VOLUME 1

STATE OF MISSISSIPPI
HAZARDOUS WASTE MANAGEMENT PERMIT
KOPPERS INDUSTRIES, INC.
TIE PLANT, MISSISSIPPI
GRENADA COUNTY
MSD OO7 O27 543

STATE OF MISSISSIPPI
HAZARDOUS WASTE MANAGEMENT PERMIT
THIS CERTIFIES THAT

KOPPERS INDUSTRIES INC. (OWNER)
BEAZER EAST, INC. (OPERATOR)
Tie Plant, Mississippi
ID NO. MSD 007 027 543

is hereby authorized to conduct post-closure care of its closed hazardous waste surface impoundment.

This permit is issued under the authority of the Mississippi Solid Waste Disposal Law, and particularly Section 17-17-27 thereof, and rules adopted and promulgated thereunder, all of which authorize the Department of Environmental Quality to enforce all applicable requirements under the Mississippi Hazardous Waste Regulations, and associated conditions included therein.

Effective: NOV 10 1999

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

CHIEF, ENVIRONMENTAL PERMITS DIVISION
MISSISSIPPI OFFICE OF POLLUTION CONTROL

Expires: September 30, 2009

Permit No. HW-88-543-01

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I.A. EFFECT OF PERMIT

The Permittee is required to conduct post-closure activities for a hazardous waste surface impoundment in accordance with the conditions of this. Subject to Mississippi Hazardous Waste Management Regulation (MHWMR) 270.4, compliance with this Permit generally constitutes compliance, for purposes of enforcement, with Mississippi Solid Waste Disposal Law (MSWDL) of 1974, as amended. Issuance of this Permit does not convey any 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, any infringement of state or local law or regulations, or preclude compliance with any other Federal, State, and/or local laws and/or regulations governing the treatment and handling of explosives. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104 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. [MHWMR 270.4, 270.30(g)]

I.B. PERMIT ACTIONS

I.B.1 Permit Modification, Revocation and Reissuance, and Termination

This Permit may be modified, revoked and reissued, or terminated for cause, as specified in MHWMR 270.41, 270.42, and 270.43. 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. [MHWMR 270.4(a) and 270.30(f)]

I.B.2 Permit Renewal

This Permit may be renewed as specified in MHWMR 270.30(b) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations. [MHWMR 270.30(b), HSWA Sec. 212]

I.C. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. [MHWMR 124.16(a)]

I.D. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in MHWMR Parts 124, 260, 264, 266, 268, and 270, unless this Permit specifically provides otherwise; where terms are not defined in the regulations or the Permit, 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. "Director" means the Executive Director of the Mississippi Department of Environmental Quality, or his designee or authorized representative.

I.D.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.D.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 Director 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 MHWMR 270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.D.3 "Corrective Action" for the purposes of this permit, may include "corrective action" as provided in MHWMR 264.100.

I.D.4 A "Corrective Action Management Unit" (CAMU) for purposes of this permit, includes any area within a facility that is designated by the Director under part 264 Subpart S, for the purpose of implementing corrective action requirements under MHWMR264.101 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.D.5 "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 MHWMR 264.101. Corrective measures may address releases to air, soils, surface water or groundwater.

I.D.6 "Director" means the Executive Director of the Mississippi Department of Environmental Quality, or his designee or authorized representative

I.D.7 "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 MHWMR.

I.D.8 "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 MHWMR264.101, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

I.D.9 A "hazardous constituent" for purposes of this permit are those substances listed in MHWMR Part 261 Appendix VIII and Part 264 Appendix IX.

I.D.10 "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.D.11 "Land Disposal" for purposes of this permit and MHWMR 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.D.12 "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.D.13 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.D.14 "<u>Remediation waste</u>" 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 MHWMR264.101 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.D.15 "<u>Solid waste</u>" 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.D.16 A "<u>solid waste management unit</u>" (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.D.17 A "<u>Temporary Unit</u>" (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 MHWMR, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

I.D.18 A "<u>unit</u>" 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.

I.D.19 "Force majeure" for the purposes of this permit is defined as any event arising from causes not foreseen and beyond the control of the Permittees or any person or entity controlled by the Permittees, including but not limited to Permittees' contractors, than delays or prevents the timely performance of any obligations under the permit despite the Permittees best efforts to fulfill such obligation. The requirement that the Permittees exercise "best efforts to fulfil such obligation: shall include, but not be limited to, best efforts to anticipate any potential force majeure event and address it before, during, and after its occurrence, such that any delay or prevention of performance is minimized to the greatest extent possible. Force majeure does not include increased costs of the work to be performed under this permit, financial inability to complete the work, work stoppages or other labor disputes.

I.E. DUTIES AND REQUIREMENTS

I.E.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 Mississippi Solid Waste Disposal Law, Sections 17-17-1, et seq., Mississippi Code Annotated and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application. [MHWMR 270.30(a)]

I.E.2 Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least 180 days prior to Permit expiration. [MHWMR 270.10(h), 270.30(b)]

I.E.3 Permit Expiration

Pursuant to MHWMR 270.50, this Permit shall be effective for a fixed term not to exceed ten years. As long as MDEQ is the Permit-issuing authority, this Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application (see MHWMR 270.10, 270.13 through 270.29) and, through no fault of the Permittee, the Director has not issued a new Permit, as set forth in MHWMR 270.51.

I.E.4 <u>Need to Halt or Reduce Activity Not a Defense</u>

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. [MHWMR 270.30(c)]

I.E.5 <u>Duty to Mitigate</u>

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment. [MHWMR 270.30(d)]

I.E.6 <u>Proper Operation and Maintenance</u>

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/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit. [MHWMR 270.30(e)]

I.E.7 <u>Duty to Provide Information</u>

The Permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director 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 Director, upon request, copies of records required to be kept by this Permit. [MHWMR 264.74(a), 270.30(h)]

I.E.8 <u>Inspection and Entry</u>

Pursuant to MHWMR 270.30(i), the Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to:

I.E.8.a Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

I.E.8.b Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

I.E.8.c Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

I.E.8.d Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by MSWDL, any substances or parameters at any location.

I.E.9 Monitoring and Records

The Director may require such testing by the Permittee, and may make such modifications to this permit, deemed necessary to ensure implementation of new regulations or requirements, or to ensure protection of human health and the environment.

I.E.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 sample to be analyzed must be the appropriate method from the Groundwater Sampling and Analysis Plan (Appendix E-5) or an equivalent method approved by the Director. Laboratory methods must be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods of Wastewater Analysis*, or an equivalent method, as specified in the Sampling and Analysis Plan (See Permit Appendix E-5). [MHWMR 270.30(j)(1)]

I.E.9.b The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification required by MHWMR 264.73(b)(9), and records of all data used to complete the application for this Permit for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. [MHWMR 264.74(b) and 270.30(j)(2)] These requirements will also be applicable to open burning/open detonation units if ground-water monitoring is required.

I.E.9.c Pursuant to MHWMR 270.30(j)(3), records of monitoring information shall specify:

I.E.9.c.i The dates, exact place, and times of sampling or measurements;

I.E.9.c.ii The individuals who performed the sampling or measurements;

I.E.9.c.iii The dates analyses were performed;

I.E.9.c.iv The individuals who performed the analyses;

I.E.9.c.v The analytical techniques or methods used; and

I.E.9.c.vi The results of such analyses.

I.E.10 Reporting Planned Changes

The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the Permitted facility. [MHWMR 270.30(l)(1)]

I.E.11 Reporting Anticipated Noncompliance

The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. [MHWMR 270.30(l)(2)]

I.E.12 Transfer of Permits

This Permit is not transferable to any person, except after notice to the Director. The Director may require modification or revocation and reissuance of the Permit pursuant to MHWMR 270.40. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of MHWMR Parts 264 and 270 and this Permit. [MHWMR 270.30(l)(3), 264.12(c)]

I.E.13 Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

I.E.14 <u>Twenty-Four Hour Reporting</u>

I.E.14.a The Permittee shall report to the Director any noncompliance which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:

I.E.14.a.i Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

I.E.14.a.ii Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility which could threaten the environment or human health outside the facility.

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

I.E.14.b.i Name, address, and telephone number of the owner or operator;

I.E.14.b.ii Name, address, and telephone number of the facility;

I.E.14.b.iii Date, time, and type of incident;

I.E.14.b.iv Name and quantity of materials involved;

I.E.14.b.v The extent of injuries, if any;

I.E.14.b.vi An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

I.E.14.b.vii Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.14.c A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance 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. The Director may waive the five-day written notice requirement in favor of a written report within 15 days. [MHWMR 270.30(l)(6)]

I.E.15 Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, Permit Conditions I.E.10- I.E.15., at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.E.14 [MHWMR 270.30(l)(10)]

I.E.16 Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Director, the Permittee shall promptly submit such facts or information. [MHWMR 270.30(l)(11)]

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Director, his designee, or authorized representative, shall be signed and certified in accordance with MHWMR 270.11 and 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DIRECTOR

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Director should be sent by certified mail or given to:

Environmental Permits Division, Chief
Mississippi Office of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39289-0385

I.H. CONFIDENTIAL INFORMATION

In accordance with MHWMR 270.12, the Permittee may claim confidential any information required to be submitted by this Permit.

I.I. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, the following documents and all amendments, revisions and modifications to these documents:

I.I.1 Waste Analysis Plan, as required by MHWMR 264.13 and this Permit.

I.I.2 Inspection schedules, as required by MHWMR 264.15(b)(2) and this Permit.

I.I.3 Personnel training documents and records, as required by MHWMR 264.16(d) and this Permit.

I.I.4 Contingency Plan, as required by MHWMR 264.53(a) and this Permit.

I.I.5 Operating record, as required by MHWMR 264.73 and this Permit.

I.I.6 Closure Plan, as required by MHWMR 264.112(a) and this Permit.

I.I.7 Post-Closure Plan, as required by MHWMR 264.118(a) and this Permit.

I.I.8 Annually-adjusted cost estimate for facility closure and post-closure if appropriate, as required by MHWMR 264.142(d) and 264.144(d).

I.I.9 All other documents required by Permit Condition I.E.9.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall construct, maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment, as required by MHWMR 264.31.

II.B. SECURITY

The Permittee shall comply with the security provisions of MHWMR 264.14(b)(2) and (c) and the Post-Closure Plan, Permit Attachment I-1.2f

II.C. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the inspection schedule set out in Post Closure Plan, Permit Attachment I-1.2b. The Permittee shall remedy any deterioration or malfunction discovered by an inspection, as required by MHWMR 264.15(c). Records of inspection shall be kept, as required by MHWMR 264.15(d).

II.D. PERSONNEL TRAINING

The Permittee shall conduct personnel training, as required by MHWMR 264.16. This training program shall follow the attached outline, Permit Attachment H. The Permittee shall maintain training documents and records, as required by MHWMR 264.16(d) and (e).

II.E. LOCATION STANDARDS

The Permittee's facility does lie in the 100 year flood plain. However, the Permittee has demonstrated to the satisfaction of the Director that, should a washout occur, the remaining levels of contaminated soil would not cause an adverse effect on human health or the environment at the site or downstream.

II.E.1 Should a washout occur during the post-closure period, such a release will constitute a release as defined in Permit Condition I.D.13 and must be reported as required by Permit Condition .

II.F. RECORD KEEPING AND REPORTING

In addition to the record keeping and reporting requirements specified elsewhere in this Permit, the Permittee shall do the following:

II.F.1 Operating Record

The Permittee shall maintain a written operating record at the facility, in accordance with MHWMR 264.73.

II.F.2 Annual Report

The Permittee shall comply with the biennial reporting requirements of MHWMR 264.S1.

II.G. GENERAL POST-CLOSURE REQUIREMENTS

II.G.1 Post-Closure Care Period

The Permittee shall begin post-closure care for the surface impoundment after completion of closure of the unit and continue for 30 years after that date. Post-closure care shall be in accordance with MHWMR 264.117 and the Post-Closure Plan, Permit Attachment I.

II.G.2 Post-Closure Security

The Permittee shall maintain security at the facility during the post-closure care period, in accordance with the Post-Closure Plan, Permit Attachment I and MHWMR 264.117(b).

II.G.3 Amendment to Post-Closure Plan

The Permittee shall amend the Post-Closure Plan in accordance with MHWMR 264.118(d), whenever necessary.

II.G.4 Post-Closure Notices

II.G.4.a No later than 60 days after certification of closure of each hazardous waste disposal unit, the Permittee shall submit records of the type, location, and quantity of hazardous waste disposed within each cell or disposal unit, in accordance with MHWMR 264.119(a).

II.G.4.b Within 60 days of certification of closure of the first hazardous waste disposal unit and the last hazardous waste disposal unit, the Permittee shall do the following:

II.G.4.b.i Record a notation on the deed to the facility property, in accordance with MHWMR 264.119(b)(1).

II.G.4.b.ii Submit a certification that a notation, in accordance with MHWMR 264.119(b)(2), has been recorded.

II.G.4.c The Permittee shall request and obtain a Permit modification prior to post-closure removal of hazardous wastes, hazardous waste residues, liners, or contaminated soils, in accordance with MHWMR 264.119(c).

II.G.5 Certification of Completion of Post-Closure Care

The Permittee shall certify that the post-closure care period was performed in accordance with the specifications in the Post-Closure Plan, as required by MHWMR 264.120.

II.H. COST ESTIMATE FOR FACILITY POST-CLOSURE

II.H.1 The Permittee's most recent post-closure cost estimate, prepared in accordance with MHWMR 264.144, as specified in Permit Attachment I.6, Table I-1.

II.H.2 The Permittee must revise the post-closure cost estimate whenever there is a change in the facility's Post-Closure Plan, as required by MHWMR 264.144(c).

II.H.3 The Permittee must keep at the facility the latest post-closure cost estimate as required by MHWMR 264.144(d).

II.I. FINANCIAL ASSURANCE FOR FACILITY POST-CLOSURE

The Permittee shall demonstrate continuous compliance with MHWMR 264.145, by providing documentation of financial assurance, as required by MHWMR 264.151 or 264.149, in at least the amount of the cost estimates required by Permit Condition II.H. Changes in financial assurance mechanisms must be approved by the Director pursuant to 264.145 or 264.149.

II.J. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS

The Permittee shall comply with MHWMR 264.148, whenever necessary.

MODULE III -GROUND WATER DETECTION MONITORING

III.A. MODULE HIGHLIGHTS

The Permittee is required by this module to maintain a groundwater detection monitoring system for the closed surface storage impoundment that was used in the treatment of wastewater from the wood preserving process. The groundwater detection monitoring system consists of eight wells, two up-gradient or background wells and six down-gradient wells. Monitoring wells R-1R and R-10- are the background wells. Monitoring well R-1R is 29.5 feet deep and R-10 is 27.0 feet deep. Monitoring wells R-7, R-8, R-8B, R-9, R-9C, and R-9D are down-gradient wells and are 31.0, 31.0, 46.0, 31.0, 60.5, and 87.2 feet deep, respectively. The location of the wells are shown in Attachment E, figure-E-5.

Indicator parameters to be measured include pH, temperature, and conductivity.

III.B. WELL LOCATION, INSTALLATION AND CONSTRUCTION

The Permittee shall install and maintain a ground-water monitoring system as specified below: [MHWMR 264.97]

III.B.1 The Permittee shall maintain ground-water monitoring wells at the locations specified on the map in Permit Attachment E, figure-E-5. and in conformance with the following list:

III.B.1.a Monitoring well R-1R and R-10 shall be maintained as a background monitoring wells.

III.B.1.b Monitoring wells R-7, R-8, R-8B, R-9, R-9C, and R-9D shall be maintained as detection-monitoring wells for the unit identified in Permit Condition IV.B.

III.B.2 The Permittee shall maintain the monitoring wells identified in Permit Condition III.B.1, in accordance with the detailed plans and specifications presented in Permit Attachment E-5.

III.B.3 All wells deleted from the monitoring program shall be plugged and abandoned in accordance with the Mississippi Office of Land and Water regulations. Well plugging and abandonment methods and certification shall be submitted to the Director within seven (7) days from the date the wells are removed from the monitoring program.

III.C. INDICATOR PARAMETERS AND MONITORING CONSTITUENTS

III.C.1 The Permittee shall monitor R-1R, R-10, R-7, R-8, R-8B, R-9, R-9C, and R-9D as described in Permit Condition III.B, for the following parameters and constituents: [MHWMR 264.98(a)]

Parameter or Constituent	Established Background Concentrations
pentachlorophenol	MDL, SW-846 Method 8270
naphthalene	MDL, SW-846 Method 8270
fluoranthene	MDL, SW-846 Method 8270
acenaphthylene	MDL, SW-846 Method 8270
2,4-dinitrophenol	MDL, SW-846 Method 8270
phenol	MDL, SW-846 Method 8270
2-chlorophenol	MDL, SW-846 Method 8270
p-chloro-m-cresol	MDL, SW-846 Method 8270
2,4-dimethylphenyl	MDL, SW-846 Method 8270
trichlorophenols	MDL, SW-846 Method 8270
tetrachlorophenols	MDL, SW-846 Method 8270
creosote	MDL, SW-846 Method 8270
chrysene	MDL, SW-846 Method 8270
benzo (b) fluoranthene	MDL, SW-846 Method 8270
benzo (a) pyrene	MDL, SW-846 Method 8270
indeno (1,2,3-cd) pyrene	MDL, SW-846 Method 8270
benz (a) anthracene	MDL, SW-846 Method 8270
dibenz (a) anthracene	MDL, SW-846 Method 8270

III.C.2 For those parameters and constituents in Permit Condition III.C.1. for which no background values are established at the time the Permit is issued, the Permittee shall establish background values in accordance with the following procedures. [MHWMR 264.97(g)(1)]

III.C.2.a Background ground-water quality for a monitoring parameter or constituent shall be based on data from quarterly sampling of the well [or wells] upgradient from the waste management unit for one (1) year. [MHWMR 264.97(g)(1)]

III.C.2.b The Permittee shall take a minimum of one sample from each well and a minimum of four samples from the entire system used, to determine background ground-water quality for each parameter and/or constituent each time the system is sampled. [MHWMR 264.97(g)(4)]

III.D. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the ground-water monitoring wells described in Permit Condition III.B: [MHWMR 264.97(d) and (e)]

III.D.1 Samples shall be collected using the techniques described in the Groundwater Sampling and Analysis Plan, Permit Appendix E-5.

III.D.2 Samples shall be preserved and shipped, in accordance with the procedures specified in the Groundwater Sampling and Analysis Plan, Permit Appendix E-5.

III.D.3 Samples shall be analyzed in accordance with the procedures specified in the Groundwater Sampling and Analysis Plan, Permit Appendix E-5.

III.D.4 Samples shall be tracked and controlled using the chain-of-custody procedures specified in the Groundwater Sampling and Analysis Plan, Permit Appendix E-5.

III.E. ELEVATION OF THE GROUND-WATER SURFACE

III.E.1 The Permittee shall determine the elevation of the ground-water surface at each well each time the ground-water is sampled, in accordance with Permit Condition III.G.2. [MHWMR 264.97(f)]

III.E.2 The Permittee shall record the surveyed elevation of the monitoring well(s) when installed (with as-built drawings).

III.F. SIGNIFICANT EVIDENCE OF A RELEASE

Historical sampling results at the facility have shown the background levels for the constituents listed in Permit Condition III.C.1 to be below method detection limits. When evaluating the monitoring results in accordance with Permit Condition III.G., the Permittee shall use the following procedures:

III.F.1 For compounds that are not naturally occurring and/or those compounds not detected in background samples, the following conditions will constitute significant evidence of a release (subject to QA/QC checks and confirmation by retesting).

III.F.1.a A compound is detected above a PQL in a down-gradient well.

III.F.1.b More than one compound is detected in a well above the MDL but below the PQL in a single sampling event.

III.F.1.c One compound is detected in a well above the MDL but below the PQL twice or more in a twelve-month period.

III.F.1.d A compound (or compounds) is detected above the MDL but below the PQL, either in a single well or in multiple wells, and a review of data shows trends or indications that a release may have 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.

III.F.2 The Permittee may choose to retest when there has been significant evidence of a release identified under Permit Condition III.F.1. A retest shall consist of analyzing two additional samples. Such samples must be collected in separate events (i.e., after re-purging the wells prior to sampling). It will not be necessary to obtain an independent sample with respect to the interval of time between subsequent samples. Confirmation of a detect will occur if analysis 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 will be necessary to determine if a release of the additional constituents has occurred.

III.G. MONITORING PROGRAM AND DATA EVALUATION

III.G.1 The Permittee shall collect, preserve, and analyze samples pursuant to Permit

Condition III.D.

III.G.2 The Permittee shall determine ground-water quality at each monitoring well at the compliance point during the active life of a regulated unit, including the closure period (and post-closure care period for land disposal units which do not clean close). [MHWMR 264.98(d)] The Permittee shall express the ground-water quality at each monitoring well in a form necessary for the determination of statistically significant increases (i.e., means and variances). [MHWMR 264.97(h)]

III.G.3 The Permittee shall determine the ground-water flow rate and direction in the uppermost aquifer at least annually. [MHWMR 264.98(e)]

III.G.4 The Permittee shall determine whether there is significant evidence of a release for each parameter identified in Permit Condition III.C.1. each time ground-water quality is determined at the compliance point using the procedures specified in Permit Condition III.F.

III.G.5 The Permittee shall perform the evaluations described in Permit Condition III.G.4. within ninety (90) days after completion of sampling. [MHWMR 264.98(g)(2)]

III.H. RECORD KEEPING AND REPORTING

III.H.1 The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Permit Condition III.G. in the operating record. [MHWMR 264.73(b)(6)]

III.H.2 The Permittee shall submit the analytical results required by Permit Conditions III.G.2. and III.G.3. and the results of the initial statistical analyses required by Permit Condition III.G.4., in accordance with the following schedule:

Samples to be Collected During the Preceding Months of	Results Due to the Executive Director
January - June	July 15
July - December	January 15

III.H.3 If the Permittee determines, pursuant to Permit Condition III.G., there is a statistically significant increase above the background values for the indicator parameters specified in Permit Condition III.C.1., the Permittee shall:

III.H.3.a Notify the Agency in writing within seven days. [MHWMR 264.98(h)(1)]

III.H.3.b Immediately sample the ground-water in all wells and determine the concentration of all constituents identified in Appendix IX of MHWMR 261. [MHWMR 264.98(h)(2)]

III.H.3.c Establish the background values for each Appendix IX constituent found in the ground-water. [MHWMR 264.98(h)(3)]

III.H.3.d Within 90 days, submit to the Agency an application for a permit modification to establish a compliance monitoring program. [MHWMR 264.98(h)(4)] The application must include the following information:

III.H.3.d.i An identification of the concentration of each Appendix IX constituent found in the ground-water at each monitoring well at the compliance point. [MHWMR 264.98(4)(i)]

III.H.3.d.ii Any proposed changes to the ground- water monitoring system at the facility necessary to meet the requirements of compliance monitoring as described in MHWMR 264.99. [MHWMR 264.98(h)(4)(ii)]

III.H.3.d.iii Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of compliance monitoring as described in MHWMR 264.99. [MHWMR 264.98(h)(4)(iii)]

III.H.3.d.iv For each hazardous constituent found at the compliance point, a proposed concentration limit, or a notice of intent to seek an alternate concentration limit for a hazardous constituent . [MHWMR 264.98(h)(4)(iv)]

III.H.3.e Submit a corrective action feasibility plan to the Agency within 180 days. [MHWMR 264.98(h)(5)]

III.H.4 If the Permittee determines, pursuant to Permit Condition III.G, there is a statistically significant increase above the background values for the parameters specified in Permit Condition III.C.1., a demonstration may be made that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. In such cases, the Permittee shall:

III.H.4.a Notify the Director in writing within seven (7) days of the intention to make a demonstration. [MHWMR 264.98(i)(1)]

III.H.4.b Within 90 days, submit a report to the Director which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. [MHWMR 264.98(i)(2)]

III.H.4.c Within 90 days, submit to the Director an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility. [MHWMR 264.98(i)(3)]

III.H.4.d Continue to monitor in accordance with the detection monitoring program at the facility. [MHWMR 264.98(i)(4)]

III.I. <u>REQUEST FOR PERMIT MODIFICATION</u>

If the Permittee or the Director determines the detection monitoring program no longer satisfies the requirements of the regulations, the Permittee must, within 90 days of the determination, submit an application for a permit modification to make any appropriate changes to the program which will satisfy the regulations. [MHWMR 264.98(j)]

MODULE IV -POST-CLOSURE CARE

IV.A. MODULE HIGHLIGHTS

This module covers the post-closure care activities for the Permittee's closed surface impoundment. The closed surface impoundment was used in the treatment of wastewater from the wood preserving process. The sediment and sludge that accumulated in the impoundment met the K001 RCRA hazardous waste listing. In the summer of 1988, all sludge and visible contaminated soils were removed from the surface impoundment and shipped to a permitted off-site disposal facility. Closure activities for the surface impoundment were initiated in July 1989 which included removal of accumulated rainwater, placement of clean soil fill, construction of a soil-bentonite cap and cover system. Closure activities for the surface impoundment were completed by the end of October 1989. The closure construction documentation and closure certification for the surface impoundment were submitted to the MDEQ in January 1990. Module III of this permit covers the requirements for detection monitoring that the facility is required to conduct during the post-closure care period.

IV.B. UNIT IDENTIFICATION

The Permittee shall provide post-closure care for the following hazardous waste management units, subject to the terms and conditions of this permit, and as described as follows:

Type of Waste Unit	Description of Wastes Contained	Hazardous Waste No.
Waste Storage Impoundment	Bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	K001

IV.C. POST-CLOSURE PROCEDURES AND USE OF PROPERTY

IV.C.1 The Permittee shall conduct post-closure care for each hazardous waste management unit listed in Permit Condition IV.B. above, to begin after completion of closure of the unit and continue for 30 years after that date, except that the 30-year post-closure care period may be shortened upon application and demonstration approved by MDEQ that the facility is secure, or may be extended by MDEQ if the Director finds this is necessary to protect human health and the environment. [MHWMR 264.117(a)]

IV.C.2 The Permittee shall maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of MHWMR Part 264 Subpart F during the post-closure period. [MHWMR 264.117(a)(1)]

IV.C.3 The Permittee shall comply with the requirements for surface impoundments as follows: [MHWMR 264.228(b)(1) and (3)]

IV.C.3.a Maintain the integrity and effectiveness of the final cover, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, and other events; and

IV.C.3.b Prevent run-on and run-off from eroding or otherwise damaging the final cover.

IV.C.4 The Permittee shall comply with all security requirements, as specified in Permit Attachment I.2f. [MHWMR 264.117(b)]

IV.C.5 The Permittee shall not allow any use of the units designated in Permit Condition IV.B. which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the post-closure care period. [MHWMR 264.117(c)]

IV.C.6 The Permittee shall implement the Post-Closure Plan, Permit Attachment I.2 All post-closure care activities must be conducted in accordance with the provisions of the Post-Closure Plan. [MHWMR 264.117(d) and 264.118(b)]

IV.D. INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the Inspection Schedule contained the Post Closure Plan, Permit Attachment I.2b. [MHWMR 264.117(a)(1)(ii)]

IV.E. NOTICES AND CERTIFICATION

IV.E.1 No later than 60 days after certification of closure of each permitted hazardous waste disposal unit, the Permittee shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Director a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before

January 12, 1981, the Permittee shall identify the type, location, and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept. [MHWMR 264.119(a)]

IV.E.2 If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located, wishes to remove hazardous wastes and hazardous waste residues, the liner, if any; or contaminated soils, then he shall request a modification to this post closure permit in accordance with the applicable requirements in MHWMR Parts 124 and 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of MHWMR 264.117(c). [MHWMR 264.119(c)]

IV.E.3 No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Director, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by the Permittee and an independent, registered professional engineer. Documentation supporting the independent, registered professional engineer's certification must be furnished to the Director upon request until the Director releases the Permittee from the financial assurance requirements for post-closure care under MHWMR 264.145(1). [MHWMR 264.120]

IV.F. FINANCIAL ASSURANCE

IV.F.1 The Permittee shall maintain financial assurance during the post-closure period and comply with all applicable requirements of MHWMR Part 264 Subpart H. [MHWMR 264.145]

IV.F.2 The Permittee shall demonstrate to the Director that the value of the financial assurance mechanism exceeds the remaining cost of post-closure care, in order for the Director to approve a release of funds. [MHWMR 264.145(a)(10)]

IV.F.3 The Permittee shall submit itemized bills to the Director when requesting reimbursement for post-closure care. [MHWMR 264.145(a)(11)]

IV.G. POST-CLOSURE PERMIT MODIFICATIONS

The Permittee must request a permit modification to authorize a change in the approved Post-Closure Plan. This request must be in accordance with applicable requirements of MHWMR Parts 124 and

270, and must include a copy of the proposed amended Post-Closure Plan for approval by the Director. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the approved Post-Closure Plan, there is a change in the expected year of final closure, or other events occur during the active life of the facility that affect the approved Post-Closure Plan. The Permittee must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the Post-Closure Plan. [MHWMR 264.118(d)]

MODULE V -CORRECTIVE ACTION

V.A. APPLICABILITY

The Conditions of this Part apply to:

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

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

V.A.3 The SWMUs and AOCs identified in Attachment M-3, which require confirmatory sampling;

V.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;

V.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 Director that, despite the Permittee's best efforts, as determined by the Director, 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.

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

V.B.1 The Permittee shall notify the Director in writing, within fifteen (15) calendar days of discovery, of any suspected new AOC as discovered under Condition V.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 Director 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 Director will notify the Permittee in writing of the final determination as to the status of the suspected AOC. If the Director determines that further investigation of an AOC is required, the permit will be modified in accordance with MHWMR 270.41.

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

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

V.B.3.a Location of unit(s) on a topographic map of appropriate scale such as required under MHWMR 270.14(b)(19).

V.B.3.b Designation of type and function of unit(s).

V.B.3.c General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

V.B.3.d Dates that the unit(s) was operated.

V.B.3.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.

V.B.3.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).

V.B.4 Based on the results of the SAR, the Director shall determine the need for further investigations at the SWMUs covered in the SAR. If the Director determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition V.E.1.b or V.D.3.

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

V.C.1 The Permittee shall notify the Director 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 ?. or SWMU or AOCs identified in Condition V.A.4 for which further investigation under Condition V.B.4 was not required.

V.C.2 If the Director 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 V.E.1.b.

V.D. CONFIRMATORY SAMPLING (CS)

V.D.1 Upon notification by the Director, the Permittees shall prepare and submit a Confirmatory Sampling (CS) Work Plan for suspected AOCs per Condition V.B.1. or newly identified SWMUs per Condition V.B.4. The work plan shall be submitted within forty-five (45) calendar days of notification by the Director 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 Director's consideration.

V.D.2 The CS Work Plan must be approved by the Director, in writing, prior to implementation. The Director shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If the Director disapproves the CS Work Plan, the Director 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.

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

V.D.4 The Permittees shall prepare and submit to the Director 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.

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

V.E. RCRA FACILITY INVESTIGATION (RFI)

V.E.1 RFI Work Plan(s)

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

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

V.E.1.c The RFI Work Plan(s) shall meet the requirements of Attachment N. 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 Permittees 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 Director. The Permittees shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Attachment N. Such omissions or deviations are subject to the approval of the Director. In addition, the scope of the RFI Work Plan(s) shall include all investigations necessary to ensure compliance with MHWMR 264.101(c).

V.E.1.d The RFI Work Plan(s) must be approved by the Director, in writing, prior to implementation. The Director shall specify the start date of the RFI Work Plan schedule in the letter approving the RFI Work Plan(s). If the Director disapproves the RFI Work Plan(s), the Director shall either (1) notify the Permittees 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 Permittees 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 Permittees of the conditions.

V.E.2 RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Work Plan(s) and Attachment N. The Permittee shall notify the Director within twenty (20) days prior to any sampling activity.

V.E.3 RFI Reports

V.E.3.a The Permittees shall prepare and submit to the Director Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under Condition V.E.1. The Draft RFI Report(s) shall be submitted to the Director for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to the Director within thirty (30) calendar days of receipt of the Director'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 V.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.

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

V.E.3.c The Director will review the RFI Report(s), including the action levels described in Condition V.E.3.b. The Director 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 V.G and MHWMR 264.101. The Director will notify the Permittee of any no further action decision. Any further investigative action required by the Director shall be prepared and submitted in accordance with a schedule specified by the Director and approved in accordance with Condition V.E.1.d.

V.F. INTERIM MEASURES (IM)

V.F.1 IM Work Plan

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

V.F.1.b Upon notification by the Director, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC which the Director determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants thereby limiting current and future potential for 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 <u>V.F.1.d</u> Such interim measures may be conducted concurrently with investigations required under the terms of this permit.

V.F.1.c The Permittee may initiate IM by submitting an IM Work Plan for approval and reporting in accordance with the requirements under Condition <u>V.F</u>.

V.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.

V.F.1.e The IM Work Plan imposed under Condition V.f.1.b must be approved by the Director, in writing, prior to implementation. The Director shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan. If the Director disapproves the IM Work Plan, the Director 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.

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

V.F.2.a The Permittee shall implement the interim measures in accordance with the approved IM Work Plan.

V.F.2.b The Permittee shall give notice to the Director as soon as possible of any planned changes, reductions or additions to the IM Work Plan.

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

V.F.3 IM Reports

V.F.3.a If the time required for completion of interim measures is greater than one year, the Permittee shall provide the Director with progress reports at intervals specified in the approved Work Plan. The Progress Reports shall contain the following information at a minimum:

V.F.3.a.i A description of the portion of the interim measures completed;

V.F.3.a.ii Summaries of findings;

V.F.3.a.iii Summaries of any deviations from the IM Work Plan during the reporting period;

V.F.3.a.iv Summaries of any problems or potential problems encountered during the reporting period; and

V.F.3.a.v Projected work for the next reporting period.

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

V.F.3.b.i A description of interim measures implemented;

V.F.3.b.ii Summaries of results;

V.F.3.b.iii Summaries of all problems encountered;

V.F.3.b.iv Summaries of accomplishments and/or effectiveness of interim measures; and

V.F.3.b.v Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.E.9

V.G. CORRECTIVE MEASURES STUDY

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

V.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 Director that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of Condition V.G.1.b The Permittee may seek approval from the Director for concurrent RFI/CMS. The CMS may be performed concurrent with the RFI process if the Director determines that sufficient investigative details are available to allow concurrent action.

V.G.1.b The CMS Work Plan shall meet the requirements of Attachment O 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 Director. 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 Attachment O. Such omissions or deviations are subject to the approval of the Director. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), MHWMR 264.101, 264.552, and 270.32(b)(2). The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition V.A.5.

V.G.1.c The Director shall either approve or disapprove, in writing, the CMS Work Plan. If the Director disapproves the CMS Work Plan, the Director 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.

V.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 Director for the CMS Work Plan. Pursuant to Permit Condition

V.G.1.b. the CMS shall be conducted in accordance with the approved CMS Work Plan.

V.G.3 CMS Report

V.G.3.a The Permittee shall prepare and submit to the Director a draft and final CMS Report for the study conducted pursuant to the approved CMS Work Plan. The draft CMS Report shall be submitted to the Director in accordance with the schedule in the approved CMS Work Plan. The final CMS Report shall be submitted to the Director within thirty (30) days of receipt of the Director'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 Director's decision on the recommended remedy, described under Permit Condition V.H.

V.G.3.b If the Director determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition V.G.3.a., the Director may disapprove the CMS Final Report. If the Director disapproves the CMS Final Report, the Director 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 Director will notify the Permittee of any no further action decision.

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

V.H. REMEDY APPROVAL AND PERMIT MODIFICATION

V.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, existing regulations, and guidance. The selected remedy may include any interim measures implemented to date.

V.H.2 Pursuant to MHWMR 270.41, a permit modification will be initiated by the Director after recommendation of a remedy under Condition V.H.1. This modification will serve to incorporate a final remedy, including a CAMU if necessary, into this permit.

V.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.

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

V.I.1 If at any time the Director determines that modification of the Corrective Action Schedule of Compliance is necessary, the Director may initiate a modification to the Schedule of Compliance (Attachment P).

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

V.J. WORK PLAN AND REPORT REQUIREMENTS

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

V.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 Director based on the Permittee's demonstration that sufficient justification for the extension exists.

V.J.3 If the Permittee at any time determines that the SAR information required under Condition V.B., the CS Work Plan under Condition V.D., or RFI Work Plan(s) required under Condition V.E. no longer satisfy the requirements of MHWMR 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 Director within ninety (90) calendar days of such determination.

V.J.4 At least two (2) copies of all reports and work plans shall be provided by the

Permittees to the Director should be sent by certified mail or given to:

Environmental Permits Division, Chief
Mississippi Office of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39289-0385

V.K. <u>APPROVAL/DISAPPROVAL OF SUBMITTALS</u>

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

V.L. <u>DISPUTE RESOLUTION</u>

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

V.L.1 In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Director in writing within thirty (30) days of receipt of the Director'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 Director's determination.

V.L.2 The Director and the Permittee shall have an additional thirty (30) days from EPA's receipt of the notification provided for in Condition <u>V.L.1</u>. to meet or confer to resolve any disagreement.

V.L.3 In the event agreement is reached, the Permittee shall submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.

V.L.4 If agreement is not reached within the thirty (30) day period, the Director 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 Director'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.

V.L.5 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 Director determines are not affected by the dispute.

MODULE VI -WASTE MINIMIZATION

VI.A. GENERAL RESTRICTIONS

In the event that the Permittee treats, stores, or disposes of hazardous wastes onsite where such wastes were generated, then the Permittee must comply with MHWMR 264.73(b)(9), and Section 3005(h) of RCRA (42 U.S.C. 6925(h)), and the Permittee must certify, no less often than annually, that:

VI.A.1 The Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

VI.A.2 The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

VI.B. RECORDING REQUIREMENTS

If Condition VI.A. is applicable, then the Permittee shall maintain copies of this certification in the facility operating record as required by MHWMR 264.73(b)(9).

VI.C. WASTE MINIMIZATION OBJECTIVES

If Condition VI.A. is applicable, then the Waste Minimization program required under Condition VI.A. should address the objectives listed in Attachment Q.

MODULE VII -LAND DISPOSAL RESTRICTIONS

VII.A. GENERAL RESTRICTIONS

VII.A.1 MHWMR 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 MHWMR Part 268. Where the Permittee has applied for an extension, waiver or variance under MHWMR 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.

VII.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

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

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

MODULE VIII -RCRA ORGANIC AIR EMISSION REQUIREMENTS FOR PROCESS VENTS

VIII.A. GENERAL INTRODUCTION

On December 6, 1994, EPA published the final rule for Phase II Organic Air Emissions Standards (MHWMR 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 MHWMR 264.1083(a), except as specifically exempted under MHWMR 264.1080 and 264.1082.

VIII.B. ORGANIC AIR EMISSION STANDARDS

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

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For EPA Regional Use Only

Date Received
Month Day Year

EPA
United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[ ] A. First Part A Submission
[X] B. Part A Amendment #

C. Installation's EPA ID Number: MSD007027543

D. 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: TIE PLANT | State: MS | Zip Code: 38960—

County Code *(If known)*: - | County Name: GRENEDA

B. Land Type (Enter code): P

C. Geographic Location

LATITUDE *(Degrees, Minutes, & Seconds)*: 33 44 04

LONGITUDE *(Degrees, Minutes & Seconds)*: 89 47 19

D. Facility Existence Date Month: 11 Day: Year: 1980

IV. Facility Mailing Address

Street or P.O. Box: BOX 160

City or Town: TIE PLANT | State: MS | Zip Code: 38960—

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*: HENDERSON | *(First)*: TOM

Job Title: PLANT MANAGER | Phone Number *(Area Code and Number)*: 601—226—4584

VI. Facility Contact Address *(See instructions)*

A. Contact Address: Location [X] Mailing [ ] Other [ ]

B. Street or P.O. Box:

City or Town: | State: | Zip Code: —

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Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

Name of Operator: S E E A T T A C H M E N T

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: K O P P E R S I N D U S T R I E S I N C

Street or P.O. Box: 4 3 6 S E V E N T H A V E N U E

City or Town: P I T T S B U R G H | **State**: P A | **ZIP Code**: 1 5 2 1 9 —

Phone Number *(Area Code and Number)*: 4 1 2 — 2 2 7 — 2 0 0 1

B. Owner Type: P

C. Change of Owner Indicator: Yes ☐ No X | **Date Changed**: Month Day Year

IX. SIC Codes *(4-digit, in order of significance)*

Primary	(Description)	Secondary	(Description)
2 4 9 1	Wood Preserving		N/A

Secondary	(Description)	Secondary	(Description)

X. Other Environmental Permits *(See Instructions)*

A. Permit Type (Enter code)	B. Permit Number	C. Description
E	0 9 6 0 - 0 0 0 1 2	Title V Air Operating Permit
E	M S P 0 9 0 3 0 0	POTW-Permit (City of Grenada)
N	M S R 2 2 0 0 0 5	Stormwater General Permit

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XI. Nature of Business *(Provide a brief description)*

The plant deals with the preservation of wood products utilizing pressure treatment processes. The preservation processes utilize creosote and pentachlorophenol. Beazer East, Inc. is not involved with the operation of this facility.

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. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), 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.*
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
	Disposal:	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet or Hectare-meter
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day r Liters Per Day
D83	Surface Impoundment	Gallons or Liters
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
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
S05	Drip Pad	Gallons or Liters
S06	Containment Building-Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
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	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T80	Boiler	Gallons or Liters
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T88	Titanium Dioxide Chloride Process Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T94	Containment Building-Treatment	Cubic Yards or Cubic Meters
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
X04	Geologic Repository	Cubic Yards or Cubic Meters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G	Short Tons Per Hour	D	Cubic Yards	Y
Gallons Per Hour	E	Metric Tons Per Hour	W	Cubic Meters	C
Gallons Per Day	U	Short Tons Per Day	N	Acres	B
Liters	L	Metric Tons Per Day	S	Acre-feet	A
Liters Per Hour	H	Pounds Per Hour	J	Hectares	Q
Liters Per Day	V	Kilograms Per Hour	R	Hectare-meter	F
				Btu's Per Hour	I

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XII. Process Codes and Design Capabilities (*Continued*)

EXAMPLE FOR COMPLETING ITEM XII (Shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

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	533.788	G	001	
1	D 8 0	** 0.0	G	001	
2		.			
3		.			
4		.			
5		** Surface impoundment closed as a			
6		landfill. All visible waste was			
7		removed; however, clean closure			
8		was not achieved.			
9		.			
10		.			
11		.			
12		.			
13		.			

NOTE: If you need to list more than 13 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 "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes (*Follow instructions from item XII for D99, S99, T04 and X99 process codes*)

Line Number (Enter #s in seq w/XII)	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	D. Description Of Process
X 1	T 0 4				In-situ Vitrification
1		.			
2		.			
3		.			
4		.			

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Secondary ID Number (Enter from page 1)

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 possess 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(1).*
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 code)	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

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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)*:

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 code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	K 0 0 1	See Comment Below		D 8 0	See Comment Below
2					
3		Former surface impoundment closed as a landfill.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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17					
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32					
33					

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M	S	D	0	0	7	0	2	7	5	4	3

Secondary ID Number (Enter from page 1)

XV. Map

Attach to this application a topographic map, or other equivalent 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). See Attachment

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 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 Signature — Date Signed: 12/16/97

Name and Official Title (Type or print)
R.D. Collins, Vice President and Secretary, Kopper Industries, Inc.

Owner Signature — Date Signed

Name and Official Title (Type or print)

Operator Signature: James P. Brennan — Date Signed: 12/16/97

Name and Official Title (Type or print)
James P. Brennan, Vice President and General Manager, Beazer East, Inc.

Operator Signature — Date Signed

Name and Official Title (Type or print)

XIX. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

VII OPERATOR INFORMATION

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY
TIE PLANT, MISSISSIPPI

PART A APPLICATION
ATTACHMENTS

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY
TIE PLANT, MISSISSIPPI

XV MAP
TOPOGRAPHIC MAP

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY
TIE PLANT, MISSISSIPPI

VII OPERATOR INFORMATION

<u>OPERATOR #1</u>

KOPPERS INDUSTRIES, INC.
436 Seventh Avenue
Pittsburgh, PA 15219
(412) 227-2001

Status of Operator #1: P

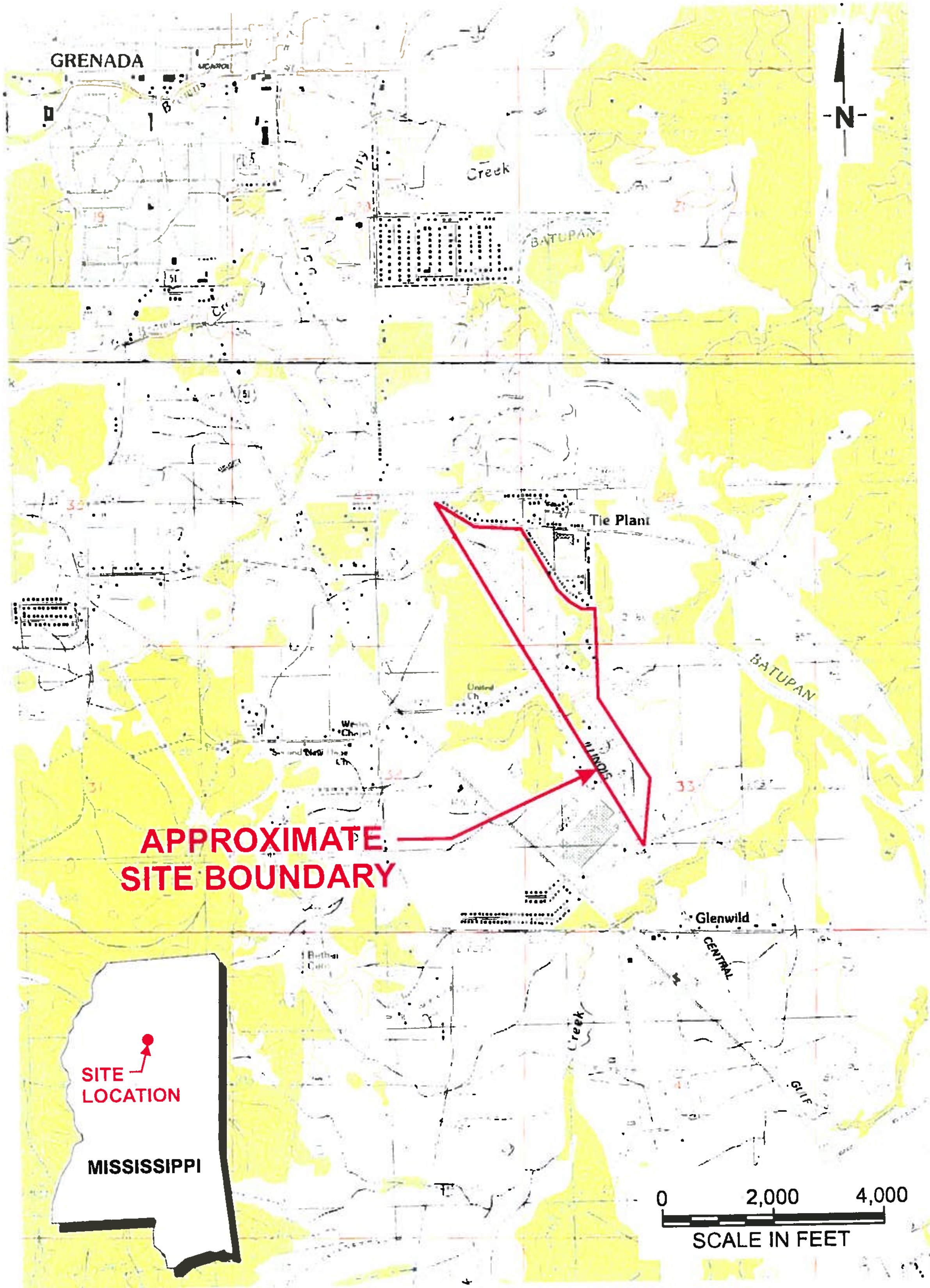
<u>OPERATOR #2 (*)</u>

BEAZER EAST, INC.
One Oxford Centre, Suite 3000
Pittsburgh, PA 15219
(412) 208-8864

Status of Operator #2: P

(*) NOTE: Operator #1 operates the wood preserving plant and generates hazardous waste which is stored for less than 90 days prior to off-site disposal.

Operator #2 is operator of the closed surface impoundment (D80).



TITLE: SITE LOCATION MAP			
LOCATION: KOPPERS INDUSTRIES, INC., GRENADA, MS			
FLUOR DANIEL GTI	CHECKED:	J.B.	B-1
	DRAFTED:	C.P.	
	FILE:	71399221.DWG	
	DATE:	07/21/97	

XVI FACILITY DRAWING
SCALE DRAWING OF FACILITY

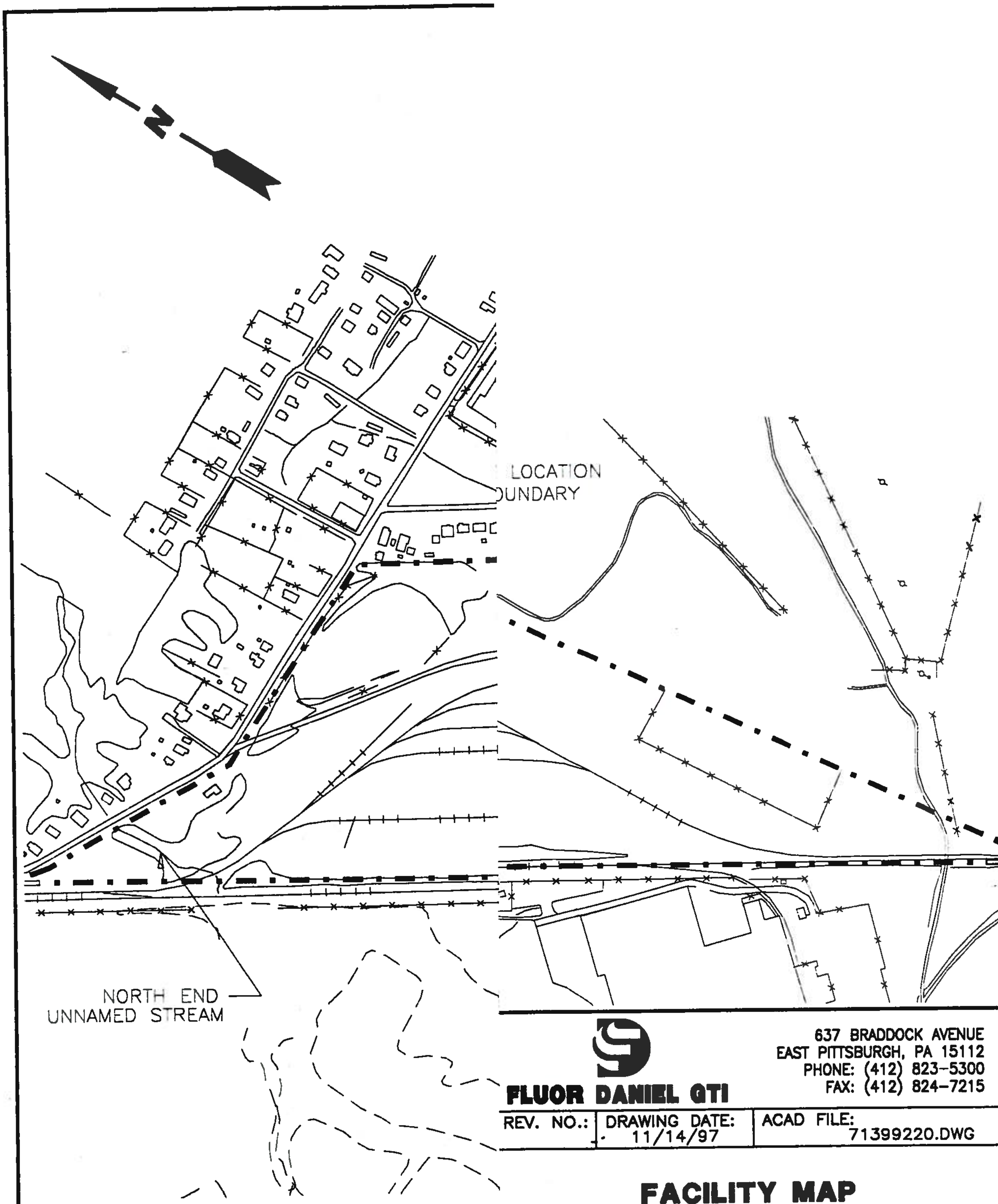
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY
TIE PLANT, MISSISSIPPI

XVII PHOTOGRAPHS
GROUND LEVEL PHOTOS
CLOSED SURFACE IMPOUNDMENT

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY
TIE PLANT, MISSISSIPPI

PHOTO 31: Tractor-Pulled Crimper for Seed and Mulch

PHOTO 32: Northwest View of Finished Cap



FLUOR DANIEL GTI

637 BRADDOCK AVENUE
EAST PITTSBURGH, PA 15112
PHONE: (412) 823-5300
FAX: (412) 824-7215

REV. NO.:	DRAWING DATE: 11/14/97	ACAD FILE: 71399220.DWG	

FACILITY MAP

CLIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
LOCATION: GRENADA, MISSISSIPPI			PE:
DESIGNED: KLM	DETAILED: R.A.M.	PROJECT NO.: 01003-0728-06	FIGURE: 1

SECTION B. FACILITY DESCRIPTION

B.1 General Description

The KII facility was constructed in 1904 to pressure treat railroad cross ties. Preservatives used at the facility include pentachlorophenol (mixed in No. 2 diesel fuel) and creosote. The facility currently pressure treats railroad cross ties, switch ties and poles.

The facility is located approximately 1 mile southeast of Grenada, Mississippi, near U.S. Highway 51 as shown on Figure B-1. The facility is located in the town of Tie Plant, Mississippi, a rural town with a small residential community located to the northeast. The 171-acre site is approximately 1.2 miles long and 0.3 miles wide. The Illinois Central Railroad services the KII facility and forms the western boundary and cultivated fields form the eastern boundary. Two streams flow northeast across the KII facility towards the Batupan Bogue: the Northern Stream in the northern portion of the KII facility and the Central Ditch in the central portion of the KII facility.

The facility's street address is:

Koppers Industries, Inc.
Tie Plant Road
Tie Plant, Mississippi 38960

The facility's mailing address is:

P. O. Box 160
Tie Plant, Mississippi 38960

The contact and party responsible for hazardous waste management at the KII facility are:

Corporate Contact:

Mr. Randall Collins
Vice President
Koppers Industries, Inc.
436 Seventh Avenue
Pittsburgh. Pennsylvania 15219

Local Contact:

Mr. Tom Henderson
Plant Manager
Koppers Industries, Inc.
P.O. Box 160
Tie Plant. Mississippi 38960

Beazer East, Inc. contact and address is:

Mr. Michael Bollinger
Environmental Program Manager
Beazer East, Inc.
One Oxford Centre, Suite 3000
Pittsburgh, Pennsylvania 15219

The SI 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. No records exist concerning the construction of the SI, but it appears that the SI was constructed by excavating into the natural clay soil and using the excavated material to construct the dike around the SI. During the operation of the SI, bottom sediment sludge (K001) was generated. 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).

B.2 Topographic Map

A topographic map for the KII facility and the surrounding region is included as Figure B-1. A site-specific topographic map detailing pertinent site features and showing the topography of the SI prior to closure is presented as Figure B-2. The scale of this map is 1 inch = 100 feet. Figure B-3 shows the final as-built ground surface contours of the closed SI. Meteorological and wind distribution data obtained from the Federal Aviation Administration, Grenada, Mississippi AAF is included in Appendix B-1.

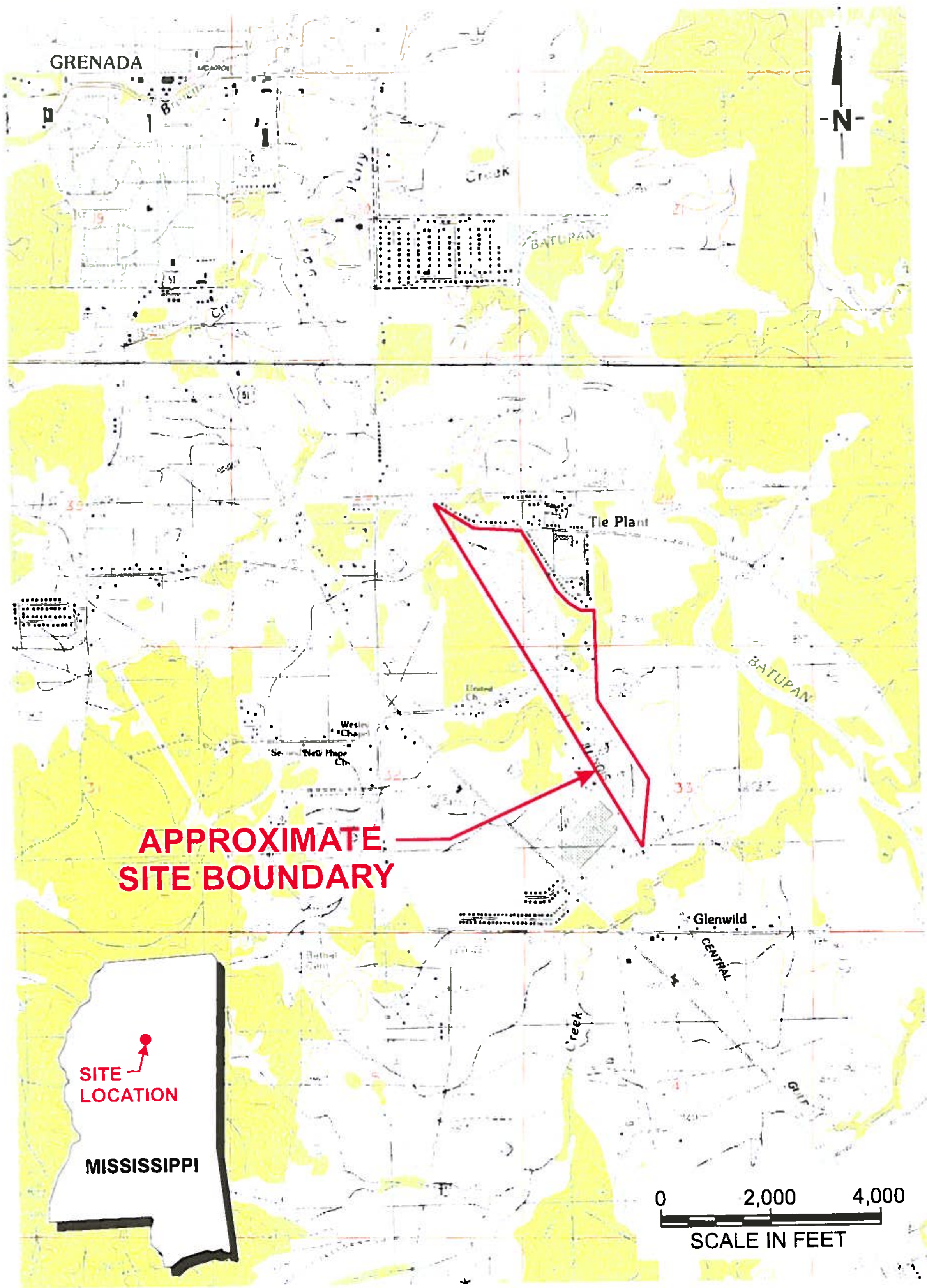
B.3 Location Information

B.3a Flood Information

The KII facility is not located within a 100-year flood plain except for a small area near the central area of the facility. The closed SI is more 7 feet above this 100-year flood plain. Consequently, no additional flood proofing is required to prevent potential constituent releases from the closed SI during flooding. This information was obtained from the Flood Insurance Rate Map Number 280060 0125B for Grenada County, Mississippi. A copy of the map is presented in Appendix B-2.

B.4 Traffic Control

The closed SI unit is located away from the wood treating operations. Traffic is restricted to intermittent use by vehicles if required to perform maintenance to the cap. Any servicing of the monitoring wells or periodic inspections are done by foot traffic. Inspection and maintenance of the closed SI cover is discussed in Section I.2 of this Renewal Application



TITLE:

SITE LOCATION MAP

LOCATION:

KOPPERS INDUSTRIES, INC., GRENADA, MS

FLUOR DANIEL GTI

CHECKED:	J.B.	B-1
DRAFTED:	C.P.	
FILE:	71399221.DWG	
DATE:	07/21/97	

SECTION C. WASTE CHARACTERISTICS

C.1 Chemical and Physical Analysis

The hazardous waste previously contained in the closed SI was K001, defined in 40 CFR 261 as "bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol". Appendix C-1 provides a waste analysis for the K001 sludge.

C.2 Waste Analysis Plan

No wastes have been placed in the closed SI since it was closed in 1989. Therefore, a Waste Analysis Plan is not applicable for this Renewal Application.

APPENDIX C-1
IMPOUNDMENT SLUDGE ANALYSIS

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

	Date	
Received/Refrigerated	07/19/84	
Organics		
Extracted	07/23/84	
- Pesticides	07/24/84	
- Herbicides	07/25/84	
Analyzed		
1. Volatiles	07/27/84	
2. Acid	08/07/84	
3. Base/Neutrals	08/03/84	
4. Pesticides/PCBS	07/27/84	- 08/01/84*
5. Herbicides	08/01/84	
Inorganics		
1. Metals	08/14/84	
2. Cyanide	Not Requested	
3. Phenols	Not Requested	

*Second column confirmation analysis which serves to verify the presence or absence of the Pesticides/PCB's.

QUALITY ASSURANCE NOTICE

CompuChem Sample No. 31897

Although not required by the Federal Register, December 3, 1979 (modified July, 1982) Volatile Method 624 procedure, the laboratory prepares VOA blanks when compositing water samples and preparing low and medium level hazardous waste VOA samples. This is to insure that the glassware used is free from contamination, and to monitor the possibility of cross-contamination from high levels of volatile organic compounds in some samples and the laboratory atmosphere.

The compositing or method blank (# 31981) prepared with this sample contained the compound(s) listed below. Sample data associated with this blank have been adjusted and/or flagged according to the EPA-recommended methods.

Compound(s)	Concentration Found In Sample (ug/kg)	Applicable Qualifier*
Methylene Chloride	28	NDB

The following data qualifiers are used by EPA and adopted by CompuChem® for reporting purposes:

NDB = The concentration of a priority pollutant in the blank is greater than 1/2 the detection limit and is greater than 1/2 the concentration in the sample.

*No adjusted sample concentration is reported.

COMPOUND LIST - VOLATILES ORGANICS

SAMPLE IDENTIFIER: GM 259
COMPUCHEM SAMPLE NUMBER: 31897

		CONCENTRATION (UG/KG)	DETECTION LIMIT (UG/KG)
1V.	CHLOROMETHANE	BDL	10
2V.	VINYL CHLORIDE	BDL	10
3V.	CHLOROETHANE	BDL	10
4V.	BROMOMETHANE	BDL	10
5V.	ACROLEIN	BDL	100
6V.	ACRYLONITRILE	BDL	100
7V.	METHYLENE CHLORIDE	NDB*	10
8V.	TRICHLOROFLUOROMETHANE	BDL	10
9V.	1,1-DICHLOROETHYLENE	BDL	10
10V.	1,1-DICHLOROETHANE	BDL	10
11V.	TRANS-1,2-DICHLOROETHYLENE	BDL	10
12V.	CHLOROFORM	BDL	10
13V.	1,2-DICHLOROETHANE	BDL	10
14V.	1,1,1-TRICHLOROETHANE	BDL	10
15V.	CARBON TETRACHLORIDE	BDL	10
16V.	BROMODICHLOROMETHANE	BDL	10
17V.	1,2-DICHLOROPROPANE	BDL	10
18V.	TRANS-1,3-DICHLOROPROPENE	BDL	10
19V.	TRICHLOROETHYLENE	BDL	10
20V.	BENZENE	BDL	10
21V.	CIS-1,3-DICHLOROPROPENE	BDL	10
22V.	1,1,2-TRICHLOROETHANE	BDL	10
23V.	DIBROMOCHLOROMETHANE	BDL	10
24V.	BROMOFORM	BDL	10
25V.	1,1,2,2-TETRACHLOROETHYLENE	BDL	10
26V.	1,1,2,2-TETRACHLOROETHANE	BDL	10
27V.	TOLUENE	19	10
28V.	CHLOROBENZENE	BDL	10
29V.	ETHYLBENZENE	20	10
30V.	2-CHLOROETHYL VINYL ETHER	BDL	10
31V.	DICHLORODIFLUOROMETHANE†	BDL	
32V.	BIS(CHLOROMETHYL)ETHER†	BDL	

BDL=BELOW DETECTION LIMIT
*See Quality Control Notice

†See Data Report Notice

COMPOUND LIST -- ACID EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

		CONCENTRATION (UG/KG)	DETECTION† LIMIT (UG/KG)
1A.	PHENOL	70000(1)	5000
2A.	2-CHLOROPHENOL	BDL	5000
3A.	2-NITROPHENOL	BDL	5000
4A.	2,4-DIMETHYLPHENOL	8000	5000
5A.	2,4-DICHLOROPHENOL	BDL	5000
6A.	P-CHLORO-M-CRESOL	BDL	5000
7A.	2,4,6-TRICHLOROPHENOL	BDL	5000
8A.	2,4-DINITROPHENOL	BDL	50000
9A.	4-NITROPHENOL	BDL	5000
10A.	4,6-DINITRO-O-CRESOL	BDL	50000
11A.	PENTACHLOROPHENOL	170000	5000

BDL=BELOW DETECTION LIMIT
†See Data Report Notice. Additionally, sample analyzed using a 10:1 dilution, thus the higher than normal detection limits.

(1)Quantitated using secondary ion

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

		CONCENTRATION (UG/KG)	DETECTION† LIMIT (UG/KG)
1B.	N-NITROSODIMETHYLAMINE	BDL	12000
2B.	BIS (2-CHLOROETHYL) ETHER	BDL	12000
3B.	1,3-DICHLOROBENZENE	BDL	12000
4B.	1,4-DICHLOROBENZENE	BDL	12000
5B.	1,2-DICHLOROBENZENE	BDL	12000
6B.	BIS (2-CHLOROISOPROPYL) ETHER	BDL	12000
7B.	HEXACHLOROETHANE	BDL	12000
8B.	N-NITROSODI-N-PROPYLAMINE	BDL	12000
9B.	NITROBENZENE	BDL	12000
10B.	ISOPHORONE	BDL	12000
11B.	BIS(2-CHLOROETHOXY) METHANE	BDL	12000
12B.	1,2,4-TRICHLOROBENZENE	BDL	12000
13B.	NAPHTHALENE	280000(1)	12000
14B.	HEXACHLOROBUTADIENE	BDL	12000
15B.	HEXACHLOROCYCLOPENTADIENE	BDL	12000
16B.	2-CHLORONAPHTHALENE	BDL	12000
17B.	DIMETHYLPHTHALATE	BDL	12000
18B.	ACENAPHTHYLENE	BDL	12000
19B.	2,6-DINITROTOLUENE	BDL	12000
20B.	ACENAPHTHENE	120000	12000
21B.	2,4-DINITROTOLUENE	BDL	12000
22B.	DIETHYLPHTHALATE	BDL	12000
23B.	FLUORENE	110000	12000
24B.	4-CHLOROPHENYL PHENYL ETHER	BDL	12000
25B.	DIPHENYLAMINE (N-NITROSO)	BDL	12000
26B.	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	BDL	12000
27B.	4-BROMOPHENYL PHENYL ETHER	BDL	12000
28B.	HEXACHLOROBENZENE	BDL	12000

BDL=BELOW DETECTION LIMIT
†See Data Report Notice. Additionally, sample extract could not be concentrated to the required volume, and sample was analyzed using a 20:1 dilution, thus the higher than normal detection limits.

(1)Quantitated using secondary ion

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS (Page Two)

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

		CONCENTRATION (UG/KG)	DETECTION† LIMIT (UG/KG)
29B.	PHENANTHRENE	430000(1)	12000
30B.	ANTHRACENE	83000	12000
31B.	DI-N-BUTYLPHTHALATE	BDL	12000
32B.	FLUORANTHENE	400000(1)	12000
33B.	BENZIDINE	BDL	12000
34B.	PYRENE	250000	12000
35B.	BUTYLBENZYLPHTHALATE	BDL	12000
36B.	BENZO(A)ANTHRACENE	72000	12000
37B.	3,3'-DICHLOROBENZIDINE	BDL	12000
38B.	CHRYSENE	65000	12000
39B.	BIS(2-ETHYLHEXYL)PHTHALATE	BDL	12000
40B.	DI-N-OCTYLPHTHALATE	BDL	12000
41B.	BENZO(B)FLUORANTHENE	75000	12000
42B.	BENZO(K)FLUORANTHENE	51000	12000
43B.	BENZO(A)PYRENE	28000	12000
44B.	INDENO(1,2,3-C,D)PYRENE	BDL	30000
45B.	DIBENZO(A,H)ANTHRACENE	BDL	30000
46B.	BENZO(G,H,I)PERYLENE	BDL	30000

BDL=BELOW DETECTION LIMIT
†See Data Report Notice. Additionally, sample extract could not be concentrated to the required volume, and sample was analyzed using a 20:1 dilution, thus the higher than normal detection limits.

(1)Quantitated using secondary ion

COMPOUND LIST -- PESTICIDES/PCB'S

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

		CONCENTRATION (UG/KG)	DETECTION† LIMIT (UG/KG)
1P.	ALDRIN	BDL	400
2P.	ALPHA-BHC	BDL	400
3P.	BETA-BHC	BDL	400
4P.	GAMMA-BHC	BDL	400
5P.	DELTA-BHC	BDL	400
6P.	CHLORDANE	BDL	400
7P.	4,4'-DDT	BDL	400
8P.	4,4'-DDE	BDL	400
9P.	4,4'-DDD	BDL	400
10P.	DIELDRIN	BDL	400
11P.	ALPHA-ENDOSULFAN	BDL	400
12P.	BETA-ENDOSULFAN	BDL	400
13P.	ENDOSULFAN SULFATE	BDL	400
14P.	ENDRIN	BDL	400
15P.	ENDRIN ALDEHYDE	BDL	400
16P.	HEPTACHLOR	BDL	400
17P.	HEPTACHLOR EPOXIDE	BDL	400
18P.	PCB-1242	BDL	4000
19P.	PCB-1254	BDL	4000
20P.	PCB-1221	BDL	4000
21P.	PCB-1232	BDL	4000
22P.	PCB-1248	BDL	4000
23P.	PCB-1260	BDL	4000
24P.	PCB-1016	BDL	4000
25P.	TOXAPHENE	BDL	4000
26P.	METHOXYCHLOR	BDL	4000

BDL=BELOW DETECTION LIMIT
†See Data Report Notice. Additionally, sample analyzed using a 200:1 dilution to properly evaluate the GC Chromatogram, thus the higher than normal detection limits.

COMPOUND LIST - SDWA/RCRA HERBICIDES

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

	CONCENTRATION (MG/L)	DETECTION† LIMIT (MG/L)
1H. 2, 4-D	BDL	20.0
2H. 2,4,5-TP (Silvex)	BDL	2.0

BDL=BELOW DETECTION LIMIT
†See Data Report Notice. Additionally, sample analyzed using a 200:1 dilution to properly evaluate the GC Chromatogram, thus the higher than normal detection limits.

COMPOUND LIST - INORGANICS (METALS)

SAMPLE IDENTIFIER: GM 269
COMPUCHEM SAMPLE NUMBER: 31897

INORGANICS PRIORITY POLLUTANTS	CONCENTRATION (UG/G)		DETECTION LIMIT† (UG/G)
1. ANTIMONY, TOTAL		BDL	0.50
2. ARSENIC, TOTAL	3.3		0.50
3. BERYLLIUM, TOTAL		BDL	0.20
4. CADMIUM, TOTAL		BDL	0.10
5. CHROMIUM, TOTAL	25		0.50
6. COPPER, TOTAL	19		1.0
7. LEAD, TOTAL	30		0.50
8. MERCURY, TOTAL	0.010		0.0020
9. NICKEL, TOTAL	5.2		1.0
10. SELENIUM, TOTAL		BDL	0.10
11. SILVER, TOTAL		BDL	0.50
12. THALLIUM, TOTAL		BDL	0.50
13. ZINC, TOTAL	73		0.20

BDL=BELOW DETECTION LIMIT
†See Data Report Notice

COMPUCHEM LABORATORIES

REPORT OF DATA

SAMPLE IDENTIFIER: GM 269

COMPUCHEM SAMPLE NUMBER: 31897

SUBMITTED TO:

Mr. Bob Hepner
Koppers, Inc.
Research Dept.
440 College Park Drive
Monroeville, PA 15146

Diana A. Scammell

DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT

ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

TABLE 1

KOPPERS COMPANY, INC.

CHEMICAL & ALLIED PRODUCTS

GRENADA, MS

SAMPLE COLLECTION DATA

LAB SAMPLE NO.	SAMPLE SOURCE	DATE COLLECTED	DATE RECEIVED
GM-262	R-1	7/17/84	7/18/84
GM-263	R-2	7/17/84	7/18/84
GM-264	R-3	7/17/84	7/18/84
GM-265	R-4	7/17/84	7/18/84
M-266	TO SPRAY FIELD	7/17/84	7/18/84
GM-267	FIELD BLANK (sample had been acidified with $NaHSO_4$)	7/17/84	7/18/84
GM-268	SPRAY FIELD SOIL	7/17/84	7/18/84
GM-269	LAGOON BOTTOMS	7/17/84	7/18/84

CTED BY: E. G. Huth
M. Long

ENVIRONMENTAL RESOURCES DEPARTMENT
ENVIRONMENTAL ANALYSIS LABORATORY
MONROEVILLE SCIENCE & TECHNOLOGY CENTER

APPENDIX B-1
METEOROLOGICAL AND WIND DISTRIBUTION DATA

DEPARTMENT OF THE AIR FORCE
AIR WEATHER SERVICE
2076TH DATA CONTROL UNIT (WEATHER)

UNIFORM SUMMARY OF SURFACE WEATHER OBSERVATIONS

PART A - DERIVED FROM HOURLY OBSERVATIONS
PART B - DERIVED FROM DAILY OBSERVATIONS

GRENADA MISS AAF

13823

AUG 1943 THRU MAY 1944
AUG 1945 THRU NOV 1945

NEW ORLEANS PORT OF EMBARKATION

NEW ORLEANS, LA.

STATION NAME | PERIOD | FT. | UPPER LIMIT OF CIG. AND VISIBILITY IF U

STATION	YEAR	MONTH	CODE	DIR. \ VEL.	1-3 M.P.H.	4-12 M.P.H.	13-24 M.P.H.	25-31 M.P.H.	32-46 M.P.H.	47 AND OVER	TOTAL 4 M.P.H. & OVER OBS.	TOTAL 4 M.P.H. & OVER %	TOTAL ALL OBS. OBS.	TOTAL ALL OBS. %	TOTAL VEL.	AV. VI
13823	0	0	32	N	201	579	31				610		811		4984	
			02	NNE	87	211	9				220		307		1777	
			04	NE	334	513	15				528		862		4212	
			06	ENE	293	284	7				291		584		2435	
			08	E	306	347	8				355		661		2853	
			10	ESE	84	216	18				234		318		1916	
			12	SE	131	309	52	1			362		493		3339	
			14	SSE	100	257	43				300		400		2819	
			16	S	149	342	100				442		591		4450	
			18	SSW	96	215	60				275		371		2695	
			20	SW	142	267	79	7	2		355		497		3785	
			22	WSW	92	238	53	2			293		385		2793	
			24	W	104	239	64	2			305		409		3024	
			26	WNW	47	166	33				199		246		1803	
			28	NW	160	349	47				396		556		3530	
			30	NNW	76	237	36				273		349		2476	
			40	CALM	—	—	—	—	—	—	—		1148		—	—
TOTALS →				1148	2402	4769	655	12	2		5438	XXXX XXXX	8988	XXXX XXXX	48891	
PER CENT →														100.0	XXXXXXXX XXXXXXXX	XXXX XXXX

APPENDIX B-2
FLOOD INSURANCE RATE MAP

SECTION D. PROCESS INFORMATION

This Renewal Application is for a SI closed as a landfill. Therefore, the requirements for information regarding containers, tanks, waste piles or land treatment facilities are not applicable.

D.1 Surface Impoundment

The SI was constructed in mid-1970's to accept process wastewater containing creosote and/or pentachlorophenol. The SI was rectangular, measuring approximately 295 feet by 115 feet. Total depth, including the side berms was approximately 7 feet. The SI was constructed from compacted native clayey soil. The solids from the wastewater settled out in the SI forming a sludge, which was regulated as a K001 listed RCRA hazardous waste (40 CFR S261.32). On July 17, 1984 a sludge sample was collected from the bottom of the SI, prior to its closure, and analyzed for organic and inorganic constituents. The sludge analysis is included in Appendix C-1.

D.2 Landfills

The SI described in Section D.1 was closed as a landfill in 1989. After the SI was dewatered, all sludge and visually contaminated soils were removed from the SI and transported off-site to a permitted landfill for disposal. The closure activities consisted of placing clean soil fill in the SI and constructing a soil-bentonite cap and vegetated soil cover. Details of the closure documentation are included in Section I.1.

SECTION E. GROUNDWATER MONITORING

E.1 Interim Status Groundwater Monitoring Data

Interim status groundwater monitoring was initiated for the closed SI in 1982 and continued until the issuance of the Permit, which was issued by MDEQ in June 1988. In accordance with 40 CFR 265 and MHWMR 265, groundwater upgradient and downgradient of the closed SI was monitored to determine if the closed SI was impacting groundwater quality. A description of the interim status groundwater monitoring well network, data collected from these wells, and results of the interim status monitoring program are discussed in the following sections.

E.1a Description of Wells

The interim status monitoring well network was modified as directed by MDEQ several times from 1982 through 1987. In accordance with 40 CFR 265.91(a) one well (R-1) was installed hydraulically upgradient of the SI and three wells (R-2, R-3, and R-4) were installed hydraulically downgradient of the SI. In 1984, the original well system was expanded under the direction of the MDEQ to provide more appropriate upgradient and downgradient well locations. The expansion of the monitoring well network included installation of five additional wells (R-5 through R-9). Following the installation of the five wells, a bimonthly sampling and analysis program was initiated to further define the groundwater flow pattern. Results of the bimonthly sampling and analysis program indicated that wells R-5 and R-6 were hydraulically upgradient wells and wells R-7, R-8 and R-9 were hydraulically downgradient of the closed SI. However, groundwater quality data from wells R-5 and R-6 were not considered by MDEQ to be characteristic of background groundwater quality. In 1986, five additional wells (R-8B, R-10, R-10B, R-11 and R-12) were installed and in 1987 two wells (R-9C and R-9D) were installed to further characterize groundwater quality and flow. The "B" , "C" and "D" series wells were installed to characterize groundwater quality at depth.

A shallow hydraulic gradient at the interim status monitoring wells for the SI made it difficult to assess the upgradient well location. As a result, the additional wells that were installed helped to determine the groundwater flow direction. Based on the subsequent well installations and determination of the groundwater surface elevation, it was determined that the groundwater flow direction at the SI was to the east-northeast, and wells R-1R and R-10 were located hydraulically upgradient of the SI.

Boring logs and well construction details showing specific design and installation of each interim status monitoring well were presented in the 1987 Permit Application. Information provided on the logs includes depth of casing and screen, formation stabilizer and sealing material placement, date of construction, and a description of the subsurface material encountered during drilling. Additional information regarding well design, installation and location is provided in Sections E-2b and E-5b of the Permit Application submitted in 1987.

E.1b Description of Interim Status Sampling and Analysis Procedures

Groundwater sampling and analysis activities completed during the interim status groundwater monitoring program were conducted in accordance with the procedures presented in Sections E-5D(1), (2) and (4) and E-9 of the Permit Application submitted in 1987.

E.1c Interim Status Monitoring Data

Groundwater sampling was conducted at various well locations throughout the interim status period from 1982 though 1987. From March 1982 though 1984, groundwater sampling was conducted at wells R-1 through R-4. Wells R-5 and R-9 were sampled following their installation in July 1984 through February 1985. Quarterly sampling was also conducted at wells R-5 through R-9 during 1986. Wells R-8B, R-10, R-10B, R-11 and R-12 were sampled in a supplemental sampling round conducted in November 1986. The interim status detection monitoring program was initiated in January 1987. Monitoring wells R-1, R-10, R-7, R-8 and R-9 were sampled under the interim status detection monitoring program. Analytical data collected during interim status are included as Appendix E-2 of the 1987 Permit Application.

E.1d Statistical Procedures

The background arithmetic mean and variance for the indicator parameters could not be determined during interim status due to varying assessments of the upgradient well location. However, statistical evaluations were subsequently initiated under the detection monitoring program required by the Permit.

E.2 General Hydrogeologic Information

E.2a Regional and Site Geology

The regional and site hydrogeology are described in detail in the Interim Measures Work Plan, KII, Grenada, MS (AWD, 1994); the RCRA Interim Measure Predesign Investigation Report and Conceptual Design (HSI, 1996); and the Final Phase II RFI Investigation Report (GeoTrans, 1997). The following summarizes the most recent findings presented in the Phase II RFI Investigation Report (GeoTrans, 1997).

The KII facility is located in the North-Central Hills Physiographic Province of Mississippi. The geology of these deposits varies between marine and non-marine sands, clays, siltstone and gravels. The KII facility is located in an area immediately underlain by the Quaternary channel fill sands, the Tallahatta Formation, which is divided into the Meridan Sand member and the overlying Basic City Shale member, and the Upper, Middle and Lower Wilcox Group beds. The quaternary channel fill sands are a result of the latest glacial period in which glacial scour trenches were eroded to depths of 75 to 150 feet below ground surface. The floodplain of the Yalobusha river and its tributaries are comprised on channel fill sands deposited within the scour trenches as the glaciers retreated. The channel fill sands of the Batupan Bogue floodplain consist of discontinuous lenses of silt, fine sand, and silty clay. Loess, wind blown dust, overlie the channel fill sands.

Underlying the channel fill sands are the Basic City Shale and the Meridan Sand. The Basic City Shale consists of silt and clay, with some fine sand and ranges in thickness from approximately 30 to 150 feet. Beneath the shale, is the Meridan Sand comprised of clean, fine quartz sand.

The Wilcox group consists of the Holy Springs and underlying Ackerman Formations. The Holy Springs formation is characterized by sands, sandy shale, and silts with a basal sand member which is predominantly sand. The Ackerman formation consists of sand lenses, clay shale, lignite, and silt. Two miles south of the KII facility, the Holy Springs formation averages 333 feet in thickness and the Ackerman formation ranges in thickness from 245 to 360 feet.

Field activities at the KII facility have shown that the upper lithology beneath the KII facility can be defined by six generalized lithologic zones, including:

1. The Fill Zone occurs either as a single unit or in combination with the Upper Silt Zone, in thicknesses that range from 0 to 10 feet. The composition of the fill material varies significantly (clay, sand, gravel, bricks, wood debris) with location throughout the KII facility.

2. The Upper Silt Zone is present, either as a single unit or in combination with the Fill Zone, in thicknesses that range from 5 to 8 feet. The unit is described from boring logs as consisting primarily of silt with some fraction of fine sand. The local water table frequently occurs within this zone. The upper silt zone is likely a loess deposit.

3. The Upper Sand Zone, located beneath the Fill and Upper Silt Zones, is characterized by fine-grained materials composed of silty fine sands and sandy silts that collectively range from approximately 5 to 15 feet in thickness. This unit correlates to the channel fill sands. The base of this unit is recognized by a gray-green clay bed several feet thick or bay a medium gray clayey silt bed. Minor amounts of silty clays are also present in thin discontinuous beds. This zone is partially to fully saturated throughout the KII facility. Hydraulic testing conducted during the Interim Measures Predesign Investigation (Hydro-Search, Inc., December 1996), resulted in an estimated average hydraulic conductivity of 4.9 feet/day for this zone.

4. The Upper Low Permeability Zone is located beneath the Upper Sand Zone and is described as a heterogeneous unit composed of silty fine sands, sandy silts, and silty clay beds that collectively range in thickness from approximately 0 to 17 feet, gradually pinching out toward the eastern and southern property boundaries. Where this unit is missing, the Upper and Lower Sand Zones form a single unit. Where present, the Upper Low Permeability Zone

behaves as a local confining unit above the Lower Sand Zone. This unit may correlate to the Basic City shale.

5. The Lower Sand Zone is found beneath the Upper Low Permeability Zone, where present, or the Upper Sand Zone, and is comprised of silty fine sands, fine-to-medium grained sands, and occasional thin discontinuous sandy silt and clay beds. The upper few feet of this zone are poorly consolidated and become more consolidated with depth. Where fully penetrated by deep soil borings, the unit has been found to range from 132 feet to 138 feet in thickness. Hydraulic testing conducted during the Interim Measures Predesign Investigation (Hydro-Search, Inc., December 1996), resulted in an estimated average hydraulic conductivity of 64 feet/day for this zone. This zone probably correlates to the Meridan Sand.

6. The Lower Confining Zone, found beneath the Lower Sand Zone, is described as a sequence of fine-grained sediments comprised of siltstones, claystones, and shales, interbedded with minor amounts of moderately well consolidated sand and sandstone. The thickness of this zone is known to be at least 150 feet, based on a deep soil boring completed during the Interim Measures Predesign Investigation (Hydro-Search, Inc., December 1996). This zone correlates with the uppermost member of the Wilcox Group.

Shallow monitoring wells at the KII facility are completed within the upper sand zone, at depths varying from 20 to 34 feet bgs. The completion interval for the shallow monitoring wells is based on the water table conditions encountered at the time of drilling. The shallow A-level wells were installed such that the top of the ten-foot screen section was placed at an elevation approximately 2 feet above the water table to allow for water table fluctuations. Deep B-level monitoring wells adjacent to shallow monitoring wells were completed so the top of the screen for the deeper well was installed at a depth approximately 10 feet below the bottom of the screen in the adjacent shallow well, within the lower sand zone.

E.2b Identification of Uppermost Aquifer

The uppermost aquifer in the vicinity of the KII facility is the channel fill sands that underlie the KII facility and the floodplain of Batupan Bogue. The channel fill deposits range in depth from 20 to 35 feet below ground surface. Beneath the channel fill sand is a basal clay unit which inhibits vertical movement of groundwater. Aquifers of the Clairborne and Wilcox Group deposits underlie the channel fill sand aquifer. The water supply wells in the Grenada area are typically screened in the Lower Wilcox Aquifer at depths of 450 to 600 feet below ground surface. The regional groundwater flow direction is northeastward; however, surface topography and land use affect groundwater flow directions in localized areas. Groundwater elevation of wells screened within the Wilcox Group have higher groundwater elevations than the wells screened within the channel fill sand indicating an upward hydraulic gradient from the Wilcox aquifer to the channel fill sand aquifer.

E.2c Determination of Groundwater Flow Direction and Rate within Uppermost Aquifer

Historically, groundwater elevation data consistently indicates that groundwater flow within the surficial channel fill sand is generally east northeast toward the Butapan Bogue. Detailed potentiometric contour maps constructed for the last four quarters of 1997 show a more eastward groundwater flow direction in the vicinity of the closed SI. KII facility monitoring wells, potentiometric surface elevations, potentiometric elevation contours, and groundwater flow directions within the surficial water-bearing unit are illustrated for each of the last four quarters of 1997 are shown on Figures E-1 through E-4. Water level measurements and groundwater elevations calculated on mean sea level (msl) datum based on the surveyed reference point elevation at each location are provided on Table E-1.

The average linear velocity of shallow groundwater flow through the uppermost aquifer is estimated from groundwater elevation data obtained during each monitoring for each semi-annual monitoring period. Velocity determinations for the detection monitoring program are calculated using the formula:

$$v = K \cdot I / n$$

where:

v	=	average linear groundwater flow velocity,
K	=	hydraulic conductivity,
I	=	average hydraulic gradient. and
n	=	porosity.

The hydraulic gradients calculated for groundwater in the area surrounding the closed SI for each of the four quarters of 1997, respectively, were 0.0049, 0.0040, 0.0051 and 0.0058 feet/feet. Using the calculated hydraulic gradients for each quarter, a hydraulic conductivity of 8.63 ft/day (slug test results for A-level wells - HSI GeoTrans, August 1997) and an effective porosity of 0.3 (estimated from Freeze and Cherry, 1979), the average linear groundwater flow velocity in the vicinity of the closed SI was 0.1425 feet/day or 52 feet/year. A summary of the 1997 groundwater flow velocities and hydraulic gradients are provided in Table E-2.

E.3 Topographic Map Requirements

The maps presented in Part B of this Renewal Application provide several of the Part E (Groundwater Monitoring) topographic map requirements. For clarity, the additional requirements of Part E.3 are provided on separate, 1 in. = 250 ft.-scale site maps without surface topographic contours. The KII facility monitoring wells, with potentiometric surface elevations, potentiometric elevation contours, and groundwater flow direction within the surficial water-bearing unit are provided for the last four monitoring events on Figures E-1 through E-4. Groundwater flow rates determined from these data sets are discussed in Section E.2c.

E.4 Groundwater Quality Description

Pursuant to Parts IV.F and IV.G of the Permit, statistical evaluations of the groundwater quality data collected from wells R-1R, R-7, R-8, R-8B, R-9, R-9C, R-9D, and R-10 since 1988 have been completed. The statistical evaluations indicate that there is no evidence that groundwater quality has been impacted downgradient of the closed SI. The statistical evaluations are provided in Appendix E-1.

E.5 Detection Monitoring Program in Accordance with the Hazardous Waste Management Permit No. 88-543-01

On June 28, 1988, the Mississippi Department of Environmental Quality (MDEQ) issued the Hazardous Waste Management Permit No. 88-543-01 (Permit) for the KII facility. The Permit was issued for the inactive SI which was closed in late 1989. Beazer, as the operator, and KII, as the owner, are responsible for conducting the groundwater detection monitoring provisions of the Permit.

Part IV, Groundwater Protection, of the Permit was modified by the MDEQ Permit Board on February 13, 1990. The modification included the addition of 24 constituents to the post-closure detection monitoring program and provides Post-Closure Care Requirements of the closed SI. Therefore, the current semi-annual groundwater detection monitoring program has been in place since 1990.

Eight wells monitor the closed SI including two upgradient wells (R-1R and R-10) and six downgradient wells (R-7, R-8, R-8B, R-9, R-9C and R-9D). Figure E-5 presents the locations of these wells. Pursuant to the Permit, groundwater samples from these wells monitoring the closed SI are analyzed for polynuclear aromatic hydrocarbons (PAH) by EPA Method 8310; acid extractable phenolics (EPA Method 8040); phthalates (EPA Method 8060); total and dissolved chromium (EPA Method 6010A); mercury (EPA Method 7470); and field pH, specific conductance and temperature. The suite of detection monitoring constituents are summarized in Table E-3.

E.5a Description of Wells

The detection monitoring well network under the Permit includes monitoring wells R-1R, R-7, R-8. R-8B, R-9C, R-9D, R-10. Wells R-1R and R-10 are located hydraulically upgradient of the closed SI and wells R-7, R-8, R-8B, R-9, R-9C, R-9D are the point of compliance wells. Well depth and construction information are provided in Appendix E-2. Monitoring well locations are provided on Figure E-5.

E.5b Description of Sampling and Analysis Procedures

General field measurements and sample collection were conducted in accordance with Attachment E-9, Groundwater Sampling and Chain-of-Custody, and Section IV.D, Sampling and Analytical Procedures, included in the 1987 Permit Application. The semi-annual sampling events included measuring water levels, evaluating the potential presence of non-aqueous phase liquid (NAPL) layers, determining field values of pH and specific conductance, purging wells, collecting samples, and recording field observations and measurements related to groundwater monitoring in a dedicated field log book.

Prior to conducting any sampling activities, Beazer and KII measured water levels from the top of the respective well casing. A list of the wells and the recorded groundwater levels at the wells are provided in Appendix E-3. Groundwater levels were used to determine groundwater elevations from the surveyed top of casing elevations. The elevations were used to construct groundwater surface elevation contour maps for the shallow A-level zone alluvium.

The groundwater stored within the well was removed from the monitoring well using either a submersible pump or laboratory-cleaned, dedicated, stainless-steel bailer. Field measurements of pH, specific conductance and temperature were obtained while purging to document changes in purge water quality. Purging continued until 1) a minimum of three well volumes of stored groundwater had been removed from the monitoring well and pH, specific conductance, and temperature of the purged water had stabilized; 2) a maximum of five well volumes were removed; or 3) until the monitoring well had been purged dry.

The detection monitoring program initially included analyses for pH, conductivity, total dissolved solids, total organic carbon, PAHs, total phenols, and pentachlorophenol. Pursuant to the Permit modification in February 1990, groundwater samples collected from wells monitoring the closed SI are analyzed for the following constituents: PAHs (EPA Method 8310), acid extractable phenolics (EPA Method 8040), phthalates (EPA Method 8060), total and dissolved chromium (EPA Method 6010A) and mercury (EPA Method 7470) and field pH, specific conductance and temperature. A summary of historical data collected during the detection monitoring program required by the Permit are provided in Appendix E-4.

E.5c Procedure for Establishing Background Quality

Previous SI groundwater data show that over 90 percent of the upgradient and downgradient monitoring well analyses were below laboratory reporting limits. Because the majority of the permit constituents were below the laboratory reporting limits, a background mean value could not be determined, and the Behrens-Fisher method could not be used for statistical evaluation.

E.5d Statistical Procedures

In accordance with Section IV.F of the Permit, a statistical evaluation is to be completed using the Behrens Fisher Student's t-test or an equivalent method approved by the MDEQ. However, because of the high number of non-detects in the groundwater monitoring data, two documents were prepared by Dr. William R. Kodrich, Clarion University of Pennsylvania, detailing statistical alternatives to address this situation. These documents were submitted to MDEQ by Beazer on September 11, 1990, for

MDEQ's approval for applying the statistical alternatives to the post-closure detection monitoring program for the impoundment. The September 11, 1990 submittal included the following two documents that presented:

1. Results of statistical analyses of data for the original five parameters specified in the Koppers Industries Inc. (KII) Grenada permit issued to KII's Grenada facility.

2. Recommended statistical procedures for comparing mean background monitoring well concentrations with mean downgradient compliance monitoring well concentrations at KII's Grenada facility.

In these documents, Dr. Kodrich presented several statistical methods to be used under various monitoring data situations (e.g., the percentage of non-detects). These methods are included in those recommended in the United States Environmental Protection Agency's (EPA) guidance document, *Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance* (1992). These methods also meet the requirements of Mississippi Hazardous Waste Management Regulations 264.

As stated, the statistical evaluations were selected based on the frequencies of detection of the constituents and the statistical distributions of the concentrations in the background samples collected from wells R-1R and R-10. Statistical evaluations are included in Appendix E-1 of this document. Because so many nondetect results were reported in this monitoring program, the data are not normally distributed. Therefore, a parametric statistical analysis such as a t-test or parametric analysis of variance where arithmetic means and standard deviations are used as a basis for decision analysis is inappropriate. The arithmetic means and standard deviations would not accurately represent the data and use of the parametric tests would most likely result in the derivation of incorrect conclusions. Therefore, nonparametric statistical tests have been used to evaluate the data.

When more than 90% of the data values are nondetect, the detected samples can be modeled as "rare events" by using the Poisson Distribution (EPA 1992). The Poisson model describes the behavior of a series of independent events over a large number of trials, where the probability of occurrence is low but stays constant from trial to trial. The Poisson model can be considered to count each constituent molecule separately but cumulatively so that the counts (i.e. concentration in parts per billion) for detected samples with high concentrations are larger than counts for samples with smaller concentrations. In other words, the probability of detection may be small and constant during each sampling round, but the magnitude of the concentration (counts, or concentration units in parts per billion) is still critical in determining whether the presence of the constituent is statistically significant.

Using the methodology and equations outlined in EPA's statistical guidance (1992), a Poisson Tolerance Limit is calculated. In these statistical analyses, the tolerance limit is a value defined by 95% coverage with 95% confidence. This value represents a concentration value which, with a probability of 95%, will be exceeded less than 5% of the time. If this concentration value is exceeded, there is a 95%

probability that the downgradient concentration is significantly greater than the upgradient concentration.

When more than 50%, but less than 90% of the data are nondetect, and a single compliance well group is being compared to background data. the Wilcoxon-Rank Sum Test (also known as the two-sample Mann-Whitney U Test) is used (EPA 1992). This test ranks the concentration data rather than using the actual constituent concentrations. Specifically, the test determines whether the downgradient wells as a group contain constituent concentrations that are significantly greater than those in an upgradient well.

Statistical evaluations of the groundwater data were conducted as part of the 1987 Permit Application. The evaluations were conducted to determine if statistically significant changes occur in comparison of upgradient to downgradient monitoring points at the closed SI. To determine statistically significant changes in the parameters, the Poisson Tolerance Interval was used to compare groundwater monitoring data collected from upgradient monitoring wells R-1R and R-10 to six downgradient monitoring wells located near the compliance point (R-7, R-8, R-8B, R-9, R-9C, R-9D). Monitoring wells R-1 and R-10 are located upgradient with respect to the closed SI and were determined to provide data representing background groundwater quality.

Applications of the Poisson test of proportions indicate no evidence of a significant difference between the background monitoring wells (R-10A and R-1R) and the six compliance monitoring wells for any of the parameters specified in the permit. The statistical evaluations indicate that no statistically significant difference exists in comparing concentrations of the permit constituents in the downgradient monitoring wells to those concentrations measured in the upgradient monitoring wells.

During past semi-annual sampling events, the detection of constituents was very infrequent. The downgradient data were compared to a pool of upgradient data collected from wells R-1R and R-10 since the second half of 1990. For those constituents statistically analyzed using the Poisson Tolerance Limit, no downgradient concentration ever exceeded the limit. Therefore, any infrequent constituent detection was not regarded as significant. For those constituents statistically analyzed using the Wilcoxon Rank-Sum Test, downgradient concentrations were also never found to be statistically greater than the upgradient concentrations.

E.6 Continuation of the Detection Monitoring Program

On June 28, 1988, the MDEQ issued Hazardous Waste Management Permit No. 88-543-01 for the KII facility. The Permit was issued for the inactive SI which was closed in late 1989. The Permit was modified by the MDEQ Permit Board on February 23, 1990. The modification included the addition of 24 constituents to a post-closure detection monitoring program. Therefore, the current semi-annual groundwater detection monitoring program has been in place since 1990. Statistical comparisons have been made semi-annually from 1990 through 1997, and the concentrations of Permit constituents in the point of compliance wells have not been statistically greater than upgradient well concentrations.

The Permit indicates that the post-closure detection monitoring program shall continue throughout the active life of the SI, including the closure period, and throughout the post-closure period (Part IV.G.3). The Mississippi Hazardous Waste Regulations incorporate by reference the federal regulations in 40 CFR Part 264. As indicated in 40 CFR Part 264.117(a)(2), the Administrator may 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. 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 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. As stated in the Request for Modification of the Post-Closure Care Permit for Closed Surface Impoundment Fluor Daniel GTI, Inc., February 1997), Beazer maintains that the conditions of the closed SI meet the requirements for reducing the post-closure care period and herein has modified the current post-closure detection monitoring program. The modifications and rationale for the modifications are described in the following sections.

E.6a Description of Wells

The current detection groundwater monitoring program for the closed SI consists of eight wells (R-1R, R-7, R-8, R-8B, R-9, R-9C, R-9D and R-10). The modified detection program will include the same network of wells. Wells R-1R and R-10 are the upgradient wells. The remaining wells are downgradient point of compliance wells. Detailed descriptions of these wells are provided in section E.1A and E.5A. The majority of the wells (R-1R, R-7, R-8, R-9, R-10) are installed within the upper sand aquifer at depths ranging from 20 to 34 feet bgs. Wells R-8B, R-9C and R-9D are completed in the lower sand at depths ranging from 41 to 87 feet bgs.

E.6b Sampling and Analysis

Previous groundwater monitoring included semi-annual analyses for metals, PAHs, phthalates, and phenol compounds. However, based on a review of the extensive analytical database and statistical evaluations of the data collected over the past nine years, no statistically significant differences exist in comparing concentrations in the downgradient monitoring wells to those concentrations measured in the upgradient monitoring wells. None of these constituents are affecting groundwater quality.

Pentachlorophenol was detected during the last two monitoring events at concentrations similar to the laboratory reporting limits. Historically, pentachlorophenol was determined using EPA Method 8040. EPA Method 8040 is a Gas Chromatography (GC) method equipped with a flame ionization detector suitable for detecting acid extractable phenolics (AEPs). As stipulated in "Test Methods for Evaluating

Solid Waste, SW-846," EPA Method 8040 is susceptible to false positives that are caused by the presence of hydrocarbons commonly found in samples from waste sites. These interferences are due to co-elution of constituents on the column. Beazer will continue to analyze for pentachlorophenol to verify that this constituent is not impacting groundwater quality downgradient of the closed SI. However, Beazer proposes EPA Method 8270, a GC/Mass Spectroscopy method for analyzing pentachlorophenol, because it reduces the potential for misidentification of constituents and reduces and/or eliminates the potential for false positive results. Groundwater samples collected during the detection monitoring program will be analyzed in accordance with the Sampling and Analysis Plan provided as Appendix E-5.

The goal of the groundwater sampling is to define a frequency of sampling that is capable of detecting constituents dissolved in groundwater as it passes through a groundwater monitoring point. Under the current site conditions, the groundwater quality has not degraded downgradient of the closed SI. Based on this information and the extensive database, Beazer proposes to collect groundwater samples from upgradient monitoring wells R-1R and R-10 and point of compliance wells R-7, R-8, R-8B, R-9, R-9C and R-9D on an annual basis for pentachlorophenol. The post-closure detection monitoring program will be completed in accordance with the sampling and analysis plan for the closed SI, included as Appendix E-5. This plan details procedures for sample collection, purging, preservation and shipment, chain-of-custody, and analyses.

Beazer proposes that groundwater sampling 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. This demonstration will be performed in accordance with the statistical evaluations presented in Section E.6d.

E.6c Alternate Concentration Limits

Given the lack of groundwater contamination shown to date, it is unlikely corrective action to any standard will be required for the closed SI. However, until the post-closure period is terminated, Beazer herein reserves the right to propose alternate concentration limits for site groundwater per CFR 40 264.94.

E.6d Statistical Evaluation

Upon receipt of the analytical data, a statistical evaluation of the data will be completed using the appropriate method outlined in Appendix E-6. Pentachlorophenol will be evaluated to determine if the concentration detected in samples collected from the downgradient monitoring wells is statistically different than the upgradient wells. These determinations will be completed annually following receipt of the analytical data.

If a statistically significant increase is determined in a downgradient monitoring well, Beazer may elect to repeat the sampling event and re-evaluate the groundwater quality. If the statistically significant increase is confirmed, Beazer will sample the well(s) indicating a statistical increase for the Appendix IX constituent list in accordance with 40 CFR 264.98 (g)(2).

E.6e Results

An annual groundwater monitoring report will be submitted to MDEQ. The annual report will include:

- Static groundwater level elevations;
- Potentiometric maps from each sampling event;
- Groundwater flow rate and direction in uppermost aquifer;
- Evaluation of the groundwater surface elevations to determine whether the locations of wells are adequately placed to characterize groundwater flow direction and potential constituent migration; and
- Statistical comparison of groundwater analytical results of upgradient well M-1R and M-10 to the background value.

E.6f Post-Closure Groundwater Monitoring Program

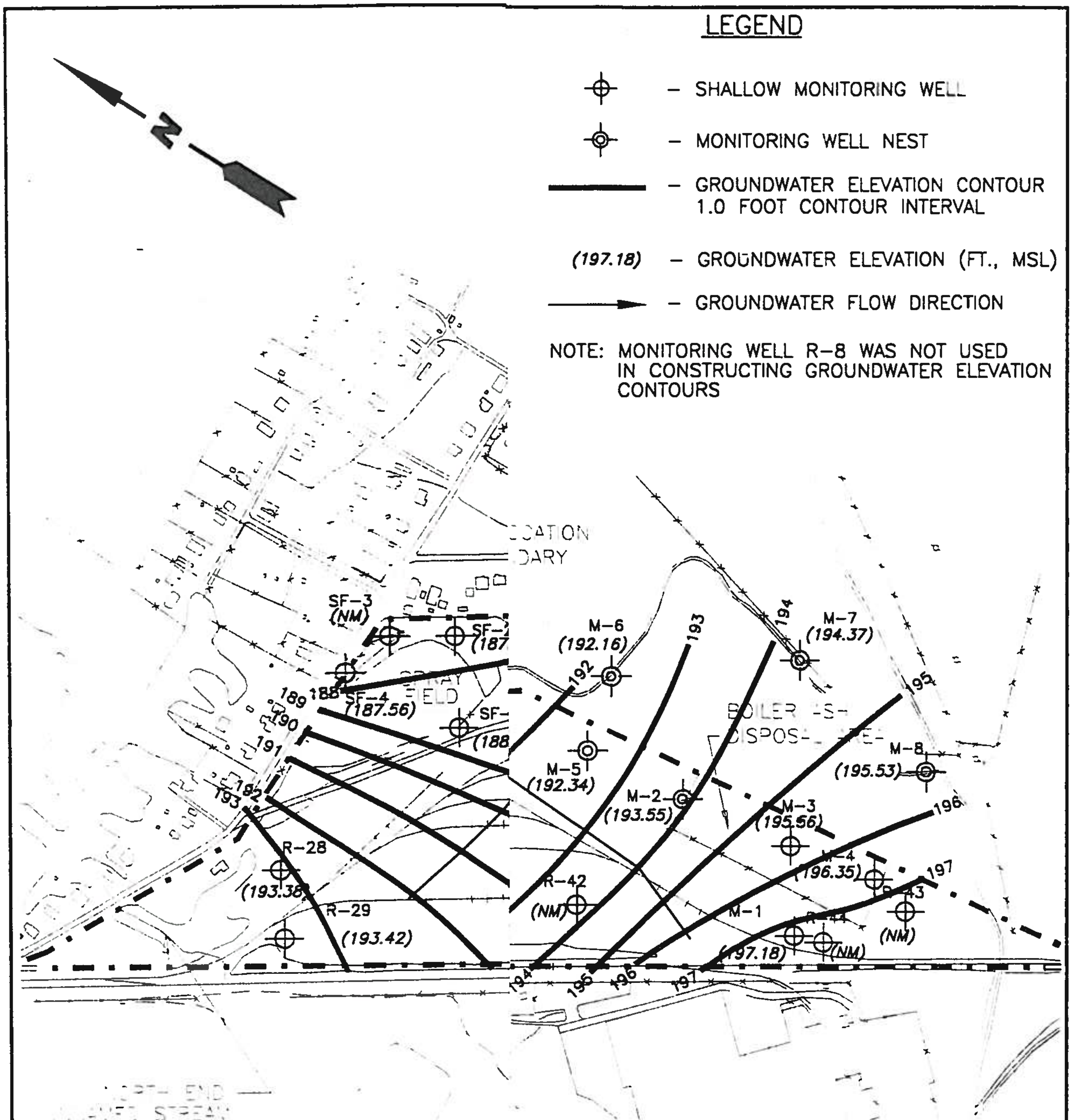
The current detection groundwater monitoring program (described in Section E.5) will be maintained at this time pending issuance of the new Permit and approval of the proposed detection monitoring program (described in Section E-6).

E.7 Compliance Monitoring Program

Since 1990, groundwater analytical data from the Grenada, Mississippi facility has been statistically evaluated semi-annually using the Poisson Tolerance Limit or the Wilcoxon Rank-Sum Test (Mann-Whitney U Test). These methods were selected in accordance with EPA's Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (1992). These methods were selected based on the frequency of detection of the constituents being monitored and the statistical distribution of the concentrations. Overall, the results of the statistical analyses since 1990 have indicated that no constituent in the downgradient wells has been detected at a concentration statistically greater than that present in the upgradient wells. Consequently, the data indicate that the closed SI has not, and is not anticipated to impact groundwater quality. As such, compliance monitoring is not required.

E.8 Corrective Action Program

Based on the first nine years of post-closure monitoring, Beazer does not anticipates that any groundwater corrective action for the closed SI will be necessary. Should corrective action for the closed SI be dictated by future groundwater monitoring, as proposed herein, that corrective action would be selected and implemented in conjunction with any site-wide corrective action determined to be necessary through the RFI/CMS and subsequent site-wide corrective action evaluation.



FLUOR DANIEL GTI

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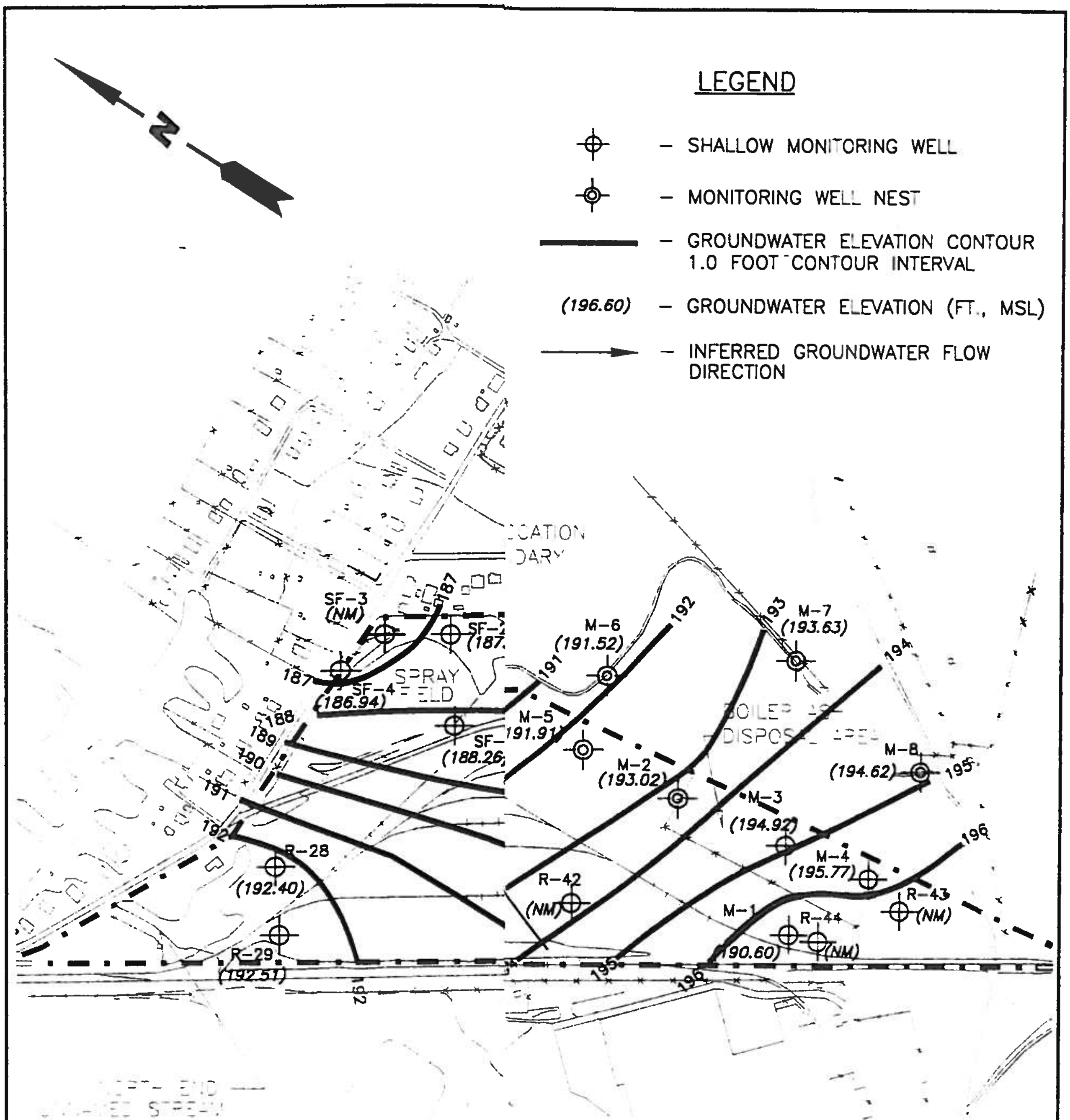
REV. NO.:	DRAWING DATE: 5/14/97	ACAD FILE: 70728120.DWG

SECOND QUARTER
GROUNDWATER ELEVATION CONTOURS
A-ZONE WELLS
MAY 5, 1997

CLIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
LOCATION: GRENADA, MISSISSIPPI			PE: R.G.
DESIGNED: R.G.	DETAILED: C.M.L.	PROJECT NO.: 010030728-06	FIGURE: E-2



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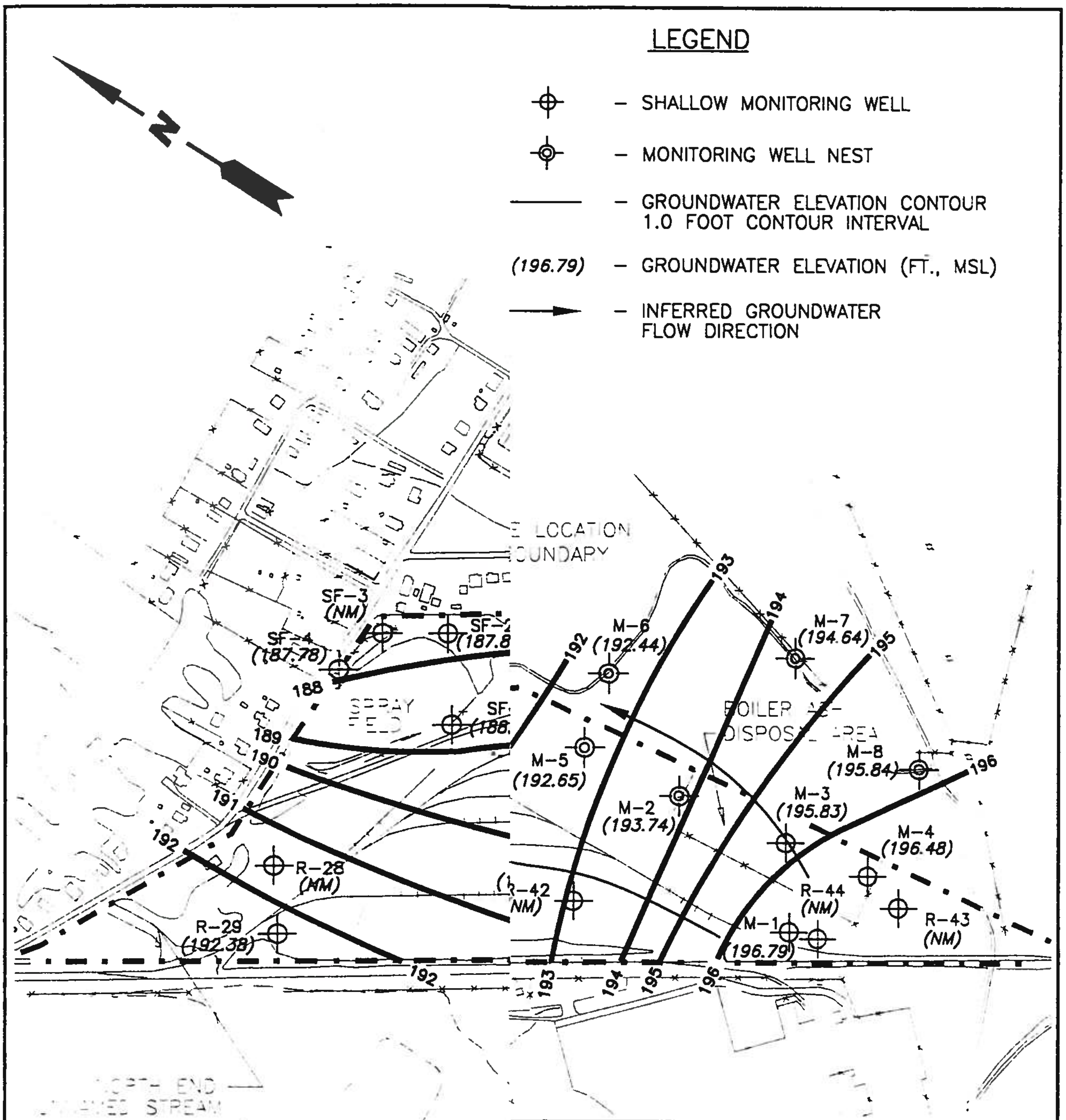
REV. NO.:	DRAWING DATE: 5/14/97	ACAD FILE: 70728119.DWG

FIRST QUARTER
GROUNDWATER ELEVATION CONTOURS
A-ZONE
JANUARY 21, 1997

CLIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
LOCATION: GRENADA, MISSISSIPPI			PE: R.G.
DESIGNED: R.G.	DETAILED: C.M.L.	PROJECT NO.: 010030728-06	FIGURE: E-1



LEGEND

- SHALLOW MONITORING WELL
- MONITORING WELL NEST
- GROUNDWATER ELEVATION CONTOUR 1.0 FOOT CONTOUR INTERVAL
- (196.79) GROUNDWATER ELEVATION (FT., MSL)
- INFERRED GROUNDWATER FLOW DIRECTION

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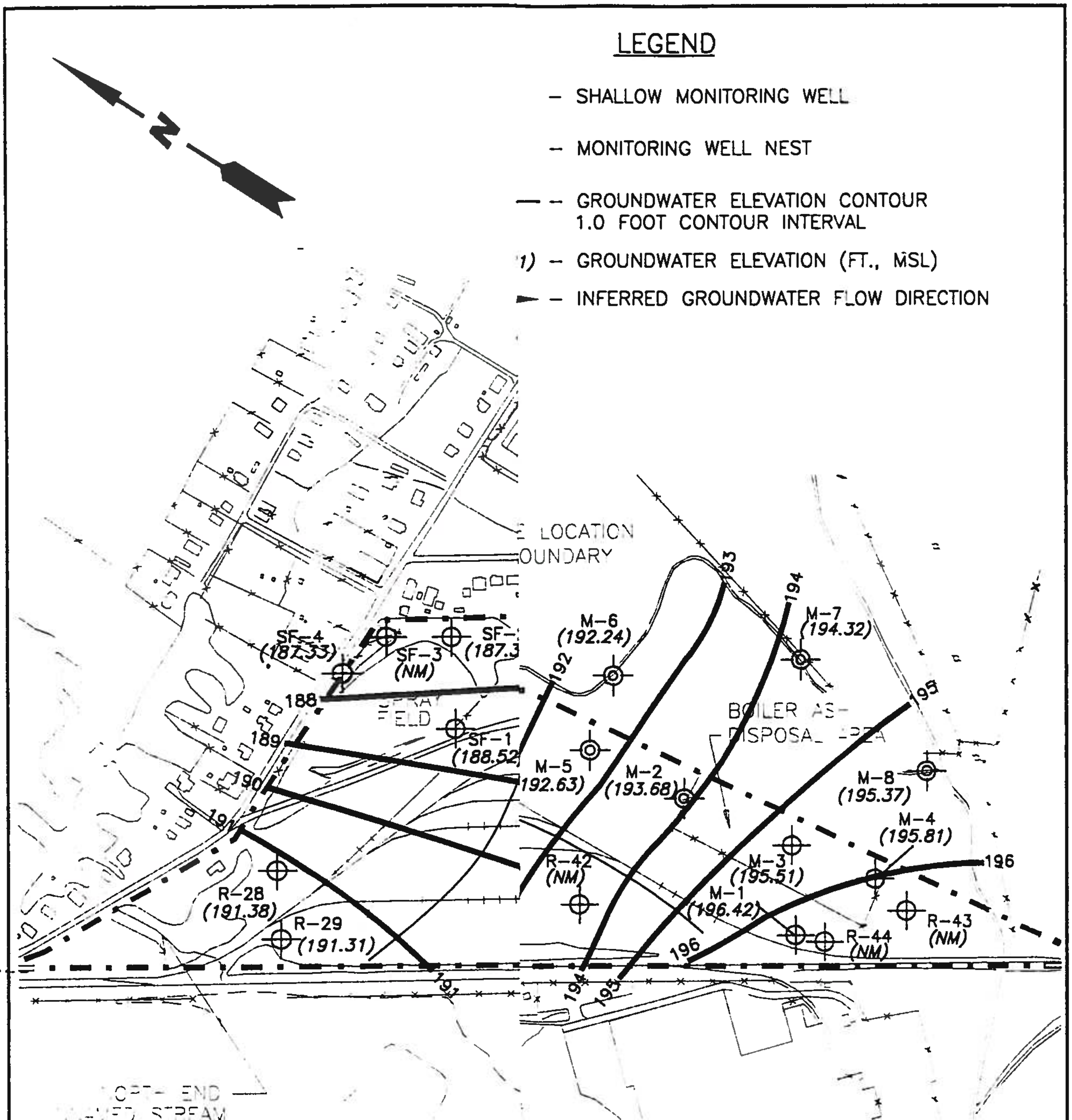
FAX: (412) 824-7215

REV. NO.:	DRAWING DATE: 9/16/97	ACAD FILE: 70728200.DWG

**THIRD QUARTER
GROUNDWATER ELEVATION CONTOURS
A-ZONE
JULY 28, 1997**

CLIENT: KOPPERS INDUSTRIES, INC.	PM: MAB
LOCATION: GRENADA, MISSISSIPPI	PE:

DESIGNED:	DETAILED:	PROJECT NO.:	FIGURE:
KLM	R.A.M.	010030728-06	E-3

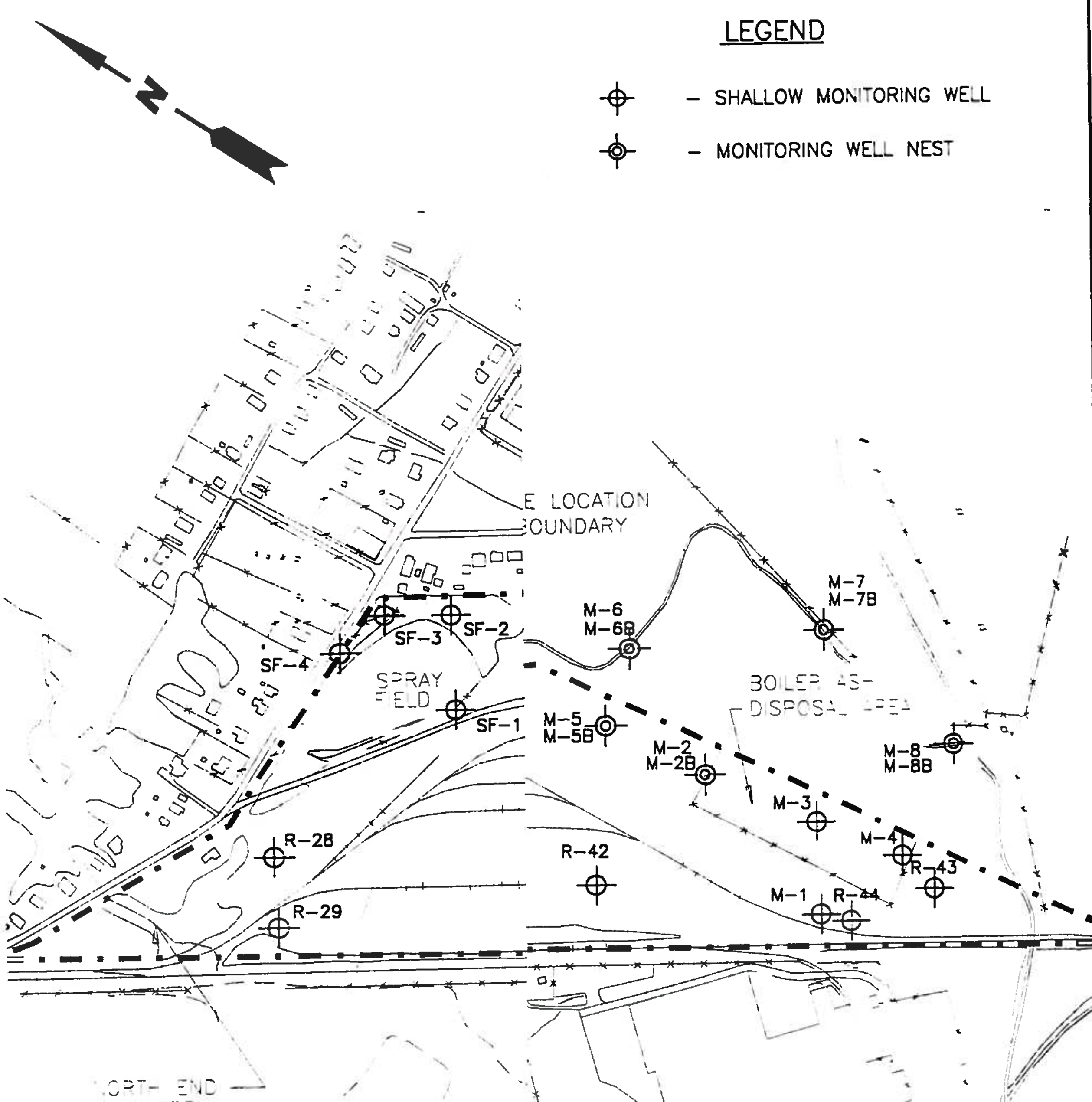


FLUOR DANIEL GTI
637 BRADDOCK AVENUE
EAST PITTSBURGH, PA 15112
PHONE: (412) 823-5300
FAX: (412) 824-7215

REV. NO.:	DRAWING DATE: 11/11/97	ACAD FILE: 70728218.DWG

FOURTH QUARTER GROUNDWATER ELEVATION CONTOURS A-ZONE OCTOBER 6, 1997

CLIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
LOCATION: GRENADA, MISSISSIPPI			PE:
DESIGNED: KLM	DETAILED: R.G.	PROJECT NO.: 010030728-06	FIGURE: E-4



FLUOR DANIEL GTI		637 BRADDOCK AVENUE EAST PITTSBURGH, PA 15112 PHONE: (412) 823-5300 FAX: (412) 824-7215	
REV. NO.:	DRAWING DATE: 5/14/97	ACAD FILE: 97051622.DWG	
MONITORING WELL LOCATIONS			
CLIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
LOCATION: GRENADA, MISSISSIPPI			PE:
DESIGNED: KLM	DETAILED: R.G.	PROJECT NO.: 01003-0728-06	FIGURE: **E-5**

TABLE E-1
Summary of Monitoring Well Construction

Koppers Industries, Inc
Grenada Facility
Tie Plant, Mississippi

Well	Top of Casing Elevation (ft msl)	Date Installed	Well Installation Depth (ft bgs)	Ground Surface Elevation (ft msl)	Well Diameter/ Type (inches)	Screen Length / Type (feet/inches)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Geologic Zone Monitored
R-1R	210.87	03/28/89	29.5	209.60	2 / PCV	10 / 0.010	20.0	30.0	189.6	179.6	Upper Sand
R-2	209.26	03/25/82	30.5	207.28	2 / PCV	10 / 0.010	20.0	30.0	187.3	177.3	Upper Sand
R-3	206.96	03/26/82	28.0	205.20	2 / PCV	10 / 0.010	18.0	28.0	187.2	177.2	Upper Sand
R-4	206.06	03/27/82	29.0	204.50	2 / PCV	10 / 0.010	19.0	29.0	185.5	175.5	Upper Sand
R-5	211.84	07/17/84	31.0	209.60	2 / PCV	10 / 0.010	21.0	31.0	188.6	178.6	Upper Sand
R-5B	212.18	08/10/88	51.0	209.60	2 / PCV	10 / 0.010	41.0	51.0	168.6	158.6	Lower Sand
R-6	213.04	07/17/84	31.0	210.10	2 / PCV	10 / 0.010	21.0	31.0	189.1	179.1	Upper Sand
R-7	210.98	07/17/84	31.0	208.60	2 / PCV	10 / 0.010	21.0	31.0	187.6	177.6	Upper Sand
R-8	214.53	07/17/84	31.0	212.40	2 / PCV	10 / 0.010	21.0	31.0	191.4	181.4	Upper Sand
R-8B	208.98	11/13/86	46.0	208.00	2 / PCV	10 / 0.010	36.0	46.0	172.0	162.0	Lower Sand
R-9	213.66	07/17/84	31.0	211.70	2 / PCV	10 / 0.010	21.0	31.0	190.7	180.7	Upper Sand
R-9C	216.00	08/26/87	60.5	213.10	2 / PCV	10 / 0.010	50.5	60.5	162.6	152.6	Lower Sand
R-9D	216.07	08/25/87	87.2	213.87	2 / PCV	10 / 0.010	77.2	87.2	136.7	126.7	Lower Sand
R-10	208.78	11/03/86	27.0	208.00	2 / PCV	10 / 0.010	17.0	27.0	191.0	181.0	Upper Sand
R-10B	203.74	11/14/86	47.0	208.00	2 / PCV	10 / 0.010	37.0	47.0	171.0	161.0	Lower Sand
R-11	208.94	11/12/86	25.0	201.80	2 / PCV	10 / 0.010	15.0	25.0	186.8	176.8	Upper Sand
R-12	200.71	11/06/86	20.0	198.77	2 / PCV	10 / 0.010	10.0	20.0	188.8	178.8	Upper Sand
R-12B	201.28	08/15/88	41.0	198.74	2 / PCV	10 / 0.010	31.0	41.0	167.7	157.7	Lower Sand
R-12D	201.74	05/15/91	63.0	199.26	2 / PCV	10 / 0.010	52.5	62.5	146.8	136.8	Lower Sand

P:\projects\beazer\grenada\welcnstr.wk4

TABLE E-2
Summary of 1997 Groundwater Flow Velocities and Hydraulic Gradients

Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

	First Quarter January 21, 1997		Second Quarter May 5, 1997		Third Quarter July 28, 1997		Fourth Quarter October 6, 1997		Average Flow Velocity (feet/day)
	Gradient (unitless)	Velocity (feet/day)	Gradient (unitless)	Velocity (feet/day)	Gradient (unitless)	Velocity (feet/day)	Gradient (unitless)	Velocity (feet/day)	
Closed Surface Impoundment Area K=8.63 ft/day, n=0.3 R-25 to R-1R = 195 feet	0.006	0.174	0.004	0.109	0.005	0.133	0.005	0.152	0.142
Closed Surface Impoundment Area K=8.63 ft/day, n=0.3 R-9 to R-11 = 135 feet	0.008	0.230	0.008	0.237	0.009	0.245	0.009	0.254	0.241
Closed Surface Impoundment Area K=8.63 ft/day, n=0.3 R-1R to R-7 = 138	0.001	0.019	0.0001	0.002	0.002	0.063	0.003	0.094	0.044
AVERAGES	0.0049	0.1410	0.0040	0.1159	0.0051	0.1468	0.0058	0.1664	0.1425

V = K*I/n
Where:
V = average linear groundwater flow velocity
K = hydraulic conductivity (Hydro-Search, Inc, 1996)
I = average hydraulic gradient
n = porosity

TABLE E-3
Summary of Detection Monitoring Constituents
Permit No. 88-543-01

Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

CONSTITUENTS
2-Chlorophenol
2-Methyl-4,6-dinitrophenol
2-Nitrophenol
2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4,6-Trichlorophenol
4-Nitrophenol
Acenaphthene
Acenaphthylene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Bis(2-ethylhexyl)phthalate
Chromium - dissolved
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-c,d)pyrene
Mercury
Naphthalene
Pentachlorophenol
Pyrene

Well R-1R (Con't)
Statistical Comparison Poisson Application
1992 - First Quarter
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03, 1992-01
Background Well: R-1R
Number of Historical Detects in R-1R:

Confidence Intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)Anthracene - 3; Benzo(g,h,i)Perylene - 4; Benzo(b)Fluoranthene - 5,
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 2; Chrysene - 1; Benzo(k)Fluoranthene - 3;
Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthene - 3; Bis(2-Ethylhexyl)Phthalat - 4;
Fluoranthene - 2; Pentachlorophenol - 0; 2,4-Dinitrophenol - 1; Naphthalene - 1; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Historical No of Detects	Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
CHRYSENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
BENZO(k)FLUORANTHENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	2	0.1 - 9.3	0.6 - 12.6	YES	NO
PYRENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
INDENO(123-cd)PYRENE	R-7	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-8	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-8B	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9C	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9D	0	0.0 - 5.3	0.3 - 11.0	YES	NO
PHENANTHRENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
BIS(2-ETHYLHEXYL)PHTHALAT	R-7	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-8	4				
	R-8B	4	DOWNGRADIENT WELLS R-8, R-8B AND R-[illegible] ARE COMPARED TO DOWNGRADIENT WELL			
	R-9	4	R-10 USING KRUSKAL-WALLIS TEST. [illegible]S PRESENTED IN TABLE 3.			
	R-9C	3	0.3 - 11.0	[illegible] - 12.6	YES	NO
	R-9D	3	0.3 - 11.0	[illegible] - 12.6	YES	NO

Well R-1R (Con't)
Statistical Comparison Poisson Application
1992 - First Quarter
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03, 1992-01
Background Well: R-1R
Number of Historical Detects in R-1R:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)Fluoranthene - 5;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 2; Chrysene - 1; Benzo(k)Fluoranthene - 3;
Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthene - 3; Bis(2-Ethylhexyl)Phthalat - 4;
Fluoranthene - 2; Pentachlorophenol - 0; 2,4-Dinitrophenol - 1; Naphthalene - 1; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Historical No of Detects	Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
FLUORANTHENE	R-7	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	0	0.0 - 5.34	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
PENTACHLOROPHENOL	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-9D	2	0.1 - 9.3	0.0 - 5.3	YES	NO
2,4-DINITROPHENOL	R-7	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
NAPHTHALENE	R-7	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	4	0.6 - 12.6	0.0 - 5.3	YES	NO
	R-9	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
ACENAPHTHALENE	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO

Well R-1R (Con't)
Statistical Comparison Poisson Application
1992 - First Quarter
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03, 1992-01
Background Well: R-1R
Number of Historical Detects in R-1R:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1; 2,3,5,6-Tetrachlorophenol - 1; Benzo(a)Anthracene - 3; Benzo(g,h,i)Perylene - 4; Benzo(b)Fluoranthene - 5, Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 2; Chrysene - 1; Benzo(k)Fluoranthene - 3; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthene - 3; Bis(2-Ethylhexyl)Phthalat - 4; Fluoranthene - 2; Pentachlorophenol - 0; 2,4-Dinitrophenol - 1; Naphthalene - 1; Acenaphthalene - 0; Chromium - 0; Mercury - 0

Parameter (ug/l)	Wells	Downgradient Wells: Historical No of Detects	Downgradient Wells: Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
CHROMIUM	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
MERCURY	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO

Well R-10

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dimethylphenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 3; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4;
Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4;
Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Wells	Downgradient Wells: Historical No of Detects	Downgradient Wells: Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
ACENAPHTHENE	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
PHENOL	R-7	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8B	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9C	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO
4-NITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 -5.3	0.0 - 5.3	YES	NO
2-METHYL-4,6-DINITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	1	0.03 - 7.4	0.0 - 5.3	YES	NO
2-NITROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	2	0.1 - 9.3	0.03 - 7.4	YES	NO

Well R-10 (Con't)

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4;
Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4;
Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Historical No of Detects	Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
2,4,6-TRICHLOROPHENOL	R-7	3	0.3 -11.0	0.1 - 9.3	YES	NO
	R-8	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9C	4	0.6 - 12.6	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
2,4-DICHLOROPHENOL	R-7	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-8	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-8B	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-9	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9C	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-9D	1	0.03 - 7.4	0.0 - 5.3	YES	NO
2,4-DIMETHYLPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8B	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2-CHLOROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2,3,5,6-TETRACHLOROPHENOL	R-7	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-8	2	0.1 - 9.3	0.3 - 11.0	YES	NO
	R-8B	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-9C	2	0.1 - 9.3	0.3 - 11.0	YES	NO
	R-9D	2	0.1 - 9.3	0.3 - 11.0	YES	NO

Well R-10 (Con't)

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1; 2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6; Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4; Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0; Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Historical No of Detects	Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
BENZO(a)ANTHRACENE	R-7	4	DOWNGRADIENT WELLS R-7, R-8, R-8B, R-9, AND R-9C COMPARED WITH UPGRADIENT WELL R-10 USING ONE-WAY ANALYSIS OF VARIANCE (ANOVA). SEE TABLE 3.			
	R-8	4				
	R-8B	4				
	R-9	6				
	R-9C	4				
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO
BENZO(g,h,i)PERYLENE	R-7	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	0	0.0 - 5.3	0.1 - 9.3	YES	NO
BENZO(b)FLUORANTHENE	R-7	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-8	4	DOWNGRADIENT WELLS R-8 AND R-8B COMPARED WITH UPGRADIENT WELL R-10. SEE TABLE 3 FOR RESULTS.			
	R-8B	4				
	R-9	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9C	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO
BENZO(a)PYRENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	1	0.03 - 7.4	0.6 - 12.6	YES	NO
FLUORENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
DIBENZO(a,h)ANTHRACENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	[illegible] - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	[illegible] - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	[illegible] - 7.4	YES	NO

Well R-10 (Con't)

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4;
Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4;
Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Historical No of Detects	Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
CHRYSENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
BENZO(k)FLUORANTHENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	2	0.1 - 9.3	0.6 - 12.6	YES	NO
PYRENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
INDENO(123-cd)PYRENE	R-7	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-8	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-8B	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9C	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9D	0	0.0 - 5.3	0.3 - 11.0	YES	NO
PHENANTHRENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
BIS(2-ETHYLHEXYL)PHTHALAT	R-7	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-8	4				
	R-8B	4	DOWNGRADIENT WELLS R-8, R-8B AND R-9 ARE COMPARED TO DOWNGRADIENT WELL R-10 USING KRUSKAL-WALLIS TEST. RESULTS PRESENTED IN TABLE 3.			
	R-9	4				
	R-9C	3	0.3 - 11.0	[illegible] - 12.6	YES	NO
	R-9D	3	0.3 - 11.0	[illegible] - 12.6	YES	NO

Well R-10 (Con't)

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence Intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4;
Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4;
Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Downgradient Wells: Historical No of Detects	Downgradient Wells: Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
FLUORANTHENE	R-7	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	0	0.0 - 5.34	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
PENTACHLOROPHENOL	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-9D	2	0.1 - 9.3	0.0 - 5.3	YES	NO
2,4-DINITROPHENOL	R-7	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
NAPHTHALENE	R-7	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	4	0.6 - 12.6	0.0 - 5.3	YES	NO
	R-9	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
ACENAPHTHALENE	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5 3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5 3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5 3	0.0 - 5.3	YES	NO

Well R-10 (Con't)

STATISTICAL COMPARISON POISSON APPLICATION
FOR 1992 - FIRST QUARTER
March 29, 1992

Background Information:
Years, Quarter Used: 1990-02, 03, 04 1991-01, 02, 03 1992, 01
Background Well: R-10
Number of Historical Detects in R-10:

Confidence intervals based on Poisson method:

Goldstein, Avram. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1;
2,4,6-Trichlorophenol - 2; 2,4-Dichlorophenol - 0; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)Anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)Fluoranthene - 6;
Benzo(a)Pyrene - 4; Fluorene - 2; Dibenz(a,h)Anthracene - 1; Chrysene - 1; Benzo(k)Fluoranthene - 4;
Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthene - 1; Bis(2-Ethylhexyl)Phthalat - 4;
Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0; Acenaphthalene - 0;
Chromium - 0; Mercury - 0

Parameter (ug/l)	Downgradient Wells: Wells	Downgradient Wells: Historical No of Detects	Downgradient Wells: Confidence Limits for Variables (Detects)	Background Well: Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Well
CHROMIUM	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
MERCURY	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO

ile: TABLE3.0392

March 29, 1992

Results of Statistical Analyses for Selected Parameters

Nonparametric methods were used where there were fewer than 50% nondetects but more than 15% nondetects where sample observations were not normally distributed. Parametric methods were used where sample observations were normally distributed.

Parameters analyzed by these methods were:

Benzo(a)anthracene
Benzo(b)fluoranthene
Bis(2-ethylhexyl)phthalat

Comparison with Up-gradient well R-10:

Parameter	Wells	Test Applied	Results
Benzo(a)anthracene	R-7 R-8 R-8B R-9 R-9C	One-way analysis of variance.	No evidence of con-tamination in down gradient wells at $p > .05$
Benzo(b)fluoranthene	R-8 R-8B	One-way analysis of variance.	No evidence of con-tamination in down gradient wells at $p > .05$
Bis(2-ethylhexyl)phthalat	R-8 R-8B R-9	Kruskal-Wallis Test for nonparametric ANOVA	No evidence of con-tamination in down-gradient wells at $p > .05$

ile: TABLE3B.0392

March 29, 1992

Results of Statistical Analyses for Selected Parameters

Nonparametric methods were used where there were fewer than 50% nondetects but more than 15% nondetects where sample observations were not normally distributed. Parametric methods were used where sample observations were normally distributed.

Parameters analyzed by these methods were:

Benzo(a)anthracene
Benzo(b)fluoranthene
Bis(2-ethylhexyl)phthalat

Comparison with Up-gradient well R-1R:

Parameter	Wells	Test Applied	Results
Benzo(a)anthracene	R-7 R-8 R-8B R-9 R-9C	One-way analysis of variance.	No evidence of contamination in down gradient wells at $p > .05$
Benzo(b)fluoranthene	R-8 R-8B	One-way analysis of variance.	No evidence of contamination in down gradient wells at $p > .05$
Bis(2-ethylhexyl)phthalat	R-8 R-8B R-9	Kruskal-Wallis Test for nonparametric ANOVA	No evidence of contamination in down-gradient wells at $p > .05$

Results of Statistical Analyses
Granada, MS Plant
October 30, 1992

- Data for thirty (30) parameters were analyzed according to the methods outlined in "Statistical Analysis of Ground-Water Monitoring Data at RCRA (Resource and Recovery Act) Facilities, Final Guidance."

Data for all wells (upgradient and downgradient) fell into two analysis categories:

1) More than 50% nondetects which required a Poisson test of proportions, and

2) Nonparametric ANOVA (Kruskal-Wallis test).

Of the thirty parameters, only three employed the nonparametric ANOVA. Three parameters, were benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate, and benzo(a)anthracene required a nonparametric ANOVA to compare some downgradient wells with some upgradient wells. The nonparametric ANOVA was required because well data were not normally distributed.

Table 1 summarizes analyses for upgradient well R-10. Table 2 summarizes analyses for upgradient well R-1R.

On one case only, a new detect concentration was compared with the well mean for previous sample dates. The additional detect value did not differ from the mean of all previous sample periods. (Upgradient well R-10, parameter benzo(b)fluoranthene).

In all cases, there was no statistical evidence that correctional measures are required for any parameter.

Well R-10

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-10
Number of Historical Detects in R-10:
Acenaphthene - 0; Phenol - 3; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoranthene - 7; Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
ACENAPHTHENE	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.8	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
PHENOL	R-7	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8B	2	0.1 - 9.3	1.0 - 14.1	YES	NO
	R-9	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9C	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO
4-NITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
2-METHYL-4,6-DINITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	1	0.03 - 7.4	0.0 - 5.3	YES	NO
2-NITROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	2	0.1 - 9.3	0.03 - 7.4	YES	NO

GRENADA: R-10, II, 3rd quart., 1992

Well R-10 (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS

FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:

Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03

Background Well: R-10

Number of Historical Detects in R-10:

Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - (2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlo rophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimet hylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)anthracer ne - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoran thene - 7; Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracer e - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:

Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
2,4,6-TRICHLOROPHENOL	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9C	4	0.6 - 12.6	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
2,4-DICHLOROPHENOL	R-7	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-8	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-8B	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2,4-DIMETHYLPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8B	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2-CHLOROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2,3,5,6-TRICHLOROPHENOL	R-7	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-8	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-8B	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-9C	2	0.1 - 9.3	0.3 - 11.0	YES	NO
	R-9D	2	0.1 - 9.3	0.3 - 11.0	YES	NO

Well R-10 (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, . PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-10
Number of Historical Detects in R-10:
Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoranthene - 7; Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
BENZO(g,h,i)PERYLENE	R-7	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	0	0.0 - 5.3	0.1 - 9.3	YES	NO
BENZO(b)FLUORANTHENE	R-7	3	0.3 - 11.0	2.0 - 17.1	YES	NO
	R-8	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9	3	0.3 - 11.0	2.0 - 17.1	YES	NO
	R-9C	2	0.1 - 9.3	2.0 - 17.1	YES	NO
	R-9D	3	0.3 - 11.0	2.0 - 17.1	YES	NO
BENZO(a)PYRENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	1	0.03 - 7.4	0.6 - 12.6	YES	NO
FLUORENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
DIBENZO(a,h)ANTHRACENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO

Well R-10 (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS

FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:

Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03

Background Well: R-10

Number of Historical Detects in R-10:

Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - (2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlo rophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimet hylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 8; Benzo(a)anthracei ne - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoran thene - 7; Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracer e - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:

Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biolog cal, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
CHRYSENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
BENZO(k)FLUORANTHENE	R-7	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-8	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-8B	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
PYRENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
INDENO(123-cd)PYRENE	R-7	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-8	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-8B	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9C	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9D	0	0.0 - 5.3	0.3 - 11.0	YES	NO
PHENANTHRENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO

GRENADA: R-10, VI, 3rd quart., 1992

Well R-10 (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS

FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:

Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03

Background Well: R-10

Number of Historical Detects in R-10:

Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - (2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlo rophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimet hylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)anthrace ne - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoran thene - 7: Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracer e - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:

Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biolog cal, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
ACENAPHTHYLENE	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
CHROMIUM	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
MERCURY	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
2,3,4,6-TETRACHLOROPHENOL	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
BENZO(a)ANTHRACENE	R-7	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-8	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9	6	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9C	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO

Well R-10 (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS

FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:

Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03

Background Well: R-10

Number of Historical Detects in R-10:

Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 3; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 2; Benzo(b)fluoranthene - 7; Benzo(a)pyene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 2; Indeno(123-cd)Pyrene - 3; Phenanthrene - 1; Bis(2-Ethylhexyl)Phtalat - 4; Pentachlorophenol - 1; Fluoranthene - 1; 2,4-Dinitrophenol - 0; Naphthalene - 0;
Acenaphthalene - 0; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:

Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
BIS(2-ETHYLHEXYL)PHTHALAT	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9C	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9D	2	0.1 - 9.3	0.6 - 12.6	YES	NO
FLUORANTHENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-8B	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
PENTACHLOROPHENOL	R-7	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	2	0.1 - 9.3	0.03 - 7.4	YES	NO
2,4-DINITROPHENOL	R-7	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
NAPHTHALENE	R-7	2	0.1 - 9.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	5	1.0 - 14.1	0.0 - 5.3	YES	NO
	R-9	3	0.3 - 11.0	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO

Well R-1R
1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-1R
Number of Historical Detects in R-1R:
Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - (2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlo rophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimet hylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthrace ne - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoran thene - 4; Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthrace e - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 4; Fluoranthene - 6; 2,4-Dinitrophenol - 5; Naphthalene - 6;
Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
ACENAPHTHENE	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
PHENOL	R-7	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8B	2	0.1 - 9.3	1.0 - 14.1	YES	NO
	R-9	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9C	3	0.3 - 11.0	1.0 - 14.1	YES	NO
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO
4-NITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
2-METHYL-4,6-DINITROPHENOL	R-7	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-9D	1	0.03 - 7.4	0.0 - 5.3	YES	NO
2-NITROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	2	0.1 - 9.3	0.03 - 7.4	YES	NO

Well R-1R (Con't)

1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS

FOR 1992, PREPARED OCTOBER 30, 1992

Background Information:

Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03

Background Well: R-1R

Number of Historical Detects in R-1R:

Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - 0 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; 2 - Chlorophenol - 1;

2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoranthene - 4: Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;

Benzo(k)fluoranthene - 2; Pyrene - 8; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phtalat - 4; Pentachlorophenol - 4; Fluoranthene - 6; 2,4-Dinitrophenol - 5; Naphthalene - 6;

Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:

Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.

Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
2,4,6-TRICHLOROPHENOL	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9C	4	0.6 - 12.6	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
2,4-DICHLOROPHENOL	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	2	0.1 - 9.3	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
2,4-DIMETHYLPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8B	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2-CHLOROPHENOL	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
2,3,5,6-TRICHLOROPHENOL	R-7	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-8	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	3	0.3 - 11.0	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	2	0.1 - 9.3	0.03 - 7.4	YES	NO

Well R-1R (Con't)
1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, , PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-1R
Number of Historical Detects in R-1R:
Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0; 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoranthene - 4; Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phtalat - 4; Pentachlorophenol - 4; Fluoranthene - 0; 2,4-Dinitrophenol - 5; Naphthalene - 6;
Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
BENZO(g,h,i)PERYLENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-9C	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-9D	0	0.0 - 5.3	0.6 - 12.6	YES	NO
BENZO(b)FLUORANTHENE	R-7	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-8	4	Compaired to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compaired to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	3	0.3 - 11.0	0.6 - 12.6	YES	NO
BENZO(a)PYRENE	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8B	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	1	0.03 - 7.4	0.6 - 12.6	YES	NO
FLUORENE	R-7	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-8B	3	0.3 - 11.0	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	2	0.1 - 9.3	0.1 - 9.3	YES	NO
DIBENZO(a,h)ANTHRACENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9C	2	0.1 - 9.3	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO

Well R-1R (Con't)
1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, ' PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-1R
Number of Historical Detects in R-1R:
Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - 0 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlo rophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimet hylphenol - 1; ; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthrace ne - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoran thene - 4; Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthrace e - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 4; Fluoranthene - 6; 2,4-Dinitrophenol - 5; Naphthalene - 6;
Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
CHRYSENE	R-7	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9C	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-9D	1	0.03 - 7.4	0.03 - 7.4	YES	NO
BENZO(k)FLUORANTHENE	R-7	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-8	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-8B	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9C	1	0.03 - 7.4	0.1 - 9.3	YES	NO
	R-9D	1	0.03 - 7.4	0.1 - 9.3	YES	NO
PYRENE	R-7	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-8	3	0.3 - 11.0	0.3 - 11.0	YES	NO
	R-8B	2	0.1 - 9.3	0.3 - 11.0	YES	NO
	R-9	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9C	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9D	1	0.03 - 7.4	0.3 - 11.0	YES	NO
INDENO(123-cd)PYRENE	R-7	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-8	1	0.03 - 7.4	0.03 - 7.4	YES	NO
	R-8B	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9C	0	0.0 - 5.3	0.03 - 7.4	YES	NO
	R-9D	0	0.0 - 5.3	0.03 - 7.4	YES	NO
PHENANTHRENE	R-7	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-8	2	0.1 - 9.3	0.3 - 11.0	YES	NO
	R-8B	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9	1	0.03 - 7.4	0.3 - 11.0	YES	NO
	R-9C	0	0.0 - 5.3	0.3 - 11.0	YES	NO
	R-9D	0	0.0 - 5.3	0.3 - 11.0	YES	NO

GRENADA: R-1R, V, 3rd quart., 1992

Well R-1R (Con't)
1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, . PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-1R
Number of Historical Detects in R-1R:
Acenaphthene - 0; Phenol - 5; 4-Nitrophenol - 0 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2,4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; 2-Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoranthene - 4; Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phthalat - 4; Pentachlorophenol - 4; Fluoranthene - 6; 2,4-Dinitrophenol - 5; Naphthalene - 6;
Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
BIS(2-ETHYLHEXYL)PHTHALAT	R-7	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-8	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9	4	Compared to upgradient wells with Kruskal-Wallis nonparametric test.		Well concentration does not differ from that of upgradient wells.	
	R-9C	3	0.3 - 11.0	0.6 - 12.6	YES	NO
	R-9D	2	0.1 - 9.3	0.6 - 12.6	YES	NO
FLUORANTHENE	R-7	1	0.03 - 7.4	1.5 - 15.6	YES	NO
	R-8	3	0.3 - 11.0	1.5 - 15.6	YES	NO
	R-8B	0	0.0 - 5.3	1.5 - 15.6	YES	NO
	R-9	1	0.03 - 7.4	1.5 - 15.6	YES	NO
	R-9C	0	0.0 - 5.3	1.5 - 15.6	YES	NO
	R-9D	0	0.0 - 5.3	1.5 - 15.6	YES	NO
PENTACHLOROPHENOL	R-7	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-8	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-8B	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-9	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-9C	2	0.1 - 9.3	0.6 - 12.6	YES	NO
	R-9D	2	0.1 - 9.3	0.6 - 12.6	YES	NO
2,4-DINITROPHENOL	R-7	2	0.1 - 9.3	1.0 - 14.1	YES	NO
	R-8	1	0.03 - 7.4	1.0 - 14.1	YES	NO
	R-8B	2	0.1 - 9.3	1.0 - 14.1	YES	NO
	R-9	0	0.0 - 5.3	1.0 - 14.1	YES	NO
	R-9C	0	0.0 - 5.3	1.0 - 14.1	YES	NO
	R-9D	0	0.0 - 5.3	1.0 - 14.1	YES	NO
NAPHTHALENE	R-7	2	0.1 - 9.3	1.5 - 15.6	YES	NO
	R-8	0	0.0 - 5.3	1.5 - 15.6	YES	NO
	R-8B	5	1.0 - 14.1	1.5 - 15.6	YES	NO
	R-9	3	0.3 - 11.0	1.5 - 15.6	YES	NO
	R-9C	1	0.03 - 7.4	1.5 - 15.6	YES	NO
	R-9D	0	0.0 - 5.3	1.5 - 15.6	YES	NO

Well R-1R (Con't)
1992 - Third Quarter

STATISTICAL ANALYSES FOR WELL PARAMETERS
FOR 1992, ' ... PREPARED OCTOBER 30, 1992

Background Information:
Years, Quarter Used: 1990 - 02, 03, 04; 1991 - 01, 02, 03, 04; ; 1992 - 01, 03
Background Well: R-1R
Number of Historical Detects in R-1R:
Acenaphthene - 0; Phenol - 5; 4 -Nitrophenol - 0 2-Methyl-4,6-Dinitrophenol - 0; 2-Nitrophenol - 1; 2,4,6-Trichlorophenol - 2; 2 4-Diclorophenol - 1; 2,4-Dimethylphenol - 1; - Chlorophenol - 1;
2,3,5,6-Tetrachlorophenol - 1; Benzo(a)anthracene - 5; Benzo(g,h,i)Perylene - 4; Benzo(b)fluoranthene - 4; Benzo(a)pyrene - 4; Fluorene - 2; Dibenzo(a,h)Anthracene - 1; Chrysene - 1;
Benzo(k)fluoranthene - 2; Pyrene - 3; Indeno(123-cd)Pyrene - 1; Phenanthrene - 3; Bis(2-Ethylhexyl)Phtalat - 4; Pentachloropheno - 4; Fluoranthene - 6; 2,4-Dinitrophenol - 5; Naphthalene - 6;
Acenaphthalene - 4; Chromium - 0; Mercury - 0; 2,3,4,6-Tetrachlorophenol - 0

Confidence intervals based on Poisson method:
Goldstein, Avrom. 1964. Biostatistics. The MacMillan Company. New York. 272 pp.
Runyon, Richard P. 1975. Fundamentals of Statistics in the Biological, Medical and Health Sciences. Duxbury Press. Boston. 393 pp.

Parameter (ug/l)	Wells	Historical Number of Detects	Downgradient Wells Confidence Limits for Variables (Detects)	Background Well Confidence Limits for Variables (Detects)	Confidence Limits for Background Well and Downgradient Wells Overlap	Evidence of Contamination in Downgradient Wells
ACENAPHTHYLENE	R-7	1	0.03 - 7.4	0.6 - 12.6	YES	NO
	R-8	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-8B	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-9	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-9C	0	0.0 - 5.3	0.6 - 12.6	YES	NO
	R-9D	0	0.0 - 5.3	0.6 - 12.6	YES	NO
CHROMIUM	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.2	YES	NO
MERCURY	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	1	0.03 - 7.4	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
2,3,4,6-TETRACHLOROPHENOL	R-7	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-8B	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9C	0	0.0 - 5.3	0.0 - 5.3	YES	NO
	R-9D	0	0.0 - 5.3	0.0 - 5.3	YES	NO
BENZO(a)ANTHRACENE	R-7	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-8	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-8B	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9	6	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9C	4	Compared to upgradient wells with Kruskal-Wallis test.		Well concentration does not differ from that of upgradient wells.	
	R-9D	3	0.3 - 11.0	1.0 - 14.1	YES	NO

APPENDIX E-2
WELL CONSTRUCTION INFORMATION

MONITORING WELL LOG

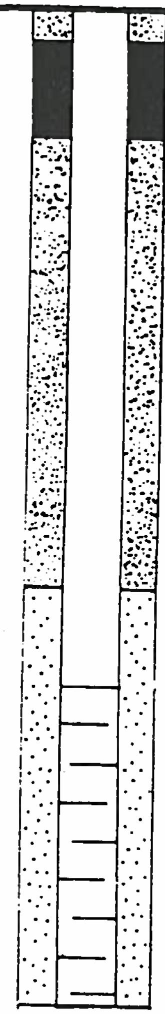
PROJECT Grenada, MS (RCRA) WELL NO. R-1

DRILLING METHOD H.S.A. GEOLOGIST J. B. Gillespie

DRILLER DISC (Developers International Service Corp.) DATE 3/24/82

GROUND ELEVATION ____	GROUND WATER DEPTH (ft):	GRAVEL PACK
TOP OF WELL 210.81	AT COMPLETION 22.8	BENTONITE
DEPTH OF WELL (ft) 32.77	AFTER 12 HOURS 22.6	BACK FILL
CASING MATERIAL 2" PVC	SCREEN 10 ft of 0.010" screen	CONCRETE
		SCREEN

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Brown FILL and CLAY & SILT, lt broken rock fragments	
		Gray/tan CLAY & SILT, tr f brown sand	
5		Brown CLAY & SILT, lt f sand	
		Tan F -SAND, tr brown clay & Silt	
10		Tan F -SAND	
15			
20			
		Lt tan F-M SAND, tr c sand	
25			
		Lt red/tan F-SAND, tr silt	
30			



SHEET 1 OF 1

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-1R

PROJECT: Grenada Wood Plant **LOCATION:** Grenada, MS

Drilling Method: HOLLOW STEM AUGER
Driller: PROFESSIONAL SERVICE INDUSTRIES, INC..

Geologist: D. SMITH
Date : MARCH 28, 1989

Ground Elevation:
Top of Well Elev.:
Depth of Well: 29.5 FEET

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Ground Water Depth:
At Completion:

Casing Material: 2 " PVC
Screen: 2" PVC (0.01" SLOT)

Depth	Sample	SPT Blow Counts	Description
			Coarse GRAVEL (FILL)
			Orange-brown SILT AND CLAY, trace brown patches (decomposed organics), trace light gray silt and clay (mottles/veins)
5	S	7,8,12	
			Light gray/ buff fine clean SAND, well-sorted quartz, trace mafic grains
10	S	12,20,20	
15	S	2,3,5	
			Light buff fine to medium clean SAND, coarsens gradually with depth
20	S	6,6,8	
25	S	9,12,11	
			Buff/gray fine to medium clean SAND, trace rust bands, trace clay
30	S	8,8,10	
			Bottom of Boring at 30.5 feet
35			
40			

Construction

MONITORING WELL LOG

PROJECT Grenada, MA (RCRA) WELL NO. R-2

DRILLING METHOD H.S.A. GEOLOGIST J. B. Gillespie

DRILLER Developers International Service Corp. DATE 3/25/82

GROUND ELEVATION

TOP OF WELL 209.26

DEPTH OF WELL (ft) 30.54

GROUND WATER DEPTH (ft):

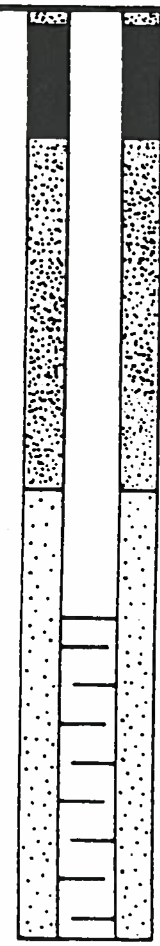
AT COMPLETION 21.54

AFTER 12 HOURS 21.5

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC SCREEN 10 ft of 0.010" screen

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Gray CLAY & SILT, tr brown/black organic particles (roots)	
5		Tan CLAYEY SILT, tr f sand	
		Tan/gray CLAYEY SILT, some f sand	
10		Lt tan/gray CLAYEY SILT and F-SAND	
15		Lt gray/tan F to V-F SAND, tr silt	
20		Lt tan/brown FMC SAND, tr silt	
25		Gray F SAND, tr silt	
30			



SHEET 1 OF 1

MONITORING WELL LOG

PROJECT Grenada, MS (RCRA) WELL NO. R-3

DRILLING METHOD H.S.A. GEOLOGIST J. B. Gillespie

DRILLER Developers International Service Corp. DATE 3/26/82

GROUND ELEVATION ______

TOP OF WELL 206.96

DEPTH OF WELL (ft) 29.8

GROUND WATER DEPTH (ft):

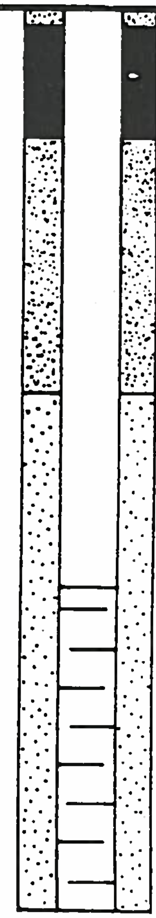
AT COMPLETION 21.8

AFTER 12 HOURS 22.0

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC SCREEN 10 ft of 0.010" screen

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Brown/gray SILTY CLAY, tr f sand	
5		Brown/gray CLAYEY SILT, lt f sand	
10			
15		Lt tan M-F SAND, tr silt	
20			
25			
30			



SHEET 1 OF 1

MONITORING WELL LOG

PROJECT Grenada, MS (RCRA)

WELL NO. R-4

DRILLING METHOD H.S.A.

GEOLOGIST J. B. Gillespie

DRILLER Developers International Service Corp.

DATE 3/27/82

GROUND ELEVATION ______

TOP OF WELL 206.06

DEPTH OF WELL (ft) 30.55

GROUND WATER DEPTH (ft):

AT COMPLETION 21.55

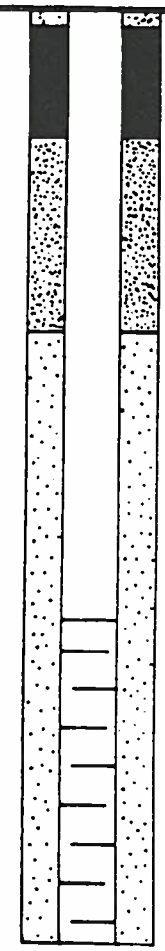
AFTER 12 HOURS 21.0

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC

SCREEN 10 ft of 0.010" screen

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
0–4		Brown CLAY & SILT, tr f sand	
4–6		Lt tan CLAYEY SILT, and F SAND	
6–12		Lt gray/tan F SAND, tr silt	
12–27		Lt tan/lt gray M-F SAND, tr silt	



SHEET 1 OF 1

MONITORING WELL LOG

PROJECT Grenada, MS

WELL NO. R-5

DRILLING METHOD H.S.A.

GEOLOGIST J. B. Gillespie

DRILLER P.S.I. Inc.-Engineering

DATE 7/17/84

GROUND ELEVATION ____

TOP OF WELL 211.84

DEPTH OF WELL (ft) 31.0

GROUND WATER DEPTH (ft):

AT COMPLETION ____

AFTER ____ HOURS ____

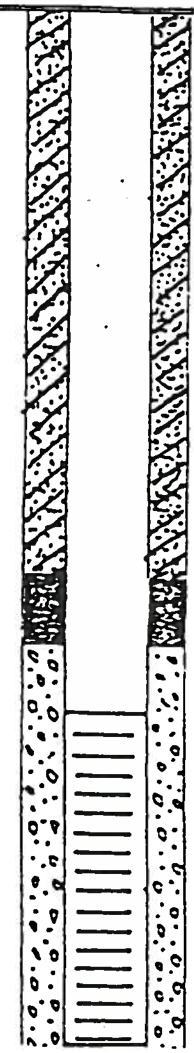
GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVD

SCREEN 10' 0.010 Slot

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
	X	Dk Brown TOPSOIL, tr organic (roots)
	X	Tan/brown/gray SILT, tr organics (roots)
5.0	X	Brown/tan SILT, some clay & silt, tr stone fragments
	X	Brown SILT and SILT & CLAY
10.0	X	Brown/gray SILT & CLAY and f SAND
	X	Tan SILT & CLAY and F SAND
15.0	X	Tan f SAND, tr silt
20.0	X	
25.0	X	Gray fm SAND, sl anaerobic odor
30.0	X	

CONSTRUCTION



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-5B

PROJECT: COLLIER LANDFILL | **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY | GEOLOGIST:
DRILLER: LAYNE-WESTERN COMPANY,INC.. | DATE: 8-10-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 51'

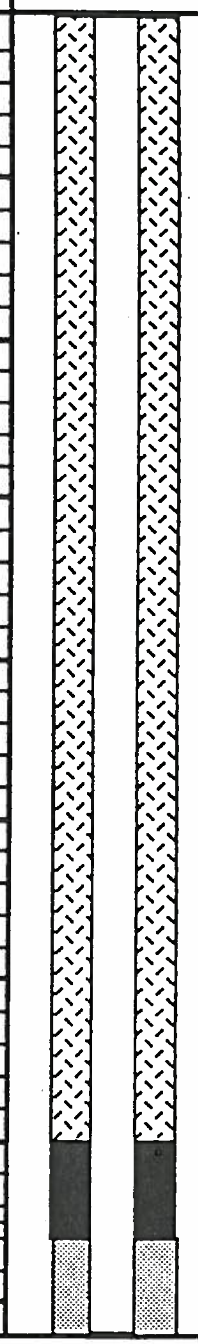
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
0–30			SEE R-5 BORING LOG FOR GEOLOGIC DESCRIPTIONS FROM 0 TO 30 FEET
30–37.5			Brown Grey mf SAND, trace to little Silty Clay
35	s	14 19 12	
37.5–40			Dark Brown CLAY & SILT, trace to little fm Sand
40	s	1 2 12	

Construction



Sheet 1 of 2

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-5B

PROJECT: AWI **LOCATION:** PORTSMOUTH, VA

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE-WESTERN COMPANY INC.

GEOLOGIST:
DATE: 8-10-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 51'

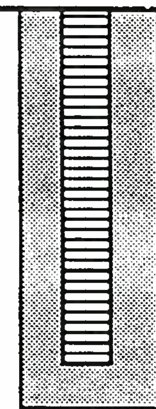
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK | SCREEN
BENTONITE | CAVE-IN
GROUT

Depth	Sample	SPT Blow Counts	Description
			Brown fm SAND, little Silty Clay
			Grey fmc SAND, little to trace Silty Clay
45	s	7 10 8	
50			Brown Silty Clay, Trace of little f Sand
	s	5 9 11	Grey mf Sand, Trace Clay
			BOTTOM OF BORING 52.5'

Construction



Sheet 2 of 2

MONITORING WELL LOG

PROJECT Grenada, MS — WELL NO. R-6

DRILLING METHOD H.S.A. — GEOLOGIST J. B. Gillespie

DRILLER P.S.I. Inc.-Engineering — DATE 7/17/84

GROUND ELEVATION ______

TOP OF WELL 213.04

DEPTH OF WELL (ft) 31.0

GROUND WATER DEPTH (ft):

AT COMPLETION ______

AFTER ______ HOURS ______

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC — SCREEN 10' 0.010 Slot

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
	X	Brown SILT, and SILT & CLAY, tr stone fragments
	X	Tan/gray SILT
5.0	X X	Gray/brown SILT & CLAY
10.0	X X X	Tan/white f SAND, tr silt
15.0		Rust/gray fm SAND and CLAY & SILT
20.0	X	Gray CLAY & SILT, tr f SAND
25.0	X	Gray fmc SAND, tr silt
30.0	X	

CONSTRUCTION

MONITORING WELL LOG

PROJECT Grenada, MS

WELL NO. R-7

DRILLING METHOD H.S.A.

GEOLOGIST J. B. Gillespie

DRILLER P.S.I. Inc.-Engineering

DATE 7/17/84

GROUND ELEVATION

TOP OF WELL 21098

DEPTH OF WELL (ft) 31.0

GROUND WATER DEPTH (ft):

AT COMPLETION

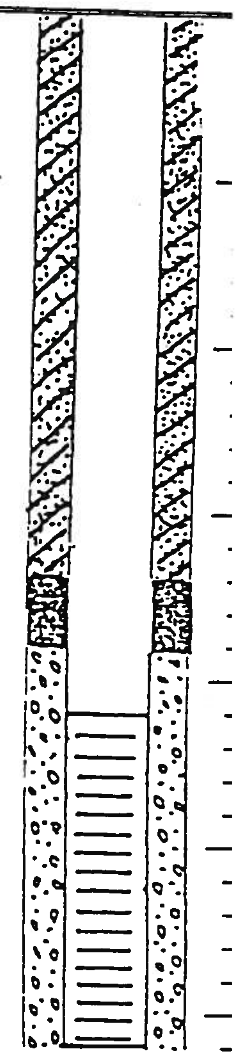
AFTER ____ HOURS

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC   SCREEN 10' 0.010 Slot

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Tan/brown/gray SILT, tr roots
5.0		Tan/brown SILT and SILT & CLAY
10.0		Brown SILT & CLAY and f SAND, SILT
		White vf SAND, some brown silt & clay, tr silt
15.0		White vf SAND, tr brown silt & clay, tr silt
20.0		Tan f SAND, tr silt
25.0		Gray/tan mf SAND, tr clay & silt
30.0		

CONSTRUCTION



MONITORING WELL LOG

PROJECT Grenada, MS

WELL NO. R-8

DRILLING METHOD H.S.A.

GEOLOGIST J. B. Gillespie

DRILLER P.S.I. Inc.-Engineering

DATE 7/17/84

GROUND ELEVATION

TOP OF WELL 214.53

DEPTH OF WELL (ft) 31.0

GROUND WATER DEPTH (ft):

AT COMPLETION

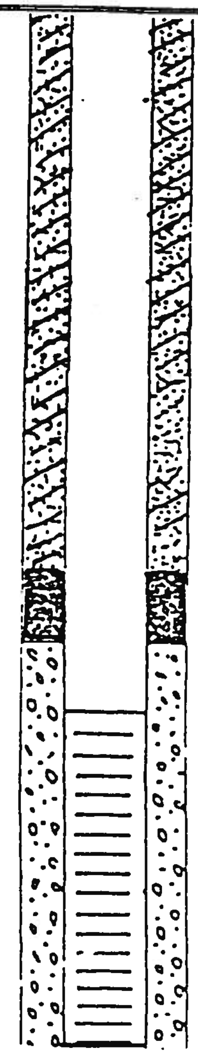
AFTER ____ HOURS

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC SCREEN 10' 0.010 Slot

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
	X	Brown SILT
	X	Brown SILT and SILT & CLAY
5.0	X	Brown SILT & CLAY
10.0	X	
15.0	X	Gray CLAY & SILT, tr vf sand
20.0	X	White/tan vf SAND, tr silt
25.0	X	Gray/tan fmc SAND, TR SILT
30.0	X	

CONSTRUCTION



MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi WELL NO. R-8B

DRILLING METHOD Mud Rotary GEOLOGIST S. A. Colton

DRILLER PSI Inc. DATE 11/13/86

GROUND ELEVATION

TOP OF WELL 208.98'

DEPTH OF WELL (ft) 46

GROUND WATER DEPTH (ft):

AT COMPLETION

AFTER HOURS

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC SCREEN 10' of 0.010" slots

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		No samples taken from 0-26.5 feet See R-8 Monitoring Well Log for soil description	
5			
10			
15			
20			
25		Grey CLAY and SILT, tr f sand	
	X	Brown fm SAND, tr to little pockets of clayey silt	
30	X	Grey/green silty CLAY, tr sand	
	X	Grey/green CLAY and SILT, tr f sand	

SHEET . OF 2

MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi — WELL NO. R-8B

DRILLING METHOD Mud Rotarv — GEOLOGIST S. A. Colton

DRILLER PSI Inc. — DATE 11/13/86

GROUND ELEVATION ______

TOP OF WELL 208.98'

DEPTH OF WELL (ft) 46

GROUND WATER DEPTH (ft):

AT COMPLETION ______

AFTER ____ HOURS ______

GRAVEL PACK / BENTONITE / BACK FILL / CONCRETE / SCREEN

CASING MATERIAL ______ SCREEN ______

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Brown fm SAND, tr pockets of CLAY and SILT	
		Grey clayey SILT, tr to little f sand	
45		Brown fm SAND, tr silt	
		Bottom of boring @ 45.5'	

MONITORING WELL LOG

PROJECT Grenada, MS | WELL NO. R-9
DRILLING METHOD H.S.A. | GEOLOGIST J. B. Gillespie
DRILLER P.S.I. Inc.-Engineering | DATE 7/17/84

GROUND ELEVATION ______
TOP OF WELL 213.66
DEPTH OF WELL (ft) 31.0

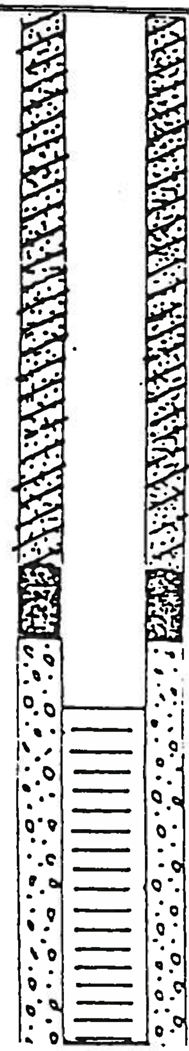
GROUND WATER DEPTH (ft):
AT COMPLETION ______
AFTER ______ HOURS ______

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC SCREEN 10' 0.010 Slot

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Tan SILT, tr roots
		Brown SILT
5.0		Gray SILT, little silt & clay
		Shelby tube
10.0		Brown SILT & CLAY, tr roots
		Brown SILT & CLAY, tr f sand
15.0		Tan f SAND, tr silt
20.0		
25.0		Tan fmc SAND, tr silt
30.0		

CONSTRUCTION



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (R-9C)

PROJECT: Grenada RCRA **LOCATION:** Grenada, Mississippi

Drilling Method: Wash Rotary
Driller: P. S. I. Inc.-Engineering

Geologist: C.Cramer
Date: August 26, 1987

Ground Elevation: 213.10 feet
Top of Well Elev.: 215.99 feet
Depth of Well: 63.4 feet

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Ground Water Depth:
At Completion:

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010 " Slotted

Depth	Sample	SPT Blow Counts	Description	Construction
5			Refer to well log R-9D for descriptions	
10				
15				
20				
25				
30				
35				
40				

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (R-9C)

PROJECT: Grenada RCRA

LOCATION: Grenada, Mississippi

Drilling Method: Wash Rotary
Driller: P. S. I. Inc.-Engineering

Geologist: C.Cramer
Date: August 26, 1987

Ground Elevation: 213.10 feet
Top of Well Elev.:215.99 feet
Depth of Well: 63.4 feet

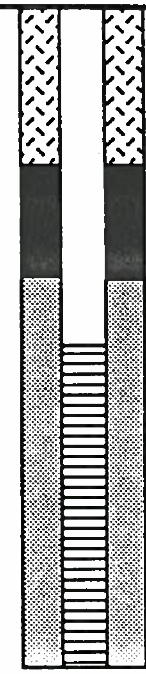
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Ground Water Depth:
At Completion:

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010 " Slotted

Depth	Sample	SPT Blow Counts	Description	Construction
45			Refer to well log R-9D for descriptions	
50				
55				
60				
65				
70				
75				
80				



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (R-9D)

PROJECT: R-9C and R-9D Well Nest **LOCATION: Grenada,Mississippi**

Drilling Method: Wash Rotary
Driller: P. S. I. Inc.-Engineering

Geologist: C. Cramer
Date: August 25, 1987

Ground Elevation: 213.87 feet
Top of Well Elev.:216.67 feet
Depth of Well: 90 feet

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Ground Water Depth:
At Completion:

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

Depth	Sample	SPT Blow Counts	Description	Construction
	S		Tan brown SILT, tr. roots	
	S			
5	S		Gray SILT, little clay	
	T			
10	S		Brown SILT & CLAY, tr. f sand, tr. roots	
	S			
15	S			
20	S		Tan f SAND, tr. silt	
25	S		Gray mf SAND, little silt, tr. clay,some wood fragments	
30	S			
35	S	7,14,18	35-35.2' Rust mf SAND, little silt	
			Gray CLAYEY SILT, tr. f. sand	
40	S	15,18,21	40-40.5' Rust mf SAND, tr. silt	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (R-9D)

PROJECT: R-9C and R-9D Well Nest **LOCATION: Grenada, Mississippi**

Drilling Method: Wash Rotary
Driller: P. S. I. Inc.-Engineering
Geologist: C. Cramer
Date: August 25, 1987

Ground Elevation: 213.87 feet
Top of Well Elev.:216.67 feet
Depth of Well: 90 feet
Ground Water Depth:
At Completion:

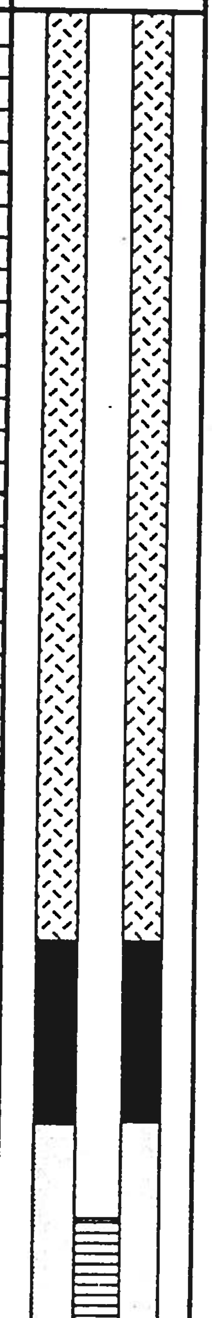
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Depth	Sample	SPT Blow Counts	Description
45	S	15,20,28	Rust mf SAND, tr. silt, tr. gray silty clay laminae
50	S	15,16,17	Rust mf SAND, tr.gray silt
55	S	15,18,15	
60	S	18,24,34	Brown mf SAND & SILT, micaceous,some small silty clay pockets
65	S	16,23,31	
70	S	27,50/5	Gray f SAND & SILT,micaceous
75			
80	S	37,50/5	Gray f SAND, some silt, micaceous

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (R-9D)

PROJECT: R-9C and R-9D Well Nest **LOCATION:** Grenada,Mississippi

Drilling Method: Wash Rotary
Driller: P. S. I. Inc.-Engineering

Geologist: C. Cramer
Date: August 25, 1987

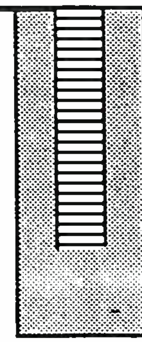
Ground Elevation: 213.87 feet
Top of Well Elev.: 216.67 feet
Depth of Well: 90 feet

Ground Water Depth:
At Completion:

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

GRAVEL PACK
BENTONITE
GROUT
SCREEN

Depth	Sample	SPT Blow Counts	Description	Construction
85	S	31,50/5	Gray f SAND, some silt, micaceous	
90			Bottom of Boring-90 feet	
95				
100				

MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi — WELL NO. R-10

DRILLING METHOD Hollow Stem Auger — GEOLOGIST S. A. Colton

DRILLER PSI Inc. — DATE 11/3/86

GROUND ELEVATION ______

TOP OF WELL 208.78'

DEPTH OF WELL (ft) 27

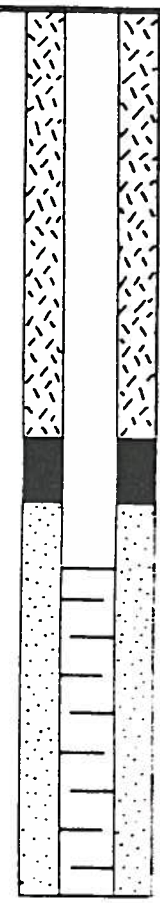
GROUND WATER DEPTH (ft):

AT COMPLETION ______

AFTER ____ HOURS ______

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC — SCREEN 10' of 0.010" slots

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
5, 10, 15, 20, 25, 30		No samples taken See B-1 Boring Log for soil description	

SHEET ___ OF ___

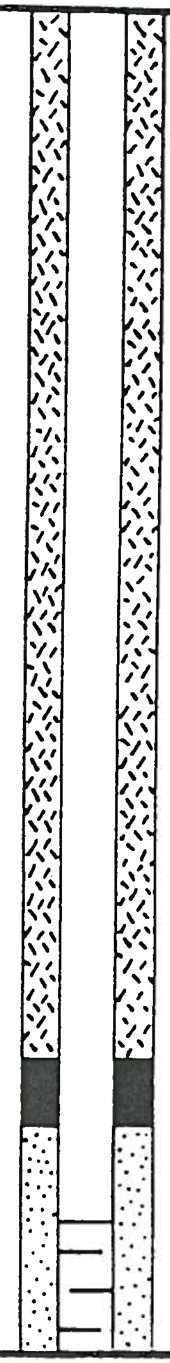
MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi — WELL NO. R-10B

DRILLING METHOD Mud Rotary — GEOLOGIST S. A. Colton

DRILLER PSI Inc. — DATE 11/14/86

GROUND ELEVATION ____	GROUND WATER DEPTH (ft):	GRAVEL PACK
TOP OF WELL 208.94'	AT COMPLETION ____	BENTONITE
DEPTH OF WELL (ft) 47	AFTER ____ HOURS ____	BACK FILL
CASING MATERIAL 2" PVC	SCREEN 10' of 0.010" slots	CONCRETE
		SCREEN

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
5, 10, 15, 20, 25, 30, 35, 40		No samples taken See B-1 Boring Log for soil description	

MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi — WELL NO. R-10B

DRILLING METHOD Mud Rotary — GEOLOGIST S. A. Colton

DRILLER PSI Inc. — DATE 11/14/86

GROUND ELEVATION ____	GROUND WATER DEPTH (ft):	GRAVEL PACK
TOP OF WELL 208.94'	AT COMPLETION ____	BENTONITE
DEPTH OF WELL (ft) 47	AFTER ____ HOURS ____	BACK FILL
		CONCRETE
		SCREEN

CASING MATERIAL 2" PVC — SCREEN 10' of 0.010" slots

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
45		No samples taken See B-1 Boring Log for soil description	
50			

VOLUME 2

MONITORING WELL LOG

PROJECT Koppers Co. Inc., Grenada, Mississippi

WELL NO. R-11

DRILLING METHOD Mud Rotary

GEOLOGIST S. A. Colton

DRILLER PSI Inc.

DATE 11/12/86

GROUND ELEVATION ______

TOP OF WELL 203.74'

DEPTH OF WELL (ft) 25

GROUND WATER DEPTH (ft):

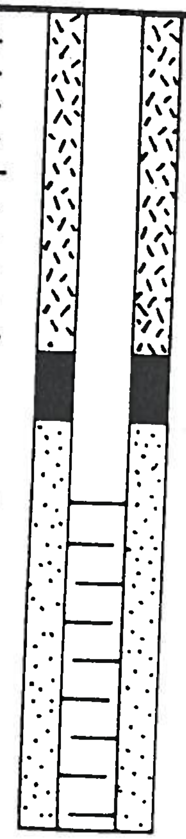
AT COMPLETION ______

AFTER ______ HOURS ______

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC

SCREEN 10' of 0.010" slots

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
5 10 15 20 25 30 35 40		No samples taken See B-4 Boring Log for soil description	

MONITORING WELL LOG

PROJECT: Koppers Co. Inc., Grenada, Mississippi

WELL NO. R-12

DRILLING METHOD: Mud Rotary

GEOLOGIST: S. A. Colton

DRILLER: PSI Inc.

DATE: 11/6/86

GROUND ELEVATION:

TOP OF WELL- 200.71'

DEPTH OF WELL (ft) 20

GROUND WATER DEPTH (ft):

AT COMPLETION

AFTER ____ HOURS

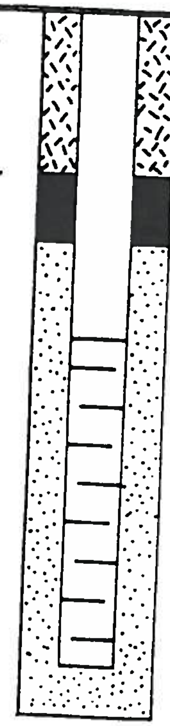
GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC

SCREEN 10' of 0.010" slots

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Brown clayey SILT, tr f sand, tr roots
5		
10		Grey to brown fmc SAND, tr silt
15		
20		Grey fmc SAND and silty CLAY
		Grey/green fmc SAND, tr silt
25		Bottom of boring @ 21.5 feet

CONSTRUCTION



SHEET

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG R-12B

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.
GEOLOGIST: S. COLTON
DATE: AUGUST 15, 1988

Ground Elevation:
Top of Well Elev.:
Depth of Well: 41'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK / SCREEN / BENTONITE / GROUT / CAVE-IN

Depth	Sample	SPT Blow Counts	Description	Construction
0–24.5			SEE R-12 BORING LOG FOR GEOLOGIC DESCRIPTIONS FROM 0 TO 24.5 FEET	
25	s	2 4 7	Grey mfc SAND, trace to little Clayey Silt	
30	s	8 11 8	Grey mfc SAND, trace to little Clay	
35	s	6 35 38		

Sheet 1 of 2

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG R-12B

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: AUGUST 15, 1988

Ground Elevation:
Top of Well Elev.:
Depth of Well: 41'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description	Construction
	s	8 14 15		
45			BOTTOM OF BORING 43.5'	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-13

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE-WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-3-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 31'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

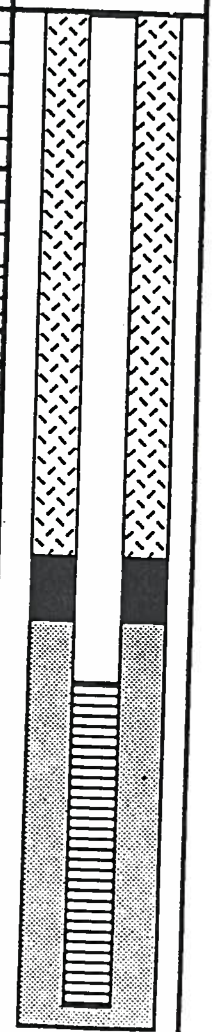
Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts
	s	1 4 7
	s	3 6 6
5	s	1 2 6
	s	4 5 7
10	s	4 7 12
	s	8 12 13
15	s	8 11 13
20	s	6 10 14
25	s	8 9 11
30	s	4 7 16
35		

Description
Brown SILT & CLAY, trace f Sand, trace fm Gravel
Brown Clayey SILT, trace f Sand
Brown fm SAND, little Silt and Clay
Brown fm SAND, trace Silt
Brown Silty CLAY, some fine Sand
Brown fm SAND, trace Silt @ 11.2 - 11.5 trace Clay
Grey fmc SAND and f Silty Clay pockets
BOTTOM OF BORING 31.5'

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-16

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE-WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-18-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 20.5'

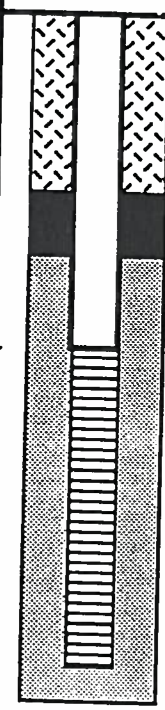
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK SCREEN
BENTONITE CAVE-IN
GROUT

Depth	Sample	SPT Blow Counts	Description
	s	7 10 9	Brown Clayey SILT, trace f Sand
	s	5 6 6	
5	s	4 8 9	
	s	8 8 9	Brown f SAND, trace to little Silt
10			Brown Grey fmc SAND
	s	1 2 1	Grey mc SAND, little Clay pockets, trace wood fragments
	s	2 1 2	
15	s	1 2 2	Grey Clayey SILT, some f Sand
20	s	2 3 7	Grey fm SAND, little to some Silty Clay products
			BOTTOM OF BORING 21.5'
25			
30			
35			

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-17

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-11-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 29.5'

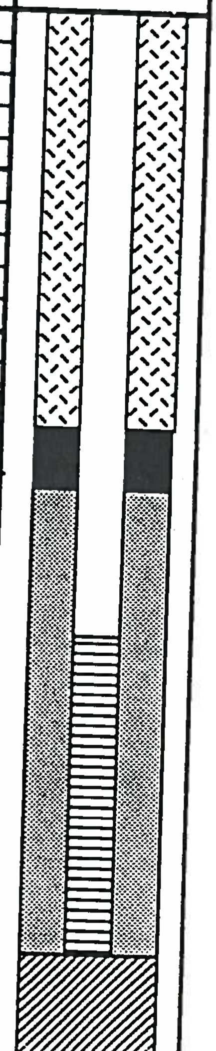
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	G		
	G		
5	s	6 10 9	Brown Clayey SILT, trace f Sand
	s	6 9 11	
10	s	6 12 11	
	s	6 14 9	
15	s	7 12 9	Grey White f SAND, trace Silt
20	s	9 18 22	@ 19.5' - 21' Sand is fm @ 19.7' - 20' Clay pocket
25	s	7 14 19	@ 25' - 32.5 Sand is fmc and contains Clay pockets
30	s	4 7 13	
35			BOTTOM OF BORING 32.5' COLLAPSE TO 29.5'

Construction



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KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-18

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-2-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 31'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

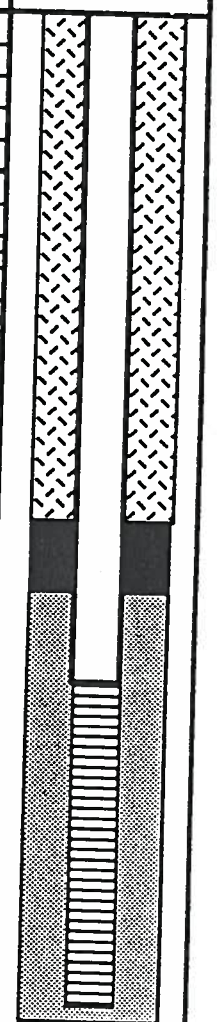
Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Sample	SPT Blow Counts	Description
s	3 9 9	Brown Clayey SILT, trace f Sand, trace fine Gravel
s	3 5 9	
s	1 5 13	
		Brown Silty CLAY, trace fine Sand
s	9 12 18	Brown Grey fm SAND, trace to little Silt @ 30' trace Clay stringers
s	10 16 32	
s	12 14 16	
s	10 18 15	
s	15 13 15	
s	11 18 17	
s	5 7 9	
		BOTTOM OF BORING 31.5'

Depth scale: 5, 10, 15, 20, 25, 30, 35

Construction



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-19

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-16-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 27'

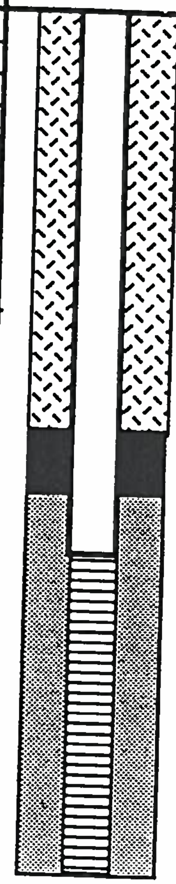
Sample Collection -
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	G		Brown Black Clayey SILT, little fm Sand
	G		
5	s	2 1 1	@ 2.5 - 6.5 contains up to 50% fmc Gravel
	s	2 1 1	
			Brown SILT & CLAY, trace to little f Sand
10	s	woh 3 6	Brown mottled Clayey SILT, trace f Sand
	s	6 9 9	
15	s	4 5 11	Grey SILT, trace Sand
20	s	4 6 10	Brown fine SAND, trace Silt
25	s	4 5 7	Grey m SAND, trace Silt
			BOTTOM OF BORING 27'
30			
35			

Construction



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KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-20

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-16-88

Ground Elevation: -
Top of Well Elev.:
Depth of Well: 32'

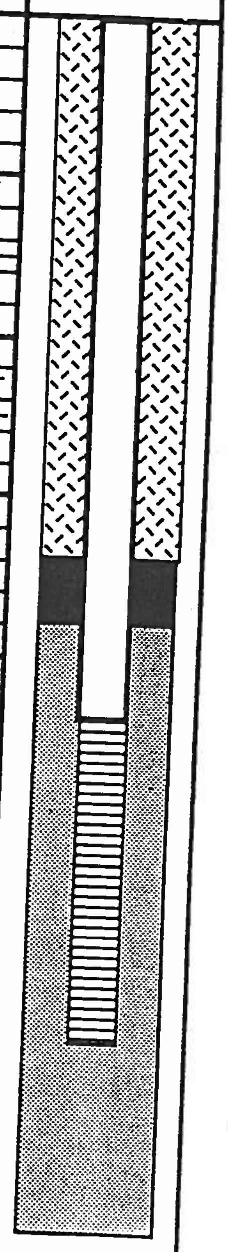
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK BENTONITE GROUT SCREEN CAVE-IN

Depth	Sample	SPT Blow Counts	Description
0–1	G		FILL (asphalt, gravel)
1–5	G, G		Brown Silty CLAY, trace Silt
5–7.5	G		Brown CLAY, trace Silt
7.5–11.25	G, s	4 12 21	Dark Grey to Grey Brown Silty CLAY @ 7.5' - 10' trace f Sand @ 10' - 11.25' little to some f Sand
11.25–13			Grey Brown f SAND, some silt trace Clay
13–38	s, s, s, s	11 15 19; 9 12 18; 10 14 13; 4 9 10	Grey White fm SAND, trace to little Silt @ 15' - 16.5' Sand is Brown Black
38			BOTTOM OF BORING 38'

Construction



Sheet 1 of 1

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-21

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.
GEOLOGIST: J. DiNUNZIO
DATE: 8-15-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 28'

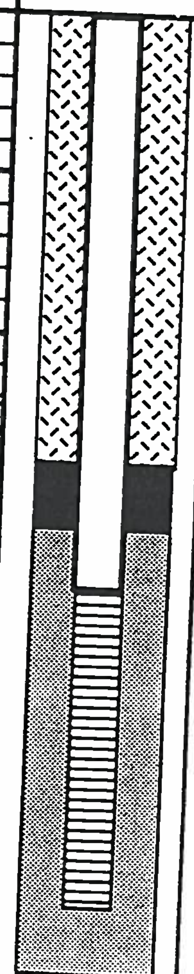
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK · BENTONITE · GROUT · SCREEN · CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	G		FILL (black gravel, asphalt, cinders, fmc sand)
	G		Dark Grey Black Silty CLAY, trace fm Sand
5	G		
	G		
10			
	s	6 10 16	Grey Clayey SILT, trace to little f Sand
15			Brown Grey f SAND & SILT, trace Clay
	s	4 10 4	Grey Brown Silty CLAY, little f Sand
			White Grey fmc SAND, trace to little Silt
20	s	5 9 11	
25	s	3 7 12	
30			BOTTOM OF BORING 30'
35			

Construction



Sheet 1 of 1

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-22

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-15-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 28'

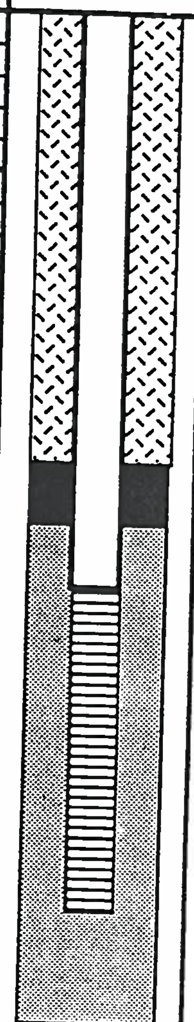
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	s	4 10 9	FILL (Black Brown m Gravel and Sand, little Silt, trace brick fragments)
	s	2 2 3	Black Brown Grey Silty CLAY, trace f Sand
5	s	2 3 2	
	s	2 2 2	
10	s	2 1 2	
	s	2 2 3	
15	s	2 1 2	Dark Grey - Grey SILT & CLAY
20	s	2 2 4	Grey Green Clayey SILT
25	s	6 4 7	Grey Brown Green mc SAND @ 25' - 26.5' trace to little silt, trace wood fibers @ 30' - 31.5' some silt, trace wood fibers
30	s	6 10 11	
			BOTTOM OF BORING 31.5'
35			

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-23

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-15-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 22'

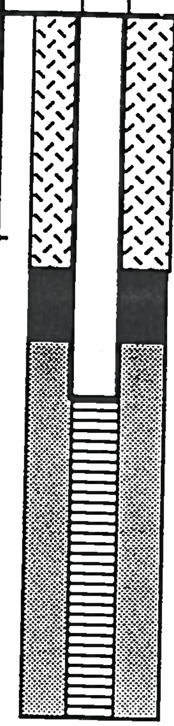
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-

Depth	Sample	SPT Blow Counts	Description
	s	4 7 3	FILL (cinders, little Silt, little fm Sand, and f gravel, tar in bottom 2")
	s	1 3 4	Brown SILT & CLAY, trace f Sand
5	s	2 4 6	Brown Silty CLAY
	s	8 7 8	Brown f SAND, trace Silt
10	s	7 8 7	Brown f SAND & CLAY & SILT
	s	5 7 7	Grey mf SAND, trace silt
15	s	4 5 4	
20	s	no recov	
			BOTTOM OF BORING 22'
25			
30			
35			

Construction



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KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-24

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.
GEOLOGIST: J. DiNUNZIO
DATE: 8-11-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 32'

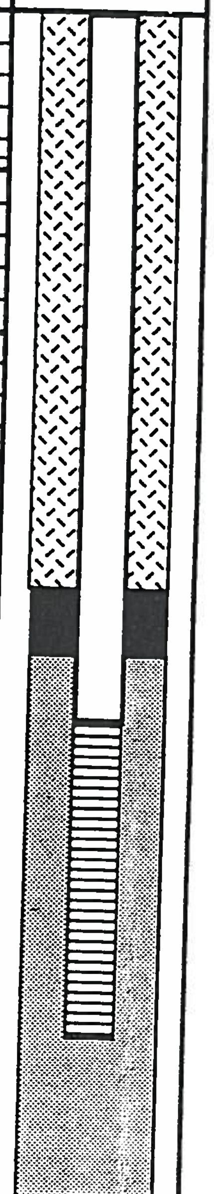
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	s	18 21 10	FILL (asphalt,gravel, Black Brown Silty Clay, f Sand)
	s	2 2 5	Black Grey Silty CLAY, trace f Sand
5	s	2 5 7	Grey to Dark Brown Silty CLAY @ 5' - 9' trace f Sand @ 5' - 6.5' trace roots @ 10' - 11.5' little to some fm Sand
	s	4 4 4	
10	s	3 4 6	
	s	12 19 18	Grey White fm SAND, trace to little Silt
15	s	9 13 14	
20	s	6 8 7	
25	s	7 6 8	@ 25' - 26.5 trace silty clay, trace root fragments
30	s	4 9 11	Grey Brown mc SAND, trace Silt
		no sample	Grey Brown Silty CLAY
35			
			BOTTOM OF BORING 37'

Construction



Sheet 1 of 1

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-25

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-12-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 31'

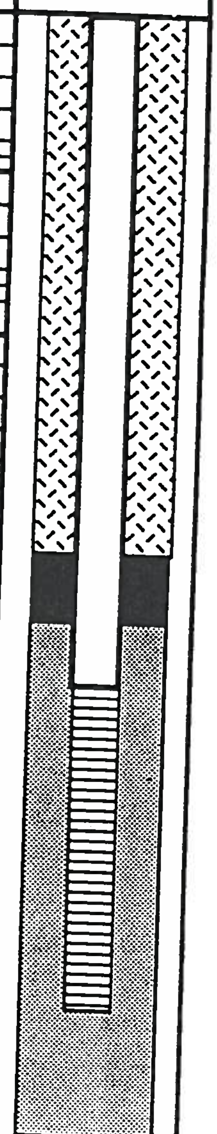
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK SCREEN
BENTONITE
GROUT CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	s	7 15 15	FILL (asphalt, Gravel, Brown Clayey Silt, trace fine Sand)
	s	2 1 3	Black Green CLAY, trace Silt, trace roots, trace f Sand
5	s	3 6 7	Grey Brown Silty CLAY
	s	5 7 9	Tan fine SAND & SILT
10			Brown Silty CLAY, trace f Sand, trace Gravel
	s	9 15 16	Green Grey to Brown to Grey fm SAND @ 10' - 10.3' contains 50 % Clayey Silt @ 10.3' - 12.5' trace to little Silt
	s	7 11 15	
15	s	8 9 12	White to white Brown fm SAND, trace to little Silt
20	s	7 10 9	
25	s	4 8 6	Red Brown fmc SAND, trace to little Brown Grey Silty Clay
30	s	no sample	
35			BOTTOM OF BORING 35'

Construction



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KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-26

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.
GEOLOGIST: S. COLTON
DATE: 8-12-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 33'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK, BENTONITE, GROUT, SCREEN, CAVE-IN

Depth	Sample	SPT Blow Counts
	s	7 9 7
	s	1 5 5
5	s	3 4 5
	s	2 3 3
10	s	5 17 18
	s	6 11 12
15	s	6 10 9
20	s	6 11 12
25	s	2 3 3
30	s	4 7 8
35		

Description

FILL (cinders, Clay, red mc Sand)

Brown CLAY & SILT, trace fm Sand

Brown Clayey SILT to SILT & CLAY, trace fm sand

Brown SILT & CLAY,

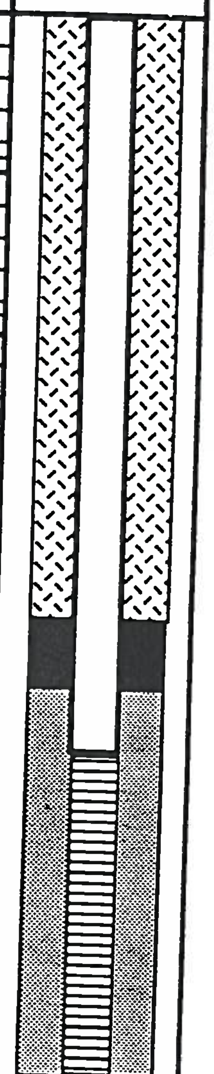
@ 10.75' Grey White f SAND

Brown Green Silty CLAY, trace f Sand

Grey mf SAND, trace Silt

BOTTOM OF BORING 33'

Construction



Sheet 1 of 1

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-27

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.
GEOLOGIST: S. COLTON
DATE: 8-12-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 23'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

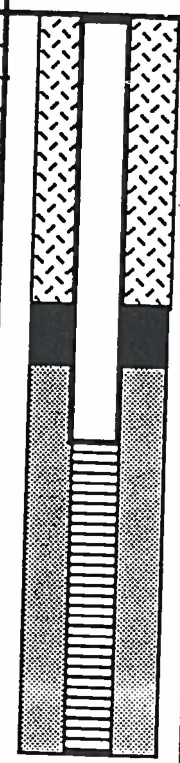
Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Sample	SPT Blow Counts	Description
s	4 3 3	Brown Clayey SILT, trace fm Sand, trace to little f gravel
s	1 2 1	Brown CLAY & SILT, trace fm Sand, trace f gravel
s	1 1 2	Brown Silty CLAY,trace fm Sand, trace f Gravel
s	3 4 6	
s	2 3 5	
s	2 4 5	
s	2 3 5	
s	4 6 7	Brown fm SAND, trace Clay
		BOTTOM OF BORING 23'

Depth: 5 10 15 20 25 30 35

Construction



Sheet 1 of 1

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-28

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-10-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 27'

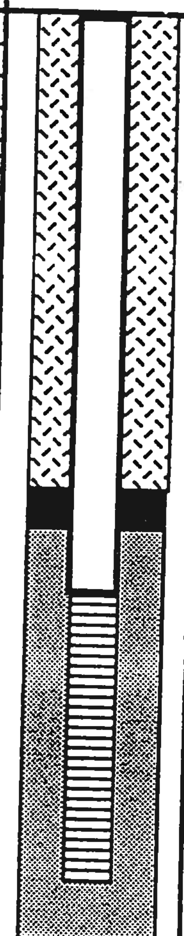
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK · BENTONITE · GROUT · SCREEN · CAVE-IN

Depth	Sample	SPT Blow Counts	Description
0–4.5	s	6 7 7	Red Brown to Brown Silty CLAY, trace to little f Sand
	s	4 4 6	
4.5–10	s	3 5 7	Brown Green CLAY, trace Silt, trace to little f Sand
	s	3 6 8	
10–15	s	6 11 13	Grey White, Red Brown fm SAND, trace to some Silt
	s	12 10 7	
15–16.5	s	6 9 11	Grey Brown m SAND, trace Silt
16.5–18.5			Red Brown Silty CLAY, some fm Sand,
18.5–29	s	4 5 6	Grey to Grey White fm SAND
	s	4 9 6	
29			BOTTOM OF BORING 29'

Construction



Sheet 1 of 1

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-29

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-10-88

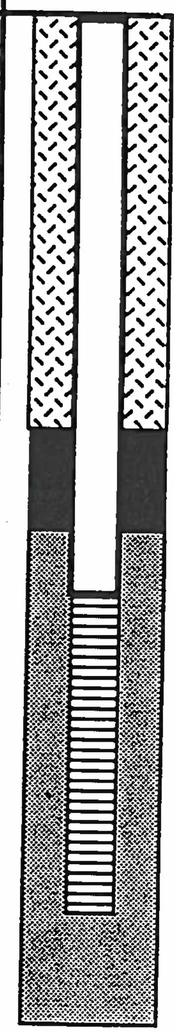
Ground Elevation:
Top of Well Elev.:
Depth of Well: 28'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK / BENTONITE / GROUT / SCREEN / CAVE-IN

Depth	Sample	SPT Blow Counts	Description	Construction
	s	4 5 9	Dark Brown Silty CLAY, trace f Sand	
	s	6 8 8	Brown CLAY to Silty Clay, trace Silt to little f Sand	
5	s	4 5 6		
	s	3 4 4		
10	s	2 3 8	Red Brown CLAY, some White Grey fm Sand, trace Silt	
	s	4 9 10	Brown to Grey fm SAND, little to some Silt, trace to little Clay	
15	s	6 5 2		
20	s	2 2 4		
25	s	no sample		
30	s	no sample		
			BOTTOM OF BORING 31.5'	
35				



Sheet 1 of 1

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-30

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: S. COLTON
DATE: 8-17-88

Ground Elevation:
Top of Well Elev.:
Depth of Well: 29'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK | BENTONITE | GROUT | SCREEN | CAVE-IN

Sample	SPT Blow Counts
s	4 6 16
s	7 10 9
s	12 19 31
s	8 10 10
s	6 10 10
s	4 8 11
s	10 11 12
s	10 11 12
s	3 7 9
s	1 3 4

Depth: 5, 10, 15, 20, 25, 30, 35

Description

Brown Clayey SILT, trace f Sand

White f SAND,trace Silt

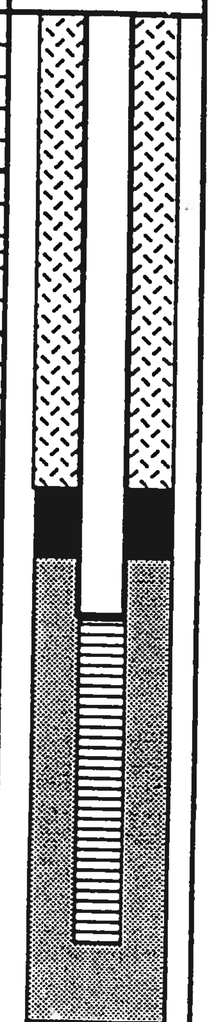
@ 12.5' - 14' Sand is fm

@ 15' - 16.5 Sand is m

@ 31.5' is Clay

BOTTOM OF BORING 31.5'

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG : R-31

PROJECT: GRENADA WOOD PLANT **LOCATION: GRENADA, MS**

DRILLING METHOD: HOLLOW STEM AUGER
DRILLER: LAYNE WESTERN COMPANY, INC.

GEOLOGIST: J. DiNUNZIO
DATE: 8-17-88

Ground Elevation: -
Top of Well Elev.:
Depth of Well: 34'

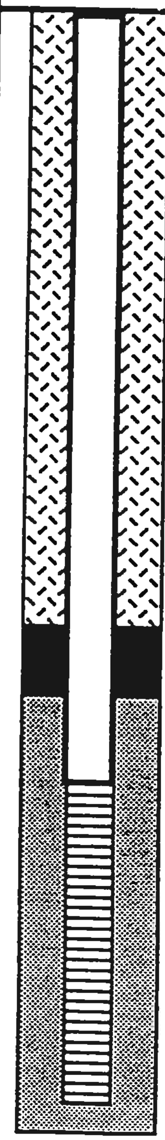
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:
Screen:

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
0–1	G		FILL (Black m Gravel,some fmc Sand, little asphalt, little Black Brown Silty Clay)
	G		Black Grey to Grey Green to Grey Brown Silty CLAY @ 3' - 5' some wood fragments @ 7.5' - 9' trace to little wood fragments @ 7.5' - 11' little to some f sand
	s	3 4 7	
10	s	4 5 15	
			Grey Green f SAND & SILT
	s	7 8 7	Grey Brown to Brown White fm SAND, trace to little Silt
15	s	5 7 8	
20	s	4 7 7	
25	s	10 10 5	Red Brown fm SAND, trace Silt, trace black organic streaks
30	s	7 5 9	Grey Brown fmc SAND, trace to little Brown Green Silty Clay
35			BOTTOM OF BORING 35'

Construction



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG (M-1)

PROJECT: Groundwater Monitoring **LOCATION: GRENADA, MISSISSIPPI**

DRILLING METHOD: MUD ROTARY
DRILLER: PSI, INC.

GEOLOGIST: S. A. COLTON
DATE: October 19, 1987

Top of Well Elev.: 215.00 feet

Depth of Well: 26 feet

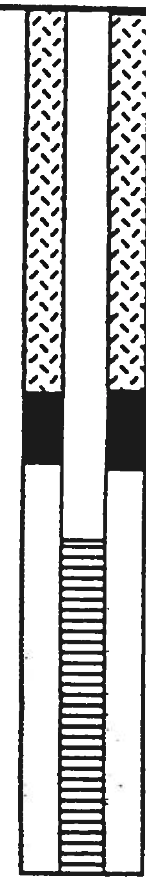
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

SAND PACK
BENTONITE
GROUT
SCREEN

Depth	Sample	SPT Blow Counts	Description
	S	4,6,4	Brown clayey SILT, tr fm sand, tr fm gravel
	S	6,6,8	
5	S	5,5,5	
	S	4,4,5	Brown SILT and CLAY to silty CLAY, tr fm sand
10	S	4,5,10	
	S	8,10,9	Tan fmc SAND, tr silt, tr clay
15	S	6,7,5	
	S	5,8,6	
20	S	7,8,11	
	S	13,18,13	
25	S	9,9,10	Brown silty CLAY, tr to little fm sand
			Bottom of Boring 26.5'
30			
35			
40			

Construction



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG (M-2)

PROJECT: Groundwater Monitoring **LOCATION:** GRENADA, MISSISSIPPI

DRILLING METHOD: MUD ROTARY
DRILLER: PSI, INC.
GEOLOGIST: S. A. COLTON
DATE: October 19, 1987

Top of Well Elev.: 215.28 feet
Depth of Well: 27.5 feet

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

SAND PACK
BENTONITE
GROUT
SCREEN

Depth	Sample	SPT Blow Counts	Description
	S	3,6,13	Brown/black mf SAND, little silt and cinders
	S	3,4,5	Brown clayey SILT to SILT and CLAY, tr fm sand
5	S	4,6,7	
	S	5,4,5	
10	S	4,5,9	
			Brown SILT and CLAY, little fm sand
	S	5,7,9	
			Brown SILT and CLAY, some fm sand
15	S	13,16,24	Tan to brown/grey fmc SAND, tr clay some silty clay (18 to 18.5 feet)
	S	5,6,15	
20	S	9,10,16	
	S	14,16,14	
25	S	8,12,16	Grey/brown SILT and CLAY, tr f sand
	S	8,8,8	
30			Bottom of Boring 29'
35			
40			

Construction

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

BORING LOG **BM-2B**

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.
GEOLOGIST: D. SMITH
DATE: OCTOBER 22, 1989

SAMPLE COLLECTION
G - grab T - shelby tube
S - splitspoon C - rock core

Depth	Sample	SPT Blow Counts	Description
	s	3 10 11	
	s	1 0 1	
5			
	s	3 3 4	
	s	1 2 3	
10	s	woh / 6" 3 4	
	s	2 1 2	
15	s	2 2 4	
	s	8 4 6	
20	s	1 1 3	SEE BORING LOGS FOR WELL M-2B FOR 0' TO 55.5'
	s	2 1 2	
25	s	3 4 5	
	s	2 2 3	
30	s	1 1 1	
35	s	1 2 2	
40	s	woh/6" 1 2	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

BORING LOG **BM-2B**

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.
GEOLOGIST: D. SMITH
DATE: OCTOBER 22, 1989

SAMPLE COLLECTION
G - grab T - shelby tube
S - splitspoon C - rock core

Depth	Sample	SPT Blow Counts	Description
45	s	3 4 4	SEE BORING LOGS FOR WELL M-2B FOR 0' TO 55.5'
50	s	1 2 2	
55	s	11 23 25	
60	s	4 12 17	Medium Grey fm SAND, trace Clay and Silt @ 59' - 64.5' trace muscovite flakes @ 59' - 60.5' trace black Sand seams
65	s	11 21 31	
70	s	14 31 33	
75	s	11 34 32	Medium Grey fmc SAND, trace Clay and Silt, trace Black Sand seams
80	s	16 33 36	Medium Grey fm SAND, trace Clay and Silt

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

BORING LOG **BM-2B**

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.
GEOLOGIST: D. SMITH
DATE: OCTOBER 22, 1989

SAMPLE COLLECTION
G - grab T - shelby tube
S - splitspoon C - rock core

Depth	Sample	SPT Blow Counts	Description
85	s	18 30 44	
90	s	26 38 50 /6"	Medium Grey fm SAND, trace Clay and Silt @ 84' - 85.5' trace Black organics (bone coal) in thin (< 1/4 " thick) seams @ 89' - 89.5' trace brown organics (patches of peat) @ 90' Tan f Sand, little Clay and Silt, trace Muscovite flakes (4" thick seam) @ 99' - 100.5' trace dark brown organics (3/8" thick peat seam)
95	s	50/6"	
100	s	30 50/6"	
			BOTTOM OF BORING 100.5'

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG M-2B

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.

GEOLOGIST: D. SMITH
DATE: OCTOBER 21, 1989

Ground Elevation:
Top of Well Elev.:
Depth of Well: 47.5'

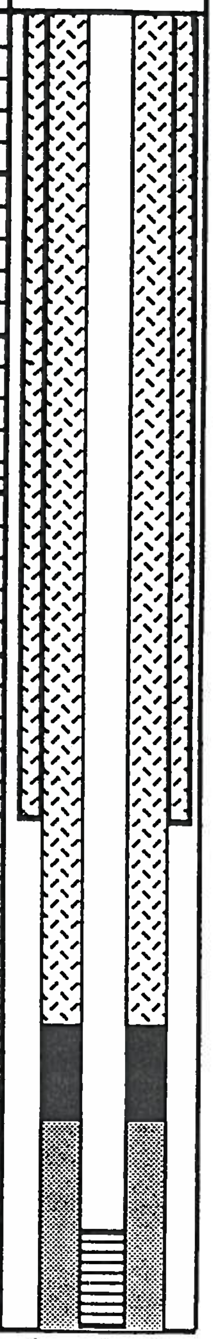
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" PVC
Screen: 2" PVC (0.010 slots)

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	s	3 10 11	Black FILL(Sand and Clay, trace Sand and Gravel)
	s	1 0 1	Light Grey CLAY & SILT, Silt and Clay to Clay and Silt trace to little Orange Brown patches / mottles @ 2.5' - 4' trace mc gravel (Black - weathering to rust colored silt) @ 10' - 11.5' trace to little vf to f Sand, trace Rust Silt patches
5	s	3 3 4	
	s	1 2 3	
10	s	woh / 6" 3 4	
	s	2 1 2	Light Grey / Rust Silty CLAY
15	s	2 2 4	Grading from Light Grey fm SAND, some clay to light Grey fm Sand, trace Orange Brown / rust streaks @ 20' - 21.5' little to some clay
	s	8 4 6	
20	s	1 1 3	
			Light Grey mc Sand
	s	2 1 2	Light Grey / Orange Brown / Red Orange Silty Clay trace Dark Brown organics(plant)
25	s	3 4 5	6" pvc casing set at 25' Hard Orange Brown CLAY & SILT @ 25' - 25.5' trace dark Brown organics (decomposed plant matter) @ 27.5' - 29' trace of f Sand @ 29.5' - 31' little vf to f Sand @ 30.5' - 31' thin (< 1/16") layers of medium Grey Clay and Silt
	s	2 2 3	
30	s	1 1 1	
35	s	1 2 2	Medium Grey Silty CLAY, trace Black organics (decomposed plant matter) grading into medium gray CLAY & SILT
40	s	woh / 6" 1 2	

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG M-2B

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.

GEOLOGIST: D. SMITH
DATE: OCTOBER 21, 1989

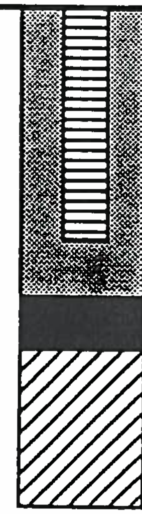
Ground Elevation:
Top of Well Elev.:
Depth of Well: 47.5'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" AVC
Screen: 2" PVC (0.010 slots)

GRAVEL PACK / BENTONITE / GROUT / SCREEN / CAVE-IN

Depth	Sample	SPT Blow Counts	Description	Construction
			SAME AS ABOVE	
45	s	3 4 4	Medium Grey fm SAND @ 44' - 45.5' some Clay @ 49' - 50.5' little Clay	
50	s	1 2 2		
			Medium Grey fmc SAND, trace Silty Clay (patch)	
55	s	11 23 25	Orange Brown fmc SAND	
			BOTTOM OF BORING 55.5'	
60			SEE BORING LOG FOR BORING BM-2B FOR 55.5' - 100.5'	
65				
70				
75				
80				



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG (M-3)

PROJECT: Groundwater Monitoring **LOCATION:** GRENADA, MISSISSIPPI

DRILLING METHOD: MUD ROTARY
DRILLER: PSI, INC.

GEOLOGIST: S. A. COLTON
DATE: October 19, 1987

Top of Well Elev.: 216.83 feet

Depth of Well: 30 feet

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

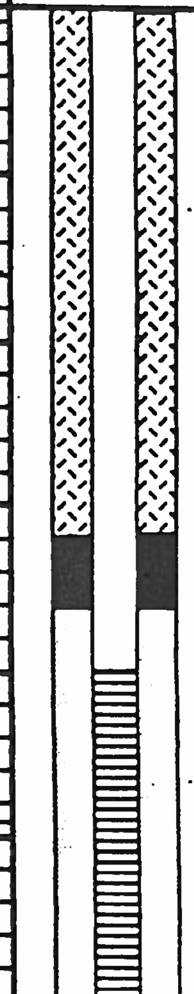
Casing Material: 2" I.D. PVC
Screen: 10' of 0.010" slotted

SAND PACK
BENTONITE
GROUT
SCREEN

Sample	SPT Blow Counts	Description
S	3,3,4	Brown clayey SILT, tr f sand
S	5,7,9	Brown silty CLAY to clayey SILT, tr f sand
S	8,11,11	
S	6,8,11	Tan fmc SAND, little clayey silt grades to tr silt at 7.7 feet (Sand and clay pocket 22.5 to 22.9 feet)
S	9,13,15	
S	7,11,13	
S	6,9,15	
S	7,13,14	
S	8,7,10	
S	8,8,11	
S	6,6,6	Brown, grey, green mottled clayey SILT to SILT and CLAY, tr f sand
S	7,7,7	
S	3,2,1	
		Bottom of Boring at 31.5 feet

Depth (feet): 5, 10, 15, 20, 25, 30, 35, 40

Construction



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG (M-4)

PROJECT: Groundwater Monitoring **LOCATION:** GRENADA, MISSISSIPPI

DRILLING METHOD:MUD ROTARY
DRILLER:PSI, INC.

GEOLOGIST: S. A. COLTON
DATE: October 19, 1987

Top of Well Elev.: 215.86 feet

Depth of Well: 27.5 feet

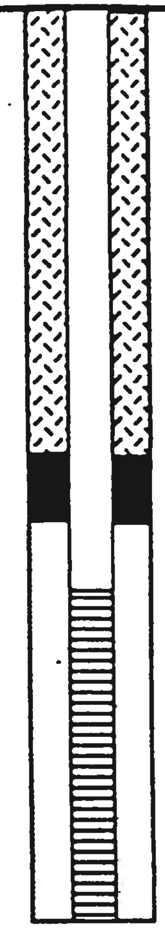
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material:2" I.D.PVC
Screen: 10' of 0.010" slotted

SAND PACK
BENTONITE
GROUT
SCREEN

Depth	Sample	SPT Blow Counts	Description
	S	1,3,4	Brown clayey SILT to silty CLAY, tr f sand
	S	13,15,18	Brown clayey SILT, tr to and f sand
5	S	14,13,11	Brown, tan f SAND, tr silt little silty clay 5.75 to 6.1 feet
	S	8,10,12	
10	S	8,10,14	
	S	9,12,13	
15	S	6,9,10	
	S	10,12,14	
20	S	7,8,11	
	S	3,3,5	Brown, grey SILT and CLAY, tr c sand
25	S	3,5,6	
	S	6,7,8	
30			Bottom of Boring 29'
35			
40			

Construction



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

WELL LOG : M-5

PROJECT: GRENADA WOOD PLANT **LOCATION:** GRENADA, MS

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING

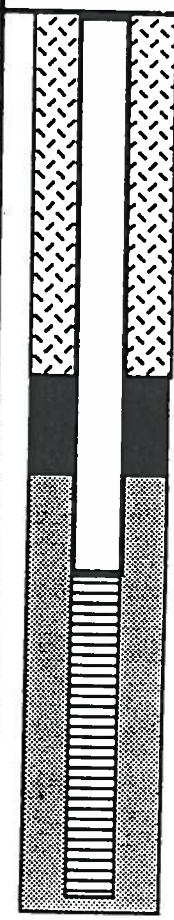
GEOLOGIST: D. SMITH
DATE: 10-19-89

Ground Elevation:
Top of Well Elev.:
Depth of Well: 27.5'

Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" PVC
Screen: 2" PVC (0.010 slots)

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description	Construction
5, 10, 15, 20, 25			SEE BORING LOG FOR BORING M-5B (no samples taken)	
30, 35			BOTTOM OF BORING 28'	

Sheet 1 of 1

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG M-5B

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.

GEOLOGIST: D. SMITH
DATE: OCTOBER 23, 1989

Ground Elevation: -
Top of Well Elev.:
Depth of Well: 50'

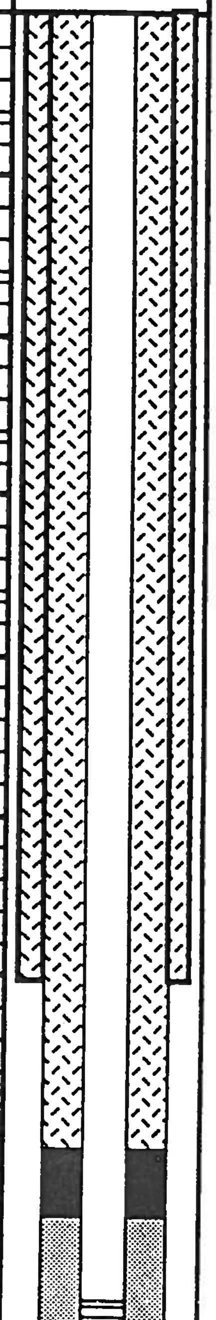
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" PVC
Screen: 2" PVC (0.010 slots)

GRAVEL PACK
BENTONITE
GROUT
SCREEN
CAVE-IN

Depth	Sample	SPT Blow Counts	Description
	s	5 14 12	FILL(Brown orange Sand and Gravel, trace slag)
			Brown SILT some Clay
5	s	2 3 3	Orqnge Brown CLAY & SILT
10	s	1 2 3	Light gray Brown to light Grey / Orange Brown mottled f SAND, some Clay, trace organics (decomposed plant material)
15	s	2 3 4	Light Grey CLAY & SILT , trace Silty Clay (lense) @ 15' - 15.8' trace Orange Brown Clay and Silt @ 15.8' - 16.5' trace vf Sand
20	s	5 14 14	Light Grey Tan mc SAND, trace f Sand and Silt
25	s	8 11 12	Orange Brown Silty CLAY, trace light Grey Silty Clay (mottles)
30	s	2 3 2	6" PVC casing set at 30' Medium Grey Silty CLAY @ 29.5' - 31' trace Orange Brown mottles
35	s	woh/6" 1 2	
40		woh/18"	

Construction



KEYSTONE ENVIRONMENTAL RESOURCES, INC.

WELL LOG M-5B

PROJECT: GWQA - ASH PILE **LOCATION: GRENADA, MS**

DRILLING METHOD: MUD ROTARY
DRILLER: LAW ENGINEERING, INC.

GEOLOGIST: D. SMITH
DATE: OCTOBER 23, 1989

Ground Elevation:
Top of Well Elev.:
Depth of Well: 50'

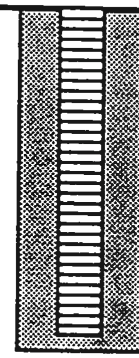
Sample Collection
G-grab T-shelby tube
S-splitspoon C-rock core

Casing Material: 2" PVC
Screen: 2" PVC (0.010 slots)

GRAVEL PACK, BENTONITE, GROUT, SCREEN, CAVE-IN

Depth	Sample	SPT Blow Counts	Description
			SAME AS ABOVE
45	s	woh / 6" 1 3	Medium Grey Orange Brown mottled vf SAND, some Clay
50	s	2 2 4	Medium grey mc SAND, trace medium gray silty Clay (patches)
			BOTTOM OF BORING 50.5'
55			
60			
65			
70			
75			
80			

Construction



MONITORING WELL LOG

PROJECT Grenada, Miss. Sprayfield

WELL NO. SF-1

DRILLING METHOD HSA

GEOLOGIST C.A. Cramer

DRILLER PSI

DATE 8/21/85

GROUND ELEVATION ____

TOP OF WELL 212.74

DEPTH OF WELL (ft) ____

GROUND WATER DEPTH (ft):

AT COMPLETION ____

AFTER ____ HOURS ____

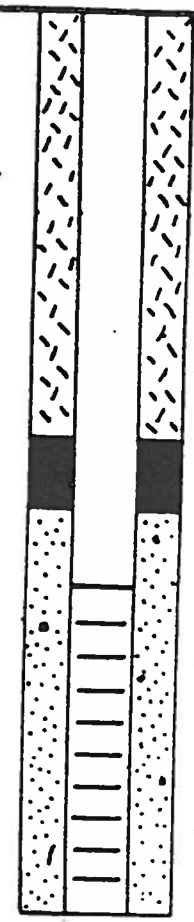
GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC

SCREEN 10' 0.010 slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Brown silty CLAY, tr gravel, tr roots, moist
5		Light gray and brown mottled silty CLAY, tr silt pockets, tr organics, moist
10		
15		Rust to orange, and light gray mottled silty CLAY, some organic stains, tr concretions (m gravel), moist
20		Gray f SAND and SILT, tr clay, moist to wet
		Gray to Rust f SAND, little silt, tr clay, wet
25		Gray silty CLAY, tr sand, wet
		Gray SILT and f SAND, wet
30		Rust to black f SAND, tr silt, wet
35		

CONSTRUCTION



MONITORING WELL LOG

PROJECT Grenada, Miss. Sprayfield

WELL NO. SF-2

DRILLING METHOD HSA

GEOLOGIST C.A. Cramer

DRILLER PSI

DATE 8/22/85

GROUND ELEVATION ______

TOP OF WELL 211.04

DEPTH OF WELL (ft) ______

GROUND WATER DEPTH (ft):

AT COMPLETION ______

AFTER ____ HOURS ______

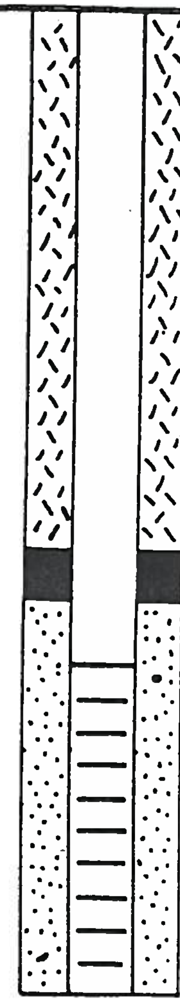
GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL 2" PVC

SCREEN 10' 0.010 slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Light brown silty CLAY, some roots, moist
		Light brown and gray mottled clayey SILT, tr roots, moist
5		Brown and white silty CLAY, fractured, dry
		Tan clayey SILT, tr white silt pockets, moist
10		Light gray and rust CLAY and SILT, moist
15		White, tan, and rust f SAND, tr to some silt, moist
20		Tan mf SAND, little silt, wet
25		Blue gray silty CLAY,wet
		Tan to gray mf SAND, little silt, wet
30		
35		

CONSTRUCTION



SHEET 1 OF 1

MONITORING WELL LOG

PROJECT: Grenada, Miss. Sprayfield
WELL NO.: SF-3
DRILLING METHOD: HSA
GEOLOGIST: C.A. Cramer
DRILLER: PSI
DATE: 8/22/85

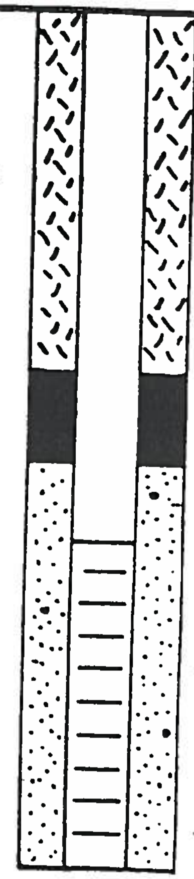
GROUND ELEVATION:
TOP OF WELL: 211.09
DEPTH OF WELL (ft):

GROUND WATER DEPTH (ft):
AT COMPLETION:
AFTER ___ HOURS:

GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL: 2" PVC
SCREEN: 10' 0.010" slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Brown to gray clayey SILT, some roots, moist	
5		Tan and gray mottled silty CLAY, tr organic stains, moist	
10		Rust and gray mottled CLAY and SILT, tr f sand, moist	
15		White f SAND and SILT, moist	
20		Rust, tan and white laminated mf SAND, tr silt, gray silty clay lens, 15-15.5', 19.5-20', tr sand, moist	
25		Tan to gray f SAND, little to some silt, wet	
30		Tan mf SAND, tr silt, wet	
35			



MONITORING WELL LOG

PROJECT Grenada, Miss. Sprayfield

WELL NO. SF-4

DRILLING METHOD HSA

GEOLOGIST C.A. Cramer

DRILLER PSI

DATE 8/23/85

GROUND ELEVATION

TOP OF WELL 212.19

DEPTH OF WELL (ft)

GROUND WATER DEPTH (ft):

AT COMPLETION

AFTER ____ HOURS

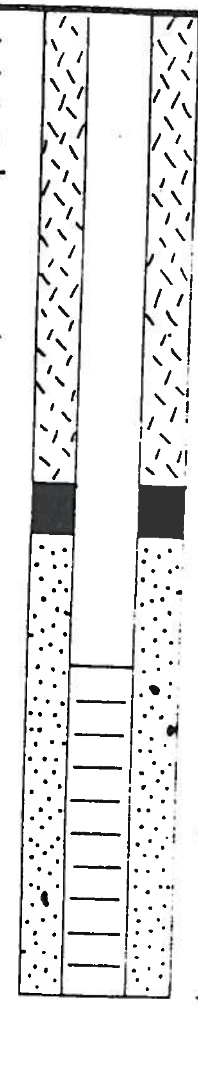
GRAVEL PACK
BENTONITE
BACK FILL
CONCRETE
SCREEN

CASING MATERIAL

SCREEN

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION
		Brown silty CLAY,some organics, tr sand, moist
5		Brown and tan mottled clayey SILT, tr roots, tr organic stains, moist
10		Light gray and orange mottled, SILT and CLAY, come c sand size black concretions, moist
15		White, tan, and rust laminatedf SAND to mf SAND, tr silt, moist
20		Tan to gray silty CLAY, moist to wet
25		Gray f SAND and SILT, wet
		Rust and tan f SAND, little silt, tr clay, wet
30		
35		

CONSTRUCTION



KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

Boring Log: B-1

Project: Grenada Wood Plant **Location:** Grenada, MS

Drilling Method: HOLLOW STEM AUGER
Driller: LAYNE-WESTERN COMPANY, INC.
Geologist: D. SMITH
Date: 3 AUGUST, 1988

Sample collection
G-grab T-shelby tube
S-splitspoon C-rock core

Strata Depth	Sample Depth	Blow Count	Description
	S	6 8 8	FILL (orange-brown SILT, some sand and gravel)
	S	3 5 5	Orange-brown/rust mottled CLAY AND SILT, Trace organics (decomposed)
	S	3 6 7	Stiff orange-brown/rust/gray mottled CLAY AND SILT to SILT AND CLAY, trace organics (decomposed)
5	S	3 5 6	
	S	3 5 6	
	S	2 5 6	
10	S	2 5 5	
			Bottom of Boring at 10.5 feet
15			
20			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

Boring Log: B-2

Project: Grenada Wood Plant **Location:** Grenada, MS

Drilling Method: HOLLOW STEM AUGER
Driller: LAYNE-WESTERN COMPANY, INC.
Geologist: D. SMITH
Date: 24 AUGUST, 1988

Sample collection
G-grab T-shelby tube
S-splitspoon C-rock core

Strata Depth	Sample Depth	Blow Count	Description
	S	3 4 5	Light brown CLAY AND SILT, rust/gray mottles
	S	3 5 6	Light gray/rust/~~orange~~-brown mottled CLAY AND SILT
	S	3 5 4	@ 4.5-6 feet trace decomposed organics
5	S	2 5 6	
	S	3 5 8	Stiff orange-brown/gray mottled SILTY CLAY
	S	3 4 5	
10	S	3 5 6	
			Orange-brown/gray mottled f SAND @ 10.5 feet light gray m SAND
			Bottom of Boring at 10.5 feet
15			
20			

APPENDIX E-3
HISTORICAL GROUNDWATER ELEVATIONS

TABLE 1

SUMMARY OF 1988 GROUNDWATER ELEVATIONS (1) (2)

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

Well	Top of Casing Elevation	Depth to Groundwater 02/17/88	Groundwater Elevation 02/17/88	Depth to Groundwater 04/13/88	Groundwater Elevation 04/13/88	Depth to Groundwater 07/25/88	Groundwater Elevation 07/25/88	Depth to Groundwater 11/21/88	Groundwater Elevation 11/21/88
R-1	210.81	24.93	185.88	24.71	186.10	25.35	185.46	20.29	190.52
R-2	209.26	23.39	185.87	23.11	186.15	23.97	185.29	24.32	184.94
R-3	206.96	21.37	185.59	21.05	185.91	21.94	185.02	22.27	184.69
R-4	206.06	20.52	185.54	20.21	185.85	21.08	184.98	21.22	184.84
R-5	211.84	25.84	186.00	25.58	186.26	26.39	185.45	26.79	185.05
R-5B	212.18	NM	--	NM	--	NM	--	26.84	185.34
R-6	213.04	27.29	185.75	27.04	186.00	28.87	184.17	26.30	186.74
R-7	210.98	25.31	185.67	24.95	186.03	25.93	185.05	25.92	185.06
R-8	214.53	28.91	185.62	28.01	186.52	29.52	185.01	29.89	184.64
R-8B	208.98	23.35	185.63	23.03	185.95	23.97	185.01	24.31	184.67
R-9	213.66	27.65	186.01	27.67	185.99	28.61	185.05	28.98	184.68
R-9C	216.00	25.46	190.54	25.20	190.80	26.13	189.87	26.23	189.77
R-9D	216.07	26.10	189.97	25.84	190.23	26.79	189.28	26.95	189.12
R-10	208.78	19.65	189.13	19.39	189.39	19.80	188.98	19.86	188.92
R-10B	208.94	22.43	186.51	22.14	186.80	23.30	185.64	23.03	185.91
R-11	203.74	18.14	185.60	17.81	185.93	18.71	185.03	18.83	184.91
R-12	200.71	14.81	185.90	14.35	186.36	15.22	185.49	15.73	184.98
R-12B	201.28	NM	--	NM	--	NM	--	16.08	185.20
R-13	216.69	NM	--	NM	--	NM	--	29.59	187.10
R-16	199.44	NM	--	NM	--	NM	--	14.35	185.09
R-17	213.03	NM	--	NM	--	NM	--	27.79	185.24
R-18	212.82	NM	--	NM	--	NM	--	NM	--
R-19	212.77	NM	--	NM	--	NM	--	23.35	189.42
R-20	214.10	NM	--	NM	--	NM	--	26.85	187.25
R-21	211.89	NM	--	NM	--	NM	--	24.64	187.25
R-22	213.19	NM	--	NM	--	NM	--	22.30	190.89
R-23	205.50	NM	--	NM	--	NM	--	16.75	188.75
R-24	211.76	NM	--	NM	--	NM	--	25.61	186.15
R-25	211.54	NM	--	NM	--	NM	--	25.60	185.94
R-26	211.85	NM	--	NM	--	NM	--	26.13	185.72
R-27	210.05	NM	--	NM	--	NM	--	22.23	187.82
R-28	207.89	NM	--	NM	--	NM	--	16.73	191.16
R-29	206.78	NM	--	NM	--	NM	--	15.70	191.08
R-30	210.55	NM	--	NM	--	NM	--	24.37	186.18
R-31	214.09	NM	--	NM	--	NM	--	27.20	186.89
SF-1	212.74	26.72	186.02	25.68	187.06	26.02	186.72	26.35	186.39
SF-2	211.04	25.21	185.83	24.90	186.14	25.68	185.36	25.98	185.06
SF-3	211.09	25.25	185.84	24.97	186.12	25.45	185.64	25.92	185.17
SF-4	212.19	26.30	185.89	25.92	186.27	26.42	185.77	26.95	185.24
M-1	215.00	19.01	195.99	19.03	195.97	19.85	195.15	19.35	195.65
M-2	215.28	22.69	192.59	21.91	193.37	22.72	192.56	24.73	190.55
M-3	216.83	22.44	194.39	22.34	194.49	22.67	194.16	22.69	194.14
M-4	215.86	20.72	195.14	20.57	195.29	20.99	194.87	19.54	196.32

NOTES:

(1) All elevations are in feet above mean sea level and referenced to USGS datum.
(2) Wells R-5B, R-12B and R-13 through R-31 were installed in August, 1988.
(3) NM indicates water level not measured.

TABLE 1

SUMMARY OF 1989 GROUNDWATER ELEVATIONS (1)

BEAZER MATERIALS AND SERVICES, INC.
GRENADA, MISSISSIPPI

Well	Top of Casing Elevation(1)	Depth to Groundwater (feet) 2-12-89	Groundwater Elevation(1) (feet) 2-12-89	Depth to Groundwater (feet) 6-20-89	Groundwater Elevation(1) (feet) 6-20-89	Depth to Groundwater (feet) 9-18-89	Groundwater Elevation(1) (feet) 9-18-89	Depth to Groundwater (feet) 12-12-89	Groundwater Elevation(1) (feet) 12-12-89
R-1	210.81	25.02	185.79	NM	—	NM	—	NM	—
R-1R	210.87	NM(2)	—	24.11	186.76	24.11	186.76	—	186.25
R-2	209.26	23.52	185.74	22.36	186.90	22.59	186.67	23.07	186.19
R-3	206.96	21.40	185.56	20.29	186.67	20.56	186.40	21.03	185.93
R-4	206.06	21.59	184.47	19.42	186.64	19.67	186.39	20.14	185.92
R-5	211.84	25.94	185.90	24.98	186.86	25.04	186.80	25.50	186.34
R-5B	212.18	26.11	186.07	24.98	187.20	25.26	186.92	25.69	186.49
R-6	213.04	27.42	185.62	22.78	190.26	26.50	186.54	26.44	186.60
R-7	210.98	25.41	185.57	24.26	186.72	24.53	186.45	24.98	186.00
R-8	214.53	29.04	185.49	27.49	187.04	28.14	186.39	27.58	186.95
R-8B	208.98	23.32	185.66	22.25	186.73	NM	—	23.59	185.39
R-9	213.66	28.14	185.52	26.98	186.68	27.23	186.43	26.60	187.06
R-9C	216.00	25.57	190.43	24.43	191.57	24.75	191.25	25.16	190.84
R-9D	216.07	26.10	189.97	25.06	191.01	25.50	190.57	25.79	190.28
R-10	208.78	19.42	189.36	18.86	189.92	18.86	189.92	19.87	188.91
R-10B	208.94	22.45	186.49	21.37	187.57	NM	—	22.73	186.21
R-11	203.74	18.20	185.54	17.00	186.74	17.33	186.41	16.79	186.95
R-12	200.71	14.78	185.93	13.32	187.39	13.81	186.90	14.44	186.27
R-12B	201.28	15.01	186.27	14.06	187.22	14.47	186.81	14.84	186.44
R-13	216.69	31.62	185.07	29.48	187.21	29.40	187.29	29.97	186.72
R-16	199.44	11.00	188.44	8.84	190.60	12.90	186.54	13.06	186.38
R-17	213.03	27.05	185.98	25.90	187.13	26.06	186.97	26.53	186.50
R-18	212.82	26.90	185.92	25.22	187.60	25.45	187.37	26.44	186.38
R-19	212.77	23.84	188.93	22.66	190.11	22.29	190.48	22.73	190.04
R-20	214.10	26.69	187.41	25.94	188.16	25.51	188.59	26.01	188.09
R-21	211.89	24.40	187.49	23.56	188.33	27.11	184.78	23.57	188.32
R-22	213.19	21.21	191.98	20.52	192.67	22.36	190.83	21.92	191.27
R-23	205.50	16.05	189.45	15.07	190.43	15.43	190.07	15.69	189.81
R-24	211.76	25.29	186.47	24.28	187.48	24.04	187.72	24.51	187.25
R-25	211.54	25.03	186.51	24.03	187.51	NM	—	24.17	187.37
R-26	211.85	25.40	186.45	24.56	187.29	NM	—	24.69	187.16
R-27	210.05	20.31	189.74	26.55	183.50	19.55	190.50	20.25	189.80
R-28	207.89	15.70	192.19	14.31	193.58	15.58	192.31	15.65	192.24
R-29	206.78	14.54	192.24	13.23	193.55	14.65	192.13	14.61	192.17
R-30	210.55	23.26	187.29	22.15	188.40	22.95	187.60	23.36	187.19
R-31	214.09	25.66	188.43	24.52	189.57	25.73	188.36	26.24	187.85
SF-1	212.74	26.21	186.53	25.61	187.13	25.17	187.57	25.43	187.31
SF-2	211.04	25.54	185.50	24.68	186.36	24.48	186.56	24.81	186.23
SF-3	211.09	28.29	182.80	24.57	186.52	24.33	186.76	25.67	185.42
SF-4	212.19	26.89	185.30	25.66	186.53	25.30	186.89	26.61	185.58
M-1	215.00	18.65	196.35	17.60	197.40	18.27	196.73	18.39	196.61
M-2	215.28	23.73	191.55	22.10	193.18	21.91	193.37	22.07	193.21
M-2B	215.25	NM	—	NM	—	NM	—	26.92	188.33
M-3	216.83	22.32	194.51	21.35	195.48	21.26	195.57	21.56	195.27
M-4	215.86	20.50	195.36	19.35	196.51	19.50	196.36	19.82	196.04
M-5	214.37	NM	—	NM	—	NM	—	23.90	190.47
M-5B	214.50	NM	—	NM	—	NM	—	27.87	186.63

NOTES:

(1) All elevations are in feet above mean sea level.
(2) NM indicates water level not measured.
(3) Well R-1 was replaced with well R-1R in March 1989.
(4) Wells M-2B, M-5 and M-5B were installed in October 1989.
(5) Wells R-6, R-8, R-8B, R-9, R-25 and R-26 were repaired in October 1989.

TABLE 1

SUMMARY OF 1990 GROUNDWATER ELEVATIONS

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet)	JAN. 7, 1990 DEPTH TO GROUNDWATER (feet)	JAN. 7, 1990 GROUNDWATER ELEVATION (feet)	JUNE 26, 1990 DEPTH TO GROUNDWATER (feet)	JUNE 26, 1990 GROUNDWATER ELEVATION (feet)	SEPT. 17, 1990 DEPTH TO GROUNDWATER (feet)	SEPT. 17, 1990 GROUNDWATER ELEVATION (feet)	DEC. 10, 1990 DEPTH TO GROUNDWATER (feet)	DEC. 10, 1990 GROUNDWATER ELEVATION (feet)
R-1R	210.87	24.62	186.25	23.40	187.47	23.73	187.14	25.02	185.85
R-2	209.26	22.96	186.30	21.76	187.50	23.02	186.24	23.58	185.68
R-3	206.96	20.85	186.11	18.75	188.21	21.00	185.96	21.54	185.42
R-4	206.06	20.09	185.97	18.88	187.18	20.09	185.97	20.63	185.43
R-5	211.84	25.51	186.33	24.29	187.55	25.36	186.48	25.94	185.90
R-5B	212.18	25.69	186.49	24.50	187.68	25.75	186.43	26.05	186.13
R-6	213.04	26.45	186.59	25.43	187.61	NM	NM	NM	NM
R-7	210.98	24.94	186.04	24.73	186.25	24.97	186.01	25.46	185.52
R-8	214.53	27.52	187.01	26.30	188.23	27.58	186.95	28.06	186.47
R-8B	208.98	23.64	185.34	22.35	186.63	23.59	185.39	24.09	184.89
R-9	213.66	26.63	187.03	25.31	188.35	26.94	186.72	27.07	186.59
R-9C	216.00	25.12	190.88	23.92	192.08	25.18	190.82	25.64	190.36
R-9D	216.07	25.75	190.32	24.52	191.55	25.83	190.24	26.29	189.78
R-10	208.78	19.49	189.29	18.08	190.70	19.04	189.74	19.64	189.14
R-10B	208.94	22.25	186.69	21.20	187.74	22.59	186.35	22.63	186.31
R-11	203.74	17.73	186.01	16.52	187.22	17.83	185.91	18.33	185.41
R-12	200.71	14.41	186.30	13.06	187.65	14.30	186.41	14.95	185.76
R-12B	201.28	14.75	186.53	13.76	187.52	14.81	186.47	15.35	185.93
R-13	216.69	30.03	186.66	28.80	187.89	29.94	186.75	30.48	186.21
R-16	199.44	11.53	187.91	11.63	187.81	12.81	186.63	13.68	185.76
R-17	213.03	26.50	186.53	25.30	187.73	26.45	186.58	27.00	186.03
R-18	212.82	26.34	186.48	25.18	187.64	26.42	186.40	26.99	185.83
R-19	212.77	22.83	189.94	21.79	190.98	22.35	190.42	22.97	189.80
R-20	214.10	26.09	188.01	25.32	188.78	25.55	188.55	26.28	187.82
R-21	211.89	23.65	188.24	22.65	189.24	22.29	189.60	24.02	187.87
R-22	213.19	21.36	191.83	21.34	191.85	22.23	190.96	22.00	191.19
R-23	205.50	15.56	189.94	14.67	190.83	15.53	189.97	15.52	189.98
R-24	211.76	24.55	187.21	23.37	188.39	24.20	187.56	24.90	186.86
R-25	211.54	24.25	187.29	23.05	188.49	23.85	187.69	24.56	186.98
R-26	211.85	24.70	187.15	23.48	188.37	24.49	187.36	23.96	187.89
R-27	210.05	20.07	189.98	19.36	190.69	20.33	189.72	20.62	189.43
R-28	207.89	15.07	192.82	14.52	193.37	16.47	191.42	16.43	191.46
R-29	206.78	13.94	192.84	13.58	193.20	15.49	191.29	15.48	191.30
R-30	210.55	23.17	187.38	22.10	188.45	23.53	187.02	23.76	186.79
R-31	214.09	26.03	188.06	24.51	189.58	26.58	187.51	26.76	187.33
SF-1	212.74	25.50	187.24	24.56	188.18	25.02	187.72	25.47	187.27
SF-2	211.04	24.83	186.21	24.58	186.46	24.55	186.49	25.03	186.01
SF-3	211.09	24.73	186.36	23.40	187.69	24.28	186.81	24.88	186.21
SF-4	212.19	25.76	186.43	24.46	187.73	NM	NM	NM	NM
M-1	215.00	18.33	196.67	17.62	197.38	18.35	196.65	18.55	196.45
M-2	215.28	22.07	193.21	21.50	193.78	21.42	193.86	21.89	193.39
M-2B	215.25	26.74	188.51	25.80	189.45	27.25	188.00	27.23	188.02
M-3	216.83	21.53	195.30	20.45	196.38	20.99	195.84	21.46	195.37
M-4	215.86	19.76	196.10	18.64	197.22	19.36	196.50	19.82	196.04
M-5	214.37	22.47	191.90	21.78	192.59	NM	NM	22.17	192.20
M-5B	214.50	26.74	187.76	25.69	188.81	NM	NM	27.41	187.09

NOTES:

1) NM - indicates water levels not measured.
2) All elevations are in feet above mean sea level.

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

TABLE 1

SUMMARY OF 1991 GROUNDWATER ELEVATIONS

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)
		JANUARY 14, 1991		APRIL 8, 1991	
R-1R	210.87	24.66	186.21	23.96	186.91
R-2	209.26	23.08	186.18	22.19	187.07
R-3	206.96	21.00	185.96	20.14	186.82
R-4	206.06	20.18	185.88	19.27	186.79
R-5	211.84	25.55	186.29	24.81	187.03
R-5B	212.18	25.56	186.62	24.74	187.44
R-6	213.04	26.68	186.36	25.83	187.21
R-7	210.98	24.86	186.12	24.09	186.89
R-8	214.53	27.49	187.04	26.70	187.83
R-8B	208.98	23.44	185.54	22.67	186.31
R-9	213.66	26.47	187.19	25.69	187.97
R-9C	216.00	25.01	190.99	24.26	191.74
R-9D	216.07	25.64	190.43	24.88	191.19
R-10	208.78	19.39	189.39	18.89	189.89
R-10B	208.94	21.82	187.12	20.17	188.77
R-11	203.74	17.77	185.97	16.86	186.88
R-12	200.71	14.55	186.16	13.31	187.40
R-12B	201.28	14.75	186.53	13.95	187.33
R-13	216.69	30.13	186.56	29.24	187.45
R-16	199.44	11.89	187.55	9.72	189.72
R-17	213.03	26.63	186.40	25.77	187.26
R-18	212.82	26.38	186.44	25.60	187.22
R-19	212.77	NM	—	22.50	190.27
R-20	214.10	26.22	187.88	25.72	188.38
R-21	211.89	23.80	188.09	23.34	188.55
R-22	213.19	20.73	192.46	20.75	192.44
R-23	205.50	14.95	190.55	14.61	190.89
R-24	211.76	NM	—	NM	—
R-25	211.54	24.39	187.15	23.77	187.77
R-26	211.85	24.78	187.07	23.95	187.90
R-27	210.05	20.33	189.72	19.82	190.23
R-28	207.89	15.53	192.36	14.74	193.15
R-29	206.78	14.13	192.65	13.60	193.18
R-30	210.55	23.03	187.52	22.23	188.32
R-31	214.09	25.54	188.55	24.89	189.20
SF-1	212.74	25.46	187.28	25.26	187.48
SF-2	211.04	24.76	186.28	24.21	186.83
SF-3	211.09	24.75	186.34	24.19	186.90
SF-4	212.19	25.80	186.39	25.24	186.95
M-1	215.00	17.99	197.01	18.22	196.78
M-2	215.28	21.90	193.38	21.74	193.54
M-2B	215.25	26.53	188.72	25.60	189.65
M-3	216.83	21.44	195.39	21.24	195.59
M-4	215.86	19.66	196.20	19.44	196.42
M-5	214.37	22.21	192.16	22.12	192.25
M-5B	214.50	26.50	188.00	25.67	188.83

NOTES:

(1) All elevations are in feet above mean sea level, and referenced to USGS datum.
(2) NM – indicates water level not measured.

TABLE 1 (continued)

SUMMARY OF 1991 GROUNDWATER ELEVATIONS

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)
		JULY 15, 1991		NOVEMBER 21, 1991	
R-1R	210.87	23.16	187.71	24.33	186.54
R-2	209.26	21.72	187.54	22.88	186.38
R-3	206.96	19.74	187.22	20.86	186.10
R-4	206.06	18.72	187.34	19.94	186.12
R-5	211.84	24.30	187.54	25.22	186.62
R-5B	212.18	24.20	187.98	25.42	186.76
R-6	213.04	25.21	187.83	26.04	187.00
R-7	210.98	23.55	187.43	24.79	186.19
R-8	214.53	26.13	188.40	27.41	187.12
R-8B	208.98	22.15	186.83	23.39	185.59
R-9	213.66	25.10	188.56	26.36	187.30
R-9C	216.00	23.75	192.25	24.98	191.02
R-9D	216.07	24.40	191.67	25.63	190.44
R-10	208.78	18.10	190.68	19.24	189.54
R-10B	208.94	21.07	187.87	22.20	186.74
R-11	203.74	16.37	187.37	17.65	186.09
R-12	200.71	12.84	187.87	14.36	186.35
R-12B	201.28	13.55	187.73	14.68	186.60
R-13	216.69	28.55	188.14	29.80	186.89
R-16	199.44	9.02	190.42	13.33	186.11
R-17	213.03	25.08	187.95	26.34	186.69
R-18	212.82	24.98	187.84	26.25	186.57
R-19	212.77	21.50	191.27	22.39	190.38
R-20	214.10	24.67	189.43	25.54	188.56
R-21	211.89	22.34	189.55	23.08	188.81
R-22	213.19	19.76	193.43	22.57	190.62
R-23	205.50	19.32	186.18	15.14	190.36
R-24	211.76	NM	—	24.11	187.65
R-25	211.54	22.88	188.66	23.76	187.78
R-26	211.85	23.43	188.42	24.28	187.57
R-27	210.05	19.77	190.28	20.43	189.62
R-28	207.89	15.03	192.86	16.19	191.70
R-29	206.78	14.09	192.69	15.21	191.57
R-30	210.55	22.63	187.92	23.37	187.18
R-31	214.09	25.26	188.83	26.44	187.65
SF-1	212.74	24.66	188.08	24.61	188.13
SF-2	211.04	23.98	187.06	24.47	186.57
SF-3	211.09	23.79	187.30	24.38	186.71
SF-4	212.19	24.75	187.44	25.37	186.82
M-1	215.00	17.62	197.38	18.25	196.75
M-2	215.28	21.09	194.19	21.53	193.75
M-2B	215.25	25.74	189.51	27.10	188.15
M-3	216.83	20.28	196.55	21.08	195.75
M-4	215.86	18.61	197.25	19.48	196.38
M-5	214.37	21.48	192.89	21.81	192.56
M-5B	214.50	25.56	188.94	26.99	187.51

NOTES:

(1) All elevations are in feet above mean sea level, and referenced to USGS datum.
(2) NM – indicates water level not measured.

TABLE 1

SUMMARY OF 1992 GROUNDWATER ELEVATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)
		FEBRUARY 3, 1992 (1st Qtr)		MAY 4, 1992 (2nd Qtr)	
R-1R	210.87	24.14	186.73	24.00	186.87
R-2	209.26	22.60	186.66	22.47	186.79
R-3	206.96	20.55	186.41	20.40	186.56
R-4	206.06	19.63	186.43	19.52	186.54
R-5	211.84	25.07	186.77	24.91	186.93
R-5B	212.18	25.13	187.05	25.02	187.16
R-6	213.04	26.10	186.94	25.68	187.36
R-7	210.98	24.49	186.49	24.39	186.59
R-8	214.53	27.10	187.43	26.97	187.56
R-8B	208.98	23.08	185.90	22.98	186.00
R-9	213.66	26.05	187.61	25.94	187.72
R-9C	216.00	24.67	191.33	24.57	191.43
R-9D	216.07	25.31	190.76	25.21	190.86
R-10	208.78	19.31	189.47	18.50	190.28
R-10B	208.94	21.70	187.24	21.75	187.19
R-11	203.74	17.33	186.41	17.22	186.52
R-12	200.71	14.05	186.66	13.78	186.93
R-12B	201.28	14.44	186.84	14.41	186.87
R-13	216.69	29.60	187.09	29.95	186.74
R-16	199.44	11.63	187.81	11.47	187.97
R-17	213.03	26.11	186.92	26.00	187.03
R-18	212.82	25.95	186.87	25.80	187.02
R-19	212.77	22.54	190.23	22.45	190.32
R-20	214.10	25.70	188.40	25.27	188.83
R-21	211.89	23.31	188.58	23.15	188.74
R-22	213.19	22.12	191.07	22.10	191.09
R-23	205.50	14.85	190.65	14.78	190.72
R-24	211.76	24.17	187.59	24.82	186.94
R-25	211.54	23.81	187.73	24.51	187.03
R-26	211.85	24.07	187.78	24.14	187.71
R-27	210.05	20.08	189.97	20.04	190.01
R-28	207.89	15.48	192.41	15.24	192.65
R-29	206.78	14.38	192.40	13.94	192.84
R-30	210.55	22.99	187.56	22.92	187.63
R-31	214.09	25.91	188.18	25.80	188.29
SF-1	212.74	24.67	188.07	24.58	188.16
SF-2	211.04	24.29	186.75	24.09	186.95
SF-3	211.09	24.32	186.77	24.16	186.93
SF-4	212.19	25.39	186.80	25.21	186.98
M-1	215.02	18.47	196.55	18.59	196.43
M-2	215.30	21.63	193.67	21.76	193.54
M-2B	215.32	26.46	188.86	26.63	188.69
M-3	216.84	21.30	195.54	21.41	195.43
M-4	215.79	19.64	196.15	19.70	196.09
M-5	214.45	21.92	192.53	22.07	192.38
M-5B	214.58	26.46	188.12	26.50	188.08
M-6	----	----	----	----	----
M-6B	----	----	----	----	----
M-7	----	----	----	----	----
M-7B	----	----	----	----	----
M-8	----	----	----	----	----
M-8B	----	----	----	----	----

NOTES:
(1) All elevations are in feet above mean sea level, and referenced to USGS datum.
(2) NM - indicates water level not measured.
(3) Wells M-6, M-6B, M-7, M-7B, M-8 and M-8B were installed in August 1992 and were not sampled until third quarter 1992.

CHESTER ENVIRONMENTAL

TABLE 1

SUMMARY OF 1992 GROUNDWATER ELEVATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)	DEPTH TO GROUNDWATER (feet)	GROUNDWATER ELEVATION (feet/msl)
		SEPTEMBER 14, 1992 (3rd Qtr)		OCTOBER 14-15, 1992 (4th Qtr)	
R-1R	210.87	24.91	185.96	24.86	186.01
R-2	209.26	NM	—	NM	—
R-3	206.96	NM	—	21.31	185.65
R-4	206.06	NM	—	20.42	185.64
R-5	211.84	NM	—	25.78	186.06
R-5B	212.18	NM	—	25.85	186.33
R-6	213.04	NM	—	NM	—
R-7	210.98	25.34	185.64	25.31	185.67
R-8	214.53	27.95	186.58	27.90	186.63
R-8B	208.98	23.91	185.07	23.89	185.09
R-9	213.66	26.89	186.77	26.91	186.75
R-9C	216.00	25.53	190.47	25.48	190.52
R-9D	216.07	26.17	189.90	26.13	189.94
R-10	208.78	19.60	189.18	19.56	189.22
R-10B	208.94	NM	—	NM	—
R-11	203.74	NM	—	18.09	185.65
R-12	200.71	NM	—	14.78	185.93
R-12B	201.28	NM	—	15.15	186.13
R-13	216.69	NM	—	30.30	186.39
R-16	199.44	NM	—	NM	—
R-17	213.03	NM	—	26.84	186.19
R-18	212.82	NM	—	26.68	186.14
R-19	212.77	NM	—	23.00	189.77
R-20	214.10	NM	—	26.21	187.89
R-21	211.89	NM	—	23.76	188.13
R-22	213.19	NM	—	NM	—
R-23	205.50	NM	—	15.29	190.21
R-24	211.76	NM	—	NM	—
R-25	211.54	NM	—	NM	—
R-26	211.85 <	NM	—	NM	—
R-27	210.05	NM	—	20.72	189.33
R-28	207.89	NM	—	16.55	191.34
R-29	206.78	NM	—	15.64	191.14
R-30	210.55	NM	—	NM	—
R-31	214.09	NM	—	26.61	187.48
SF-1	212.74	NM	—	25.11	187.63
SF-2	211.04	NM	—	24.96	186.08
SF-3	211.09	NM	—	24.94	186.15
SF-4	212.19	NM	—	25.99	186.20
M-1	215.02	19.01	196.01	18.96	196.06
M-2	215.30	22.19	193.11	22.12	193.18
M-2B	215.32	27.44	187.88	27.46	187.86
M-3	216.84	21.89	194.95	21.87	194.97
M-4	215.79	20.21	195.58	20.17	195.62
M-5	214.45	22.49	191.96	22.53	191.92
M-5B	214.58	27.44	187.14	27.38	187.20
M-6	212.67	21.22	191.45	21.14	191.53
M-6B	212.83	25.96	186.87	25.83	187.00
M-7	213.39	19.71	193.68	19.65	193.74
M-7B	213.26	24.65	188.61	24.54	188.72
M-8	214.11	19.25	194.86	19.29	194.82
M-8B	213.88	25.43	188.45	24.86	189.02

NOTES:
(1) All elevations are in feet above mean sea level, and referenced to USGS datum.
(2) NM indicates not measured.
(3) Wells M-6, M-6B, M-7, M-7B, M-8 and M-8B were installed in August 1992 and were not sampled until third quarter 1992.

CHESTER ENVIRONMENTAL

TABLE 1

SUMMARY OF 1993 GROUNDWATER ELEVATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet above MSL)	MARCH 2, 1993 (1st QTR) DEPTH TO GROUNDWATER (feet)	MARCH 2, 1993 (1st QTR) GROUNDWATER ELEVATION (feet above MSL)	JUNE 1, 1993 (2nd QTR) DEPTH TO GROUNDWATER (feet)	JUNE 1, 1993 (2nd QTR) GROUNDWATER ELEVATION (feet above MSL)
R-1R	210.87	24.18	186.69	23.98	186.89
R-2	209.26	NM	---	NM	---
R-3	206.96	NM	---	NM	---
R-4	206.06	NM	---	NM	---
R-5	211.84	NM	---	24.51	187.33
R-5B	212.18	NM	---	NM	---
R-6	213.04	NM	---	NM	---
R-7	210.98	24.39	186.59	24.08	186.90
R-8	214.53	27.02	187.51	26.88	187.65
R-8B	208.98	22.96	186.02	22.74	186.24
R-9	213.66	25.98	187.68	25.63	188.03
R-9C	216.00	24.54	191.46	24.36	191.64
R-9D	216.07	25.18	190.89	24.96	191.11
R-10	208.78	19.16	189.62	18.89	189.89
R-10B	208.94	21.42	187.52	NM	---
R-11	203.74	NM	---	NM	---
R-12	200.71	13.94	186.77	13.29	187.42
R-12B	201.28	14.24	187.04	NM	---
R-13	216.69	29.59	187.10	28.98	187.71
R-16	199.44	11.79	187.65	8.71	190.73
R-17	213.03	26.05	186.98	25.52	187.51
R-18	212.82	25.88	186.94	25.25	187.57
R-19	212.77	22.84	189.93	22.20	190.57
R-20	214.10	25.85	188.25	25.63	188.47
R-21	211.89	23.47	188.42	23.21	188.68
R-22	213.19	21.40	191.79	21.24	191.95
R-23	205.50	14.53	190.97	14.31	191.19
R-24	211.76	NM	---	NM	---
R-25	211.54	NM	---	NM	---
R-26	211.85	NM	---	NM	---
R-27	210.05	NM	---	NM	---
R-28	207.89	15.18	192.71	15.06	192.83
R-29	206.78	13.98	192.80	14.02	192.76
R-30	210.55	NM	---	NM	---
R-31	214.09	25.17	188.92	24.89	189.20
SF-1	212.74	25.03	187.71	24.64	188.10
SF-2	211.04	24.85	186.19	NM	---
SF-3	211.09	NM	---	NM	---
SF-4	212.19	NM	---	NM	---
M-1	215.02	18.78	196.24	18.47	196.55
M-2	215.30	22.22	193.08	21.93	193.37
M-2B	215.32	26.15	189.17	NM	---
M-3	216.84	21.99	194.85	21.65	195.19
M-4	215.79	20.12	195.67	19.79	196.00
M-5	214.45	22.58	191.87	22.34	192.11
M-5B	214.58	26.18	188.40	NM	---
M-6	212.67	20.99	191.68	NM	---
M-6B	212.83	24.96	187.87	NM	---
M-7	213.39	19.05	194.34	NM	---
M-7B	213.26	23.86	189.40	NM	---
M-8	214.11	19.30	194.81	NM	---
M-8B	213.88	23.68	190.20	NM	---
R-42	214.89	NM	---	21.21	193.68
R-43	216.13	NM	---	NM	---
R-44	214.58	NM	---	NM	---

NOTES:

1) All elevations are in feet above mean sea level, and referenced to USGS datum.
2) NM indicates not measured.

TABLE 1

SUMMARY OF 1993 GROUNDWATER ELEVATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet above MSL)	AUGUST 16, 1993 (3rd QTR) DEPTH TO GROUNDWATER (feet)	AUGUST 16, 1993 (3rd QTR) GROUNDWATER ELEVATION (feet above MSL)	NOVEMBER 21, 1993 (4th QTR) DEPTH TO GROUNDWATER (feet)	NOVEMBER 21, 1993 (4th QTR) GROUNDWATER ELEVATION (feet above MSL)
R-1R	210.87	24.15	186.72	24.68	186.19
R-2	209.26	22.68	186.58	23.15	186.11
R-3	206.96	20.65	186.31	21.10	185.86
R-4	206.06	19.70	186.36	20.17	185.89
R-5	211.84	NM	---	25.57	186.27
R-5B	212.18	25.22	186.96	25.65	186.53
R-6	213.04	25.86	187.18	26.33	186.71
R-7	210.98	24.60	186.38	25.07	185.91
R-8	214.53	27.21	187.32	27.68	186.85
R-8B	208.98	23.18	185.80	23.64	185.34
R-9	213.66	26.14	187.52	26.64	187.02
R-9C	216.00	24.79	191.21	25.23	190.77
R-9D	216.07	25.43	190.64	25.86	190.21
R-10	208.78	19.17	189.61	19.69	189.09
R-10B	208.94	21.94	187.00	22.11	186.83
R-11	203.74	17.45	186.29	17.87	185.87
R-12	200.71	NM	---	14.60	186.11
R-12B	201.28	14.61	186.67	14.95	186.33
R-13	216.69	29.78	186.91	30.34	186.35
R-16*	199.44	13.30	186.14	13.57	185.87
R-17	213.03	26.15	186.88	26.64	186.39
R-18	212.82	26.02	186.80	26.54	186.28
R-19	212.77	22.28	190.49	22.76	190.01
R-20	214.10	25.49	188.61	26.07	188.03
R-21	211.89	23.07	188.82	23.62	188.27
R-22	213.19	22.95	190.24	22.57	190.62
R-23	205.50	14.65	190.85	14.89	190.61
R-24	211.76	NM	---	NM	---
R-25	211.54	24.69	186.85	24.70	186.84
R-26	211.85	NM	---	NM	---
R-27	210.05	20.34	189.71	20.84	189.21
R-28	207.89	16.26	191.63	16.72	191.17
R-29	206.78	15.31	191.47	15.68	191.10
R-30	210.55	NM	---	23.62	186.93
R-31	214.09	25.90	188.19	26.51	187.58
SF-1	212.74	15.31	197.43	25.28	187.46
SF-2	211.04	24.85	186.19	24.97	186.07
SF-3	211.09	NM	---	25.03	186.06
SF-4	212.19	25.57	186.62	26.12	186.07
M-1	215.02	18.96	196.06	19.13	195.89
M-2	215.30	22.12	193.18	22.60	192.70
M-2B	215.32	26.86	188.46	27.18	188.14
M-3	216.84	21.93	194.91	22.45	194.39
M-4	215.79	20.21	195.58	20.74	195.05
M-5	214.45	22.42	192.03	22.66	191.79
M-5B	214.58	26.77	187.81	27.18	187.40
M-6	212.67	NM	---	21.45	191.22
M-6B	212.83	NM	---	25.82	187.01
M-7	213.39	NM	---	20.08	193.31
M-7B	213.26	NM	---	24.78	188.48
M-8	214.11	NM	---	NM	---
M-8B	213.88	NM	---	NM	---
R-42	214.89	NM	---	NM	---
R-43	216.13	NM	---	NM	---
R-44	214.58	NM	---	NM	---

NOTES:

1) All elevations are in feet above mean sea level, and referenced to USGS datum.
2) Well R-30 and SF-3 could not be located due to overgrown weeds/shrubs.
3) During the third quarter sampling event, Well R-16A contained light and dense phase non-aqueous liquids, but not of measurable thickness.
4) NM indicates not measured.

TABLE 1 (Cont.)

SUMMARY OF 1994 GROUNDWATER ELEVATIONS
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI

WELL	TOP OF CASING ELEVATION (feet msl)	MARCH 21,1994 DEPTH TO GROUNDWATER (feet)	MARCH 21,1994 GROUNDWATER ELEVATION (feet msl)	JUNE 7,1994 DEPTH TO GROUNDWATER (feet)	JUNE 7,1994 GROUNDWATER ELEVATION (feet msl)	AUGUST 30, 1994 DEPTH TO GROUNDWATER (feet)	AUGUST 30, 1994 GROUNDWATER ELEVATION (feet msl)	NOVEMBER 15, 1994 DEPTH TO GROUNDWATER (feet)	NOVEMBER 15, 1994 GROUNDWATER ELEVATION (feet msl)
M-1	215.02	19.06	195.96	19.27	195.75	18.86	196.16	18.45	196.57
M-2	215.30	22.58	192.72	22.43	192.87	22.33	192.97	22.34	192.96
M-2B	215.32	26.27	189.05	26.01	189.31	26.61	188.71	25.98	189.34
M-3	216.84	22.31	194.53	22.25	194.59	22.10	194.74	22.10	194.74
M-4	215.79	20.52	195.27	20.50	195.29	20.29	195.50	20.23	195.56
M-5	214.45	22.80	191.65	22.55	191.90	22.53	191.92	22.56	191.89
M-5B	214.58	26.27	188.31	25.85	188.73	26.55	188.03	26.00	188.58
M-6	212.67	21.48	191.19	21.23	191.44	21.30	191.37	21.35	191.32
M-6B	212.83	24.81	188.02	24.58	188.25	25.06	187.77	24.52	188.31
M-7	213.39	20.03	193.36	19.89	193.50	20.02	193.37	19.97	193.42
M-7B	213.26	23.62	189.64	23.39	189.87	24.06	189.20	23.41	189.85
M-8	214.11	19.78	194.33	19.42	194.69	19.70	194.41	19.68	194.43
M-8B	213.88	23.88	190.00	23.59	190.29	24.28	189.60	23.59	190.29
R-1R	210.87	24.17	186.70	24.28	186.59	23.98	186.89	23.81	187.06
R-2	209.26	22.96	186.30	22.71	186.55	22.48	186.78	22.23	187.03
R-3	206.96	20.99	185.97	20.74	186.22	20.44	186.52	20.16	186.80
R-4	206.06	20.07	185.99	19.95	186.11	19.49	186.57	19.21	186.85
R-5	211.84	25.01	186.83	24.90	186.94	24.90	186.94	24.71	187.13
R-5B	212.18	25.22	186.96	24.89	187.29	25.04	187.14	24.72	187.46
R-6	213.04	25.70	187.34	25.48	187.56	25.68	187.36	25.40	187.64
R-7	210.98	24.40	186.58	24.15	186.83	24.38	186.60	24.09	186.89
R-8	214.53	27.00	187.53	26.80	187.73	27.00	187.53	26.71	187.82
R-8B	208.98	22.98	186.00	22.63	186.35	22.97	186.01	22.67	186.31
R-9	213.66	25.98	187.68	25.70	187.96	25.93	187.73	25.65	188.01
R-9C	216.00	24.58	191.42	24.32	191.68	24.55	191.45	24.24	191.76
R-9D	216.07	25.20	190.87	24.90	191.17	25.19	190.88	24.88	191.19
R-10	208.78	19.15	189.63	18.99	189.79	18.75	190.03	18.69	190.09
R-10B	208.94	21.48	187.46	21.11	187.83	21.57	187.37	21.09	187.85
R-11	203.74	17.56	186.18	17.22	186.52	17.24	186.50	16.92	186.82
R-12	200.71	14.56	186.15	14.16	186.55	13.92	186.79	14.69	186.02
R-12B	201.28	14.80	186.48	14.65	186.63	14.43	186.85	10.59	190.69
R-13	216.69	29.69	187.00	29.43	187.26	29.64	187.05	29.37	187.32
R-16	199.44	13.48	185.96	13.19	186.25	12.74	186.70	22.84	176.60
R-17	213.03	26.00	187.03	25.84	187.19	25.98	187.05	25.79	187.24
R-18	212.82	25.79	187.03	25.63	187.19	25.84	186.98	25.60	187.22
R-19	212.77	22.51	190.26	22.34	190.43	22.06	190.71	21.95	190.82
R-20	214.10	25.29	188.81	24.98	189.12	25.22	188.88	25.25	188.85
R-21	211.89	NM	—	NM	211.89	22.85	189.04	22.84	189.05
R-22	213.19	21.72	191.47	21.49	191.70	22.61	190.58	22.73	190.46
R-23	205.50	14.76	190.74	14.48	191.02	14.53	190.97	14.07	191.43
R-24	211.76	NM	—	NM	211.76	NM	—	NM	—
R-25	211.54	NM	—	NM	211.54	23.58	187.96	23.48	188.06
R-26	211.85	NM	—	NM	211.85	NM	—	NM	—
R-27	210.05	20.45	189.60	20.08	189.97	20.13	189.92	19.95	190.10
R-28	207.89	15.84	192.05	15.61	192.28	15.92	191.97	15.27	192.62
R-29	206.78	14.72	192.06	14.54	192.24	14.86	191.92	14.16	192.62
R-30	210.55	22.83	187.72	22.54	188.01	23.07	187.48	13.74	196.81
R-31	214.09	25.54	188.55	25.21	188.88	25.67	188.42	13.91	200.18
R-39B	—	NM	—	11.76	—	NM	—	NM	—
R-39C	—	NM	—	11.12	—	NM	—	NM	—
R-42	214.89	NM	—	NM	—	NM	—	NM	—
R-43	216.13	NM	—	NM	—	NM	—	NM	—
R-44	214.58	NM	—	NM	—	NM	—	NM	—
SF-1	212.74	25.13	187.61	24.96	187.78	24.77	187.97	24.71	188.03
SF-2	211.04	NM	—	NM	—	24.30	186.74	24.20	186.84
SF-3	211.09	NM	—	NM	—	NM	—	NM	—
SF-4	212.19	NM	—	NM	—	25.45	186.74	25.38	186.81

NOTES:
1. All elevations are reported in feet above mean sea level and referenced to a USGS datum.
2. NM = Not Measured.

TABLE 1

Summary of Groundwater Elevations for 1995
Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

Well	Top of Casing Elevation (feet msl)	January 24, 1995 Depth to Groundwater (feet TOC)	January 24, 1995 Groundwater Elevation (feet msl)	May 10, 1995 Depth to Groundwater (feet TOC)	May 10, 1995 Groundwater Elevation (feet msl)	August 14, 1995 Depth to Groundwater (feet TOC)	August 14, 1995 Groundwater Elevation (feet msl)	November 6, 1995 Depth to Groundwater (feet TOC)	November 6, 1995 Groundwater Elevation (feet msl)
M-1	215.02	18.31	196.71	18.38	196.64	18.29	196.73	18.84	196.18
M-2	215.30	22.16	193.14	21.90	193.40	22.05	193.25	22.05	193.25
M-2B	215.32	25.48	189.84	25.16	190.16	24.99	190.33	26.98	188.34
M-3	216.84	21.93	194.91	21.46	195.38	21.37	195.47	21.91	194.93
M-4	215.79	20.02	195.77	19.63	196.16	19.59	196.20	20.26	195.53
M-5	214.45	22.38	192.07	22.16	192.29	22.26	192.19	23.34	191.11
M-5B	214.58	25.45	189.13	25.09	189.49	25.29	189.29	25.87	188.71
M-6	212.67	21.04	191.63	20.64	192.03	20.90	191.77	21.22	191.45
M-6B	212.83	23.95	188.88	23.52	189.31	23.76	189.07	23.98	188.85
M-7	213.39	19.71	193.68	19.27	194.12	19.62	193.77	20.03	193.36
M-7B	213.26	22.80	190.46	22.46	190.80	22.64	190.62	23.08	190.18
M-8	214.11	19.22	194.89	18.50	195.61	19.08	195.03	19.32	194.79
M-8B	213.88	23.04	190.84	22.60	191.28	22.93	190.95	23.16	190.72
R-1R	210.87	23.40	187.47	22.84	188.03	23.20	187.67	23.47	187.40
R-2	209.26	21.75	187.51	NM (4)	—	21.70	187.56	22.33	186.93
R-3	206.96	19.68	187.28	19.00	187.96	19.43	187.53	19.71	187.25
R-4	206.06	18.75	187.31	18.05	188.01	18.69	187.37	18.99	187.07
R-5	211.84	24.03	187.81	23.71	188.13	23.90	187.94	24.21	187.63
R-5B	212.18	24.29	187.89	23.73	188.45	24.18	188.00	24.52	187.66
R-6	213.04	24.95	188.09	24.36	188.68	24.95	188.09	25.18	187.86
R-7	210.98	23.63	187.35	23.04	187.94	23.70	187.28	23.99	186.99
R-8	214.53	26.25	188.28	25.61	188.92	26.28	188.25	26.42	188.11
R-8B	208.98	22.21	186.77	21.61	187.37	22.29	186.69	22.38	186.60
R-9	213.66	25.21	188.45	24.56	189.10	25.22	188.44	25.36	188.30
R-9C	216.00	23.79	192.21	23.21	192.79	23.89	192.11	24.06	191.94
R-9D	216.07	24.43	191.64	23.87	192.20	24.53	191.54	24.72	191.35
R-10	208.78	18.47	190.31	17.97	190.81	18.23	190.55	18.46	190.32
R-10B	208.94	20.68	188.26	20.32	188.62	21.13	187.81	21.53	187.41
R-11	203.74	16.44	187.30	NM	—	16.13	187.61	16.52	187.22
R-12	200.71	13.13	187.58	12.42	188.29	13.02	187.69	13.36	187.35
R-12B	201.28	13.63	187.65	12.99	188.29	13.39	187.89	13.59	187.69

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TABLE 1

Summary of Groundwater Elevations for 1995
Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

Well	Top of Casing Elevation (feet msl)	January 24, 1995		May 10, 1995		August 14, 1995		November 6, 1995	
		Depth to Groundwater (feet TOC)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet msl)
R-13	216.69	28.92	187.77	28.28	188.41	28.86	187.83	29.72	186.97
R-16	199.44	8.90	190.54	9.77	189.67	8.69 (5)	190.75	9.03 (5)	190.41
R-17	213.03	25.29	187.74	24.70	188.33	25.18	187.85	25.42	187.61
R-18	212.82	25.09	187.73	24.45	188.37	24.95	187.87	25.13	187.69
R-19	212.77	21.83	190.94	21.47	191.30	21.77	191.00	22.13	190.64
R-20	214.10	25.07 (1)	189.03	24.45 (1)	189.65	24.91 (1)	189.19	25.23 (1)	188.87
R-21	211.89	22.70	189.19	22.18	189.71	22.56	189.33	22.97	188.92
R-22	213.19	20.36	192.83	21.32	191.87	20.16	193.03	20.65	192.54
R-23	205.50	25.42	180.08	13.69	191.81	25.36	180.14	25.74	179.76
R-24	211.76	NM (2)	—	NM (2)	—	NM (2)	—	NM (2)	—
R-25	211.54	22.93 (3)	188.61	23.16	188.38	22.63 (3)	188.91	23.13 (3)	188.41
R-26	211.85	NM (2)	—	NM (2)	—	NM (2)	—	NM (2)	—
R-27	210.05	19.88	190.17	19.50	190.55	19.71	190.34	20.09	189.96
R-28	207.89	14.63	193.26	14.51	193.38	14.59	193.30	14.89	193.00
R-29	206.78	13.44	193.34	13.43	193.35	13.37	193.41	13.69	193.09
R-30	210.55	22.28	188.27	21.88	188.67	22.19	188.36	22.48	188.07
R-31	214.09	24.63	189.46	24.22	189.87	24.58	189.51	24.99	189.10
R-39B	—	NM	—	NM	—	NM	—	NM	—
R-39C	—	NM	—	NM	—	NM	—	NM	—
R-42	214.89	NM	—	NM	—	NM	—	NM	—
R-43	216.13	NM	—	NM	—	NM	—	NM	—
R-44	214.58	NM	—	NM	—	NM	—	NM	—
SF-1	212.74	24.56	188.18	24.23	188.51	24.42	188.32	24.73	188.01
SF-2	211.04	23.88	187.16	NM	—	23.67	187.37	24.06	186.98
SF-3	211.09	NM	—	NM	—	NM (4)	—	NM (4)	—
SF-4	212.19	25.13	187.06	NM	—	24.98	187.21	25.13	187.06

NOTE:
(1) NAPL was measured at well R-20: 1.72' DNAPL (first quarter); 0.01' LNAPL (second quarter); 1.99' DNAPL (third quarter); and 1.90' DNAPL (fourth quarter).
(2) Well is buried.
(3) Bentonite observed in well.
(4) Well could not be located.
(5) Sheen detected on probe in well R-16A.
(6) NM = Not measured.

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TABLE 1
Summary of 1996 Groundwater Elevations
Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

Well	Top of Casing Elevation (feet msl)	First Quarter February 19, 1996 Depth to Groundwater (feet)	First Quarter February 19, 1996 Groundwater Elevation (feet msl)	Second Quarter June 5, 1996 Depth to Groundwater (feet)	Second Quarter June 5, 1996 Groundwater Elevation (feet msl)	Third Quarter August 26, 1996 Depth to Groundwater (feet)	Third Quarter August 26, 1996 Groundwater Elevation (feet msl)	Fourth Quarter November 19, 1996 Depth to Groundwater (feet)	Fourth Quarter November 19, 1996 Groundwater Elevation (feet msl)
M-1	215.02	18.82	196.20	18.72	196.30	19.12	195.90	18.86	196.16
M-2	215.30	22.36	192.94	22.06	193.24	22.24	193.06	22.34	192.96
M-2B	215.32	26.26	189.06	26.26	189.06	27.10	188.22	27.10	188.22
M-3	216.84	21.94	194.90	21.74	195.10	22.04	194.80	22.18	194.66
M-4	215.79	20.15	195.64	20.00	195.79	20.34	195.45	20.44	195.35
M-5	214.45	22.58	191.87	22.25	192.20	22.41	192.04	23.42	191.03
M-5B	214.58	26.26	188.32	22.20	192.38	27.01	187.57	26.02	188.56
M-6	212.67	21.16	191.51	20.86	191.81	21.35	191.32	21.34	191.33
M-6B	212.83	24.78	188.05	24.68	188.15	25.09	187.74	24.12	188.71
M-7	213.39	19.63	193.76	19.44	193.95	20.15	193.24	20.24	193.15
M-7B	213.26	23.52	189.74	23.53	189.73	23.74	189.52	23.19	190.07
M-8	214.11	19.30	194.81	18.89	195.22	19.27	194.84	19.37	194.74
M-8B	213.88	23.76	190.12	23.75	190.13	24.33	189.55	23.21	190.67
R-1R	210.87	23.98	186.89	23.68	187.19	24.21	186.66	23.58	187.29
R-2	209.26	22.33	186.93	22.07	187.19	22.38	186.88	22.39	186.87
R-3	206.96	20.26	186.70	20.22	186.74	22.25	184.71	19.80	187.16
R-4	206.06	19.36	186.70	19.10	186.96	19.51	186.55	19.13	186.93
R-5	211.84	24.82	187.02	24.57	187.27	25.15	186.69	24.30	187.54
R-5B	212.18	24.87	187.31	24.66	187.52	25.31	186.87	24.61	187.57
R-6	213.04	25.54	187.50	25.30	187.74	25.62	187.42	25.27	187.77
R-7	210.98	24.25	186.73	24.02	186.96	24.19	186.79	24.06	186.92
R-8	214.53	26.86	187.67	26.60	187.93	27.23	187.30	26.51	188.02
R-8B	208.98	22.81	186.17	22.59	186.39	23.23	185.75	22.53	186.45
R-9	213.66	25.82	187.84	25.56	188.10	26.19	187.47	25.47	188.19
R-9C	216.00	24.38	191.62	24.18	191.82	24.84	191.16	24.21	191.79
R-9D	216.07	25.05	191.02	24.84	191.23	25.48	190.59	24.91	191.16
R-10	208.78	19.31	189.47	18.84	189.94	19.28	189.50	18.52	190.26
R-10B	208.94	21.42	187.52	21.35	187.59	22.12	186.82	21.59	187.35
R-11	203.74	NM	NM	NM	NM	NM	NM	16.62	187.12
R-12	200.71	13.71	187.00	13.37	187.34	13.63	187.08	13.48	187.23
R-12B	201.28	14.17	187.11	14.08	187.20	14.35	186.93	13.66	187.62
R-12D		NM	NM	NM	NM	NM	NM	13.99	-13.99
R-13	216.69	29.46	187.23	29.19	187.50	29.71	186.98	29.90	186.79
R-16	199.44	10.80	188.64	12.32	187.12	12.64	186.80	NM	NM
R-17	213.03	25.83	187.20	25.61	187.42	26.23	186.80	25.46	187.57
R-18	212.82	25.66	187.16	25.43	187.39	26.24	186.58	25.23	187.59
R-19	212.77	22.44	190.33	22.06	190.71	NM	NM	23.24	189.53
R-19B		NM	NM	NM	NM	NM	NM	NM	NM
R-20	214.10	25.57	188.53	25.18	188.92	25.33	188.77	25.34	188.76
R-21	211.89	23.16	188.73	22.80	189.09	23.15	188.74	23.04	188.85
R-22	213.19	21.65	191.54	22.56	190.63	22.87	190.32	20.81	192.38
R-23	205.50	14.58	190.92	14.51	190.99	18.22	189.28	25.86	179.64
R-24	211.76	NM	NM	23.66	188.10	NM	NM	NM	NM
R-25	211.54	23.56	187.98	23.44	188.10	23.68	187.86	23.25	188.29
R-26	211.85	NM	NM	NM	NM	NM	NM	NM	NM
R-27	210.05	20.38	189.67	20.30	189.75	20.62	189.43	20.16	189.89
R-28	207.89	15.84	192.05	15.81	192.08	NM	NM	14.96	192.93
R-29	206.78	14.66	192.12	14.76	192.02	14.91	191.87	13.88	192.90
R-30	210.55	22.89	187.66	22.82	187.73	23.15	187.40	22.63	187.92
R-31	214.09	25.28	188.81	25.45	188.64	26.41	187.68	25.16	188.93
R-39B	—	NM	NM	NM	NM	NM	NM	NM	NM
R-39C	—	NM	NM	NM	NM	NM	NM	NM	NM
R-42	214.69	NM	NM	NM	NM	NM	NM	NM	NM
R-43	216.13	NM	NM	NM	NM	NM	NM	NM	NM
R-44	214.58	NM	NM	NM	NM	NM	NM	NM	NM
SF-1	212.74	24.62	188.12	23.41	189.33	23.82	188.92	24.85	187.89
SF-2	211.04	24.03	187.01	23.84	187.20	24.15	186.89	24.21	186.83
SF-3	211.09	NM	NM	NM	NM	NM	NM	NM	NM
SF-4	212.19	25.91	186.28	24.90	187.29	NM	NM	25.21	186.98

NOTES:

(1) All elevations are in feet referred to mean sea level (msl).

(2) NM = not measured.

(3) NAPL was detected in well R-20: Approximately 1.78 feet of DNAPL in first quarter and approximately 1.73 feet of DNAPL in the fourth quarter.

TABLE 1
Summary of 1997 Groundwater Elevations
Koppers Industries, Inc.
Grenada Facility
Tie Plant, Mississippi

		First Quarter January 21, 1997		Second Quarter May 5, 1997		Third Quarter July 28, 1997		Fourth Quarter October 6, 1997	
Well	Top of Casing Elevation (feet msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet msl)
M-1	215.02	18.42	196.60	17.84	197.18	18.23	196.79	18.60	196.42
M-2	215.30	22.28	193.02	21.75	193.55	21.56	193.74	21.62	193.68
M-2B	215.32	25.84	189.48	24.83	190.49	25.57	189.75	21.33	193.99
M-3	216.84	21.92	194.92	21.28	195.56	21.01	195.83	19.98	196.86
M-4	215.79	20.02	195.77	19.44	196.35	19.31	196.48	19.98	195.81
M-5	214.45	22.54	191.91	22.06	192.39	21.80	192.65	21.82	192.63
M-5B	214.58	25.88	188.70	24.84	189.74	25.42	189.16	26.20	188.38
M-6	212.67	21.15	191.52	20.51	192.16	20.23	192.44	20.43	192.24
M-6B	212.83	24.41	188.42	23.32	189.51	23.81	189.02	24.66	188.17
M-7	213.39	19.76	193.63	19.02	194.37	18.75	194.64	19.07	194.32
M-7B	213.26	23.08	190.18	22.14	191.12	22.86	190.40	23.65	189.61
M-8	214.11	19.49	194.62	18.58	195.53	18.27	195.84	18.74	195.37
M-8B	213.88	23.32	190.56	22.19	191.69	23.16	190.72	23.94	189.94
R-1R	210.87	23.90	186.97	23.09	187.78	22.84	188.03	23.36	187.51
R-2	209.26	22.01	187.25	21.31	187.95	21.30	187.96	21.99	187.27
R-3	206.96	20.11	186.85	19.22	187.74	19.22	187.74	19.93	187.03
R-4	206.06	19.20	186.86	18.31	187.75	18.28	187.78	19.25	186.81
R-5	211.84	24.77	187.07	23.88	187.96	23.74	188.10	24.31	187.53
R-5B	212.18	24.73	187.45	23.82	188.36	23.91	188.27	24.56	187.62
R-6	213.04	25.43	187.61	24.55	188.49	24.63	188.51	25.32	187.72
R-7	210.98	24.10	186.88	23.21	187.77	23.25	187.73	23.92	187.06
R-8	214.53	26.69	187.84	28.51	186.02	25.82	188.71	26.51	188.02
R-8B	208.98	22.86	186.12	21.76	187.22	21.84	187.14	22.52	186.46
R-9	213.66	25.70	187.96	24.78	188.88	24.78	188.88	25.47	188.19
R-9C	216.00	24.32	191.68	23.37	192.63	23.42	192.58	24.09	191.91
R-9D	216.07	24.94	191.13	24.02	192.05	24.08	191.99	24.74	191.33
R-10	208.78	19.07	189.71	18.53	190.25	18.21	190.57	18.75	190.03
R-10B	208.94	21.20	187.74	20.30	188.64	20.75	188.19	21.38	187.56
R-11	203.74	16.86	186.88	15.97	187.77	16.01	187.73	16.74	187.00
R-12	200.71	13.74	186.97	12.67	188.14	12.66	188.06	13.41	187.30
R-12B	201.28	14.02	187.26	13.11	188.17	13.37	187.91	14.02	187.26
R-12D		NM	NM	NM	NM	NM	NM	NM	NM
R-13	216.69	29.40	187.29	28.46	188.23	28.38	188.31	29.03	187.66
R-16	199.44	11.12	188.32	7.67	191.77	12.19	187.25	13.44	NM
R-17	213.03	25.75	187.28	24.82	188.21	24.81	188.22	25.43	187.60
R-18	** 212.56	NM	NM	24.72	187.84	24.69	187.87	25.33	187.23
R-19	212.77	22.46	190.31	21.88	190.89	21.62	191.15	21.90	190.87
R-19B		25.46	NA	24.51	NA	25.06	NA	25.79	NA
R-20	214.10	25.60	188.50	24.82	189.28	24.45	189.65	24.80	189.30
R-21	211.89	23.21	188.68	22.47	189.42	22.11	189.78	22.45	189.44
R-22	213.19	20.90	192.29	20.97	192.22	22.11	191.08	22.75	190.44
R-23	205.50	14.10	191.40	13.59	191.91	14.15	191.35	14.47	191.03
R-24	211.76	NM	NM	NM	NM	NM	NM	NM	NM
R-25	211.54	23.39	188.15	23.02	188.52	22.61	188.93	23.00	188.54
R-26	211.85	NM	NM	NM	NM	NM	NM	NM	NM
R-27	210.05	20.21	189.84	19.92	190.13	19.92	190.13	20.31	189.74
R-28	207.89	15.49	192.40	14.51	193.38	15.41	NM	16.51	191.38
R-29	206.78	14.27	192.51	13.36	193.42	14.40	192.38	15.47	191.31
R-30	210.55	22.60	187.95	21.78	188.77	22.05	188.50	22.82	187.73
R-31	214.09	24.25	189.84	23.97	190.12	24.35	189.74	25.47	188.62
R-39B	—	NM	NM	NM	NM	NM	NM	NM	NM
R-39C	—	NM	NM	NM	NM	NM	NM	NM	NM
R-42	214.89	NM	NM	NM	NM	NM	NM	NM	NM
R-43	216.13	NM	NM	NM	NM	NM	NM	NM	NM
R-44	214.58	NM	NM	NM	NM	NM	NM	NM	NM
SF-1	212.74	24.48	188.26	24.16	188.58	23.88	186.86	24.22	188.52
SF-2	211.04	23.80	187.24	23.35	187.69	23.15	187.89	23.66	187.38
SF-3	211.09	NM	NM	NM	NM	NM	NM	NM	NM
SF-4	212.19	25.25	186.94	24.63	187.56	24.41	187.78	24.86	187.33

NOTES:

(1) All elevations are in feet referred to mean sea level (msl).

(2) NM = not measured.

(3) NAPL was detected in well R-20: Approximately 1.72 feet of DNAPL in first quarter, approximately 1.80 feet of DNAPL in the second quarter, approximately 0.7 feet of DNAPL in the third quarter, and approximatley XXX feet of DNAPL in the fourth quarter.

(4) ** - Top of casing elevation was recalculated during the second quarter, after being damaged during demolition of an adjacent building.

APPENDIX E-4
A SUMMARY OF HISTORICAL ANALYTICAL RESULTS

GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT
PARAMETER: 2,3,4,6-TETRACHLOROPHENOL (ug/L)

Well #	1991 3rd Qtr. (7/17)	1991 4th Qtr. (11/21)	1992 1st Qtr. (2/5)	1992 2nd Qtr.	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)
R-10	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0
R-7	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0
R-8	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0
R-9	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0

Well #	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0	<1.0	<2.5	<2.5
R-1R	<1.0	<1.0	<2.5	<2.5
R-7	<1.0	<1.0	<2.5	<2.5
R-8	<1.0	<1.0	<2.5	<2.5
R-8B	<1.0	<1.0	<2.5	<2.5
R-9	<1.0	<1.0	<2.5	<2.5
R-9C	<1.0	<1.0	<2.5	<2.5
R-9D	<1.0	<1.0	<2.5	<2.5

Well #	1996 1st Qtr. (2/20,2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.5	<2.5	<2.0	<2.5
R-1R	<2.5	<2.5	<2.0	<2.5
R-7	<2.5	<2.5	<2.0	<2.5
R-8	<2.5	<2.5	<2.0	<2.5
R-8B	<2.5	<2.5	<2.0	<2.5
R-9	<2.5	<2.5	<2.0	<2.5
R-9C	<2.5	<2.5	<2.0	<2.5
R-9D	<2.5	<2.5	<2.0	<2.5

TABLE 2-1
Summary of Groundwater Monitoring Wells
Koppers Industries, Inc.
Grenada Facility
Grenada, Mississippi

Upgradient Wells	Point of Compliance Wells
R-1R	R-7
R-10	R-8
	R-8B
	R-9
	R-9C
	R-9D

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2,4,6-TRICHLOROPHENOL (ug/L)

	1990			1991		
Well #	2nd Qtr. (6/26)	3rd Qtr. (9/18)	4th Qtr. (12/11)	1st Qtr. (1/15)	2nd Qtr. (4/9)	3rd Qtr. (7/16)
R-10	<1.0	1.1, 24.4, 9.33	1.95, 1.62, 1.70	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0,<1.0,<1.0
R-1R	<1.0	<1.0,<1.0,<1.0	1.10, 1.51, 1.17	<1.0, <1.0, <1.0	2.41, 2.21, 3.43	<1.0,<1.0,<1.0
R-7	<1.0	<1.0, <1.0	1.51, 4.80	1.07, <1.0	1.41, 2.03	<1.0, <1.0
R-8	<1.0	<1.0, <1.0	4.10, 2.09	<1.0, <1.0	6.12, 4.38	<1.0, <1.0
R-8B	<1.0	<1.0, <1.0	2.78, 1.43	<1.0, <1.0	1.08, <1.0	<1.0, <1.0
R-9	<1.0	44.3, <1.0	2.06, 2.48	<1.0, <1.0	2.27, 2.25	<1.0, <1.0
R-9C	<1.0	<1.0, 21	5.82	1.07, <1.0	2.22, 1.55	<1.0, <1.0
R-9D	<1.0	12.3, <1.0	2.53, 2.23	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0

	1992		1993		1994		1995	
Well #	1st Qtr. (2/5)	3rd Qtr. (9/15)	1st Qtr. (3/2)	3rd Qtr. (8/17)	1st Qtr. (3/22, 3/23)	3rd Qtr. (8/30, 8/31)	1st Qtr. (1/25, 1/26)	3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-1R	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-7	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8B	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9C	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9D	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5

	1996		1997	
Well #	1st Qtr. (2/20,2/21)	3rd Qtr. (8/27,8/28)	1st Qtr. (1/21, 1/22)	3rd Qtr. (7/29, 7/30)
R-10	<2.5	<2.5	<2.0	<2.0
R-1R	<2.5	<2.5	<2.0	<2.0
R-7	<2.5	<2.5	<2.0	<2.0
R-8	<2.5	<2.5	<2.0	<2.0
R-8B	<2.5	<2.5	<2.0	<2.0
R-9	<2.5	<2.5	<2.0	<2.0
R-9C	<2.5	<2.5	<2.0	<2.0
R-9D	<2.5	<2.5	<2.0	<2.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2,4-DICHLOROPHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/15)
R-10	<0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-1R	<0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, 1.80, 1.13	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-7	0.581	<0.50, <0.50	<0.50, <0.50	<0.50, 0.776	<0.50, 0.567	<0.50, <0.50
R-8	1.06	<0.50, <0.50	<0.50, <0.50	<0.50, 0.681	4.56, 5.30	<0.50, <0.50
R-8B	0.668	<0.50, <0.50	<0.50, <0.50	1.20, 1.65	<0.50, <0.50	<0.50, <0.50
R-9	<0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	2.40, 2.66	<0.50, <0.50
R-9C	0.571	<0.50, <0.50	5.46	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9D	0.632	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-7	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0
R-8	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-8B	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9C	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9D	<1.0, <1.0	<0.5	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0

Well #	1996 1st Qtr. (2/20-21/96)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<1.0	<1.0	<1.0
R-1R	<1.0	<1.0	<1.0	<1.0
R-7	<1.0	<1.0	<1.0	<1.0
R-8	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0	<1.0	<1.0	<1.0
R-9	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0	<1.0	<1.0	<1.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2,4-DIMETHYLPHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/16)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.50	<0.50, 2.26, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-1R	<0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, 0.503, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-7	<0.50	<0.50, <0.50	<0.50, 0.787	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8	<0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8B	<0.50	0.636, <0.50	0.738, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9	<0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9C	<0.50	5.94, <0.50	<0.50	2.25, 0.952	<0.50, <0.50	<0.50, <0.50
R-9D	<0.50	<0.50, 1.41	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50

Well #	1992 1st Qtr. (2/6)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-7	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8B	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9C	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9D	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<1.0	<1.0	<1.0
R-1R	<1.0	<1.0	<1.0	<1.0
R-7	<1.0	<1.0	<1.0	<1.0
R-8	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0	<1.0	<1.0	<1.0
R-9	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0	<1.0	<1.0	<1.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2,4-DINITROPHENOL (ug/l)

Well #	1988 3rd Qtr. (7/26)	1988 4th Qtr. (9/27)	1989 1st Qtr. (2/13)	1989 2nd Qtr. (6/22)	1989 3rd Qtr. (9/20)	1989 4th Qtr. (12/14)	1990 1st Qtr. (1/19)	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (9/18, 9/19)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15, 1/16)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16, 7/17)
R-10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00
R-1R	NI	NI	NI	—	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00, <1.00	1.32, <1.00, 1.13	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00
R-7	1.32	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	1.26, 1.60	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-8	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	2.61, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-8B	<1.00	<1.00	<1.00	<1.00	—	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, 1.97	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-9	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-9C	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-9D	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-1R	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-7	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8B	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9C	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9D	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.5	<30	<2.0	<2.0
R-1R	<2.5	<30	<2.0	<2.0
R-7	<2.5	<30	<2.0	<2.0
R-8	<2.5	<30	<2.0	<2.0
R-8B	<2.5	<30	<2.0	<2.0
R-9	<2.5	<30	<2.0	<2.0
R-9C	<2.5	<30	<2.0	<2.0
R-9D	<1.0	<30	<2.0	<2.0

NI - Not Installed untile March 1989.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
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PARAMETER: 2-CHLOROPHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.50	0.834, 7.02, 4.30	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-1R	<0.50	0.556, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-7	<0.50	<0.50, <0.50	<0.50, 1.63	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8	<0.50	0.613, <0.50	1.04, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8B	<0.50	<0.50, <0.50	<0.50, 96.7	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9	<0.50	<0.50, 0.772	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9C	<0.50	36.8, 3.31	<0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9D	<0.50	1.72, 2.18	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
						<0.50, <0.50

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-7	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8B	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9C	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9D	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<1.0	<1.0	<1.0
R-1R	<1.0	<1.0	<1.0	<1.0
R-7	<1.0	<1.0	<1.0	<1.0
R-8	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0	<1.0	<1.0	<1.0
R-9	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0	<1.0	<1.0	<1.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2-METHYL-4,6-DINITROPHENOL (ug/L)

	1990			1991		
Well #	2nd Qtr. (6/26)	3rd Qtr. (9/18)	4th Qtr. (12/11)	1st Qtr. (1/15)	2nd Qtr. (4/9)	3rd Qtr. (7/16)
R-10	<1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0,<1.0,<1.0
R-1R	<1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0,<1.0,<1.0
R-7	<1.0	2.51, 3.52	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-8	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-8B	<1.0	1.33, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9C	<1.0	<1.0, 1.17	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9D	<1.0	1.12, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0

	1992		1993		1994		1995	
Well #	1st Qtr. (2/5)	3rd Qtr. (9/15)	1st. Qtr. (3/2)	3rd Qtr. (8/17)	1st. Qtr. (3/22, 3/23)	3rd Qtr. (8/30, 8/31)	1st. Qtr. (1/25, 1/26)	3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-1R	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-7	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8B	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9C	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9D	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5

	1996		1997	
Well #	1st Qtr. (2/20, 2/21)	3rd Qtr. (8/27, 8/28)	1st Qtr. (1/21, 1/22)	3rd Qtr. (7/29, 7/30)
R-10	<2.5	<2.5	<2.0	<2.0
R-1R	<2.5	<2.5	<2.0	<2.0
R-7	<2.5	<2.5	<2.0	<2.0
R-8	<2.5	<2.5	<2.0	<2.0
R-8B	<2.5	<2.5	<2.0	<2.0
R-9	<2.5	<2.5	<2.0	<2.0
R-9C	<2.5	<2.5	<2.0	<2.0
R-9D	<2.5	<2.5	<2.0	<2.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 2-NITROPHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.50	0.514, 1.40, 1.19	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50,<0.50,<0.50
R-1R	<0.50	<0.50, <0.50, 0.712	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50, <0.50	<0.50, <0.50
R-7	<0.50	<0.50, <0.50	<0.50, 0.514	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8	<0.50	1.40, 0.878	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-8B	<0.50	<0.50, 0.849	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9	<0.50	1.08, 0.823	1.40, 1.21	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9C	<0.50	10.7, <0.50	1.46	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50
R-9D	<0.50	0.504, 0.687	1.10, <0.50	<0.50, <0.50	<0.50, <0.50	<0.50, <0.50

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-7	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-8B	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9C	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0
R-9D	<1.0, <1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<1.0	<1.0	<1.0
R-1R	<1.0	<1.0	<1.0	<1.0
R-7	<1.0	<1.0	<1.0	<1.0
R-8	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0	<1.0	<1.0	<1.0
R-9	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0	<1.0	<1.0	<1.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: 4-NITROPHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/16)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0,<1.0,<1.0
R-1R	<1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0,<1.0,<1.0
R-7	<1.0	<1.0, <1.0	<1.0, 5.23	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-8	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-8B	<1.0	<1.0, <1.0	<1.0, 1.97	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9C	<1.0	<1.0, <1.0	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0
R-9D	<1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0	<1.0, <1.0

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st. Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st. Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st. Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-1R	<1.0, <1.0, <1.0	<1.0, <1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-7	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-8B	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9C	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5
R-9D	<1.0, <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5	<2.5

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.5	<2.5	<2.0	<2.0
R-1R	<2.5	<2.5	<2.0	<2.0
R-7	<2.5	<2.5	<2.0	<2.0
R-8	<2.5	<2.5	<2.0	<2.0
R-8B	<2.5	<2.5	<2.0	<2.0
R-9	<2.5	<2.5	<2.0	<2.0
R-9C	<2.5	<2.5	<2.0	<2.0
R-9D	<2.5	<2.5	<2.0	<2.0

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KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: ACENAPHTHENE (ug/l)

Well #	1988 3rd Qtr. (7/26)	1988 4th Qtr. (9/27)	1989 1st Qtr. (2/13)	1989 2nd Qtr. (6/22)	1989 3rd Qtr. (9/20)	1989 4th Qtr. (12/14)	1990 1st Qtr. (1/9)	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (9/18, 9/19)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15, 1/16)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16, 7/17)
R-10	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00
R-1R	NI	NI	NI	—	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00
R-7	<2.00	<2.00	<2.00	<2.00	<2.00	24.8	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-8	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-8B	<2.00	<2.00	<2.00	<2.00	—	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9C	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9D	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (9/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/17)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)
R-10	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-1R	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-7	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-8	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-8B	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9C	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9D	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Well #	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.0	<2.0
R-1R	<2.0	<2.0
R-7	<2.0	<2.0
R-8	<2.0	<2.0
R-8B	<2.0	<2.0
R-9	<2.0	<2.0
R-9C	<2.0	<2.0
R-9D	<2.0	<2.0

NI Not installed until March 1989.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: ACENAPHTHYLENE (ug/l)

Well #	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (9/18, 9/19)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15, 1/16)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16, 7/17)	1st Qtr. (2/5)	3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (9/17)
R-10	<2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00
R-1R	<2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00
R-7	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00
R-8	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00
R-8B	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00
R-9	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00
R-9C	<2.00	<2.00, <2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00
R-9D	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00	<2.00	<2.00

Well #	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/17)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-1R	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.6
R-8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-8B	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9C	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
R-9D	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Well #
R-10
R-1R
R-7
R-8
R-8B
R-9
R-9C
R-9D

NI - Not installed until March 1989.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BENZO(a)PYRENE(ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	0.021	<0.02, <0.02, <0.02	<0.02, <0.02, 0.038	0.260, 0.257, 0.255	0.02, 0.023, 0.027	<0.02, <0.02, <0.02
R-1R	<0.02	<0.02, <0.02, 0.052	0.032, <0.02, <0.02	0.257, 0.261, 0.255	0.021, 0.02, 0.032	<0.02, <0.02, <0.02
R-7	<0.02	<0.02, <0.02	<0.02, <0.02	0.256, 0.260	0.029, 0.034	<0.02, <0.02
R-8	<0.02	<0.02, <0.02	<0.02, <0.02	0.259, 0.255	0.0261, <0.02	<0.02, <0.02
R-8B	0.021	<0.02, <0.02	<0.02, <0.02	0.259, 0.257	0.023, 0.025	<0.02, <0.02
R-9	<0.02	<0.02, <0.02	<0.02, <0.02	0.256, 0.263	<0.02, 0.021	<0.02, <0.02
R-9C	<0.02	<0.02, <0.02	<0.02	0.253, 0.257	0.033, 0.022	<0.02, <0.02
R-9D	<0.02	<0.02, <0.02	<0.02, <0.02	0.256, 0.253	<0.02, <0.02	<0.02, <0.02

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.02, <0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02, <0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-7	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9	<0.02, 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02, <0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02	<0.02	<0.02	<0.02
R-7	<0.02	<0.02	<0.02	<0.02
R-8	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02	<0.02	<0.02	<0.02
R-9	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02	<0.02	0.025	<0.02

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BENZO(b)FLUORANTHENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/18)
R-10	0.049	0.034, 0.039, 0.075	0.07, 0.059, 0.057	0.242, 0.229, 0.228	0.032, 0.043, 0.059	<0.020, <0.020, <0.020
R-1R	0.025	<0.02, 0.035, 0.09	0.082, <0.02, <0.02	0.223, 0.242, 0.226	0.056, 0.043, 0.061	<0.020, <0.020, <0.020
R-7	<0.02	0.057, 0.054	<0.02, <0.02	0.227, 0.236	0.067, 0.071	<0.020, <0.020
R-8	<0.02	0.035, <0.02	<0.02, 0.05	0.235, 0.228	0.059, 0.04	<0.020, <0.020
R-8B	0.052	<0.02, <0.02	0.059, 0.04	0.233, 0.232	0.074, 0.072	<0.020, <0.020
R-9	<0.02	<0.02, <0.02	<0.02, <0.02	0.228, 0.252	0.029, 0.037	<0.020, <0.020
R-9C	<0.02	<0.02, <0.02	<0.02	0.220, 0.221	0.057, 0.047	<0.020, <0.020
R-9D	<0.02	<0.02, <0.02	0.023, 0.037	0.219, 0.221	0.028, 0.046	<0.020, <0.020

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/17)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	0.03, 0.03, 0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02, <0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-7	<0.02, 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9	0.02, 0.04	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02
R-9C	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02, <0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (2/20, 2/21)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02	<0.02	<0.02	<0.02
R-7	<0.02	<0.02	<0.02	<0.02
R-8	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02	<0.02	<0.02	<0.02
R-9	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02	<0.02	<0.02	<0.02

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BENZO(k)FLUORANTHENE(ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	1.16	<0.02, <0.02, 0.021	<0.02, <0.02, <0.02	0.245, 0.241 0.242	<0.02, <0.02, <0.020	<0.02, <0.02, <0.02
R-1R	<0.02	<0.02, <0.02, 0.091	<0.02, <0.02, <0.02	0.240, 0.246, 0.241	<0.02, <0.02, <0.020	<0.02, <0.02, <0.02
R-7	<0.02	<0.02, <0.02	<0.02, <0.02	0.241, 0.244	<0.02, <0.02	<0.02, <0.02
R-8	<0.02	<0.02, <0.02	<0.02, <0.02	0.243, 0.241	<0.02, <0.02	<0.02, <0.02
R-8B	<0.02	<0.02, <0.02	<0.02, <0.02	0.241, 0.242	<0.02, <0.02	<0.02, <0.02
R-9	<0.02	<0.02, <0.02	<0.02, <0.02	0.241, 0.250	<0.02, <0.02	<0.02, <0.02
R-9C	<0.02	<0.02, <0.02	<0.02	0.239, 0.239	<0.02, <0.02	<0.02, <0.02
R-9D	<0.02	<0.02, <0.02	<0.02 <0.02	0.239, 0.239	<0.02, <0.02	<0.02, <0.02

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.02 <0.02, <0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0.25
R-1R	<0.02 <0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-7	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9	<0.02, <0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02, <0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02

Well #	1996 1st Qtr. (2/20-2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02	<0.02	<0.02	<0.02
R-7	<0.02	<0.02	<0.02	<0.02
R-8	0.034	<0.02	<0.02	<0.02
R-8B	<0.02	<0.02	<0.02	<0.02
R-9	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02	<0.02	<0.02	<0.02

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BENZO(a)ANTHRACENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.02	<0.02, 0.06, <0.02	0.07, 0.059, 0.057	0.210, 0.207, 0.206	<0.02, <0.02, 0.021	0.052, 0.052, 0.057
R-1R	<0.02	<0.02, 0.077, 0.135	0.06, <0.02, <0.02	<0.02, 0.207, 0.220	0.035, <0.02, 0.026	0.048, 0.047, 0.057
R-7	<0.02	0.075, 0.066	0.032, 0.04	0.204, 0.215	<0.02, <0.02	0.049, 0.051
R-8	<0.02	0.087, <0.02	0.027, 0.055	0.218, 0.287	<0.02, <0.02	0.050, 0.046
R-8B	<0.02	<0.02, <0.02	0.046, 0.033	0.307, 0.210	0.023, 0.021	<0.020, 0.047
R-9	<0.02	0.074, 0.075	0.024, 0.032	0.271, 0.217	<0.02, 0.032	0.051, 0.064
R-9C	<0.02	<0.02, <0.02	0.038	0.211, 0.208	0.043, 0.023	<0.020, 0.045
R-9D	<0.02	<0.02, <0.02	0.023, 0.037	0.219, 0.201	0.026, <0.02	<0.02, <0.02

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.02, <0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02, <0.02, <0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
R-7	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9	<0.02, 0.04	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02
R-9C	<0.02, <0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02, <0.02	<0.02	<0.02	0.02	0.04	<0.02	<0.02	<0.02

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.02	<0.02	<0.02	<0.02
R-1R	<0.02	<0.02	<0.02	<0.02
R-7	<0.02	<0.02	<0.02	<0.02
R-8	<0.02	<0.02	<0.02	<0.02
R-8B	<0.02	<0.02	<0.02	<0.02
R-9	<0.02	<0.02	<0.02	<0.02
R-9C	<0.02	<0.02	<0.02	<0.02
R-9D	<0.02	<0.02	<0.02	<0.02

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BENZO(g,h,l)PERYLENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.05	<0.05, <0.05, <0.05	0.071, <0.05, 0.077	<0.05, <0.05, <0.05	<0.05, <0.05, <0.05	0.122, 0.109, 0.125
R-1R	<0.05	<0.05, <0.05, <0.05	<0.05, 0.1, 0.052	<0.05, 0.215, <0.05	<0.05, <0.05, 0.068	0.103, 0.100, 0.106
R-7	<0.05	<0.05, <0.05	<0.05, 0.057	<0.05, <0.05	<0.05, <0.05	0.103, 0.104
R-8	<0.05	<0.05, <0.05	<0.05, 0.07	<0.05, <0.05	<0.05, <0.05	0.100, 0.102
R-8B	<0.05	<0.05, <0.05	0.056, <0.05	<0.05, <0.05	<0.05, <0.05	0.101, 0.100
R-9	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	0.099, 0.104
R-9C	<0.05	<0.05, <0.05	<0.05	<0.05, <0.05	<0.05, <0.05	0.099, 0.100
R-9D	<0.05	<0.05, <0.05	<0.05, <0.05	<0.03, <0.05	<0.05, <0.05	<0.05, <0.05

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/27, 8/28)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.05, <0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	0.056
R-1R	<0.05, <0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-7	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-8	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-8B	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-9	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-9C	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05
R-9D	<0.05, <0.05	<0.05	<0.05	<0.03	<0.05	<0.05	<0.05	<0.05

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.05	<0.05	<0.05	<0.05
R-1R	0.25	<0.05	<0.05	<0.05
R-7	<0.05	<0.05	<0.05	<0.05
R-8	<0.05	<0.05	<0.05	<0.05
R-8B	<0.05	<0.05	<0.05	<0.05
R-9	<0.05	<0.05	<0.05	<0.05
R-9C	<0.05	<0.05	<0.05	<0.05
R-9D	<0.05	<0.05	<0.05	<0.05

GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: BIS(2-ETHYLHEXYL)PHTHALATE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<10	2.0, 2.42, 4.91	<7.5, <7.5, <7.5	<2.0, 3.79, 8.10	47.1, 3.86, 4.93	2.18, 2.35, 4.21
R-1R	<10	6.69, <2.0, <2.0	<7.5, <7.5, <7.5	2.77, 2.69, <2.0	2.77, 2.86, 2.62	2.46, 10.2, 3.00
R-7	<40	<2.0, <2.0	<7.5, <7.5	<2.0, <2.0	<2.0, 7.33	<2.0, 2.11
R-8	<2.0	6.59, 5.41	<7.5, <7.5	5.98, <2.0	7.71, 3.2	3.75, 3.11
R-8B	<40	4.66, 7.4	<7.5, <7.5	2.71, <2.0	2.62, 3.49	9.42, 15.2
R-9	<2.0	3.6, 16.2	<7.5, <7.5	17.1, <2.0	<2.0, 2.89	7.99, 4.79
R-9C	<10	<2.0, <2.0	<7.5, <7.5	2.51, <2.0	16.1, 44.4	6.05, 5.46
R-9D	<10	<2.0, <2.0	<7.5, <7.5	<2.0, 2.0	7.68, 5.98	9.83, 9.07

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/26, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<10, <10, <10	<10	<10	<94.5	<1.0	5.2	<5.0	<5.0
R-1R	<10, <10, <10	<10	<10	<94.5	<1.0	5.6	8.0	<5.0
R-7	<10, <10	<10	<10	<94.5	<1.0	3.5	<5.0	<5.0
R-8	<10, <10	<10	<10	<94.5	<1.0	2.9	<5.0	<5.0
R-8B	<10, <10	<10	<10	<94.5	<1.0	3.6	20	7.3
R-9	<10, <10	<10	<10	<94.5	<1.0	2.6	<5.0	<5.0
R-9C	<10, <10	<10	<10	<94.5	<1.0	6.0	<5.0	<5.0
R-9D	<10, <10	<10	<10	<94.5	<1.0	15	25	12.0

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<2.5	<0.10	<0.10
R-1R	<1.0	<2.5	<0.10	<0.10
R-7	<1.0	<2.5	<0.10	<0.10
R-8	<1.0	<2.5	<0.10	<0.10
R-8B	<1.0	<2.5	<0.10	<0.10
R-9	<1.0	<2.5	<0.10	<0.10
R-9C	<1.0	<2.5	<0.10	<0.10
R-9D	<1.0	<2.5	<0.10	<0.10

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: CHRYSENE(ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.15	<0.15, <0.15, <0.15	<0.15, <0.15, <0.15	0.225, 0.252 0.257	<0.15, <0.15, <0.15	<0.15, <0.15, <0.15
R-1R	<0.15	<0.15, <0.15, <0.15	<0.15, <0.15, <0.15	<0.15, 0.214, 0.235	<0.15, <0.15, <0.15	<0.15, <0.15, <0.15
R-7	<0.15	<0.15, <0.15	<0.15, <0.15	0.274, 0.251	<0.15, <0.15	<0.15, <0.15
R-8	<0.15	<0.15, <0.15	<0.15, <0.15	0.263, 0.131	<0.15, <0.15	<0.15, <0.15
R-8B	<0.15	<0.15, <0.15	<0.15, <0.15	<0.15, 0.214	<0.15, <0.15	<0.15, <0.15
R-9	<0.15	<0.15, <0.15	<0.15, <0.15	0.182, 0.307	<0.15, <0.15	<0.15, <0.15
R-9C	<0.15	<0.15, <0.15	<0.15	0.277, 0.242	<0.15, <0.15	<0.15, <0.15
R-9D	<0.15	<0.15, <0.15	<0.15 <0.15	0.271, 0.276	<0.15, <0.15	<0.15, <0.15

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.15 <0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-1R	<0.15 <0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-7	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-8	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-8B	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-9	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-9C	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
R-9D	<0.15, <0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.15	<0.15	<0.15	<0.15
R-1R	<0.15	<0.15	<0.15	<0.15
R-7	<0.15	<0.15	<0.15	<0.15
R-8	<0.15	<0.15	<0.15	<0.15
R-8B	<0.15	<0.15	<0.15	<0.15
R-9	<0.15	<0.15	<0.15	<0.15
R-9C	<0.15	<0.15	<0.15	<0.15
R-9D	<0.15	<0.15	<0.15	<0.15

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: DISSOLVED CHROMIUM (ug/L)

Well #	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<10, <10, <10	<10, <10, <10	<10, <10, <10	<10, <10, <10	<10, <10, <10
R-1R	<10, <10, <12.5	<10, <10, <10	<10, <10, <10	<10, <10, <10	10, <10, <10
R-7	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10
R-8	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10
R-8B	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10
R-9	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10
R-9C	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10
R-9D	<10, <10	<10, <10	<10, <10	<10, <10	<10, <10

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<10, <10, <10	<10	<10	<10	<10	<10	<10	<10
R-1R	<10, <10, <10	<10	<10	<10	<10	<10	<10	<10
R-7	<10, <10	<10	<10	<10	<10	<10	<10	<10
R-8	<10, <10	<10	<10	<10	<10	<10	<10	<10
R-8B	<10, <10	<10	<10	<10	<10	<10	<10	<10
R-9	<10, <10	<10	<10	<10	<10	<10	<10	<10
R-9C	<10, <10	<10	<10	<10	<10	<10	<10	<10
R-9D	<10, <10	<10	<10	<10	<10	<10	<10	<10

Well #	1996 1st Qtr. (2/20,2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<10	<10	<10	<10
R-1R	<10	<10	<10	<10
R-7	<10	<10	<10	<10
R-8	<10	<10	<10	<10
R-8B	<10	<10	<10	<10
R-9	<10	<10	<10	<10
R-9C	<10	<10	<10	<10
R-9D	<10	<10	<10	<10

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: DIBENZO(a,h)ANTHRACENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.03	<0.03, <0.03, <0.03	0.07, <0.03, 0.273	<0.03, <0.03, <0.03	<0.03, <0.03, <0.03	<0.03, <0.03, <0.03
R-1R	<0.03	<0.03, <0.03, <0.03	0.277, 0.038, 0.058	<0.03, <0.03, <0.03	0.046, <0.03, <0.03	<0.03, <0.03, <0.03
R-7	<0.03	<0.03, <0.03	0.053, 0.067	<0.03, <0.03	<0.03, <0.03	<0.03, <0.03
R-8	<0.03	<0.03, <0.03	0.077, 0.19	<0.03, <0.03	<0.03, <0.03	<0.03, <0.03
R-8B	<0.03	<0.03, <0.03	0.124, 0.066	<0.03, <0.03	<0.03, <0.03	<0.03, <0.03
R-9	<0.03	<0.03, <0.03	0.074, 0.06	<0.03, <0.03	<0.03, <0.03	0.050, 0.058
R-9C	<0.03	<0.03, <0.03	0.056	<0.03, <0.03	0.058, <0.03	<0.03, <0.03
	<0.03	<0.03, <0.03	0.049, 0.103	<0.03, <0.03	<0.03, <0.03	<0.03, <0.03

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.03 <0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-1R	<0.03 <0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-7	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-8	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-8B	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-9	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-9C	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
R-9D	<0.03, <0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.03	<0.03	<0.03	<0.03
R-1R	<0.03	<0.03	<0.03	<0.03
R-7	<0.03	<0.03	<0.03	<0.03
R-8	<0.03	<0.03	<0.03	<0.03
R-8B	<0.03	<0.03	<0.03	<0.03
R-9	<0.03	<0.03	<0.03	<0.03
R-9C	<0.03	<0.03	<0.03	<0.03
R-9D	<0.03	<0.03	<0.03	<0.03

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: FLUORENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.2	<0.2, <0.2, <0.2	0.404, 0.22, <0.2	0.281, 0.267, 0.293	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2
R-1R	<0.2	0.304, <0.2, 0.237	<0.2, <0.2, <0.2	0.275, 0.231, 0.279	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2
R-7	0.21	0.728, 0.332	<0.2, <0.2	0.217, 0.228	<0.2, <0.2	<0.2, <0.2
R-8	<0.2	0.32, <0.2	<0.2, 0.283	0.245, 0.23	<0.2, <0.2	<0.2, <0.2
R-8B	0.262	<0.2, <0.2	0.351, 0.25	0.23, 0.22	<0.2, <0.2	<0.2, <0.2
R-9	<0.2	0.703, 0.344	<0.2, <0.2	0.239, 0.220	<0.2, <0.2	<0.2, <0.2
R-9C	<0.2	<0.2, <0.2	<0.2	0.233, 0.223	<0.2, <0.2	<0.2, <0.2
R-9D	0.233	<0.2, <0.2	<0.2, <0.2	0.24, 0.23	<0.2, <0.2	<0.2, <0.2

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	<0.20	<0.2	<0.2	<0.2
R-1R	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	0.50	<0.2	<0.2	<0.2
R-7	<0.2, <0.2	<0.2	<0.2	<0.2	<0.20	<0.2	<0.2	<0.2
R-8	<0.2, <0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2
R-8B	<0.2, <0.2	<0.2	<0.2	<0.2	0.27	<0.2	<0.2	<0.2
R-9	<0.2, <0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2
R-9C	<0.2, <0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2
R-9D	<0.2, <0.2	<0.2	<0.2	<0.2	1.0	<0.2	<0.2	<0.2

Well #	1996 1st Qtr. (2/5)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.2	<0.2	<0.2	<0.2
R-1R	<0.2	<0.2	<0.2	<0.2
R-7	<0.2	<0.2	<0.2	<0.2
R-8	<0.2	<0.2	<0.2	<0.2
R-8B	<0.2	<0.2	<0.2	<0.2
R-9	<0.2	<0.2	<0.2	<0.2
R-9C	<0.2	<0.2	<0.2	<0.2
R-9D	<0.2	<0.2	<0.2	<0.2

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: FLUORANTHENE (ug/l)

Well #	1988 3rd Qtr. (7/28)	1988 4th Qtr. (9/27)	1989 1st Qtr. (2/13)	1989 2nd Qtr. (6/22)	1989 3rd Qtr. (9/20)	1989 4th Qtr. (12/14)	1990 1st Qtr. (1/19)	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (9/12, 9/13)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/16, 1/18)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16, 7/17)
R-10	<0.200	<0.200	<0.200	<0.200	<0.200	0.207	<0.200	<0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200
R-1R	NI	NI	NI	—	<0.200	<0.200	<0.200	0.215	0.468, 0.493, 0.410	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200	<0.200, <0.200, <0.200
R-7	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.557, 0.313	<0.200, <0.200	<0.200, <0.200	<0.200, 0.200	<0.200, <0.200
R-8	<0.200	<0.200	<0.200	<0.200	<0.200	0.214	<0.200	<0.200	0.470, <0.200	<0.200, 0.286	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200
R-8B	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200
R-9	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.579, 0.270	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200
R-9C	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200, <0.200	<0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200
R-9D	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200	<0.200, <0.200

Well #	1992 1st Qtr. (2/6)	1992 3rd Qtr. (9/16)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)	1996 1st Qtr. (2/20-2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.200, <0.200, <0.20	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-1R	<0.200, <0.200, <0.20	<0.200	<0.200	<0.200	0.25	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-7	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8B	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	0.24	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9C	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9D	<0.200, <0.200	<0.200	<0.200	<0.200	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

NOTE: The concentration of fluoranthene in these wells in the first quarter of 1991 was <0.200 ug/l only after the concentrations detected in associated trip and field blanks was subtracted from the actual detected concentrations.

NI - Not installed until March 1989.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: INDENO(123-cd)PYRENE(ug/L)

	1990			1991		
Well #	2nd Qtr. (6/26)	3rd Qtr. (9/18)	4th Qtr. (12/11)	1st Qtr. (1/15)	2nd Qtr. (4/9)	3rd Qtr. (7/18)
R-10	<0.05	<0.05, <0.05, <0.05	0.053, <0.05, 0.08	<0.05, 0.212, <0.05	<0.05, <0.05, <0.05	<0.05, <0.05, 0.053
R-1R	<0.05	<0.05, <0.05, <0.05	0.088, <0.05, <0.05	<0.05, <0.05, <0.05	<0.05, <0.05, <0.05	<0.05, <0.05, <0.05
R-7	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05
R-8	<0.05	<0.05, <0.05	<0.05, 0.063	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05
R-8B	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05
R-9	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05
R-9C	<0.05	<0.05, <0.05	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05
R-9D	<0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05, <0.05	<0.05 <0.05

	1992		1993		1994		1995	
Well #	1st Qtr. (2/5)	3rd Qtr. (9/15)	1st Qtr. (3/2)	3rd Qtr. (8/17)	1st Qtr. (3/22, 3/23)	3rd Qtr. (8/30, 8/31)	1st Qtr. (1/25, 1/26)	3rd Qtr. (8/16, 8/16)
R-10	<0.05, <0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-1R	<0.05, <0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-7	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-8	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-8B	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-9	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-9C	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
R-9D	<0.05, <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

	1996		1997	
Well #	1st Qtr. (2/6)	3rd Qtr. (8/27, 8/28)	1st Qtr. (1/21, 1/22)	3rd Qtr. (7/29, 7/30)
R-10	<0.05	<0.05	<0.05	<0.05
R-1R	<0.05	<0.05	<0.05	<0.05
R-7	<0.05	<0.05	<0.05	<0.05
R-8	<0.05	<0.05	<0.05	<0.05
R-8B	<0.05	<0.05	<0.05	<0.05
R-9	<0.05	<0.05	<0.05	<0.05
R-9C	<0.05	<0.05	<0.05	<0.05
R-9D	<0.05	<0.05	<0.05	<0.05

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: DISSOLVED MERCURY (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/16)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2,<0.2,<0.2
R-1R	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2	<0.2,<0.2,<0.2
R-7	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2
R-8	0.216, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2
R-8B	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2
R-9	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2
R-9C	<0.2, <0.2	<0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2
R-9D	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2	<0.2, <0.2

Well #	1992 1st Qtr. (2/5)	1992 1st Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-1R	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-7	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8B	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9C	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9D	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Well #	1996 1st Qtr. (2/20,2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.2	<0.2	<0.2	<0.2
R-1R	<0.2	<0.2	<0.2	<0.2
R-7	<0.2	<0.2	<0.2	<0.2
R-8	<0.2	<0.2	<0.2	<0.2
R-8B	<0.2	<0.2	<0.2	<0.2
R-9	<0.2	<0.2	<0.2	<0.2
R-9C	<0.2	<0.2	<0.2	<0.2
R-9D	<0.2	<0.2	<0.2	<0.2

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: NAPHTHALENE (ug/l)

Well #	1988 3rd Qtr. (7/26)	1988 4th Qtr. (9/27)	1989 1st Qtr. (2/13)	1989 2nd Qtr. (6/22)	1989 3rd Qtr. (9/20)	1989 4th Qtr. (12/14)	1990 1st Qtr. (1/18)	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (8/18, 8/19)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15, 1/16)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16)
R-10	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00
R-1R	NI	NI	NI	NI	<2.00	<2.00	<2.00	4.56	2.94, <2.00, 3.63	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00	<2.00, <2.00, <2.00
R-7	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	3.05	<2.00, 2.79	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-8	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-8B	<2.00	<2.00	<2.00	<2.00	—	<2.00	<2.00	7.76	2.90, 2.84	3.27, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9	<2.00	<2.00	<2.00	<2.00	2.41	<2.00	<2.00	1.77	2.28, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9C	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	4.99	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00
R-9D	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00	<2.00, <2.00

Well #	1992 1st Qtr. (2/13)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/26, 1/26)	1995 3rd Qtr. (8/15, 8/16)	199 1st Qtr. (2/20-2/21)	199 3rd Qtr. (8/27, 8/28)	1997 1st Qtr (1/21, 1/22)	1997 3rd Qtr. [illegible]
R-10	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	<0.20
R-1R	<2.00, <2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	<0.20
R-7	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	<0.20
R-8	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	<0.20
R-8B	3.3, 3.1	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	2.3	<2.0	<0.20	<0.20
R-9	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	<0.20
R-9C	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	3
R-9D	<2.00, <2.00	<2.00	<2.00	<2.00	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.20	2.1

NI - Not installed until March 1989.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: PENTACHLOROPHENOL (ug/l)

Well #	1988 3rd Qtr. (7/26)	1988 4th Qtr. (9/27)	1989 1st Qtr. (2/13)	1989 2nd Qtr. (6/22)	1989 3rd Qtr. (9/20)	1989 4th Qtr. (12/14)	1990 1st Qtr. (1/19)	1990 2nd Qtr. (6/27)	1990 3rd Qtr. (9/18, 9/19)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15, 1/16)	1991 2nd Qtr. (4/9, 4/10)	1991 3rd Qtr. (7/16, 7/17)
R-10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.04, 1.88, 1.34	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00
R-1R	NI	NI	NI	—	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00
R-7	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-8	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-8B	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	1.09,1.32	<1.00, <1.00
R-9	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00
R-9C	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	13.5, 1.46	<1.00	<1.00, <1.00	3.21,3.38	<1.00, <1.00
R-9D	<1.00	<1.00	<1.00	<1.00	<1.00	1.38	<1.00	<1.00	4.43, 3.31	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00	<1.00, <1.00

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-1R	<1.00, <1.00, <1.00	<1.00, <1.00, <1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-7	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-8	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-8B	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-9	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-9C	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5
R-9D	<1.00, <1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<2.5	<2.5

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1ST Qtr. (1/21, 122/)	1997 3rd Qtr. (7/29, 7/30)
R-10	<2.5	<2.5	<2.0	<2.0
R-1R	<2.5	<2.5	<2.0	<2.0
R-7	<1.0	<2.5	<2.0	4
R-8	<2.5	<2.5	<2.0	<2.0
R-8B	<2.5	<2.5	<2.0	<2.0
R-9	<2.5	<2.5	<2.0	<2.0
R-9C	<2.5	<2.5	<2.0	<2.0
R-9D	<2.5	<2.5	3.0	3

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: PHENANTHRENE (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	<0.5	<0.5, <0.5, <0.5	0.749, 0.579, <0.5	<0.5, <0.5, <0.5	<0.5, <0.5, <0.5	<0.5, <0.5, <0.5
R-1R	<0.5	1.44, 1.75, 1.44	0.752, 0.813, 1.07	<0.5, <0.5, <0.5	0.625, 0.656, 0.564	<0.5, <0.5, <0.5
R-7	<0.5	2.84, 1.24	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5
R-8	<0.5	1.12, <0.5	0.524, 0.799	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5
R-8B	<0.5	<0.5, <0.5	0.525, <0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5
R-9	<0.5	1.67, 0.743	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5
R-9C	<0.5	<0.5, <0.5	<0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5
R-9D	<0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5	<0.5, <0.5

Well #	1992 1st Qtr. (2/5)	1992 1st Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-1R	<0.5, <0.5, <0.5	<0.5	<0.5	<0.5	0.61	<0.50	<0.1	<0.5
R-7	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-8	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-8B	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-9	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-9C	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5
R-9D	<0.5, <0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.1	<0.5

Well #	1996 1st Qtr. (2/20-2/21)	1996 3rd Qtr. (8/27, 8/28)	1997 1st Qtr. (1/21, 1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<0.5	<0.1	<0.5	<0.5
R-1R	<0.5	<0.1	<0.5	<0.5
R-7	<0.5	<0.1	<0.5	<0.5
R-8	<0.5	<0.1	<0.5	<0.5
R-8B	<0.5	<0.1	<0.5	<0.5
R-9	<0.5	<0.1	<0.5	<0.5
R-9C	<0.5	<0.1	<0.5	<0.5
R-9D	<0.5	<0.1	<0.5	<0.5

GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: PHENOL (ug/L)

Well #	1990 2nd Qtr. (6/26)	1990 3rd Qtr. (9/18)	1990 4th Qtr. (12/11)	1991 1st Qtr. (1/15)	1991 2nd Qtr. (4/9)	1991 3rd Qtr. (7/16)
R-10	0.721	0.528, 0.865, 0.50	1.16, 0.738, 1.01	<0.50,<0.05,<0.05	1.96, 0.74, <0.50	<0.50, 0.847, 0.624
R-1R	1.06	0.897,<0.50,<0.50	1.87, 3.45, 2.93	<0.50,<0.05,<0.05	<0.50, 1.34, 3.43	0.678, <0.500, 1.08
R-7	<0.50	<0.50,<0.50	2.89, 0.544	<0.50,<0.50	<0.50,<0.50	<0.50, <0.50
R-8	<0.50	<0.50,<0.50	2.33, 1.64	<0.50,<0.50	<0.50,<0.50	<0.50, <0.50
R-8B	<0.50	<0.50,<0.50	1.97, 2.13	<0.50,<0.50	<0.50, 2.04	<0.50, <0.50
R-9	1.44	<0.50,<0.50	1.60, 3.79	<0.50,<0.50	3.50, 3.41	<0.50, <0.50
R-9C	<0.50	<0.50,<0.50	3.51	<0.50,<0.50	3.52, 5.18	0.562, <0.50
R-9D	<0.50	<0.50,<0.50	5.14, 4.81	<0.50,<0.50	5.38, 4.31	1.07, 0.858

Well #	1992 1st Qtr. (2/5)	1992 3rd Qtr. (9/15)	1993 1st Qtr. (3/2)	1993 3rd Qtr. (8/17)	1994 1st Qtr. (3/22, 3/23)	1994 3rd Qtr. (8/30, 8/31)	1995 1st Qtr. (1/25, 1/26)	1995 3rd Qtr. (8/15, 8/16)
R-10	<1.0, <1.0, <1.0	<0.50, <0.50, <0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-1R	<1.0, <1.0, <1.0	<0.50, <0.50, <0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-7	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-8	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-8B	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9C	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0
R-9D	<1.0, <1.0	<0.50	<0.50	<0.50	<0.50	<0.5	<1.0	<1.0

Well #	1996 1st Qtr. (2/20, 2/21)	1996 3rd Qtr. (8/27,8/28)	1997 1st Qtr. (1/21,1/22)	1997 3rd Qtr. (7/29, 7/30)
R-10	<1.0	<1.0	<1.0	<1.0
R-1R	<1.0	<1.0	<1.0	<1.0
R-7	<1.0	<1.0	<1.0	<1.0
R-8	<1.0	<1.0	<1.0	<1.0
R-8B	<1.0	<1.0	<1.0	<1.0
R-9	<1.0	<1.0	<1.0	<1.0
R-9C	<1.0	<1.0	<1.0	<1.0
R-9D	<1.0	<1.0	<1.0	<1.0

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT
QUARTERLY MONITORING
FOR RCRA SURFACE IMPOUNDMENT

PARAMETER: PYRENE (ug/L)

	1990			1991		
Well #	2nd Qtr. (6/26)	3rd Qtr. (9/18)	4th Qtr. (12/11)	1st Qtr. (1/15)	2nd Qtr. (4/9)	3rd Qtr. (7/16)
R-10	<0.2	<0.2, <0.2, <0.2	0.244, 0.229, 0.216	0.593, 0.522, 0.562	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2
R-1R	<0.2	0.628, 0.282, 0.308	0.343, <0.2, <0.2	<0.2, 0.547, <0.2	<0.2, <0.2, <0.2	<0.2, <0.2, <0.2
R-7	<0.2	0.870, 0.366	0.227, 0.218	0.674, 0.689	<0.2, <0.2	<0.2, <0.2
R-8	<0.2	0.424, <0.2	0.247, 0.351	0.636, 0.661	<0.2, <0.2	<0.2, <0.2
R-8B	<0.2	<0.2, <0.2	0.250, 0.242	0.664, 0.491	<0.2, <0.2	<0.2, <0.2
R-9	<0.2	<0.2, <0.2	<0.2, <0.2	0.659, 0.532	<0.2, <0.2	<0.2, <0.2
R-9C	<0.2	<0.2, <0.2	<0.2	0.522, 0.577	<0.2, <0.2	<0.2, <0.2
R-9D	<0.2	<0.2, <0.2	<0.2, <0.2	0.575, 0.570	<0.2, <0.2	<0.2, <0.2

	1992		1993		1994		1995	
Well #	1st Qtr. (2/5)	3rd Qtr. (9/15)	1st Qtr. (3/2)	3rd Qtr. (8/17)	1st Qtr. (3/22, 3/23)	3rd Qtr. (8/30, 8/31)	1st Qtr. (1/25, 1/26)	3rd Qtr. (8/15, 8/16)
R-10	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-1R	<0.2, <0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-7	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-8B	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9C	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
R-9D	<0.2, <0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

	1996		1997	
Well #	1st Qtr. (2/20-2/21)	3rd Qtr. (8/27, 8/29))	1st Qtr. (1/21, 1/22)	3rd Qtr. (7/29, 7/30)
R-10	<0.2	<0.2	<0.2	<0.2
R-1R	<0.2	<0.2	<0.2	<0.2
R-7	<0.2	<0.2	<0.2	<0.2
R-8	<0.2	<0.2	<0.2	<0.2
R-8B	<0.2	<0.2	<0.2	<0.2
R-9	<0.2	<0.2	<0.2	<0.2
R-9C	<0.2	<0.2	<0.2	<0.2
R-9D	<0.2	<0.2	<0.2	<0.2

APPENDIX E-5
SAMPLING AND ANALYSIS PLAN

SAMPLING AND ANALYSIS PLAN
POST-CLOSURE CARE
KOPPERS INDUSTRIES, INC.
GRENADA FACILITY
GRENADA, MISSISSIPPI

Prepared for

Beazer East, Inc.
One Oxford Centre
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Prepared by:

November 1997

Fluor Daniel GTI, Inc.
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Revised March 1999

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TABLES

FIGURES

1.0 INTRODUCTION

The purpose of the Sampling and Analyses Plan (SAP) is to define and document the specifications and methods to be employed, and to ensure the highest possible degree of technical accuracy and precision, statistical validity, and documentary compliance of data generated in the course of conducting RCRA Post-Closure activities for the Koppers Industries, Inc. (KII) Grenada Facility located in Grenada, Mississippi. The format of this document is in accordance with the EPA Technical Guidelines for Quality Assurance Project Plans (July 1988). Additional sources of information used in preparing the SAP originated from the U.S. EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, September 1986, SW-846 Test Methods for Evaluating Solid Wastes, and Standard Methods for the Examination of Water and Wastewater.

2.0 PROJECT DESCRIPTION

2.1 Introduction

The Post-Closure Care Program will be implemented to comply with Mississippi Department of Environmental Quality (MDEQ) requirements to monitor groundwater quality groundwater quality in the alluvium underlying the Koppers Industries, Inc. Grenada facility (facility) during post-closure. Groundwater samples will be collected from select monitoring wells in the alluvium to monitor groundwater quality. A summary of sampling locations and project schedules are provided in the Post-Closure Care Permit Reapplication, along with the rationale for location and parameter selection.

2.2 Site Description

The KII Facility is located approximately 1 mile southeast of Grenada, Mississippi, near U.S. Highway 51. The facility is located in the town of Tie Plant, Mississippi, a rural town with a small residential community located to the northeast. The 171-acre site is approximately 1.2 miles long and 0.3 miles wide. The Illinois Central Railroad services the plant and forms the western boundary and cultivated fields form the eastern boundary. Two streams flow northeast across the facility towards the Batupan Bogue; the Northern Stream in the northern portion of the facility and the Central Ditch in the central portion of the facility.

2.3 Site History

The facility was constructed in 1904 to pressure treat railroad cross ties. Preservatives used at the facility include pentachlorophenol (mixed in No. 2 diesel fuel) and creosote. The facility currently pressure treats railroad cross ties, switch ties and poles.

The surface impoundment (SI) 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. No records exist concerning the construction of the SI, but it appears that the SI was constructed by excavating into the natural clay soil and using the excavated material to construct the dike around the SI. During the operation of the SI, bottom sediment sludge (K001) was generated. In the summer of 19988, 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, 1988)

2.4 Target Compounds

Groundwater samples will be analyzed using U.S. EPA Method 8270C for constituents listed for K001 in 40CFR 261 Appendix VII and other semivolatile organic compounds associated with creosote as follows:

Table 2-1

pentachlorophenol	chrysene
phenol	naphthalene
2-chlorophenol	fluoranthene
p-chloro-m-cresol	benzo(b)fluoroanthene
2,4-dimethylphenyl	benzo(a)pyrene
2,4-dinitrophenol	indeno(1,2,3-cd)pyrene
trichlorophenols	benzo(a)anthracene
tetrachlorophenols	dibenzo(a,h)anthracene
acenaphthene	acenaphthalene
fluorene	anthracene
phenanthrene	pyrene

2.5 Data Use

Monitoring under the Detection Monitoring Program is designed to be consistent with the objectives of RCRA. During the remaining portion of the 30-year Post-Closure Care Program which began in June 1990, groundwater data will be collected to establish a database to statistically assess the groundwater quality. The monitoring program has been developed to determine to be protective of human health and the environment.

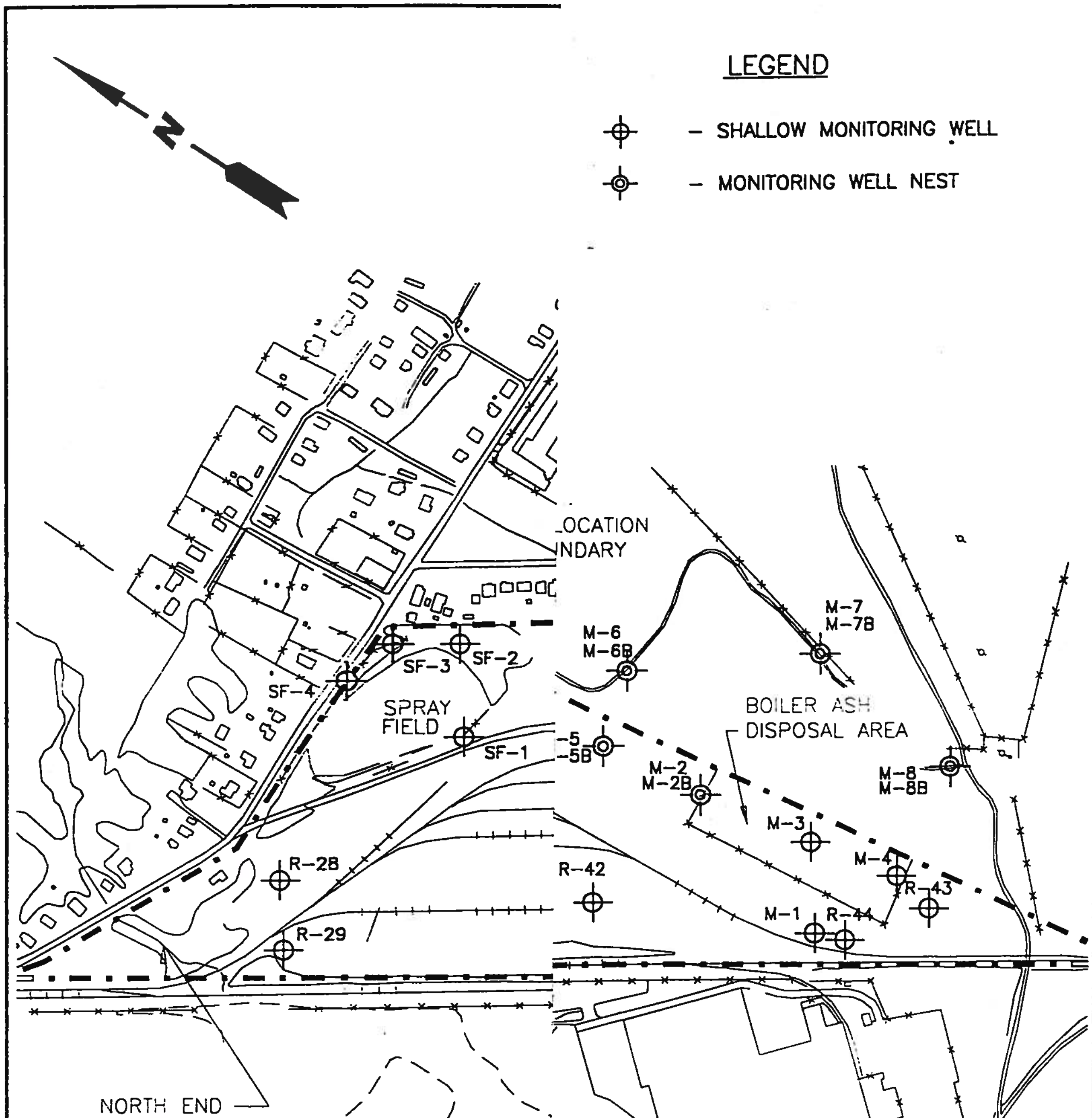
2.6 Sampling Locations

The locations of the monitoring wells from which the groundwater samples will be collected were determined by historical groundwater quality data and groundwater flow directions obtained from previous monitoring events.

Groundwater samples will be collected from two upgradient monitoring wells, R-1 R and R-1 0 and six point of compliance monitoring wells, R-7, R-8, R-8B, R-9, R-9C and R-9D. Figure 2-1 presents the well locations.

2.7 Schedule

The detection groundwater monitoring program will be implemented after the issuance of the Permit. Until such time, the groundwater beneath the facility will be monitored semi-annually under the current detection monitoring program required by the 1988 Permit. Sample analyses will be completed within approximately five (5) weeks of receipt of the final sample. Analytical results will be made available to the MDEQ approximately 30 days after receipt of the analytical data. The detection monitoring program continue throughout the post-closure period or until the permit is modified.



FLUOR DANIEL GTI		637 BRADDOCK AVENUE EAST PITTSBURGH, PA 15112 PHONE: (412) 823-5300 FAX: (412) 824-7215
EV. NO.:	DRAWING DATE: 5/14/97	ACAD FILE: 97051622.DWG

MONITORING WELL LOCATIONS

LIENT: KOPPERS INDUSTRIES, INC.			PM: MAB
OCATION: GRENADA, MISSISSIPPI			PE:
ESIGNED: KLM	DETAILED: R.G.	PROJECT NO.: 01003-0728-06	FIGURE: 2-1

3.0 PROJECT ORGANIZATION AND RESPONSIBILITY

3.1 Project Team

Project responsibilities within the primary contractor will proceed from the Program Manager to the Project Manager and principle investigators.

3.1.1 Program Manager

Overall legal responsibility for the project resides with the Beazer Program Manager, Mr. Robert Markwell who has over ten years of experience in management of environmental work sites, including management of hazardous waste and environmental engineering activities.

3.1.2 Project Manager

The Project Manager will coordinate and manage the day-to-day technical aspects of the project and project team activities. The Project Manager also is responsible for the management and tracking of the project schedule and budget. Other responsibilities include coordination with subcontractors, coordination and preparation of required reports, and assignment of technical responsibilities to appropriate Principle Investigators. Administrative support activities are under the Project Manager's supervision.

3.1.3 Site Hydrogeologist/Field Team Leader

The Hydrogeologist/Field Team Leader is responsible for field activities. The Site Hydrogeologist/Field Team Leader supervises the sampling operations and ensures that the Project requirements are completed. The Site Hydrogeologist/Field Team Leader reports to the Project Manager on all issues that are related to the project.

3.2 Subcontractors

The laboratory's Project Manager will report to Project Manager assigned to oversee the analytical aspects of the program.

4.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

The Quality Assurance (QA) objectives for the project are listed below. The QA objectives for measurement data are provided below.

4.1 Precision

Precision is the degree of reproducibility of a measured quantity. Precision will be evaluated in the field at the point of measurement. Laboratory precision will be verified by the laboratory.

4.1.1 Temperature and pH

Two measurements of temperature and pH will be made before and after sampling at each well location. The second measurement will be considered a duplicate measurement and must agree to within plus or minus the sensitivity of the instrument. These measurements will also be used to determine stability of groundwater for sampling.

4.1.2 Specific Conductivity

Two measurements of specific conductivity will be made before and after sampling at each well location. The second measurement will be considered a duplicate measurement and must agree to within plus or minus the sensitivity of the instrument. These measurements will also be used to determine stability for groundwater sampling.

4.1.3 Laboratory Analytical Measurements

Precision objectives for all laboratory analytical measurements are defined in the laboratory-specific Quality Assurance Manual (QAM).

4.2 Accuracy

Accuracy is the degree of conformity of a generated value to the true value. The accuracy of field measurements is generally limited to the sensitivity of the instruments used. The accuracy of laboratory measurements will be evaluated through the data validation process (see Section 10.0).

4.2.1 Groundwater Level

Groundwater levels will be measured to the nearest 0.01 of a foot.

4.2.2 Temperature and pH

The accuracy of these indicator measurements will be limited to the sensitivity of the measuring device as follows: temperature to +/- 1.0°C and pH to +/- 1.0 standard unit.

4.2.3 Conductivity

The accuracy of this indicator measurement will be limited to the sensitivity of the measuring device and no less than +/- 10.0 umhos.

4.2.4 Laboratory Analytical Measurements

Accuracy objectives for all laboratory analytical measurements are defined in Section 4.0 of the laboratory specific QAM. The laboratory will meet the Estimated Quantitation Limits (EQLs) for the constituents listed in Table 4-1 using U.S. EPA Method 8270C.

Table 4-1 Estimated Quantitation Limits (EQLs) for Semivolatile Organics

Compound	CAS	EQL (μg/L)
Acenaphthene	83-32-9	10
Acenapthylene	208-96-8	10
Anthracene	120-12-7	10
Benzo(a)anthracene	56-55-3	10
Benzo(a)pyrene	50-32-8	10
4-Chloro-3-methylphenol	59-50-7	20
2-Chlorophenol	95-57-8	10
Chrysene	218-01-9	10
Dibenz(a,h)anthracene	53-70-3	10
2,4-Dimethylphenol	105-67-9	10
2,4-Dinitrophenol	54-28-5	10
Fluoranthene	206-44-0	50
Fluorene	86-73-7	10
Indeno(1,2,3-cd)pyrene	193-39-5	10
Naphthalene	91-20-3	10
Pentachlorophenol	87-86-5	50
Phenanthrene	85-01-8	10
Phenol	108-95-2	10
Pyrene	129-00-0	10
2,3,4,6-Tetrachlorophenol	58-90-2	10
2,4,5-Trichlorophenol	95-95-4	10
2,4,6-Trichlorophenol	88-06-2	10

5.0 SAMPLING PROCEDURES

5.1 Sampling Program

All sampling locations were selected to monitor groundwater quality in the alluvium underlying the facility. The purpose of the monitoring is to provide a database to track groundwater quality over a 22-year period to assess groundwater quality changes with time.

5.2 Sample Locations

5.2.1 Groundwater

A total of 8 monitoring wells will be sampled semi-annually. All wells are located on KII's property. Monitoring wells R-1 R and R-1 0 are located hydraulically upgradient of the closed SI and monitoring wells R-7, R-8, R-8B, R-9, R-9C and R-9D are located hydraulically downgradient of the closed SI.

5.3 Equipment Blank Collection

5.3.1 Equipment Blank

The equipment blank is collected by passing laboratory-demonstrated analyte-free water through or over clean sample equipment, and then placing the water in an empty sample container for analysis. The equipment should have been decontaminated prior to sampling using the procedures described in Standard Operating Procedures provided as Attachment A of this SAP. The transfer should occur in the field location with the highest potential for contamination.

The following procedures will be followed for equipment blanks:

- At least one equipment blank will be collected during the sampling event and will be analyzed for the same parameters as the environmental samples.
- The equipment blank will be cooled with ice to 4 C +/- 2 C to preserve the blank.

5.4 Laboratory Replicate Samples

Laboratory replicates will be performed by the laboratory consistent with the laboratory-specific QAM. The collection of additional sample volume may not be necessary.

5.5 Containers, Preservation and Holding Times

All samples will be collected in laboratory provided, clean containers. SVOC sample containers will be 1 -liter amber glass bottles. Samples and sample extracts must be kept cooled at 40 +/- 2°C. Samples must be extracted within seven days of sample collection and analyzed within 40 days of extraction.

5.6 Chain-of-Custody Procedures

Chain-of-custody procedures are presented in Section 6.0, Sample Custody.

5.7 Sample Transportation and Storage

The sample containers will be shipped from the laboratory to the field. After filling the sample containers and prior to sample shipment, the containers will be packed in ice and shipped via overnight courier to the off-site laboratory. Precautions will be taken whenever glassware is transported to minimize the possibility of breakage. Upon the arrival of the field samples at the laboratory, the temperature of the water inside the shipping containers will be checked and the temperature noted on the chain of custody. The laboratory will be prepared to receive shipments of samples during weekends.

5.8 Prevention of Cross-Contamination

Cross-contamination of field samples will be prevented through the use of decontaminated equipment and dedicated materials. Bailers will be decontaminated in the laboratory and transported to the site. Field decontamination of pumps will be required when a pump is used more than once for purging or sampling. Materials, such as nylon rope, will be dedicated to each sampling point.

5.9 Documentation of Sampling Activities

Proper documentation of all activities at the KII facility will be made by field staff. Water-resistant field log books will be maintained to record pertinent information at each sample location. Information recorded in the field logs will include name and location of site, date and time of arrival and departure, name of person keeping the log, names of all on-site personnel, purpose of visit, location of sampling points, field instrument calibration information, number of samples collected, matrix of sample and volume of samples taken, method of sample collection and any factors that may affect the quality of the data collected, sample identification numbers using unique sample labels, weather conditions and any other observations deemed pertinent.

6.0 SAMPLE CUSTODY

6.1 Field Custody

The Chain-of-Custody will begin with the shipment of sample containers from the laboratory to the site. For all sampling, appropriately prepared containers and blank water will be shipped in custody-sealed containers with a Chain-of-Custody Form. An example of an acceptable Chain-of-Custody Form is provided in Figure 6-1. When overnight couriers are utilized, the airbill will become part of the Chain-of-Custody record. The receiver will verify that all chain-of-custody seals are intact. Any shipping containers that show evidence of tampering will be addressed with the Project Manager. Any deviations from the original shipment documents will be noted on the Chain-of-Custody Form and the receiver will accept custody for all or part of the shipment by an exchange of signatures with the delivering agent.

When a sample has been taken in the field, the sampling technician will complete the Chain-of-Custody Form. The sample will be secured in a shipping container by the sampler and must remain in his or her possession until it is secured in an approved location accessible only to authorized personnel or until custody is transferred by an exchange of signatures to another person.

Each sample container will be clearly identified using standard container labels. It is imperative that information on the Chain-of-Custody Form and the container label matches in every respect. The label is printed in waterproof, self-adhesive stock. All labels in a set have the same identification number. Labels with the same identification number will be used on the various bottles that usually constitute a single sample.

Following are definitions for some of the terms on the labels:

- Identification No.
  This field consists of a four to seven character alphanumeric code and the date. All labels in a set have the same identification number. The label set will be applied to each bottle within one sample and to the corresponding forms or notebooks. The purpose of the identification number is to provide a single, unique identifier to distinguish the sample from all others and to simplify data management.

- Site
  The site is the name of the overall area from which the sample was taken. It is the largest area of concern in a project (i.e., it is the name used for the area of the entire project). A single name or abbreviation will be used by samplers.

6.2 Laboratory Custody

Transfer of custody to the analytical laboratory, and sample custody within the laboratory, are addressed in the laboratory-specific QAM. Upon completion of analysis, samples will be maintained at the laboratory under chain-of-custody for a period of six months. Thereafter, all remaining samples will be released for proper disposal.

Chain of Custody Record MA 000171

ThermoRetec Consulting Corporation
A ThermoRetec Company
9 Damonmill Square, Suite 3A • Concord, MA 01742-2851
(978) 371-1422 Phone • (978) 369-9279 Fax
www.thermoretec.com

ThermoRetec
Smart Solutions. Positive Outcomes.

Project Name:	Project Number:
Send Report To:	Sampler (Print Name):
Address:	Sampler (Print Name):
	Shipment Method:
	Airbill Number:
Phone:	Laboratory Receiving:
Fax:	

Analysis Requested

Page____ of____

Purchase Order #:________________

Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers												Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Sample Custodian Remarks (Completed By Laboratory):

QA/QC Level	Turnaround	Sample Receipt	
Level I [ ]	Routine [ ]	Total # Containers Received?	
Level II [ ]	24 Hour [ ]	COC Seals Present?	
Level III [ ]	1 Week [ ]	COC Seals Intact?	
Other [ ]	Other ____	Received Containers Intact?	
		Temperature?	

White: Lab Copy Yellow: PM Copy Pink: Field Copy Gold: PM/QA/QC Copy

7.0 CALIBRATION PROCEDURES AND FREQUENCY

7.1 Field Instruments

A calibration program will be implemented to ensure that routine calibration is performed on all field instruments. Field team members familiar with the field calibration and operations of the equipment will maintain proficiency and perform the prescribed calibration procedures outlined in the manufactures' instructions accompanying the respective instruments. Calibration records for each field instrument used on the project will be maintained in the field.

Three field instruments will be used during sampling that will require calibration and include specific conductivity meter, pH meter, and a thermometer. All field instruments will be calibrated in accordance with the manufacturer's specifications.

7.2 Laboratory Instruments

Laboratory calibration procedures are addressed in detail in the laboratory-specific QAM. All calibration procedures will be consistent with the method used for analysis.

8.0 ANALYTICAL PROCEDURES

8.1 Laboratory

Laboratory analytical procedures will be in accordance with the SW-846, Test Methods for Evaluating Solid Waste, 40 CFR pt. 136, November 1986 and all subsequent promulgated updates. SVOCs listed in Table 4-1 will be analyzed by EPA Method 8270C. The laboratory will maintain, and have available for the appropriate operators, SOPs relating to sample preparation and analysis according to the methods stipulated in the tables referenced above.

9.0 INTERNAL QUALITY CONTROL (QC) CHECKS

9.1 Field QC Checks

9.1.1 Calibration

Field measurements of temperature, pH, and specific conductance will be obtained for groundwater samples. Calibration of the instruments used to obtain these measurements is discussed in Section 7.0 of this SAP.

Calibration records for each field instrument used on this project will be maintained in the field notebook.

9.1.2 Equipment Blanks

The equipment blank provides a check on possible sources of contamination such as ambient air and sampling instruments. The reason for performing equipment blanks in the most impacted area is to attempt to simulate a worst-case scenario regarding contributions from ambient air or from improperly cleaned sampling equipment to sample contamination. Equipment blanks should be handled, transported, and analyzed in the same manner as the samples with which they are associated.

Issues affecting the use and integrity of equipment blanks include the following:

- Handling - The temperature of the blank water must be maintained at 4° +/- 20°C during shipment.

- Holding Time - Holding times for individual parameters are dictated by the specific analytical method being used. The holding-time clock begins at the time of sample collection of the equipment blank.

9.1.3 Laboratory Replicate Samples

Laboratory replicates will be performed by the laboratory consistent with the laboratory-specific QAM. Laboratory replicate samples may or may not necessitate the collection of additional sample volume in the field. The contracted laboratory will include additional sample containers if they require additional sample volume.

9.2 Laboratory QC Checks

Internal QC checks are documented in the laboratory-specific QAM. All laboratory internal QC checks will conform to those required by the methodologies noted in the tables provided in Section 8.0 of this SAP.

10.0 DATA REPORTING

10.1 Data Reduction

10.1.1 Field
Data reduction will occur for the field measurements at the point of sampling. At the point of sampling, the data, as measured by the field instrument, will be reported in the field notebooks as well as on any forms required for the project.

10.1.2 Office
Upon the return of the analytical results from the laboratory, and after data validation, the data will be further reduced to data tables, graphs and images. The data tables will contain the following information:

- The date and number of the most current revision;
- Information identifying exactly the samples represented on the tables (e.g. sample location, matrix, depth, etc.);
- The compounds for which the samples were tested;
- The results for each compound; and
- The data flags as applied by the laboratory and the data validators.

10.1.3 Laboratory
Data reduction in the laboratory is covered in detail in the laboratory-specific QAM.

10.2 Identifying Outliers

10.2.1 Field
Outliers are isolated, anomalous analytical results. Outliers in the field measurements will be determined through comparison of historical data to current measurements. The Principle Investigator responsible for field activities will conduct the comparison and order any suspicious measurement data re-measured.

10.2.2 Laboratory
Detailed procedures for the laboratory identifying outliers are found in the laboratory-specific QAM. The laboratory's results, including their identification of outliers, will be verified through the data validation process.

10.3 Data Reporting

Any proposed equivalent forms required below must be justified by the laboratory and approved in advance by Beazer East, Inc. or its designated representative.

APPENDIX E-6
STATISTICAL METHODS

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STATISTICAL EVALUATION PROCEDURES

I. TREATMENT OF NON-DETECTS

I.A. The treatment of low and zero data values shall be based upon information concerning the following characteristics for each constituent and analytical method:

1. Method of Detection Limit (MDL; as published in SW-846);
2. Practical Quantification Limit (PQL; as published in SW-846);
3. Limit-of-Detection (LOD; as determined within the laboratory); and
4. Limit-of-Quantitation (LOQ; as determined within the laboratory).

I.B. In general, the laboratory Limit of Detection and Limit of Quantitation should be known, such that the following treatments are warranted:

1. In those cases where the laboratory LOD is known, verified and approved by the state, then any data less than the LOD shall be treated as one-half of the LOD.
2. In those cases where the laboratory LOQ is known, verified and approved by the state, then any data greater than the laboratory LOD, but less than the laboratory LOQ, shall be treated as one-half of the laboratory LOQ.
3. In those cases where the laboratory LOD is not known, then any data reported as "not detected" shall be treated as one-half of the published SW-846 MDL.
4. In those cases where the laboratory LOQ is not known, then any data reported as greater than MDL, but "less than PQL" shall be treated as one-half of the published SW-846 PQL.

II. OUTLIERS

The presence of outliers shall be tested in accordance with EPA guidance presented in Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance, April, 1989, page 8-11.

III. NORMALITY

The original data must be treated for normality using the Shapiro-Wilk Test of Normality for sample size up to 50 and the Shapiro-Francia Test of Normality for sample size more than 50. The following are used for decisions:

1. If the original data show that the data are not normally distributed, then the data must be log-transformed and tested for normality using the above methods.

2. If the original or the log-transformed data confirm that the data are normally distributed, then a normal distribution test must be applied.
3. If the original or the log-transformed data confirm that the data are not normally distributed, then a distribution free test must be applied.

IV. SELECTION OF STATISTICAL METHOD

IV.A. In those cases where the background data consist of a minimum of eight (8) independent data values obtained during four sampling events for the upgradient wells and when less than or equal to 15% of the background data values are less than the MDL and/or PQL for a given constituent and the data follow a normal distribution, then the downgradient values shall be compared to the parametric tolerance interval/prediction interval in accordance with the procedure described by Gibbons (1991) and summarized in the EPA guidance documents, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance (April, 1989) and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (April, 1992).

IV.B. In those cases where the background data consist of a minimum of eight (8) independent data values obtained during four sampling events for upgradient wells and when more than 15%, but less than or equal to 50%, of the background data values are less than the MDL and/or PQL for a given constituent, then the mean and standard deviation shall be adjusted in accordance with the procedure described by Aitchison (1955) and summarized in the EPA guidance document, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (April, 1992). After the adjustments are made, the downgradient values shall be compared to the parametric tolerance interval/prediction interval in accordance with the procedure described by Gibbons (1991) and summarized in the EPA guidance documents, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance (April, 1989) and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (April, 1992).

IV.C. In those cases where the background data consist of a minimum of nineteen (19) independent data values obtained during four sampling events for the upgradient wells, and when more than 50%, but less than or equal to 90%, of the background data values are less than the MDL and/or PQL for a given constituent, then the downgradient data values shall be compared to the non-parametric tolerance interval or non-parametric prediction interval in accordance with the procedures described by Gibbons (1991) and summarized in the EPA guidance documents, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance (April, 1989) and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (April 1992).

IV.D. In those cases where the background data consist of a minimum of eight (8) independent data values obtained during four sampling events for downgradient wells and when more than 90% of the background data values are less than the MDL and/or PQL for a given constituent, then the downgradient data values shall be compared to the Poisson Tolerance Limit or the Poisson Prediction Limit in accordance with the procedure described by Gibbons (1987) and Cox and Hinkley (1974).

IV.E. In those cases where 100% of the background data are "non-detects," then the downgradient data values shall be compared to Practical Quantitation Limit (PQL).

IV.F. In those cases where the above statistical methods are not applicable, the Students t-test or other statistical approaches as applicable will be incorporated. All statistical evaluations will be performed in accordance with the EPA guidance documents, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance (April, 1989) and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (April, 1992).

V. FREQUENCY

Once background is established, statistical comparisons will be made for each sampling event for constituents summarized in the permit, as appropriate. The procedures for statistical comparison are described above. The statistical comparisons shall consider individually, each of the wells in the monitoring system to determine statistically significant increases over background.

SECTION F. PROCEDURES TO PREVENT HAZARDS

The SI is a nonactive facility and was closed as a landfill in 1989. Post-closure security for the closed unit is discussed in Section I.2f.

SECTION G. CONTINGENCY PLAN

The SI is a nonactive facility and was closed as a landfill in 1989. Therefore, a Contingency Plan is not applicable for the closed SI.

SECTION H. PROGRAM TRAINING

Beazer will insure that those individuals responsible for the inspection and maintenance of the closed SI and the associated groundwater monitoring network have been appropriately trained to conduct these activities. The use of well samplers trained in proper RCRA procedures will insure that the well network will be inspected and properly sampled. No specialized training beyond that required for maintenance of a household lawn is required for routine maintenance of the cover system. Any significant maintenance activities concerning these systems will be conducted by qualified personnel. The qualifications and training records of those individuals will be supplied upon request.

SECTION I. CLOSURE PLANS, POST-CLOSURE PLANS, AND FINANCIAL REQUIREMENTS

I.1 Closure Plan

Closure activities for the SI were completed on October 1989. The *Construction Documentation Report for Surface Impoundment Closure* (Keystone, 1989) was submitted to the MDEQ certifying that the SI was closed in accordance with the specifications of the facility's closure plan. A copy of the closure certification document is included in Appendix I-1.

I.1a Closure Performance Standard

The SI was closed in a manner that: 1) minimizes the need for further maintenance, and 2) controls and minimizes or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste or hazardous constituents to groundwater or surface water or to the atmosphere. In general, this performance standard was achieved by removing liquids, bottom sludges and visually contaminated soils, and was ensured by the construction of a low-permeability soil-bentonite cap and vegetative soil cover. In addition, this facility will continue to monitor groundwater conditions to document any changes in groundwater quality in the vicinity of the closed SI.

I.1b Partial Closure and Final Closure Activities

The SI was not partially closed, therefore partial closure requirements are not applicable.

I.1c Maximum Waste Inventory

During the active life of the SI, a maximum of approximately 1050 cubic yards of K001 sludge was stored in the SI.

I.1d Schedule for Closure

The SI was closed in 1989.

I.1e Closure Procedures

Documentation of closure activities and the final design of the closed SI as a landfill can be found in Appendix I-1. A description of how the SI was closed and the design of the final landfill is provided in the following sections.

I.1e(1) Inventory Removal, Disposal, or Decontamination of Equipment

In 1988, all K001 sludge and visually contaminated soils were removed from the SI and shipped off-site to Chemical Waste Management, Inc. located in Emelle, Alabama for disposal. Accumulated rainwater was pumped from the impoundment to the Grenada POTW in accordance with a letter, dated May 2, 1989, from the State of Mississippi, Bureau of Pollution Control, Industrial Pretreatment Division. Dewatering activities were completed by July 18, 1989. The SI was filled with clean material and covered with a low-permeability soil-bentonite cap. Closure activities were completed by the end of October 1989. For a description of the landfill design see Section I.1e(2).

After completion of the final soil fill lift, the dozer was decontaminated. Decontamination was accomplished by scraping, shoveling and sweeping all of the soil from the dozer. Soil removal was performed while the dozer was still within the limits of the SI. Following the removal of soil, the dozer was moved to the facility's concrete-lined equipment wash-down area. All remaining soil and dirt was removed by cleaning the dozer with steam and high pressure water. All rinseate was collected and conveyed to the wash-down area sump, which connects to the plant wastewater treatment system. As required by the approved closure plan, soil removed from the equipment was place in the SI beneath the soil-bentonite layer.

I.1e(2) Closure of Disposal Unit

A description of how the SI was closed as a landfill is provided in the following sections.

I.1e(2)(a) Elimination of Liquids/Waste Stabilization. As described in Section I.1e(1), all liquid and sludges were removed from the SI prior to construction of the cap and cover.

I.1e(2)(b) Cover Design. After the sludge and visually contaminated soil were removed from the SI, the subgrade was prepared, and the SI dikes were excavated and placed in the SI as fill material. A key trench was excavated with a dozer around the perimeter of the SI. Clean soil fill material from an off-site borrow source was placed in the SI. The fill material was placed in approximately 8-inch lifts and compacted to at least 90 percent of the maximum dry density. Placement and compaction of the soil fill continued until the grades required for the soil-bentonite subbase were achieved.

Soil from a pre-approved off-site borrow source and bentonite were used to construct the clay barrier cap with a permeability less than 1×10^{-7} cm/sec. The soil-bentonite layer was constructed by placing and spreading the soil into 8-inch lifts over the entire SI. This process was continued until a compacted cap two feet thick was constructed. After grading the final lift, the surface of the soil-bentonite layer was rolled smooth with a steel drum roller in preparation for the installation of the filter fabric and drainage layer.

A one-foot layer of drainage material was placed over the soil-bentonite layer. The drainage layer was then covered with geotextile fabric. Finally 18 inches of cover soil was placed over the geotextile fabric overlying the drainage layer. The soil cover was seeded and mulched to establish a vegetated cover.

A drainage channel was constructed along the western side of the capped SI to convey run-off from the west area. The channel begins at the middle of the western side of the cap and extends past the southern end of the cap until it connects with the existing drainage channel that runs from west to east. Surface grading was used around the remaining portions of the capped SI to direct run-off away from the closed SI.

I.1e(2)(c) Minimization of Liquid Migration. To minimize infiltration, the cover will drain by a final slope of approximately 4 percent. Also, infiltration beyond the vegetated cover is minimized because of the underlying drainage layer and compacted soil-bentonite which allow infiltration to flow to the perimeter channels.

1.1e(2)(d) Maintenance Needs. The closure design minimizes the required future maintenance of the closed landfill. It is intended to minimize any threats to human health and the environment because any post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated runoff, or waste products or constituents to groundwater or surface water or the atmosphere are controlled.

The liquid portion of the sludge and contaminated soils were removed from the SI prior to construction of the cover. The design of the soil-bentonite cap, drainage layer, and vegetated soil layer promote positive drainage. These measures minimize the infiltration into the disposal area, and isolate the landfill from the local groundwater system.

Minimum maintenance will be performed to keep the cover functional. Specific maintenance needs are identified in the Section I.2d, Maintenance Plan.

I.1e(2)(e) Drainage and Erosion. Free drainage of precipitation off the cover will be provided by the slope of the soil cover and topsoil layers. The drainage of infiltration by the conducting zone above the soil-bentonite cap is provided by the drainage layer. The drainage layer is constructed of sand which permits drainage to the collection channels. The potential for the drainage layer clogging is reduced by the use of a geotextile fabric atop the sand zone.

Drainage is controlled by using off-site diversion ditches, on-site collection channels, surface grading and vegetation. The on-site collection channels are designed to control the on-site surface water and outlet it to existing drainage courses.

The cover erosion potential was calculated using the Universal Soil Loss Equation. The final cover design was selected to minimize erosion.

Settlement, Subsidence and Displacement. The soils that comprise the cover are compacted, cohesive fill material, excluding the drainage layer. These materials are not expected to significantly consolidate under the applied cover overburden loading. Calculations estimating cap settlement were presented in the approved Closure Plan.

The potential for waste consolidation is precluded because the waste sludges have been removed and replaced by compacted cohesive backfill. The potential for consolidation of the backfill is governed by the compaction criteria for placement and overburden loading. The overburden load has not to date, and is not expected to, cause significant consolidation of the compacted cohesive backfill.

Freeze/Thaw Effects. The soil-bentonite barrier layer is located below the average frost penetration depth reported for the geographical area. The frost penetration depth in the Grenada, Mississippi area is approximately 10 inches. The depth of cover is 3 feet over the soil-bentonite cap and reduces to a minimum of 12 inches at the edge. This provides adequate frost protection for the low-permeability cap.

I.2 Post-Closure Plan

The regulations governing closure of waste disposal sites, as contained with Federal Regulations in 40 CFR 264 and as adopted by the Mississippi Hazardous Waste Management Regulations, include requirements for post-closure care. These include inspection, maintenance, and groundwater monitoring. This Post-Closure Care Plan for the closed SI includes inspection, monitoring, and maintenance activities that have been performed for the last nine years under the current permit. These activities will continue to be performed in accordance with the above-cited regulations. There are approximately 22 years remaining in the original 30-year post-closure period. However, Beazer anticipates that the post-closure care period can be shortened substantially (see Section E.6b), based on the last nine-year trend of groundwater quality data collected from the wells monitoring the closed SI.

I.2a Post-Closure Contact

The post-closure contacts for the facility during the post-closure period are:

<u>On-Site Contact:</u>
Mr. Tom Henderson
Plant Manager
Koppers Industries, Inc.
P. O. Box 160
Tie Plant, Mississippi 38960
(601) 226-4584

The monthly inspection frequency is justified because the forces of nature acting on the Beazer facility are likely to cause relatively slow rates of change. For instance, the most likely natural force to affect change on the Beazer facility is rainfall runoff. However, even if several large, closely-spaced rainstorms were to cause accelerated erosion, the monthly (and after major rainfall) inspection schedule would still allow the contact person sufficient time to take appropriate action.

Groundwater Monitoring System Inspection

The following features related to the groundwater monitoring system (all site wells) and benchmarks will be subject to inspection and maintenance during each annual sampling event conducted during the post-closure care period:

- Groundwater monitoring wells;
- Monitoring well covers;
- Locks;
- Surface seals; and
- Benchmark integrity.

Surface grout around the monitoring wells will be replaced or repaired if the significant cracks, loose or missing grout are observed. Monitoring wells will be re-surveyed if there is any noticeable change in the well such as subsidence or moved protector pipe. The monitoring wells will be kept locked when not in use. Missing or broken padlocks or caps will be replaced as needed.

The established benchmarks will be inspected, and if needed, repair work will be conducted to ensure that the proper elevation has been retained.

The result of the inspections will be placed on an inspection log which is included in Appendix I-2. The inspection log will also provide for reporting any variances noted and remedial action taken.

I.2c Monitoring Plan

The current post-closure groundwater monitoring program covered under the existing Hazardous Waste Management Permit for the closed SI is discussed in Section E.5. Based on data collected from this groundwater monitoring program over the last 10 years of the permit, a revised groundwater monitoring program for the post-closure period is proposed in Section E.6.

I.2d Maintenance Plan

The contact person will be responsible for maintenance activities at the closed SI. Additional labor and equipment operators may be needed occasionally and their cost have been included in the post-closure cost estimate. Maintenance activities at the closed SI will be triggered by problems/deficiencies which

Off-site Contact:
Mr. Robert Markwell
Environmental Program Manager
Beazer East, Inc.
One Oxford Centre
Suite 3000
Pittsburgh, Pennsylvania 15219
(412) 208-8812

I.2b Inspection Plan

The following features are subject to inspection during the post-closure period:

- Security control devices,
- Erosion damage;
- Cover settlement, subsidence, and displacement;
- Vegetative cover condition;
- Integrity of run-on and run-off control measures;
- Cover drainage system function; and
- Well condition.

The post-closure care of the closed SI system will be conducted by Beazer during the post-closure care period. Upon any permanent shut-down of the KII facility, the post-closure care for the closed SI will be conducted by a post-closure contact person designated by Beazer. During continued plant operation, the KII plant manager will function as the contact person. The current plant manager, Mr. Tom Henderson, can be contacted at (601) 226-4584.

The on-site contact person will be provided with necessary inspection equipment by Beazer. This equipment will be used by the on-site contact person to perform the inspection and maintenance tasks. Although additional assistance is not expected, outside assistance may be required if, for some reason, major maintenance activities become necessary. The post-closure cost estimates that are included in Section I.6 are based on the assumption that some outside assistance will be necessary through the post-closure period.

Cover Inspection

Beazer will conduct monthly (and after major rainfall) inspections of site access and security systems (i.e., fences and gates), Beazer will also examine the cover integrity monthly, including vegetative cover condition, potential erosion damage and cover subsidence and run-on and run-off control system integrity. The results of the inspections and any corrective action taken will be placed on an inspection log sheet which is presented in Appendix I-2.

will be noted in the monthly inspections for the cover or during the groundwater monitoring inspections. Observations of the problem/deficiencies could result in initiation of one or more of the following maintenance activities (as appropriate):

- Repair of security control devices,
- Erosion damage repair,
- Correction of settlement, subsidence and displacement,
- Mowing, fertilization, and other vegetative cover maintenance,
- Repair of run-on and runoff control structures, or
- Well repair or replacement.

I.2e Post-Closure Care for Miscellaneous Units

Miscellaneous units do not apply to this facility.

I.2f Post-Closure Security

The SI was closed in a manner that controls and minimizes or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste or hazardous constituents to groundwater or surface water or to the atmosphere. In general, the performance standard was achieved by removing liquids and bottom sludges and by constructing a low-permeability cap and vegetated soil cover.

During the post-closure period, signs are posted and maintained on each side of the closed SI. The warning signs read "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT". The signs are legible from a distance of 25 feet and posted at all directions of approach. Access to the closed SI is controlled by a fence located around the perimeter and an entrance gate.

In addition, the KII facility operates continuously 24 hours a day, 5 days per week. All KII facility personnel are instructed to report any unusual activities or security incidents to a supervisor who may in turn contact the police. All visitors are instructed to report to the plant office.

I.3 Notices Required for Disposal Facilities

I.3a Certification of Closure

Closure of the SI as a landfill was completed in 1989. The report titled, *Closure Construction Documentation Report for the Surface Impoundment Closure* is included in Appendix I-1. This report contains documentation of closure construction to verify that the SI was closed in accordance with the approved closure plan. The operator and engineer certification of closure is included in Attachments A and B of this report.

I.3b Survey Plat

Appendix I-3 contains a copy of a survey plat submitted to the local zoning authority which indicates the location and dimensions of the closed SI. The plat was prepared and certified by a professional land surveyor and contains a note, which states the area described hereon previously contained a Waste Management Unit. The use of the described area is restricted and any future uses must not disturb the integrity of the final cover without prior approval of the State of Mississippi, Department of Natural Resources.

I.4 Closure Cost Estimate

The SI was closed in 1989, therefore a closure cost estimate is not applicable.

I.5 Financial Assurance Mechanism for Closure

Financial assurance mechanism for closure is not applicable for this facility since the SI was closed in 1989.

I.6 Post-Closure Cost Estimate

Table I-1 summarizes the Post-Closure Cost Estimate in current dollars. The cost estimate for post-closure will be updated annually.

I.7 Financial Assurance Mechanism for Post-Closure

The current established financial assurance mechanism for post-closure care as required by 40 CFR 264.145 is presented in Appendix I-4.

SECTION J. OTHER FEDERAL LAWS

Other than the regulations stated in this permit reapplication, no known other federal laws are applicable to the post-closure care activities detailed herein.

SECTION K. CERTIFICATION

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

James P. Brennan
(Name)

James P. Brennan
(Signature)

Vice President and General Manager
(Title)

Beazer East, Inc.
(Company Name)

March 22, 1999
(Date)

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 I-1 Post-Closure Care Estimate
Koppers Industries, Inc.
Grenada, Mississippi Facility
Tie Plant, Mississippi

Activity		Estimated Cost Over a 22-Year Period In Current Dollars
Inspection of Closed Surface Impoundment		
(2 hr/mo x $50 x 12 mo/yr x 22)		$26,400
Lawn Care of Cap		
(5 visits/yr x 1 acre/visit x $30/acre x 22 yrs)		$3,300
Fertilization of Cap		
(1 acre x 1 visit/yr x $210/acre x 22 yrs)		$4,600
Post-Closure Monitoring		
Sampling Cost [(2 hr/well x $50/hr x 8 wells) + $1,000 equipment & expenses] x 22 yrs		$39,600
Analytical Cost (Annually) ($4,125/yr x 22 yrs)		$90,750
Monitoring Well Inspection (¼-hr/well x $50/hr x 9 wells x 1 time/yr x 22 yrs)		$2,500
Monitoring Well Maintenance & Repair (2 hr/well x $30/hr x 8 wells x 1 time/yr x 22 yrs)		$10,600
Monitoring Well Part Replacement ($50/well x 8 wells x 1 time/yr x 22 yrs)		$8,800
P.E. Certification of Post-Closure (60 hr x $80/hr)		$4,800
	Subtotal	**$191,350**
	Contingency	**$19,135**
TOTAL POST-CLOSURE ESTIMATE		**$210,485**

APPENDIX I-1

CLOSURE CONSTRUCTION DOCUMENTATION

REPORT FROM SURFACE IMPOUNDMENT CLOSURE

CLOSURE CONSTRUCTION DOCUMENTATION REPORT FOR SURFACE IMPOUNDMENT CLOSURE KOPPERS INDUSTRIES, INC. GRENADA, MS

Prepared for:

BEAZER MATERIALS AND SERVICES, INC.
PITTSBURGH, PENNSYLVANIA

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
3000 TECH CENTER DRIVE
MONROEVILLE, PA 15146

PROJECT NO. 176975

DECEMBER 1989

DCC #R 415

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manifests. The "Operator Certification of Closure" is contained in Attachment A and "Professional Engineer Certification of Closure" is contained in Attachment B.

2.0 CLOSURE ACTIVITIES

The following sections briefly describe the construction activities which were performed to complete closure of the surface impoundment in accordance with the approved plan. Additional information on closure construction activities is included in Appendix A in the form of construction inspection daily reports. A photographic record illustrating the construction activities is also included in Section 6.0, and these photographs are referenced in the descriptions of closure activities.

2.1 Health and Safety Training

Construction personnel received 40 hours of Hazardous Waste Operations and Emergency Response Training in accordance with the requirements of 29 CFR 1910.120. The training was conducted during the week of June 25, 1989.

Since all K001 sludges had previously been removed from the work area, Level D personnel protective equipment was used throughout the construction activities.

2.2 Construction Start-up Meeting

An informal, on-site construction start-up meeting was held on July 19, 1989. The meeting was attended by both the construction engineer and foreman from Green and Green Construction Company and the resident inspector and project manager from Keystone Environmental Resources, Inc. The construction activities, sequence and schedule were reviewed; construction quality assurance testing, inspections and responsibilities were discussed; and, questions concerning the execution of closure were discussed and resolved.

2.3 Site Preparation

Equipment was mobilized to the site during the week of July 9, 1989 and site preparation work began on July 12. Initially, the equipment consisted of a track hoe and a dozer. Additional pieces of equipment were mobilized throughout the job as was required to accomplish the construction. Site preparation work consisted of brush and fence removal, removal of rainwater from the impoundment, and proof-rolling of the subgrade. These activities are discussed in the following sections.

2.3.1 Clearing

The fence and all trees and brush within a ten foot wide area around the impoundment were removed prior to the completion of dewatering.

2.3.2 Impoundment Dewatering

In accordance with the letter, dated May 2, 1989, from the State of Mississippi, Bureau of Pollution Control, Industrial Pretreatment Division, accumulated rainwater was pumped from the impoundment to the Grenada POTW. Dewatering activities were initiated by Koppers Industries, Inc. personnel on June 19, 1989 and were completed by the contractor on July 18, 1989.

After dewatering was completed, the pump and intake and discharge hoses were taken to the plant's equipment wash down area and were decontaminated by steam cleaning. Both internal and external surfaces were decontaminated.

2.3.3 Subgrade Preparation

After the accumulated rainwater was removed from the impoundments, the subgrade was prepared by tracking with the dozer. Wet subgrade soils were conditioned by spreading them in order to expedite their drying (see Photo 2).

2.4 Excavation of Impoundment Dikes

When the subgrade was prepared, the impoundment dikes were excavated and placed into the surface impoundment as fill material (see Photos 3 and 4). Photo 5 shows the impoundment after placing and compacting the dike soils.

2.5 Soil-Bentonite Key Trench Excavation

After the impoundment dikes were excavated and placed in the impoundment, a key trench was excavated with the dozer around the perimeter. The trench was excavated into the existing side slopes of the impoundments to a depth determined from the slopes and elevations of the final contours. The excavated soil was placed into the impoundments as fill.

2.6 Soil Fill

After completion of the cut and fill of the dikes and key trench material, clean soil fill from an off-site borrow source was placed in the impoundments (See Photo 6). The fill was spread into lifts of approximately eight (8) inches, loose thickness and compacted to at least 90 percent of the maximum dry density obtained from the Standard Proctor Test Method for compaction (ASTM D-698). In-place densities were checked periodically throughout fill placement to verify that this minimum standard was met. The soil testing, conducted to approve the borrow source prior to construction and as quality assurance documentation during construction, is discussed in Section 3.2. Placement and compaction of the soil fill continued until the grades required for the soil-bentonite subbase were achieved.

2.7 Equipment Decontamination

After completion of the final soil fill lift, the dozer was decontaminated. Decontamination was accomplished by scraping, shovelling and sweeping all of the soil from the dozer. Soil removal was performed while the dozer was still within the limits of the impoundment. Following the removal of soil, the dozer was moved to the plant's concrete lined equipment wash down area. All remaining soil and dirt was removed by cleaning the dozer with steam and high pressure water. All rinseate was collected and conveyed to the wash down area sump, which connects to the plant wastewater treatment system. As required by the approved closure plan, soil removed from the equipment was placed in the impoundment beneath the soil-bentonite layer.

2.8 Soil-Bentonite Layer

Soil from a pre-approved off-site borrow source and bentonite were used to construct the clay barrier soil layer. Prior to construction, the borrow source was sampled. Soil from the borrow source was mixed with bentonite and the resultant soil-bentonite mixture was remolded and tested in the laboratory to demonstrate that the clay soil could be placed and compacted to achieve an in-place coefficient of permeability less than 1 x 10^{-7} cm/sec. The soil testing program and construction quality assurance program are discussed in Section 3.2.

The soil-bentonite layer was constructed by placing and spreading the soil into an eight (8) inch (loose thickness) lift over the entire impoundment. Bentonite was then applied to the soil at a rate of between 2.2 and 3.0 lbs/ft^3. The bentonite was mixed into the soil by tilling and/or disking until the bentonite was uniformly distributed throughout the soil lift (See Photos 7 through 13).

The soil-bentonite layer was then compacted with the rubber-tired roller. The soil-bentonite layer was compacted to at least 95 percent of the maximum dry density obtained from the Standard Proctor Test Method for Compaction (ASTM D-698). The moisture content was adjusted, as required, to assure that the placement soil moisture content exceeded the optimum moisture content for the soil.

To document that the constructed soil-bentonite layer had a coefficient of permeability less than 1 x 10^{-7} cm/sec, two "undisturbed" samples were obtained from each lift and tested in the laboratory (See Photo 14). The results of the laboratory permeability tests indicated that the original first lift of the soil-bentonite layer had a coefficient of permeability greater than 1 x 10^{-7} cm/sec and, therefore, did not meet the requirements of the approved closure plan. This lift was subsequently added to the soil fill zone and the elevations of the remaining cap components were adjusted accordingly. Four more soil-bentonite lifts totaling two (2) feet in thickness (compacted) were then placed using increasing amounts of bentonite. Following completion of placement of the last lift of the soil-bentonite layer, the final surface was shaped and graded to conform to the intent of the design drawings. The surface of the soil-bentonite layer was rolled smooth with a steel drum roller in preparation for the installation of the filter fabric and the drainage layer.

2.9 Geotextiles and Drainage Layer

A one-foot layer of drainage material was then placed over the soil-bentonite layer. Prior to construction, the drainage layer material was tested to verify that its coefficient of permeability was greater than 1 x 10^{-2} cm/sec. The drainage layer material was placed in a single, 12-inch thick lift and was compacted to at least 75% relative density. A non-woven geotextile was placed around the edge of the impoundment cap area and extended approximately two (2) feet beneath the drainage layer material (See Photos 17 and 18). Soil testing and quality control programs are discussed in Section 3.2. The drainage layer was completed by shaping the outer edges to a 4 horizontal to 1 vertical slope, lapping the geotextile over the slope and covering the layer with geotextile (See Photos 21-23). Photo 24 shows how the 18" overlap on the edges was stapled.

2.10 Cover Soil

Eighteen inches of cover soil was placed over the geotextile overlying the drainage layer. The first lift was placed by progressively placing and spreading the soil with end loaders so that the equipment did not track directly on the geotextile (See Photos 20 and 25). The soil was placed in lifts of approximately eight (8) inches, loose thickness and compacted with a rubber-tired roller. The cover soil was compacted to a dry unit weight corresponding to at least 90 percent of the maximum dry density obtained from the Standard Proctor Test method for Compaction (ASTM D-698).

2.11 Stone Protection

Stone protection was placed along the side slopes of the drainage layer against the filter fabric (See Photo 19). The two feet of coarse stone was placed to a slope of four (4) horizontal to one (1) vertical.

2.12 Top Soil

Top soil was placed over the coversoil layer (See Photo 26). A minimum of six (6) inches of topsoil was placed and spread to establish the finished elevations and slopes for the cap construction. The topsoil was placed and lightly compacted and then prepared for seeding.

2.13 Drainage Structure

A drainage channel was constructed along the western side of the capped surface impoundment to convey run-off away from the west area. The channel begins at the middle of the western side of the cap and extends past the southern end of the cap until it connects perpendicularly with an existing drainage channel that runs from west to east (See Photo 33). Surface grading was used around the remaining portions of the capped area to direct run-off away from the closed surface impoundment.

2.14 Vegetation

To complete the closure construction, the capped area was seeded and mulched to establish vegetal cover. The topsoil was prepared for seeding by applying fertilizer and tilling to incorporate the fertilize throughout the topsoil layer (See Photos 27-29). A seed mixture, consisting of the following:

Common Name	Rate (lbs/acre)
Bermuda Grass (Common) hulled	20
Fescue	35
Rye	112

was applied to the capped area by a hand seeder (See Photo 30). The seeded area was then mulched with straw at the rate of 4,000 pounds per acre. Immediately following the application of the mulch, it was lightly compacted with a tractor-pulled culti-packer which crimped the mulch into the seed bed (See Photo 31). Photo 32 shows an overview of the seeded cap.

3.0 CONSTRUCTION DOCUMENTATION AND QUALITY ASSURANCE

In order to insure that the construction was performed in accordance with the intent of the approved closure plan and the design drawings and construction specifications, Keystone provided a full-time resident inspector throughout most of the construction period. Additionally, a local soil testing consultant (Mid-South Testing Company) was used to provide soil testing services during the borrow source approval phase and throughout construction. Soil permeability testing was provided by Springer Engineering in Starkville, MS. These activities are summarized in the following sections.

3.1 Construction Inspection and Daily Reports

Keystone's resident inspectors were on-site during all construction activities except for dewatering, brush clearing and fence removal. The resident inspector was responsible for visual inspection of the closure construction, coordination of the testing conducted by the soils consultant, assisting the contractor with interpretation of the design drawings and specifications, and preparation of construction inspection daily reports. The construction inspection reports included information about the weather, contractor personnel, equipment employed, inspectors and visitors on-site, and a summary of the daily activities. Copies of these reports are included as Appendix A.

3.2 Soil Testing

Soil testing was performed prior to construction to approve the contractor's proposed borrow sources and during construction as quality assurance documentation. The testing performed during construction included both field testing and laboratory testing of samples from the construction. The various testing is described in the following sections and the test data and results are included as Appendix B.

3.2.1 Borrow Source Approval Testing

The contractor's proposed borrow source, for each of the soil layers required for the cap construction, was tested to verify compliance with the respective project material specifications. The unclassified soil fill, soil for the soil-bentonite layer and the cover soil were each tested to determine natural moisture content, grain size distribution, Atterberg Limits and moisture density relationship (Standard Proctor Test Method for Compaction ASTM D698). Samples of the soil-bentonite soil were also remolded, at the optimum moisture content, to a dry unit weight corresponding to 95 percent of the maximum dry unit weight obtained from the Standard Proctor Test and tested to determine the coefficient of permeability. The drainage layer material was tested to determine grain size distribution, coefficient of permeability and minimum and maximum densities. The topsoil material was tested to determine natural moisture content, grain size distribution and Atterberg Limits. The stone protection material was tested to determine grain size distribution.

3.2.2 Construction Quality Assurance Testing

Field testing of the various soil layers was conducted throughout the construction to verify that the fill materials were placed and compacted as required by the construction specifications and to verify that the construction satisfied the intent of the design.

3.2.2.1 Soil Fill

In-place density tests were performed on the soil fill. The tests indicated that the in-place density equalled or exceeded the dry density corresponding to 90 percent of the maximum dry density obtained from the Standard Proctor Test. Additionally, the corresponding moisture contents from these tests ranged from -0.9 percent to +1.9 percent of the optimum moisture content.

3.2.2.2 Soil-Bentonite Layer

In-place density tests and laboratory permeability tests were performed on the soil-bentonite soil layer. Sixty-three density tests and ten permeability tests were performed. All final density tests performed on the soil-bentonite layer indicated that the in-place dry density exceeded the dry density corresponding to 95 percent of the maximum dry density obtained from the Standard Proctor Test. The corresponding moisture contents exceeded the optimum moisture content except for three tests and they were within 1% of the optimum. Several of the moisture contents exceeded the limit of 3 percent above the optimum moisture content specified in the construction specifications; but, for these ten tests, the soil-bentonite layer did not exhibit any deflection under heavy equipment travel. Two samples of the in-place soil-bentonite layer were obtained on each soil-bentonite lift with 3-inch diameter shelby tube samplers. Each sample was tested in the laboratory to determine the coefficient of permeability of the soil-bentonite soil layer. The test results indicated that the first soil-bentonite lift did not meet the permeability requirements of the approved closure plan. This lift was left in place and incorporated into the soil fill zone, but that the next four lifts (2 feet total) did meet the required minimum permeability criteria.

3.2.2.3 Drainage Layer

In-place density tests were performed on the drainage layer. A total of eight density tests were performed. All final density tests performed on the drainage layer indicated that the in-place dry density exceeded 75 per cent relative density.

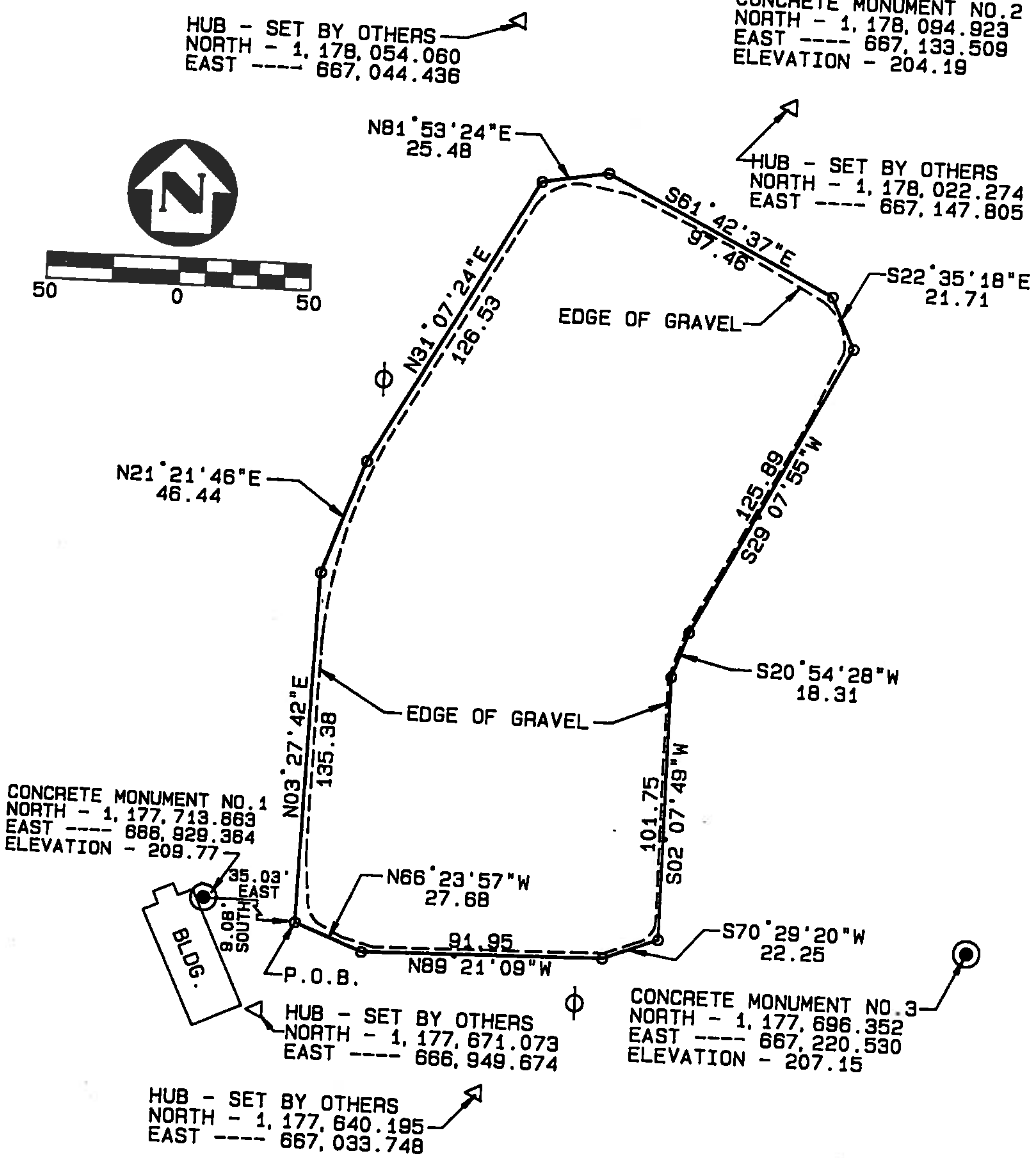
3.2.2.4 Cover Soil

In-place density tests were performed on the cover soil layer. A total of sixteen density tests were performed. All final density tests indicated that the in-place dry density exceeded 90 percent of the maximum dry density obtained from the Standard Proctor Test. The corresponding moisture contents averaged 4.3 percent below the optimum moisture content.

4.0 DRAWINGS

The following drawings show the plan view and the cross-sections of the cap and surface impoundment and the survey plat with deed restriction notification.

NOTE:
THE AREA DESCRIBED HEREON PREVIOUSLY CONTAINED A WASTE MANAGEMENT UNIT DESIGNATED U.S.EPA IDENTIFICATION NUMBER MSD 007027543. THE USE OF THE DESCRIBED AREA IS RESTRICTED AND ANY FUTURE USES MUST NOT DISTURB THE INTEGRITY OF THE FINAL COVER SYSTEM WITHOUT THE PRIOR APPROVAL OF THE STATE OF MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES, BUREAU OF POLLUTION CONTROL. MAINTENANCE, INSPECTIONS AND MONITORING ARE TO BE PERFORMED IN ACCORDANCE WITH THE APPROVED CLOSURE/POST-CLOSURE PLAN.



-- DESCRIPTION --

A PART OR PARCEL OF SECTION 28, TOWNSHIP 22 NORTH, RANGE 5 EAST, GRENADA COUNTY, MISSISSIPPI AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT THAT IS 9.08 FEET SOUTH AND 35.03 FEET EAST OF CONCRETE MONUMENT NO.1 THENCE RUN NORTH 03°27'42"EAST FOR 135.38 FEET TO A POINT; THENCE RUN NORTH 21°21'46"EAST FOR 46.44 FEET TO A POINT; THENCE RUN NORTH 31°07'24"EAST FOR 126.53 FEET TO A POINT; THENCE RUN NORTH 81°53'24"EAST FOR 25.48 FEET TO A POINT; THENCE RUN SOUTH 61°42'37" EAST FOR 97.46 FEET TO A POINT; THENCE RUN SOUTH 22°35'18"EAST FOR 21.71 FEET TO A POINT; THENCE RUN SOUTH 29°07'55"WEST FOR 125.89 FEET TO A POINT; THENCE RUN SOUTH 20°54'28"WEST FOR 18.31 FEET TO A POINT; THENCE RUN SOUTH 02°07'49"WEST FOR 101.75 FEET TO A POINT; THENCE RUN SOUTH 70°29'20" WEST FOR 22.25 FEET TO A POINT; THENCE RUN NORTH 89°21'09"WEST FOR 91.95 FEET TO A POINT; THENCE RUN NORTH 66°23'57"WEST FOR 27.68 FEET TO THE POINT OF BEGINNING OF HEREIN DESCRIBED PARCEL OF LAND CONTAINING 40,729.681 SQ.FT. OR 0.935 ACRES MORE OR LESS.

I, JACK T. WILLIS, SR., HEREBY CERTIFY THAT I HAVE MADE A SURVEY OF THE LANDS DESCRIBED HEREINABOVE AND THAT THE PLAT AND DESCRIPTION OF SAID LANDS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

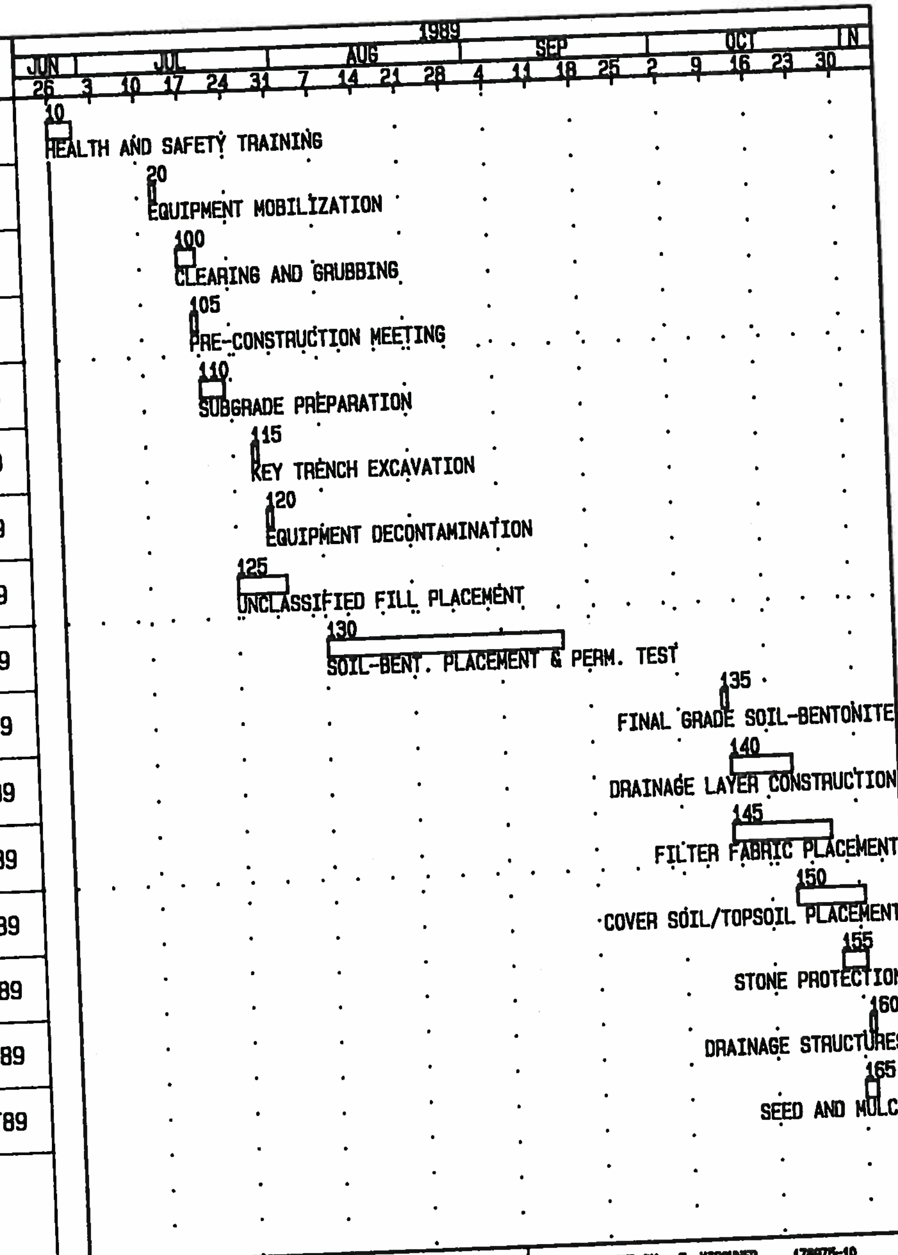
WITNESS MY SIGNATURE, THE 9 DAY OF [illegible] 19 90.

REGISTERED PROFESSIONAL ENGINEER NO. 4049
REGISTERED LAND SURVEYOR NO. 2344
MISSISSIPPI

5.0 SCHEDULE

The following schedule identifies the start and completion dates of each activity during the closure.

ACTIVITY ID	ACTIVITY DESCRIPTION	ORIG DUR	EARLY START	EARLY FINISH
10	HEALTH AND SAFETY TRAINING	4	26JUN89	29JUN89
20	EQUIPMENT MOBILIZATION	1	12JUL89	12JUL89
100	CLEARING AND GRUBBING	3	16JUL89	18JUL89
105	PRE-CONSTRUCTION MEETING	1	18JUL89	18JUL89
110	SUBGRADE PREPARATION	4	19JUL89	22JUL89
115	KEY TRENCH EXCAVATION	1	27JUL89	27JUL89
120	EQUIPMENT DECONTAMINATION	1	29JUL89	29JUL89
125	UNCLASSIFIED FILL PLACEMENT	8	24JUL89	31JUL89
130	SOIL-BENT. PLACEMENT & PERM. TEST	38	7AUG89	13SEP89
135	FINAL GRADE SOIL-BENTONITE	1	9OCT89	9OCT89
140	DRAINAGE LAYER CONSTRUCTION	10	10OCT89	19OCT89
145	FILTER FABRIC PLACEMENT	16	10OCT89	25OCT89
150	COVER SOIL/TOPSOIL PLACEMENT	11	20OCT89	30OCT89
155	STONE PROTECTION	4	27OCT89	30OCT89
160	DRAINAGE STRUCTURES	1	31OCT89	31OCT89
165	SEED AND MULCH	2	30OCT89	31OCT89



Activity Bar/Early Dates
Critical Activity
Progress Bar

1984, 1985, 1986, 1987

Project Start : 26JUN89
Project Finish: 31OCT89

SURFACE IMPOUNDMENT CLOSURE
BEAZER MATERIALS AND SERVICES, INC.
GRENADA, MS

Sheet 1 of 1

Data Date: 26JUN89
Plot Date: 13DEC89

PREPARED BY: T. KIRCHNER 178975-10

Date	Revision	Checked	Approved

6.0 PHOTOGRAPHS

The following photographs represent a brief pictorial account of the closure and are referenced in Section 2.0.

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT

PHOTO 1: Subgrade Preparation: Dewatering and Tracking

PHOTO 2: Subgrade Preparation: Spreading Soil to Dry

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT

PHOTO 3: Cut and Fill of Dike Material Using D5H and D6H Dozers

PHOTO 4: Checking Grade Elevation During Cut and Fill

PHOTO 5: Rolled Surface During Cut and Fill

PHOTO 6: Beginning of Unclassified Fill

PHOTO 7: Loading Bentonite into the Spreader with the Backhoe

PHOTO 8: Spreading Bentonite

PHOTO 9: Soil-Bentonite Surface After Spreading Bentonite

PHOTO 10: Watering and Tilling Soil-Bentonite

PHOTO 11: Tilling Soil-Bentonite

PHOTO 12: Disking and Tilling Soil-Bentonite

PHOTO 13: Checking Moisture Content with Humboldt Nuclear Tester

PHOTO 14: Digging Out Shelby Tube

PHOTO 15: Old Feeder Lines to Lagoon

PHOTO 16: Old Feeder Pipes to Lagoon - Cut and Backfilled 10' with Cement

PHOTO 17: Pushing Sand (Drainage Layer) into Position with 850D Dozer

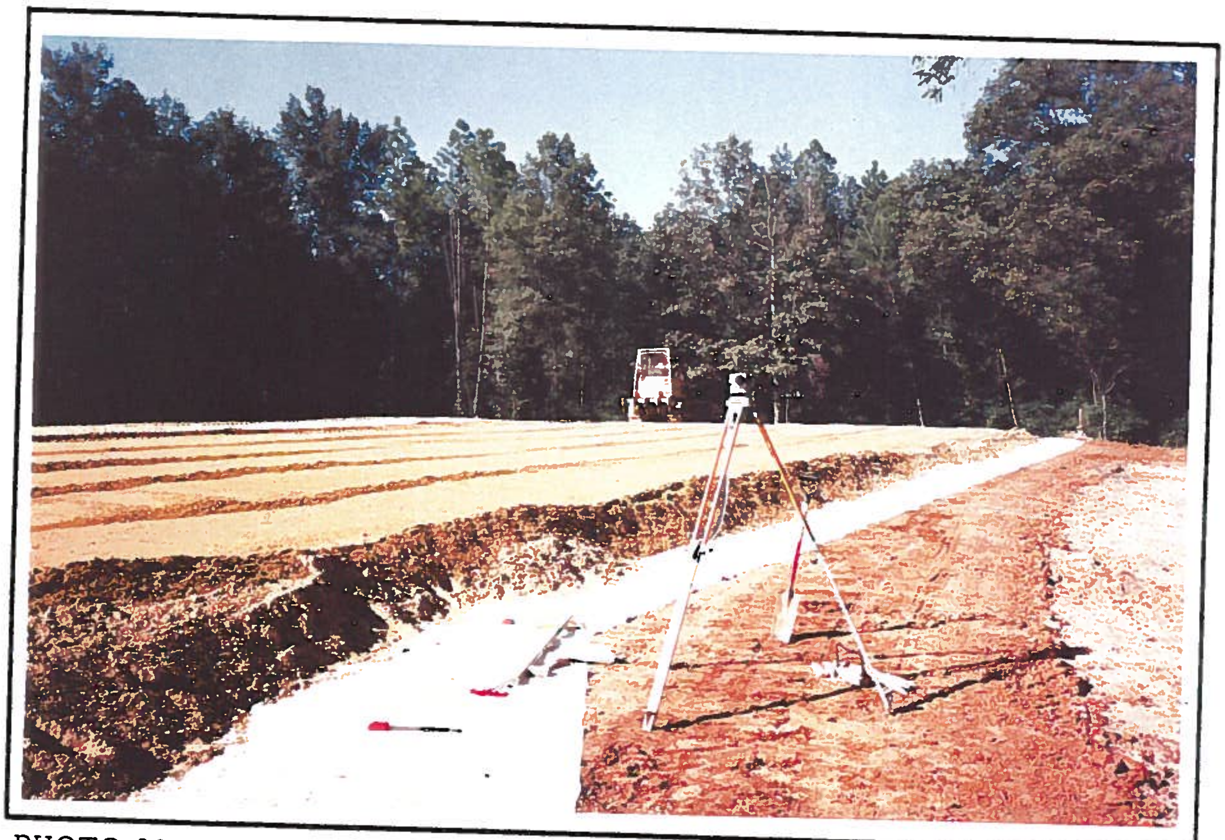


PHOTO 18: 850D Dozer Grading Drainage Layer

PHOTO 19: South End: Raking Gravel into Position

PHOTO 20: Placing Filter Fabric onto Drainage Layer and Pushing Cover Soil onto the Fabric

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT

PHOTO 21: Folding Filter Fabric back over the Ten-Foot Extension

PHOTO 22: East Side Extension: Ready for Cover Soil

PHOTO 23: Folding Back Filter Fabric on West Side

PHOTO 24: Stapling Overlaps

PHOTO 25: Grading Cover Soil

PHOTO 26: Grading Top Soil Along West Side

PHOTO 27: Applying Limestone with Truck-Mounted Agricultural Spreader

PHOTO 28: Applying Fertilizer with Tractor-Pulled Agricultural Spreader

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT

PHOTO 29: Disking Lime and Fertilizer

PHOTO 30: Grass Seeding with Hand Spreader

KOPPERS INDUSTRIES, INC.
GRENADA, MS PLANT

PHOTO 31: Tractor-Pulled Crimper for Seed and Mulch

PHOTO 32: Northwest View of Finished Cap

PHOTO 33: Seeded Drainage Ditch from West Side of Cap

APPENDIX A

Daily Construction Inspection Reports

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/19/89
REPORT NO.: 1
SHEET 1 of 2
BY: TPK

WEATHER: MOSTLY SUNNY, HOT

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 71 HIGH 87

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, RICKEY DENLEY, TOM DOUBLEDAY

EQUIPMENT EMPLOYED: TRACK HOE, D5H DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: G&G: NEIL TURNAGE, JOHN GREEN
KEYSTONE: MIKE BOLLINGER

SUMMARY OF ACTIVITIES: MIKE AND I ARRIVED ABOUT 12:30 PM. GREEN & GREEN PERSONNEL WERE CLEARING A TEN-FOOT ZONE AROUND THE SURFACE IMPOUNDMENT OF TREES, FENCING AND WHAT REMAINED OF THE DISCONNECTED PUMP SYSTEM WHICH FED THE S.I.

ATTACHMENTS: —   SIGNATURE: Terence D. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/19/89
REPORT NO.: 1

BY: TPK

SUMMARY OF ACTIVITIES (cont.):

BECAUSE OF THE EXCESS RAIN OVER THE PAST FEW WEEKS, THE IMPOUNDMENT HAD TO BE PUMPED DRY WITH A RENTAL PUMP DISCHARGING TO THE LOCAL P.O.T.W.

THIS RAIN LEFT THE BOTTOM OF THE IMPOUNDMENT MUDDY, SO THE CONTRACTORS TODAY ALSO WERE SPREADING OUT THE SOIL TO EXPEDITE ITS DRYING.

FINISHED 5:30 PM

ATTACHMENTS: —

SIGNATURE: Timm P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/20/89
REPORT NO.: 2
SHEET 1 of 1
BY: TPK

WEATHER: MORNING: MOSTLY SUNNY; AFTERNOON: CLOUDY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 68 HIGH 82

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, JOE DAVE McCLESKEY, RICKEY DENLEY,
NEIL TURNAGE

EQUIPMENT EMPLOYED: CATERPILLAR D5H DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: MIKE BOLLINGER : KEYSTONE

SUMMARY OF ACTIVITIES:

ATTACHMENTS: — SIGNITURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/21/89
REPORT NO.: 3
SHEET 1 of 1
BY: TPK

WEATHER: AM: OVERCAST, PM: PARTLY CLOUDY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 70 HIGH 88

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: JOE WILLING, JOE DAVE McCLESKEY, RICKEY DENLEY

EQUIPMENT EMPLOYED: D5H DOZER, RUBBER-TIRED ROLLER, 1066 TRACTOR

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JOHN GREEN : GREEN + GREEN

SUMMARY OF ACTIVITIES: ARRIVED 7:00 AM.
A 30 FOOT SECTION OF THE DIKE WAS PUSHED IN BY THE DOZER TO BE USED AS A RAMP FOR THE TRUCKS TO DUMP FROM. WORKED BOTTOM AGAIN AND THEN PROOF-ROLLED WITH TRACTOR-PULLED RUBBER-TIRED ROLLER.

ATTACHMENTS: —

SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/22/89
REPORT NO.: 4
SHEET 1 of 2
BY: TPK

WEATHER: AM: SUNNY, MILD ; PM: PARTLY CLOUDY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 72 HIGH 87

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.:
JOE WILLING, RICKEY DENLEY, TOM DOUBLEDAY, JOE DAVE McCLUSKEY, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR: 7:00AM.
G & G DUG UP NORTH END AS IT WAS STILL SOFT AND REPLACED IT WITH BANK MATERIAL.

~~PROOF~~ TPK PROOF - ROLLED WITH TRACTOR - PULLED RUBBER-TIRED ROLLER.

ATTACHMENTS: — SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/22/89
REPORT NO.: 4
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

RE-TOOK CENTERLINE TO GET TOP LOCATION
FOR INTERSECTION OF GRADE OF EXISTING
GROUND TO CAP

10:30 AM. : FINISHED SUBGRADE WORK

STARTED UNCLASSIFIED FILL.

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirkner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/23/89
REPORT NO.: 5
SHEET 1 of 1
BY: TPK

WEATHER:

PRECIPITATION: ____ (inches) TEMPERATURE: LOW ____ HIGH ____

CONTRACTOR PERSONNEL ON SITE:

EQUIPMENT EMPLOYED:

INSPECTORS ON SITE:

QUALITY CONTROL TESTS AND SAMPLES:

VISITORS ON SITE:

SUMMARY OF ACTIVITIES: NO WORK TODAY

ATTACHMENTS: —

SIGNATURE: Terence P. Kuhne

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/24/89
REPORT NO.: 6
SHEET 1 of 2
BY: TPK

WEATHER: PARTLY SUNNY, HUMID

PRECIPITATION: 0.5 (inches) TEMPERATURE: LOW 65 HIGH 82

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: JOE WILLING, JOE DAVE MCCLESKEY, RICKEY DENLEY, TOM DOUBLEDAY, JOHN SUGGS, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, SUMP PUMP, D6H DOZER, RUBBER-TIRED ROLLER, 1066 TRACTOR

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: COMPACTION & MOISTURE (SEE ATTACHMENTS)

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:00 A.M.
RAIN FROM EARLY SUNDAY MORNING WAS PUMPED OUT LEAVING WATER PONDS TO BE RE-WORKED WITH DOZERS.
LAID 1ST AND 2ND LIFTS, ROLLED AND TESTED FOR MOISTURE AND COMPACTION. SEE ATTACHMENTS (THIS FINISHED DIKE MATERIAL).

ATTACHMENTS: 6-1, 6-2 SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/24/89
REPORT NO.: 6
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

STARTED 3RD LIFT OF UNCLASSIFIED MATERIAL. THIS SOIL CAME FROM GREEN & GREEN'S BORROW PIT AT THEIR GARAGE LOCATION.

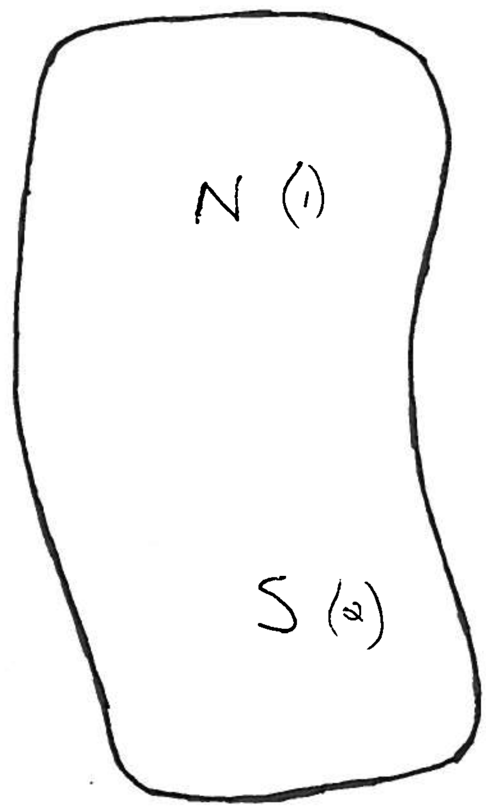
FINISHED AT 6:30 AM

ATTACHMENTS: ______ SIGNATURE: Terrence P. Kirchner

ATTACHMENT 6-1 DATE 7/24/89

TEST NO.	% MOISTURE	% COMPACTION
1	19.2	95.8
2	16.3	95.2
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

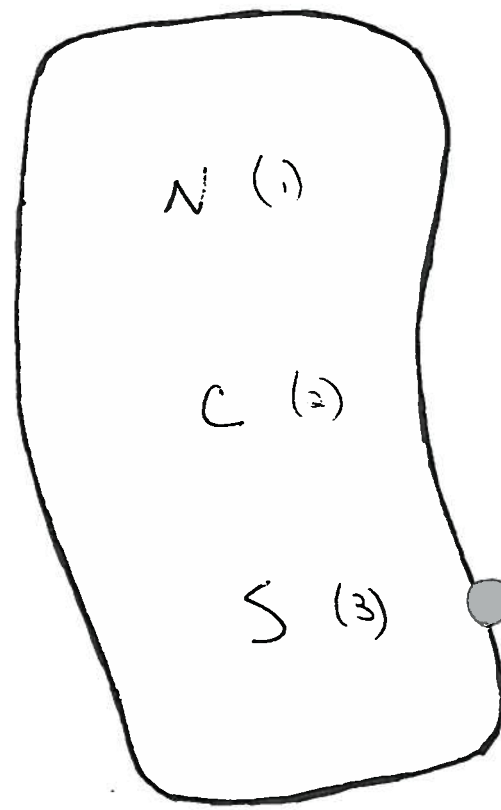
1ST UNCLASSIFIED



ATTACHMENT 6-2 DATE 7/24/89

2ND UNCLASSIFIED

TEST NO.	% MOISTURE	% COMPACTION
1	20.5	96.4
2	22.7	97.6
3	18.7	96.5
4		
5		
6	OPTIMUM 17.2% (-2%, +3%)	COMPACTION ≥ 95%
7		
8		
9		
10		
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/25/89
REPORT NO.: 7
SHEET 1 of 1
BY: TPK

WEATHER: AM: OVERCAST ; PM: PARTLY SUNNY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 65 HIGH 83

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY, JOHN SIGGS

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY & MOISTURE

VISITORS ON SITE: JOHN GREEN (G&G), TOM HUDSON (CAT.)

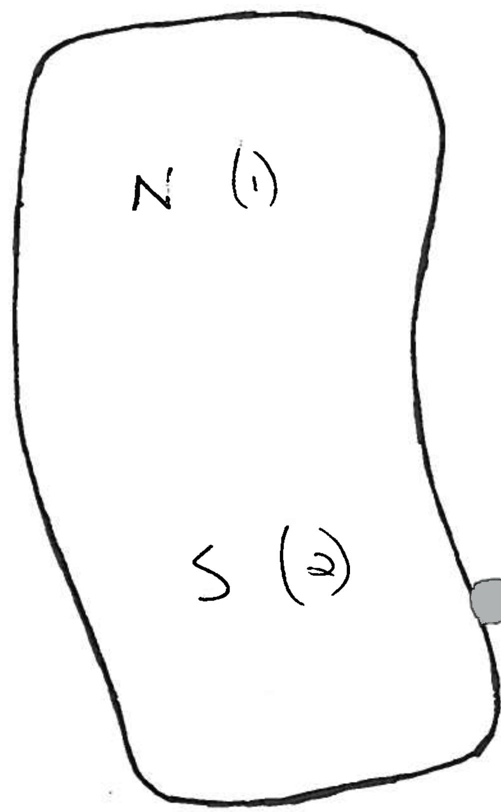
SUMMARY OF ACTIVITIES: 7:00 AM.
FINISHED PLACING 3RD LIFT. IT WAS ROLLED AND TESTED. THE 4TH LIFT WAS ALSO PLACED, ROLLED AND TESTED. SEE ATTACHMENTS FOR RESULTS.

ATTACHMENTS: 7-1, 7-2 SIGNATURE: Terrence P. Kirchner

ATTACHMENT 7-1 DATE 7/25/89

TEST NO.	% MOISTURE	% COMPACTION
1	15.00	104.2
2	14.60	100.5
3		
4	OPT MOIST.	COMP.
5	17.2%	≥ 95%
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

3RD UNCLASSIFIED

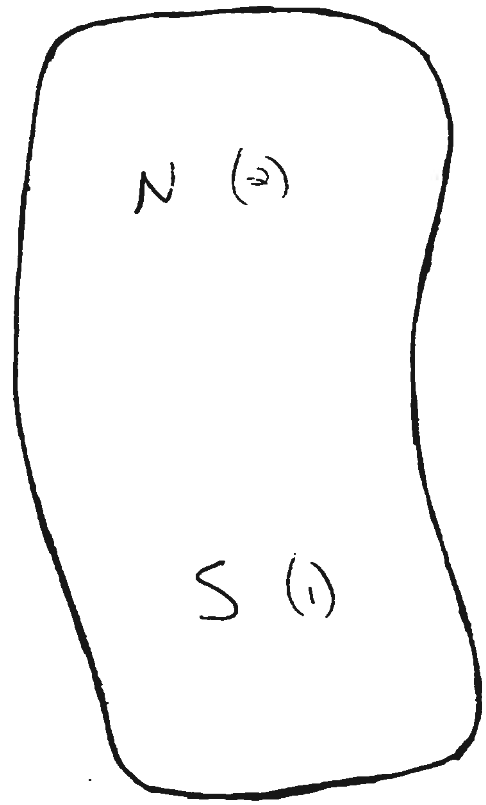


ATTACHMENT 7-2

DATE 7/25/89 — SOUTH TES
7/26/89 — NORTH TE

4TH UNCLASSIFIED

TEST NO.	% MOISTURE	% COMPACTION
1	15.8	103.2
2	16.6	99.8
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/26/89
REPORT NO.: 8
SHEET 1 of 1
BY: TPK

WEATHER: AM, PM: SUNNY, HOT, HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 68 HIGH 90

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN CONST:
JOE WILLING, RICKEY DENLEY, JOE DAVE MCGLESKEY,
JOHN SUGGS, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR,
RUBBER-TIRED ROLLER.

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY + MOISTURE
SEE ATTACHMENTS.

VISITORS ON SITE: JOHN GREEN (G + G)

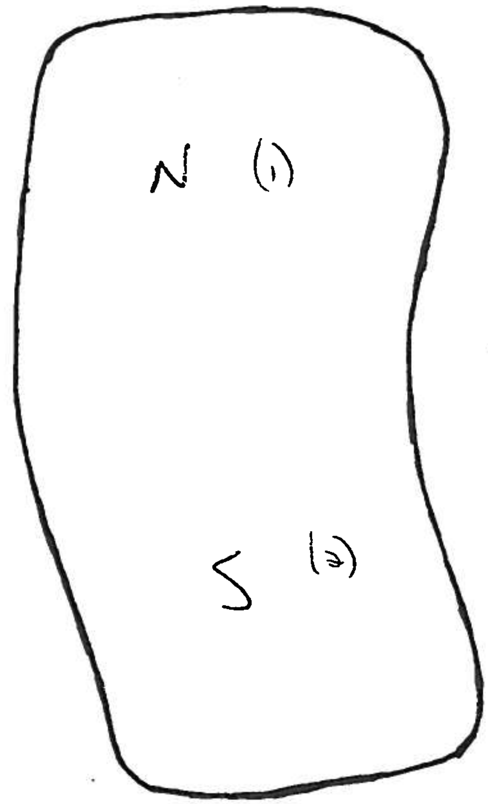
SUMMARY OF ACTIVITIES: 7:00 AM.
TESTED 4TH (NORTH) LIFT. THEN LAID,
ROLLED AND TESTED THE 5TH AND 6TH
LIFTS OF UNCLASSIFIED SOIL

ATTACHMENTS: 8-1, 8-2, SIGNATURE: Terrance P. Kirchner

ATTACHMENT 8-1 DATE 7/26/89

TEST NO.	% MOISTURE	% COMPACTION
1	18.9	101.6
2	15.8	97.8
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

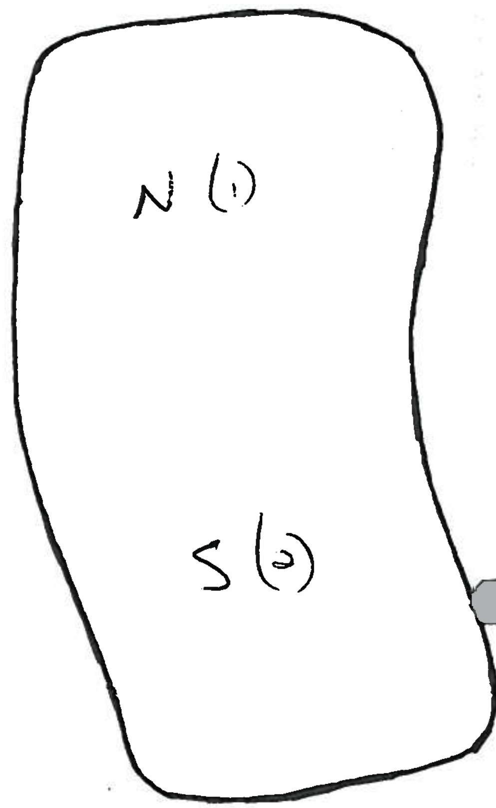
5 TH UNCLASSIFIED



ATTACHMENT 8-2 DATE 7/26/89

6TH UNCLASSIFIED

TEST NO.	% MOISTURE	% COMPACTION
1	16.9	104.1
2	18.0	103.6
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/27/89
REPORT NO.: 9
SHEET 1 of 1
BY: TPK

WEATHER: AM: SUNNY, HAZY, HOT ; PM: OVERCAST, COOL

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 69 HIGH 83

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN CONST.:
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY,
JOHN SUGGS, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR,
RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY + MOISTURE
SEE ATTACHMENTS

VISITORS ON SITE: JOHN GREEN (G+G CONST.)

SUMMARY OF ACTIVITIES: ARR. 7:00 AM.
PLACED, ROLLED AND TESTED 7TH, 8TH,
9TH LIFTS OF UNCLASSIFIED SOIL.
ALSO PLACED, ROLLED AND TESTED 10TH (N)
SEE ATTACHMENTS

FINISHED AT 6:30 PM

ATTACHMENTS: 9-1, 9-2, 9-3, 9-4 SIGNITURE: T.P. Kirchner

ATTACHMENT 9-1   DATE 7/27/89

TEST NO.	% MOISTURE	% COMPACTION
1	17.7	102.3
2	16.8	103.1
3		
4		
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7TH UNCLASSIFIED

ATTACHMENT 9-2 DATE 7/27/89

TEST NO.	% MOISTURE	% COMPACTION
1	18.8	101.8
2	16.8	100.9
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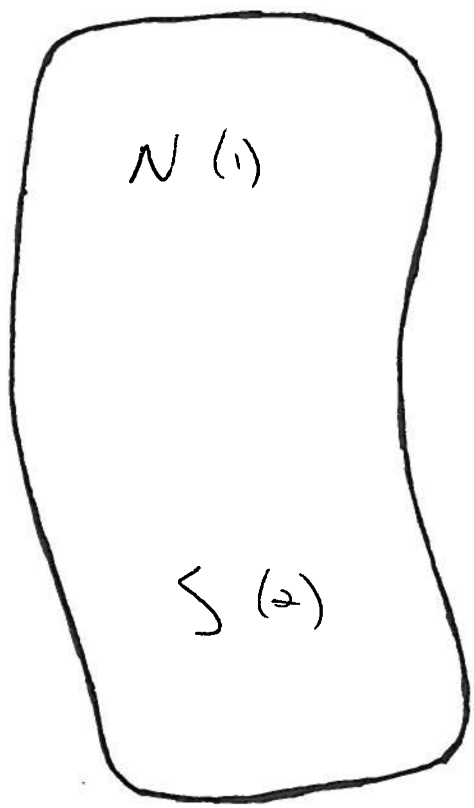
8TH UNCLASSIFIED



ATTACHMENT 9-3 DATE 7/27/89

9TH UNCLASSIFIED

TEST NO.	% MOISTURE	% COMPACTION
1	18.9	100.6
2	18.5	104.1
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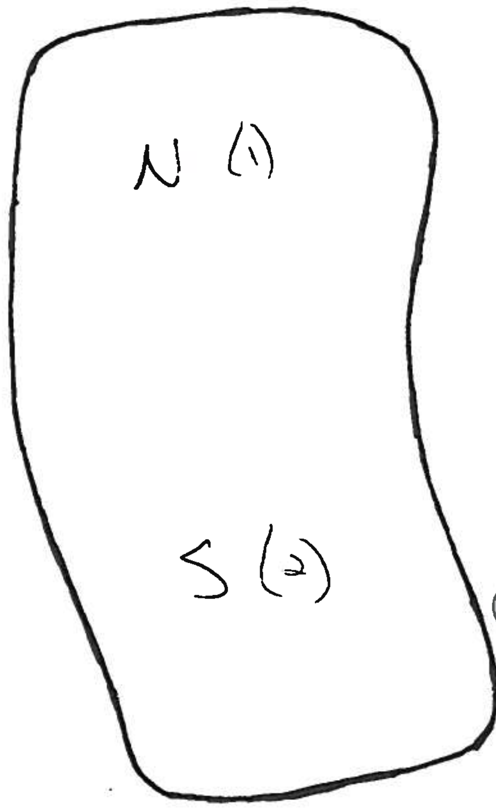

ATTACHMENT 9-4

DATE 7/27/89 N
7/28/89 S

10 TH UNCLASSIFIED

TEST NO.	% MOISTURE	% COMPACTION
1	16.6	104.0
2		
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14		
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KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/28/89
REPORT NO.: 10
SHEET 1 of 1
BY: TPK

WEATHER: AM: SUNNY, MILD ; PM: OVERCAST (DRIZZLE) THEN CLEARING

PRECIPITATION: TRACE (inches)   TEMPERATURE: LOW 65 HIGH 82

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN :
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLOSKEY,
JOHN SUGGS, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR,
RUBBER-TIRED ROLLER, BACKHOE

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY & MOISTURE
SEE ATTACHMENTS

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR: 7:00 AM
ROLLED AND TESTED 10TH - SOUTH.
PLACED, ROLLED AND TESTED 11TH LIFT.

RECEIVED TRUCK LOAD OF BENTONITE (49,460 lb)
STORED IT IN A TRENCH CUT BY THE BACKHOE

ATTACHMENTS: 10-1   SIGNATURE: Terrence P. Kirchner

ATTACHMENT 10-1 DATE 7/28/89

TEST NO.	% MOISTURE	% COMPACTION
1	18.8	100.7
2	19.8	101.4
3		
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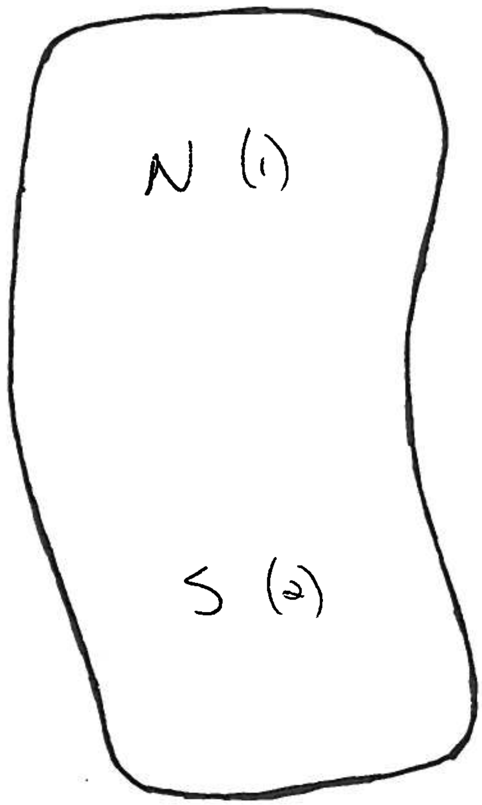
11TH UNCLASSIFIED



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/29/89
REPORT NO.: 11
SHEET 1 of 1
BY:

WEATHER: AM: PARTLY CLOUDY, MILD ; PM: SUNNY, HOT

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 68 HIGH 85

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY,
JOHN SUGGS; NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 10LL TRACTOR,
RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY & MOISTURE
SEE ATTACHMENT

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:30 AM., FIN. 5:30 PM
DECONTAMINATED D5H DOZER WITH HIGH PRESSURE
STEAM ON CONCRETE PAD AT GARAGE.
WELL # R-8B WAS KNOCKED OVER BY DOZER.
LAST FILL-LIFT TESTS WERE TAKEN ON 12TH LIFT.
STARTED PLACING FILL FOR BENTONITE-SOIL LAYER
TILLER SHEAR PIN BROKE; BROUGHT IN NEW TILLER

ATTACHMENTS: 11-1 SIGNATURE: Terrance P. Kirchner

ATTACHMENT 11-1 DATE 7/29/89

TEST NO.	% MOISTURE	% COMPACTION
1	18.2	99.7
2	16.9	104.7
3	17.0	102.9
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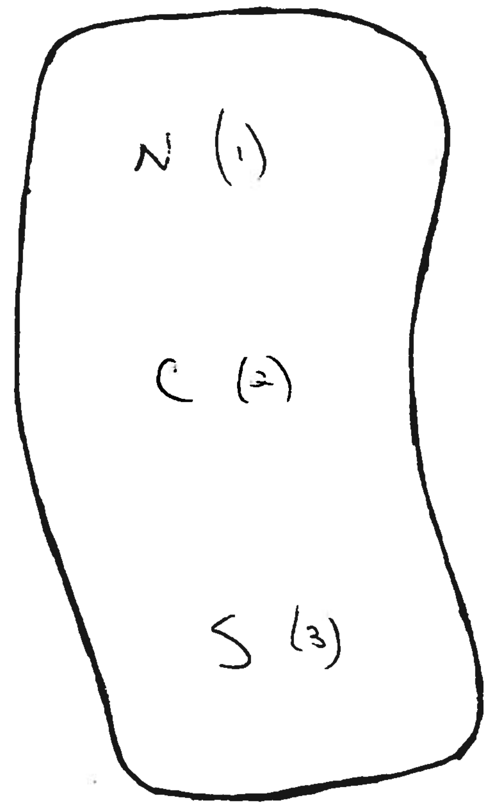
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/30/89
REPORT NO.: 12
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, HOT, HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 69 HIGH 89

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY, JOHN SUGGS; NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR, TRACK HOE, WATER TRUCK, RUBBER-TIRED ROLLER, TILLER (BOMAG)

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE CHECKS

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:00 AM
WATERED 1ST LIFT OF SOIL-BENTONITE LAYER WITH APPROX 9000 GAL OF WATER. TILLED AND COMPACTED A SMALL SECTION TO CHECK MOISTURE. APPLIED BENTONITE (39,470 lbs) or 2.2 lb/ft³) AND TILLED IT IN.
LOADED TREE DEBRIS ONTO TRUCKS
J. VANCE HERE ALL DAY ($240/DAY)

ATTACHMENTS: ________ SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 7/31/89
REPORT NO.: 13
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, HOT

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 68 HIGH 88

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST. : JOE WILLING, RICKEY DENLEY, JOE DAVE MCCLESKEY, JOHN SIGGS, NEIL TURNAGE

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR, TILLER, ROLLER.

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE, MIKE BOLLINGER : KEYSTONE, JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY & MOISTURE SEE ATTACHMENT.

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:00 AM.
A NEW PROCTOR WAS TAKEN ON THE SOIL MIXTURE GIVING NEW MOISTURE OPTIMUM OF 19.8% (MAX: 22.8%) RECEIVED TWO MORE TRUCK LOADS OF BENTONITE (49,040 lbs ; 49,520 lbs). DROVE TWO SHELBY TUBES INTO SOIL/BENTONITE AND ~~TOOK~~ TOOK THEM TO SPRINGER ENGR. IN STARKVILLE, MS. M. BOLLINGER SUPERVISED.

ATTACHMENTS: 13-1 SIGNATURE: Terrence P. Kirchner

ATTACHMENT 13-1 DATE 7/31/89

TEST NO.	% MOISTURE	% COMPACTION
1	23.7	98.6
2	22.7	99.7
3	20.9	101.2
4	24.1	98.6
5	24.7	98.5
6	25.4	100.1
7	23.8	98.5
8	20.6	103.8
9	22.4	100.2
10	18.8	105.7
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KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/7/89
REPORT NO.: 14
SHEET 1 of 1
BY: TPK

WEATHER: OVERCAST, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 62 HIGH 78

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: JOE WILLING, JOHN SUGGS

EQUIPMENT EMPLOYED: D5H DOZER (TO PUSH START TRACTOR), 1066 TRACTOR, SCRAPER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: SAMPLES TAKEN FROM 1ST LIFT OF S/B LAYER TO RUN ATTERBERG LIMITS (FOR 1,2,3 ADD'T. lbs OF BENT.

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:00 AM. FIN. 5:30
RAINED YESTERDAY. GOT RESULTS OF SHELBY TUBE PERMEABILITY TESTS. BOTH FAILED (10^{-5}, 8.8×10^{-6})
TILLED SOIL ALL DAY - ONCE PER HOUR TO HELP DRY IT OUT; ALSO DISKING TO DRY.
TOOK PICTURES OF WELLS.

ATTACHMENTS: SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/8/89
REPORT NO.: 15
SHEET 1 **of** 2
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 **(inches)** **TEMPERATURE: LOW** ____ **HIGH** ____

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN;
JOE WILLING, JOHN SUGGS (BOTH 7-5:30)
RICKEY DONLEY, JOE DAVE MCCLESKEY (BOTH 1-5:30)

EQUIPMENT EMPLOYED: 1066 TRACTOR, DISK IMPLEMENT,
SCRAPER,

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY & MOISTURE
SEE ATTACHMENT

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR: 7 AM FINISHED 5:30
SINCE THE FIRST SOIL-BENTONITE LIFT DID NOT PASS THE PERMEABILITY, IT WAS DECIDED (MLB) TO INCORPORATE THIS LIFT AS PART OF THE UNCLASSIFIED FILL AND NOT AS THE FIRST LIFT OF THE SOIL-BENT. LAYER. MET WITH JEFF VANCE TO SEE RESULTS OF ATTERBERG LIMITS TESTS FOR THE THREE SAMPLES

ATTACHMENTS: 15-1 **SIGNATURE:** Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/8/89
REPORT NO.: 15
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

OF THE IN-PLACE SOIL WHICH WERE GIVEN 1, 2, AND 3 POUNDS (EXTRA) / CF OF BENTONITE. WE'LL PROBABLY USE 2 TO 3 lbs EXTRA.

JOHN SUGGS DISKED UNTIL NOON (ONCE PER HOUR)

AFTER LUNCH — JOE DAVE, RICKED AND JOE CAME AND WORKED UNTIL 5 AM.

NEIL RETOOK CENTER LINE AND GRADE LINES WERE RE-ESTABLISHED.

LIFT (FAILED ONE) WAS ROLLED AND WILL BE INCORPORATED INTO UNCLASSIFIED. THEREFORE, DENSITY AND MOISTURE TESTS WERE TAKEN.

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirkman

ATTACHMENT 15-1 DATE 8/8/89

TEST NO.	% MOISTURE	% COMPACTION
1	18.3	100.3
2	11.8	112.9
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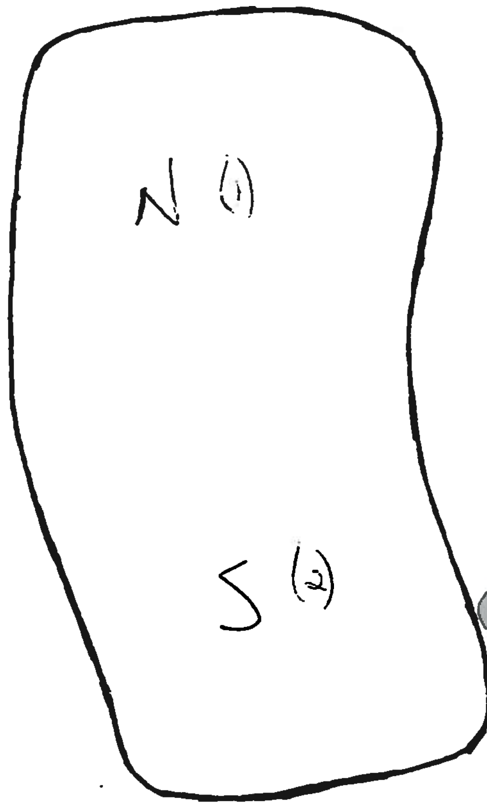

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/9/89
REPORT NO.: 14
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 67 HIGH 84

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN CONST: JOE WILLING, RICKEY BENLEY, JOE DAVE McCLESKEY, JOHN SUGGS.

EQUIPMENT EMPLOYED: D5H DOZER, 1066 TRACTOR, DISK, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE; MIKE BULLINGER: KEYSTONE; JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: SAMPLES TAKEN FOR GRAIN SIZE DIST., PROCTOR, AND OPT. MOIST. ANALYSIS

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: 7:55 AM, FIN. 7:30 PM
STARTED ~~NEXT~~ LIFT (NEW 1ST LIFT OF SOIL-BENT) USING SOIL WITH MORE CLAY CONTENT.
MID-SOUTH TESTING TOOK SAMPLES FOR GRAIN SIZE DIST, PROCTOR AND OPT. MOISTURE.
OLD 1ST LIFT WAS OFF GRADE SLIGHTLY, SO HIGH SANDY SECTION WAS REMOVED.

ATTACHMENTS: SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/10/89
REPORT NO.: 17
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 64 HIGH 85

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY, JOHN SUGGS.

EQUIPMENT EMPLOYED: D5H DOZER

INSPECTORS ON SITE: TERRY KIRCHNER, MIKE BOLLINGER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING (1/2 DAY)

QUALITY CONTROL TESTS AND SAMPLES:

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: 7:00 AM ; FIN. 6:00 PM
SCRAPED CLAY LAYER SECTION OFF NE CORNER AND REMOVED EXCESS SANDY LAYER BELOW IT, RE-SET GRADE STAKES AFTER REPLACING THE CLAY LAYER.

ATTACHMENTS: SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/11/89
REPORT NO.: 18
SHEET 1 of 1
BY: TPK

WEATHER: HOT, SUNNY, HAZY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 64 HIGH 86

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY, JOHN SUGGS.

EQUIPMENT EMPLOYED: D5H DOZER, AGR. SPREADER, 1066 TRACTOR, BACK HOE, DISK

INSPECTORS ON SITE: TERRY KIRCHNER & MIKE BOLLINGER: KEYSTONE; JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE.

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: 7:00 AM, FIN. 6 PM
APPLIED BENTONITE FROM TRACTOR-PULLED SPREADER IN THREE DOSES TOTALLING 45,080 lbs; TILLING AFTER EACH APPLICATION.
THEN PUT FIVE TRUCK LOADS OF WATER ONTO MIXTURE AND DISKED THEM TOGETHER. MOISTURE CHECK INDICATED SLIGHTLY HIGH; THEREFORE, WILL DISK IN AM.

ATTACHMENTS: ______ SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/12/89
REPORT NO.: 19
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, HOT, HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 68 HIGH 87

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN CONST. : JOE WILLING, RICKEY DENLEY

EQUIPMENT EMPLOYED: D5H DOZER (TO PUSH SHELBY TUBES), 1066 TRACTOR, DISK IMPLEMENT, ROLLER

INSPECTORS ON SITE: T. KIRCHNER, M. BOLLINGER : KEYSTONE; JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DENSITY + MOISTURE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: 7:00 AM, FIN. 12 NOON

DISKED SOME OF THE WET AREAS FROM YESTERDAY'S WATERING, THEN ROLLED WHEN THE SOIL APPEARED TO HAVE DRIED. G + G THEN DROVE SHELBY TUBES WITH DOZER AFTER COMPACTION + MOISTURE TESTS WERE DONE. DROVE TUBES TO SPRINGER ENGR FOR ANALYSIS.

ATTACHMENTS: 19-1 SIGNATURE: Terrance P. Kirchner

ATTACHMENT 19-1 DATE 8/12/89

TEST NO.	% MOISTURE	% COMPACTION
1	25.2	99.5
2	25.9	102.7
3	24.3	102.5
4	26.1	103.3
5	25.5	100.1
6	26.1	95.5
7	25.7	96.8
8	24.4	98.5
9	26.0	98.5
10	29.0	95.0
11		
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1ST SOIL-BENTONITE LIFT

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/18
REPORT NO.: 20
SHEET 1 of 1
BY: CMR

WEATHER: Sunny, Humid → rained approximately 1 inch on 8/17

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 70 HIGH 92

CONTRACTOR PERSONNEL ON SITE: Joe Willing, Ricky Denny (also 3 truck drivers for Green & Green hauled in clay)

EQUIPMENT EMPLOYED: Caterpillar D5H, International tractor w/ disk attachment

INSPECTORS ON SITE: Chris Rascher

QUALITY CONTROL TESTS AND SAMPLES: Jeff Vance sampled the clay stock pile twice performed sieve analysis and atterburg limits

VISITORS ON SITE: none

SUMMARY OF ACTIVITIES: Standing water in perimeter of cap was pumped out in the morning. In the afternoon, muddy areas of the cap were disk to help dry them. 3 trucks hauled clay in morning and afternoon and D5H stockpiled the soil in one area. Worked from 7:00 to 5:30.

ATTACHMENTS: — SIGNITURE: Christian M. Rasch

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/19/89
REPORT NO.: 21
SHEET 1 of 1
BY: CMR

WEATHER: Hot Hazy partly sunny

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 70 HIGH 93

CONTRACTOR PERSONNEL ON SITE: Joe Willing, John Soggs, Tom Doubleday (left at 10:00 AM)
Hours worked 7:00 to 5:30

EQUIPMENT EMPLOYED: International Farmall w/ disk, Caterpillar D5H, International w/ rubber tired compacter, Bomag rototiller

INSPECTORS ON SITE: Chris Rascler

QUALITY CONTROL TESTS AND SAMPLES: 2 samples from stockpile #1 PI=12 78% passing sieve (#200), #2 14 PI, 85% passing sieve (#200) - see below for more

VISITORS ON SITE:

SUMMARY OF ACTIVITIES: Wet areas (around perimeter) were disk, rototilled, leveled and then recompacted. Jeff Vance tested 4 locations w/ Humbolt. The results were:
#1 19.7% moisture 104.5% rel. density, #2 24% moisture 97.1% rel. density
#3 23.4% moisture 102% rel density #4 27.4% moisture, 97.3% rel density
I said this was OK and he (Joe Willing) didn't have to rework it.

ATTACHMENTS: — SIGNITURE: Christian M. Rasch

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: (sunday) 8/20/89
REPORT NO.: 22
SHEET 1 of 1
BY: CMR

WEATHER: Hot Humid Hazy in morning sunny in afternoon

PRECIPITATION: ____ (inches) TEMPERATURE: LOW 70 HIGH 94

CONTRACTOR PERSONNEL ON SITE: Tom Doubleday (left at 2:00)
John Suggs, Joe Winning

Worked from 7:00 to 3:30

EQUIPMENT EMPLOYED: International farmall w/ disk, Caterpillar D5H

INSPECTORS ON SITE: Chris Rascher

QUALITY CONTROL TESTS AND SAMPLES: — none

VISITORS ON SITE: — none

SUMMARY OF ACTIVITIES: ~~The cap surface was~~
The capped was staked out w/ an approximate grid pattern of 3 rows w/ 40' spacing. The stock piled soil was then spread over the cap by Tom D., John S. moved soil from stakeds. Joe W. leveled ~~evened out~~ soil from 1:30 to 3:30. Not enough soil to cover last ~50'x50'x6" at north east end.

ATTACHMENTS: — SIGNITURE: Christian M. Rasch

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/21/89
REPORT NO.: 23
SHEET 1 of 2
BY: CMR

WEATHER: Hot Humid Sunny

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 74 HIGH 96

CONTRACTOR PERSONNEL ON SITE: John Suggs, Ricky Denny
Joe Willing, Tom Doubleday (7:00 to 8:00)

7:00 to 7:30

EQUIPMENT EMPLOYED: 1 double axle dump hauled in 4 load of clay, D5H dozer, John Deere frontend loader backhoe, Rex rototiller, water truck, International Farmall w/ disk, compactor & lime spreader.

INSPECTORS ON SITE: Chris Rascher

QUALITY CONTROL TESTS AND SAMPLES: Jeff Vance 12:30 to 7:30
% moisture - random samples uncompacted.

VISITORS ON SITE: John Green (owner of Green & Green)

SUMMARY OF ACTIVITIES: John Suggs, Tom Doubleday, Ricky D. removed level stakes & rocks (2-3 hours). Truck hauling in more clay and dozer leveled area (Joe Willing). Cap was then disk and 3 1/2 loads of bentonite were added. Cap was rototilled after each load of bentonite was applied. The 1st load was applied near 11:00AM. The 1st load weighed 13,450 lbs (18,450 gross), the second weighed 14,170 lbs.

ATTACHMENTS: ____________ SIGNITURE: ____________

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/21/89
REPORT NO.: 23
SHEET 2 of 2
BY: CMR

SUMMARY OF ACTIVITIES (cont.): and the third (and fourth) weighed 20,000 lbs. Roto tilling was done to a depth of 6". The first two tilling took approximately 45 min. each and the third took approximately 1 hr 45 min. The clay looked completly mixed and no unmixed bentonitec was observed.

After roto tilling Jeff Vance ~~took 4~~ sampled randomly at 4 places in the ~~non~~ uncompacted clay the results were: 17%, 20%, 19.4% and 23%. Four truck loads of water were then applied (total of 7000 gal H_2O) Water application was completed at 6:45. 3 ~~or~~ random ~~samples~~ locations were then sampled w/ the Humbolt, the results were: 29%, 19%, 19%. Visually dry areas were then further wetted w/ 4rth load of water. Compaction was then attempted but the truck kept getting stuck. It was then decided to just have the dozer lightly compact for the end of the day.

ATTACHMENTS: —

SIGNITURE: Christian M. Rasch

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/22/89
REPORT NO.: 24
SHEET 1 of 3
BY: CMR

WEATHER: Very Hot sunny Humid

PRECIPITATION: ____ (inches) TEMPERATURE: LOW 74 HIGH 99

CONTRACTOR PERSONNEL ON SITE: Joe Winning, Tom Doubleday, Joe Suggs, Ricky Denny

EQUIPMENT EMPLOYED: International Farmall w/ disk & compactor, Bomag (10 min.), D5H dozer, water truck

INSPECTORS ON SITE: Chris Rasler

QUALITY CONTROL TESTS AND SAMPLES: Jeff Vance took % moisture and % relative density w/ Humbolt at 11 locations. Took 2 shelby tubes.

VISITORS ON SITE:

SUMMARY OF ACTIVITIES: John Suggs compacted for 2 hrs. w/ rubbertired compactor. Tom D. and Ricky D. replaced blades on Rex for 2 hrs. Joe W. rototilled obvious wet spots for 10 min. w/ Bomag to help dry them a little. After compaction 11 locations encompassing the whole site were chosen for testing. Percent moisture and relative density tests w/ Humboldt were performed.

ATTACHMENTS: ____________ SIGNITURE: Christine M. Rasler

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/22/89
REPORT NO.: 24
SHEET 2 of 3
BY: CMR

SUMMARY OF ACTIVITIES (cont.):

Two ~~to~~ sampling locations did not pass they were location #3 and #11. I called Mike B. to check, he said to ~~r~~ rework the areas and add water. The areas surrounding #3 and #11 were reworked (other areas that visually appeared dry were also reworked) and water was added.

The reworked areas were retested, Area #11 passed area #3 did not. (see attached table). The area surrounding area #3 was reworked and watered again and then it passed. Shelby tube samples were then taken near sampling point #11 and #5 and delivered to Springer Eng.

~~#~~ Note: There was some confusion as to whether optimum moisture was 24 or 25%. Jeff Vance ~~open~~ ~~decided~~ stated it was 24.2%.

ATTACHMENTS: ______________ SIGNITURE: Christian M. Rauch

FLUOR DANIEL GTI

POST-CLOSURE PERMIT RENEWAL APPLICATION
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI FACILITY

Fluor Daniel GTI Project 101399

December 1997

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

CONTENTS

FIGURES

TABLES

APPENDICES

INTRODUCTION

In accordance with Federal Regulations in 40 CFR Parts 264 and 270 and the Mississippi Hazardous Waste Management Regulations (MHWMR) 264 and 270, this Resource Conversation and Recovery Act (RCRA) Post-Closure Care Permit Renewal Application (Renewal Application) is being submitted for the closed surface impoundment (SI) at the Koppers Industries, Inc. (KII) facility located in Tie Plant, Mississippi, Grenada County (KII facility).

The original RCRA Operating Permit Application for the SI was submitted to the Mississippi Department of Natural Resources currently known as the Mississippi Department of Environmental Quality (MDEQ) in 1987 by Keystone Environmental Resources. The effective date of the Hazardous Waste Management Permit No. 88-543-01 (Permit) for the SI was June 28, 1988. The MDEQ Permit Board modified the Permit on February 23, 1990. The Permit was modified to reflect Beazer as operator, KII as owner, include additional detection monitoring constituents in Part IV - Groundwater Protection, and to provide Post-Closure Care requirements of the closed SI. The duration of the Permit was 10 years and is set to expire on June 28, 1998. In accordance with Section I.D.2 of the Permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires.

The 1984 Hazardous and Solid Waste Amendments (HSWA) Permit is set to expire on June 14, 1998. As stated in the EPA letter to Beazer dated July 17, 1997 and pursuant to HSWA Permit Condition I.D.2 (40 CFR 270.10(h)), and Part I Section I.D.2 of the Post-Closure Permit, the Permittee shall submit a complete application for a new permit at least 180 days before the permit expires. Because the HSWA Permit and the Post-Closure Permit together constitute the full RCRA Permit for the facility, this Renewal Application has been prepared to meet both regulatory requirements.

The KII facility was built in 1904 by Koppers Company, Inc. On November 14, 1988, BNS, Inc., an indirect wholly-owned subsidiary of Beazer PLC, completed its acquisition of all the common stock of Koppers Company, Inc. On January 26, 1989, the name of Koppers Company, Inc. was changed to Beazer Materials and Services, Inc. (BM&S). On December 28, 1988, the wood treating facilities, including the KII facility, were purchased by KII. No changes in operation have resulted from this sale. On April 16, 1990, the name of Beazer Materials and Services, Inc. was changed to Beazer East, Inc. Under the terms of the purchase agreement, Beazer has agreed to remain the "operator" of the RCRA SI. Beazer has also agreed to retain responsibility for financial assurance required in connection with the closure of the RCRA SI and has provided appropriate financial assurance documentation (refer to Section I.7).

Prior to closure, the SI stored hazardous waste material, K001 (bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol). In the summer of 1988, all K001 sludge and visually contaminated soils were removed from the SI and shipped to a permitted off-site disposal facility. Closure activities for the SI were initiated in July 1989 which included removal of accumulated rainwater, placement of clean soil

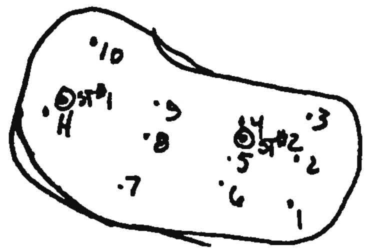
fill, construction of a soil-bentonite cap and cover system. Closure activities for the SI were completed by the end of October 1989. The closure construction documentation and closure certification for the SI were submitted to the MDEQ in January 1990.

This reapplication is organized into the following section with supporting documentation contained in the appendices:

- Section A Part A Application
- Section B Facility Description
- Section C Waste Characteristics
- Section D Process Information
- Section E Groundwater Monitoring
- Section F Procedures to Prevent Hazards
- Section G Contingency Plan
- Section H Training Program
- Section I Closure Plans, Post-Closure Plans and Financial Requirements
- Section J Other Federal Laws
- Section K Certification
- Section L Information Requirements For Solid Waste Management Units

24-1

tests taken on 8/22/89



approximate locations

ST#1, ST#2 - shelby tube samples

1ST Sampling

	% moisture	% rel. density		2nd Sampling	3rd sampling
1	23.5 (25.8, 25.2)	95.2 (94.8, 95.8) (retested in same area)	passed		
2	25.0	95.5	passed		
3	23.0	101.7	did not pass	fail	26.7 96.6 passed
4	26.2	97.6	pass		
5	24.8	95.0	pass		
6	24.9	99.5	pass		
7	25.3	97.3	pass		
8	24.2 (26.3)	95.3 (94.5) (retest)	pass		
9	27.5	95.1	pass		
10	24.7	99.7	pass		
11	23.1	100.3	did not pass	24.2% 97.8 passed	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/29/89
REPORT NO.: 25
SHEET 1 of 3
BY: TPK

WEATHER: SUNNY, HOT, HUMID : MORNING AND AFTERNOON

PRECIPITATION: TRACE (inches) TEMPERATURE: LOW 73 HIGH 95

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN : JOE WILLING, RICKEY DENLEY, JOHN SUGGS

EQUIPMENT EMPLOYED: CATERPILLAR D5H DOZER, INTERNATIONAL FARMALL TRACTOR, BACK HOE, TWO TRAILER TRUCKS, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JEFF VANCE : MID-SOUTH TESTING

SUMMARY OF ACTIVITIES: STARTED AT 7:00 AM.
STOPPED AT MID-SOUTH TESTING TO GET RESULTS
OF GRAIN SIZE AND ATTERBERG LIMITS TESTS:
- GRAIN SIZE (PASSING # 200 SIEVE): 78%, 83%
- PLASTICITY INDEX : 15

ARRIVED AT SITE AT 7:45 AM. JOE AND RICKEY

ATTACHMENTS: SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/29/89
REPORT NO.: 25
SHEET 2 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

WENT TO GET AN ALTERNATE TILLER AS BOTH OF THE TWO PREVIOUSLY USED ONES ARE DOWN FOR REPAIRS. RICKEY WAS BACK AT 8:45 WITH THE BACK HOE.

TWO TRAILERS USED TO BRING IN SOIL FROM THE BORROW.
JOE WILLING ISN'T SURE IF THE BORROW HAS ENOUGH CLAYEY SOIL FOR THE NEXT LIFT. MAY HAVE TO FIND A NEW PIT (JOE W.)

AT 7:00 AM, JOHN, RICKEY AND JOE ARE TAKING GRADE CHECKS AS THEY PLACE THE STAKES. APPROXIMATELY 50% OF THE SOIL FOR THIS LIFT IS IN PLACE.

AFTER LUNCH, THE CREW CONTINUED TO PICK UP ROCKS AND JOE W. OPERATED THE DOZER IN ORDER TO SPREAD THE ARRIVING BORROW MATERIAL. ONLY ONE TRUCK IS DELIVERING MATERIAL NOW.

ATTACHMENTS: ____________ SIGNITURE: Timothy P. Kirkham

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/29/89
REPORT NO.: 25
SHEET 3 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

AT 4:30 PM, A BRIEF SHOWER CAME THROUGH; NOTHING SIGNIFICANT FELL.

THE LAST TRUCK LOAD WAS DELIVERED AT 5:40 PM. AT 5:45, THE NORTH HALF OF THE IMPOUNDMENT WAS BEING ROLLED AS THE SOUTH HALF WAS BEING "CLEANED-UP" ACCORDING TO GRADE STAKES. BLUEPRINT CHECK WILL BE DONE TOMORROW.

FINISHED AT 6:10 PM

ATTACHMENTS: ______

SIGNATURE: Timothy P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/30/89
REPORT NO.: 26
SHEET 1 of 2
BY: TPK

WEATHER: HUMID, OVERCAST A.M.; SUNNY BY 9:00

PRECIPITATION: 0.58 (inches) EARLY MORNING TEMPERATURE: LOW 73 HIGH 93

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN: JOE WILLING, RICKEY DENLEY, JOHN SUGGS, LEONARD LANIER, CLYDE MEYERS

EQUIPMENT EMPLOYED: FARM TRACTOR - IH 1066, DISK IMPLEMENT, BACK HOE, SMALL GARDEN TILLER (MASCHIO TYPE A), FORD TRACTOR

INSPECTORS ON SITE: TERRY KIRCHNER - KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JEFF VANCE : MID-SOUTH TESTING

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 AM.
THE TOP INCH OR TWO WAS WET FROM AN EARLY MORNING SHOWER. JOE W. DECIDED TO LET IT AIR DRY A LITTLE BEFORE DISKING.
AT 10:45, THE TOP 3 OR 4 INCHES WERE DISKED TO SPEED UP THE DRYING.
AT 11:00, THE SMALL GARDEN TILLER WAS BROUGHT

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/30/89
REPORT NO.: 26
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

TO THE SITE.

AT 11:30, THE FRONT LEFT TIRE ON THE WATER TRUCK WAS CHANGED (DUE TO A FLAT).

AFTER LUNCH, THE CREW RESUMED PICKING UP OVERSIZED ROCKS IN THE LIFT. WHICH THE DISK HAD LOOSENED.

LEONARD & CLYDE LEFT AT 4:00 PM.

TESTED THE NEW TILLER - MIXED SO SO.
4:00 PM - LOADED BENTONITE: 15,000 lbs (NET)
4:30 PM - BEGAN SPRAYING BENTONITE
5:00 PM - BEGAN DISKING SOIL/BENTONITE
5:25 PM - STARTED TILLING; 6:20 STOPPED
6:10 PM - STARTED ROLLING, 6:25 STOPPED
- ROLLED BECAUSE OF 50% CHANCE OF RAIN.

FINISHED 6:30 PM

ATTACHMENTS: ______ SIGNATURE: Trena P. Kuchina

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/31/89
REPORT NO.: 27
SHEET 1 of 2
BY: TPK

WEATHER: FOGGY, PARTLY SUNNY A.M.; SUNNY, HOT P.M.

PRECIPITATION: ______ (inches) TEMPERATURE: LOW 74 HIGH 95

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN: JOE WILLING, RICKEY DENLEY, JOHN SUGGS, JOE DAVE McCLOSKEY

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, SPREADER, D5H CAT. DOZER, DISK IMPLEMENT, MASCHIO TILLER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE AND DENSITY (SEE ATTACHMENT)

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED 7:00 AM
THE SPREADER WAS LOADED WITH THE SECOND APPLICATION OF BENTONITE: WEIGHT = 15,450 lbs (NET)
STARTED SPREADING AT 8:10; FINISHED AT 8:25.
DISKED THIS APPLICATION, BUT WILL ROTOTILL THE THIRD APPLICATION OF BENTONITE.

ATTACHMENTS: 27-1 SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 8/31/89
REPORT NO.: 27
SHEET 2 **of** 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

THE THIRD LOAD OF BENTONITE WEIGHED 15,380 lbs (NET)

CALLED MIKE BOLLINGER (KEYSTONE) ABOUT ADDING EXTRA BENTONITE. HE SAID TO ADD ABOUT 5000 EXTRA POUNDS SINCE THE RESULTS OF THE LAST LIFTS' PERMEABILITY TESTS WERE SO CLOSE TO THE DESIGN SPECS.

THE FOURTH LOAD OF BENTONITE WEIGHED 5,940 lbs (NET).

FINISHED SPREADING BENTONITE AT 11:30 AM.

DISKED SOIL/BENTONITE FROM 11:30 - 12:00.

TILLED FROM 12:45 - 1:45.

WATER WAS THEN APPLIED TO BRING UP THE MOISTURE CONTENT. AFTER WATERING, THE SOIL WAS ROTOTILLED AGAIN AND THEN ROLLED WITH THE RUBBER-TIRED ROLLER.

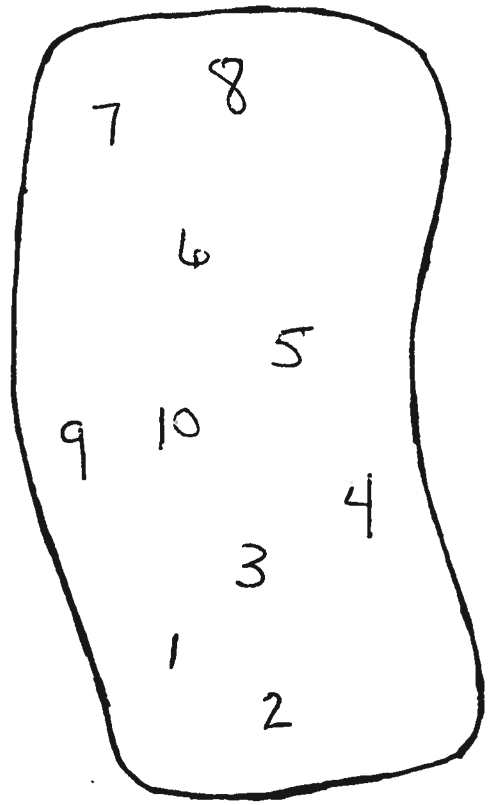
JEFF VANCE OF MID-SOUTH TESTING TOOK MOISTURE AND DENSITY TESTS (SEE ATTACHMENT FOR RESULTS). SOME OF THE TESTS SHOWED EXCESS MOISTURE AND LOW COMPACTION. MORE WILL BE TAKEN TOMORROW.

FINISHED 6:30

ATTACHMENTS: ____________ **SIGNATURE:** Timm P. Kirkman

ATTACHMENT 27-1 DATE 8/31/89

TEST NO.	% MOISTURE	% COMPACTION
1	27.0	96.6
2	29.0	92.8
3	26.0	98.8
4	31.8	89.8
5	31.6	87.8
6	24.4	98.2
7	25.5	98.3
8	27.0	95.6
9	26.5	94.5
10	26.0	96.3
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/1/89
REPORT NO.: 28
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, HOT, HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 71 HIGH 94

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN: JOE WILLING, RICKEY DENLEY,
JOHN SUGGS, JOE DAVE McCLOSKEY

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, CAT. D5H DOZER,
DISK IMPLEMENT

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE AND DENSITY
(SEE ATTACHMENT)

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 A.M.
SEVERAL AREAS APPEARED TOO WET; THEREFORE, THESE AREAS WERE DISKED IN ORDER TO EXPEDITE THEIR DRYING. AFTER DRYING, THESE AREAS WERE THEN ROLLED AND MOISTURE AND DENSITY TESTS WERE TAKEN (SEE ATTACHMENT).

ATTACHMENTS: 28-1 SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/1/89
REPORT NO.: 28
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

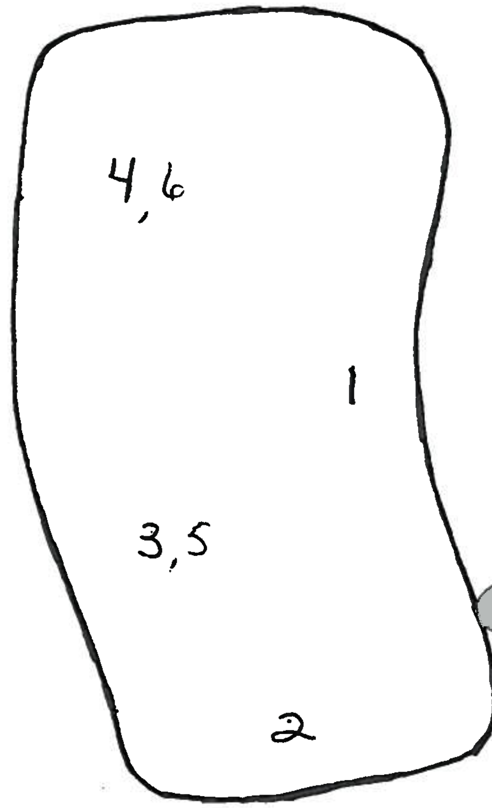
SHELBY TUBES WERE THEN PUSHED INTO THE SOIL FOR PERMEABILITY SAMPLES.
AT 10:00 AM., SAMPLES WERE TAKEN TO SPRINGER ENGINEERING IN STARKVILLE, MS. FOR TESTING.
RETURNED TO PLANT BY 3:00 PM. TO STORE EQUIPMENT THEN WENT TO AIRPORT FOR FLIGHT BACK TO PITTSBURGH.

ATTACHMENTS: 28-1

SIGNATURE: Tommie P. Kirkman

ATTACHMENT 28-1 DATE 9/1/89

TEST NO.	% MOISTURE	% COMPACTION	
1	25.5	99.0	O.K.
2	27.0	97.8	O.K.
3	29.8/31.4	94.3/92.4	NG
4	31.7/28.7	91.0/94.8	NG
* 5	25.5	99.7	OK
* 6	24.8	99.8	OK
7			
8			
9			
10			
11			
12			
13			
14			
15			



* NOS. 5 AND 6 WERE TAKEN IN APPROXIMATELY THE SAME LOCATIONS AS NOS. 3 AND 4, RESPECTIVELY; HOWEVER, THEY WERE TAKEN 4 HOURS LATER.

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/9/89
REPORT NO.: 29
SHEET 1 of 3
BY: TPK

WEATHER: MILD & CLOUDY IN MORNING ; SUNNY, HOT, HUMID IN AFTERNOON

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 73 HIGH 95

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN : RICKEY DENLEY , JOHN SUGGS

EQUIPMENT EMPLOYED: INTERNATIONAL FARMALL WITH DISK, CASE 850 DOZER (USING CHISEL PLOW), INT. FARMALL WITH BENTONITE SPREADER, BOMAG ROTOTILLER, WATER TRUCK, CASE BACK HOE

INSPECTORS ON SITE: TERRY KIRCHNER

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 AM.
JOHN SUGGS WAS USING THE DISK TO BREAK-UP SOIL FURTHER AFTER RICKEY DENLEY MADE A PASS WITH THE 850 DOZER USING THE CHISEL PLOW TO LOOSEN SOIL. AFTER THIS, THEY BOTH WERE PICKING UP ANY ROCKS GREATER THAN SIX INCHES IN DIAMETER. FURTHER DISKING WAS THEN DONE.

ATTACHMENTS: ______ SIGNATURE: Terrance P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/9/89
REPORT NO.: 29
SHEET 2 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

TO UNCOVER ANY REMAINING ROCKS.
AT 11:15, THE SPREADER WAS LOADED WITH THE FIRST BATCH OF BENTONITE TO BE SPREAD.
AT 11:45, THE BENTONITE WAS SPREAD.
FIRST APPLICATION: 15,610 lbs (NET)

AT 1:00 PM, THE SOIL AND BENTONITE WAS MIXED USING THE DISK.
AT 1:10, THE BOMAG ROTOTILLER WAS USED TO PROVIDE BETTER MIXING AND TO INSURE THAT IT WAS MIXED TO A DEPTH OF SIX INCHES.
FINISHED TILLING AT 3:00 PM.
MORE LOOSE ROCKS LARGER THAN SIX INCHES IN DIAMETER WERE REMOVED.
AT 3:15, THE SECOND APPLICATION WAS LOADED INTO THE SPREADER; WEIGHT: 15,110 lbs (NET)
3:50 STARTED TILLING SOIL/BENTONITE USING BOMAG TILLER AND SMALL (MASCHIO) TILLER.
THIRD LOAD OF BENTONITE WEIGHED 14,560 lbs (NET)

ATTACHMENTS: ____________ SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/9/89
REPORT NO. 29
SHEET 3 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

CALLED MIKE BOLLINGER (KEYSTONE) ABOUT ADDING EXTRA BENTONITE AGAIN ON THIS LIFT AS WAS DONE ON THE LAST LIFT. HE SAID TO GO AHEAD AND ADD EXTRA. FOURTH LOAD WEIGHED 7,160 lbs (NET) THEREFORE, TOTAL BENTONITE ADDED WAS:

1ST	15,610 lbs
2ND	15,110
3RD	14,560
4TH	7,160
TOTAL	52,440 lbs

AT 6:30 THE THIRD AND FOURTH LOADS OF BENTONITE WERE TILLED INTO THE SOIL USING BOTH TILLERS AGAIN.
FINISHED TILLING AT 8:30 PM

ATTACHMENTS: ____________ SIGNATURE: Thomas P. Kirkman

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/10/89
REPORT NO.: 30
SHEET 1 of 2
BY: TPK

WEATHER: OVERCAST, DRIZZLING (RAINED LAST NIGHT)

PRECIPITATION: 1 (inches)   TEMPERATURE: LOW 71 HIGH 85

CONTRACTOR PERSONNEL ON SITE:
GREEN & GREEN: JOE WILLING (2 HRS)

EQUIPMENT EMPLOYED: NONE

INSPECTORS ON SITE: TERRY KIRCHNER

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 A.M.
APPROXIMATELY ONE INCH OF RAIN FELL THROUGH THE NIGHT. SINCE THE RAIN WAS NOT EXPECTED, THE LIFT WAS NOT ROLLED LAST NIGHT. THIS LEFT THE RAIN SATURATE THE TOP TWO OR THREE INCHES TO THE EXTENT THAT IT WAS TOO WET TO DISK DRY

ATTACHMENTS: ____________ SIGNATURE: Terrance P Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/10/89
REPORT NO.: 30
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

I RETURNED TWICE MORE DURING THE AFTERNOON TO CHECK ON THE DRYING, BUT SINCE THE SUN WAS OBSCURRED BY CLOUDS ALL DAY, THE SOIL NEVER DRIED.

ATTACHMENTS:

SIGNATURE: Teresa P. Kirkner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/11/89
REPORT NO.: 31
SHEET 1 of 3
BY: TPK

WEATHER: AM: HAZY, ALTOCUMULUS CLOUDS; PM: PARTLY SUNNY, SOME DRIZZLE

PRECIPITATION: TRACE (inches) TEMPERATURE: LOW 73 HIGH 89

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST: JOE WILLING, RICKEY DENLEY, JOHN SUGGS, ~~JOE~~ DAVE M^c^CLESKEY

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, DISK IMPLEMENT, 850 DOZER, FORD TRACTOR, MASCHIO TILLER, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER - KEYSTONE
JEFF VANCE - MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE & DENSITY WITH HUMBOLDT SAMPLER.

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED AT 7:05 A.M.
RICKEY WAS DISKING THE SOIL TO HELP IT DRY MORE QUICKLY.
IN ORDER TO GET AN IDEA OF THE MOISTURE CONTENT, THE SURFACE WAS ROLLED (TWO PASSES ONLY) AND THE RESULTS OF TWO TESTS (30% and 28% MOISTURE) SHOWED

ATTACHMENTS: ______ SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/11/89
REPORT NO.: 31
SHEET 2 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

THAT WATER CONTENT WAS IN EXCESS OF THE ACCEPTABLE MOISTURE LIMIT OF OPTIMUM (24.2%) PLUS 3% ABOVE OPTIMUM (27.2%)

AFTER LUNCH, STORM CLOUDS BEGAN TO MOVE IN SO THE 850 D TRACTOR TRACKED OVER THE SURFACE TO PARTIALLY ROLL THE TOP IN CASE IT RAINED.

JEFF VANCE OF MID-SOUTH TESTING TOOK MORE SAMPLES AND BOTH WERE LOW (20% AND 21.8%) INDICATING THAT MUCH MOISTURE HAD EVAPORATED IN SOME SECTIONS WHILE OTHERS STILL APPEARED WET.

SINCE THE RAIN FROM SUNDAY MORNING ONLY WET THE TOP 2" OR 3", MIXING OF THE WHOLE 6" MIGHT CREATE THE PERFECT MOISTURE. THEREFORE, THE FORD TRACTOR W/ MASCHIO TILLER MADE TWO PASSES, BUT ONLY TILLED TOP 4"; SO THE DISK WAS BROUGHT OUT IN ORDER TO MIX THE FULL 6" DEPTH.

BY THIS TIME, THE MOISTURE APPEARED

ATTACHMENTS: ________ SIGNATURE: Terrence P. Kirsten

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/11/89
REPORT NO.: 31
SHEET 3 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

TO HAVE DROPPED BELOW OPTIMUM, BUT IT WAS TOO LATE TO BEGIN ADDING WATER, TILLING AND ROLLING. THEREFORE, THE TOP WAS ROLLED IN CASE OF RAIN TONIGHT.

FINISHED AT 6:00 PM

ATTACHMENTS:

SIGNATURE: Teresa P. Kirkner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/12/89
REPORT NO.: 32
SHEET 1 of 2
BY: TPK

WEATHER: AM: OVERCAST, MILD, 9:00 AM: PARTLY SUNNY, HOT, HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 71 HIGH 94

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST: RICKEY DENLEY, CLYDE MEYERS.

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, DISK IMPLEMENT, WATER TRUCK, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: MOISTURE AND DENSITY TESTS.

VISITORS ON SITE: JOHN GREEN (PRES. OF GREEN + GREEN)

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 AM.
JEFF VANCE TOOK SEVERAL MOISTURE AND COMPACTION TESTS. THE RESULTS WERE BELOW SPECIFICATIONS FOR BOTH MOISTURE AND COMPACTION. THEREFORE, THE SOIL WAS DISKED IN PREPARATION OF ADDING WATER. BASED ON RESULTS OF THIS MORNINGS TESTS, ONE

ATTACHMENTS: 32-1, 32-2 SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/12/89
REPORT NO.: 32
SHEET 2 of 2
BY: TPK

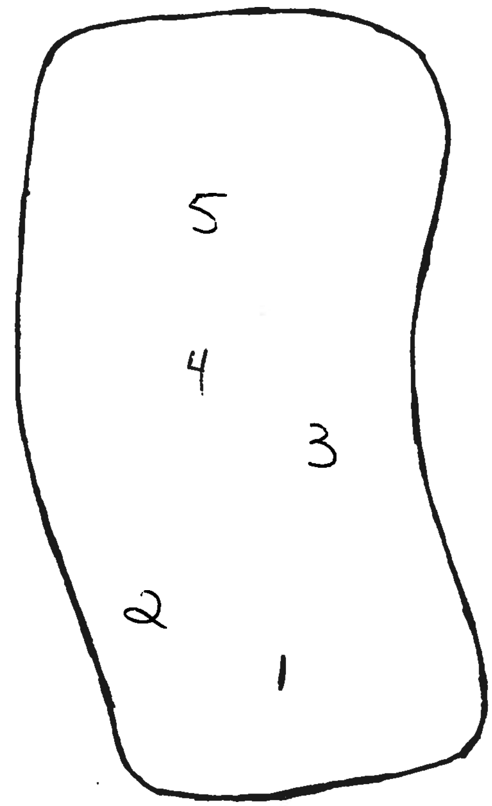
SUMMARY OF ACTIVITIES (cont.):

TRUCKLOAD OF WATER WAS ADDED.
THE SOIL WAS THEN DISKED AGAIN AND THEN ROLLED WITH THE IH 1066 TRACTOR AND RUBBER-TIRED ROLLER (SIX PASSES).
SIX MOISTURE AND COMPACTION TEST WERE TAKEN AND ALL BUT ONE TEST FAILED IN EITHER MOISTURE OR COMPACTION PERCENTAGE.
AFTER LUNCH, THE SOIL WAS DISKED AGAIN AND THIS TIME, TWO MORE TRUCKLOADS (4000 GAL) WERE ADDED, THEN DISKED AND ROLLED (SIX PASSES).
ELEVEN AREAS WERE THEN TESTED FOR MOISTURE AND COMPACTION (SEE ATTACHMENT).
RESULTS WERE ACCEPTABLE. THEREFORE, TWO SHELBY TUBE SAMPLES WERE DRIVEN AND THEN SEALED WITH WAX. SINCE IT WAS TOO LATE TO TAKE THEM TO THE LAB, I WILL TAKE THEM TOMORROW MORNING TO SPRINGER ENGINEERING FOR ANALYSIS OF PERMEABILITY.
FINISHED AT 6:00 PM.

ATTACHMENTS: 32-1, 32-2 SIGNATURE: Terrence P. Kirkman

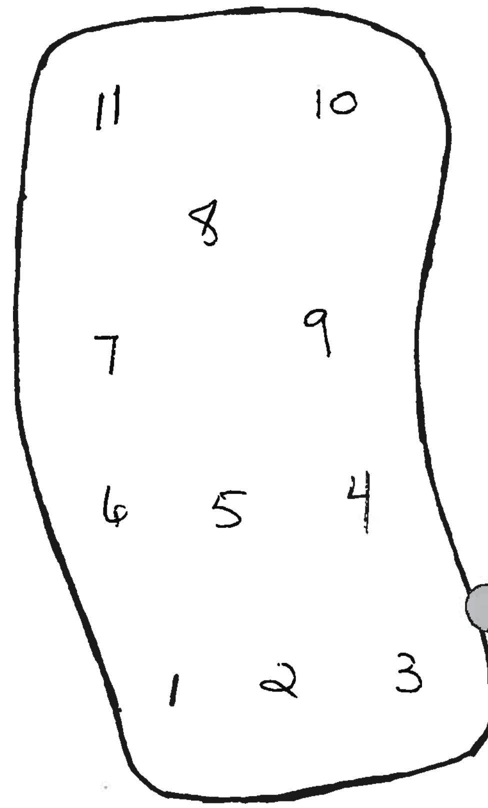
ATTACHMENT 32-1 DATE 9/12/89

TEST NO.	% MOISTURE	% COMPACTION
1	21.4	104.3
2	29.2/26.3	91.3/93.6
3	20.9	107.6
4	22.8	103.3
5	24.2	98.5
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



ATTACHMENT 32-2 DATE 9/12/89

TEST NO.	% MOISTURE	% COMPACTION	
1	24.9	100.2	OK.
2	24.7	97.8	OK.
3	25.2	101.1	OK.
4	24.2	103.9	OK
5	26.9	99.3	OK
6	26.9	94.4	OK
7	25.9	103.1	OK
8	24.0	104.0	OK
9	25.8	96.4	OK
10	24.3	102.1	OK
11	27.2	94.7	OK
12			
13			
14			
15			



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/13/89
REPORT NO.: 33
SHEET 1 of 1
BY: TPK

WEATHER: NOT APPLICABLE

PRECIPITATION: N/A (inches) TEMPERATURE: LOW N/A HIGH N/A

CONTRACTOR PERSONNEL ON SITE: NONE

EQUIPMENT EMPLOYED: NONE

INSPECTORS ON SITE: NONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES:

STOPPED BY MID-SOUTH TESTING TO PICK UP SAND SAMPLE TO TAKE TO SPRINGER ENGINEERING FOR FALLING HEAD PERMEABILITY TEST AND RELATIVE DENSITY TEST ALONG WITH THE TWO SHELBY TUBES FOR ANALYSIS OF PERMEABILITY. THEY SHOULD BE READY BY 9/18 OR 9/19/89.

ATTACHMENTS: NONE SIGNATURE: Thomas P. Kirkman

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 9/22/89
REPORT NO.: 34
SHEET 1 of 1
BY: TPK

WEATHER: POURING RAIN → REMNANTS OF HURRICANE HUGO

PRECIPITATION: ? (inches) TEMPERATURE: LOW — HIGH —

CONTRACTOR PERSONNEL ON SITE: NONE

EQUIPMENT EMPLOYED: NONE

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: UNABLE TO DO ANY WORK AS RAIN INTENSITY INCREASING FROM HURRICANE HUGO

ATTACHMENTS: ______ SIGNATURE: T. P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/9/89
REPORT NO.: 35
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 (inches)   TEMPERATURE: LOW 45 HIGH 80

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST. : RICKEY DENLEY, JOE DAVE M^C CLESKEY

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, FORD 3000 TRACTOR, BOX SCRAPER, DRUM ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JOE WILLING : GREEN + GREEN

SUMMARY OF ACTIVITIES: G+G USED THE BOX SCRAPER TO GET A UNIFORM GRADE ON THE BENTONITE SURFACE AND THEN PULLED THE DRUM ROLLER TO ACHIEVE A SMOOTH SURFACE.

I ARRIVED AT 12:30 PM FROM PITTSBURGH AND TWO G+G MEN WERE DIGGING

ATTACHMENTS: ____________   SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/9/89
REPORT NO.: 35
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

OUT THE MUD FROM AROUND THE TWO PIPES WHICH ORIGINALLY FED INTO THE IMPOUNDMENT.

WHEN THIS WAS CLEAR, THEY REPLACED THE MUD INSIDE THESE PIPES WITH A CEMENT MIXTURE IN ORDER TO PERMANENTLY SEAL THE PIPES. ENOUGH CEMENT WAS MIXED TO BACKFILL THE PIPES TEN FEET. THIS TEN FEET BEGAN APPROXIMATELY TEN FEET FROM THE TOP OF THE KEY TRENCH OF THE CLAY LAYER

FINISHED AT 3 PM.

ATTACHMENTS:

SIGNATURE: T. P. Kinkman

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/10/89
REPORT NO.: 36
SHEET 1 of 2
BY: TPK

WEATHER: CLEAR, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 55 HIGH 79

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST: JOE WILLING, RICKEY DONLEY, JOE DAVE McCLESKEY

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, FORD 3000 TRACTOR, BOX SCRAPER, DRUM ROLLER, CASE 850D DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED AT 7:00 AM
CUT ONE 15' ROLL OF FILTER FABRIC IN HALF AND LAID IT AROUND SOUTH END, EAST SIDE AND NORTH END. ONTO THIS FABRIC, SAND WAS PLACED, COVERING 3 FEET (2 FEET BEYOND THE 50' DISTANCE FROM CENTER LINE).
THE SAND TRUCKS BACKED ONTO THE CLAY

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/10/89
REPORT NO.: 36
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

LAYER IN ORDER TO SPOT-PLACE THE SAND AND ELIMINATE EXCESS PUSHING OF THE SAND INTO POSITION. ANY GROOVES MADE BY THE TRUCKS WERE EITHER ROLLED WITH THE DRUM ROLLER OR BACK-DRAGGED WITH THE BLADE OF THE 850 D DOZER BEFORE ANY SAND WAS LAIN.

ABOUT HALF OF THE SAND REQUIRED WAS DELIVERED TODAY.

FINISHED 5:30 PM.

ATTACHMENTS:

SIGNATURE: Teresa P. Kirkner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/11/89
REPORT NO.: 37
SHEET 1 of 2
BY: TPK

WEATHER: CLEAR, COOL

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 48 HIGH 84

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN: JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY

EQUIPMENT EMPLOYED: 850 D DOZER, TRAILER TRUCKS

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED 7:00 AM.
TRUCKS STARTED AROUND 7:30 AM DELIVERING SAND.
LAID OUT THE REMAINDER OF THE FILTER FABRIC AROUND THE SOUTHWEST CORNER, LEAVING ABOUT 25 FEET OPEN FOR TRUCK TRAFFIC.

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/11/89
REPORT NO.: 37
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

WHEN THE SAND LIFT LOOKED FULL, THE TRUCKS WERE STOPPED AND THEY CHECKED GRADE. IT LOOKS LIKE ABOUT A DOZEN LOADS WILL STILL BE NEEDED.

ATTACHMENTS:

SIGNATURE: Terence P. Kirkner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/12/89
REPORT NO.: 38
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, MILD W/ MORNING FOG

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 54 HIGH 85

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY

EQUIPMENT EMPLOYED: 850 D DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JEFF VANCE : MID-SOUTH TESTING

SUMMARY OF ACTIVITIES:
13 TRUCKLOADS OF SAND WERE DELIVERED, BRINGING THE SURFACE VERY CLOSE TO GRADE SPECS.
THE GRAVEL EDGES WERE RAKED TO BRING THEM AS CLOSE AS POSSIBLE TO A 4:1 SLOPE (H:V)

ATTACHMENTS: ______ SIGNATURE: Terrance P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/12/89
REPORT NO.: 38
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

IT LOOKS LIKE ONE MORE LOAD OF SAND WILL BE NEEDED TO CLOSE GAP WHERE TRUCKS BACKED UP ONTO SAND. JEFF VANCE STOPPED BY AND I ASKED HIM TO COME TOMORROW FOR DRY DENSITY TESTS AND TO GET A SAMPLE OF THE BORROW PIT'S SOIL TODAY TO RUN A NEW PROCTOR TEST ON IT. HE'LL GET SAMPLE TOMORROW.

FINISHED 5:30 PM.

ATTACHMENTS:

SIGNATURE: Terrence P. Kushner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/13/89
REPORT NO.: 39
SHEET 1 of 3
BY: TPK

WEATHER: SUNNY, MILD W/ AM. FOG; AFTERNOON HUMID

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 54 HIGH 75

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN:
JOE WILLING, RICKEY DENLEY, JOE DAVE M^cCLESKEY

EQUIPMENT EMPLOYED: 850 D DOZER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: DRY DENSITY TESTS

VISITORS ON SITE:

SUMMARY OF ACTIVITIES:
FINISHED SAND LAYER AND TURNED FILTER FABRIC UP AND OVER THE EDGE OF THE SAND SO THAT THE GRAVEL COULD BE PLACED AGAINST THE OUTSIDE RIM OF THE CONDUCTING ZONE.

ATTACHMENTS: SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/13/89
REPORT NO.: 39
SHEET 2 of 3
BY: TPK

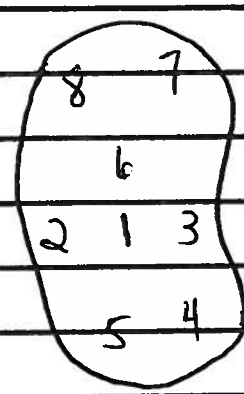
SUMMARY OF ACTIVITIES (cont.):

JEFF VANCE OF MID-SOUTH PERFORMED DRY DENSITY TESTS W/ HUMBOLDT NUCLEAR MACHINE. TARGET DENSITY WAS CALCULATED ACCORDING TO THE FOLLOWING EQUATION:

$$\text{DRY DENSITY} = \frac{\text{MIN. DRY DENSITY} \times \text{MAX DRY DENSITY}}{\text{MAX DRY DEN} - \underset{\text{(REQ'D REL DEN)}}{0.75}\,(\text{MAX. D.D.} - \text{MIN. D.D.})}$$

$$\text{DRY DENSITY} = \frac{90.4 \times 106.3}{106.3 - .75\,(106.3 - 90.4)} = \boxed{101.8}$$

TEST	DRY DENSITY		% MOISTURE
1	108.9	O.K	5.7
2	107.1	O.K	5.7
3	107.8	OK	5.9
4	106.6	OK	5.1
5	109.9	OK	5.5
6	108.8	OK	4.6
7	106.9	OK	6.2
8	106.1	OK	4.9



ATTACHMENTS: ________ SIGNATURE: Teresa P. Kirkham

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/13/89
REPORT NO.: 39
SHEET 3 of 3
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

JEFF VANCE AND I WENT TO THE BORROW PIT TO GET A SAMPLE OF THE COVER SOIL LAYER SO THAT A STANDARD PROCTOR TEST/ANALYSIS COULD BE EVALUATED.

FINISHED AT 5:30 PM.

ATTACHMENTS: ____________

SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/14/89
REPORT NO.: 40
SHEET 1 of 1
BY: TPK

WEATHER: FOGGY, COOL

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 55 HIGH 83

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN:
JOE WILLING, RICKEY DENLEY, JOE DAVE McCLESKEY

EQUIPMENT EMPLOYED: BACK HOE

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: FINISHED PLACING AGGREGATE WITH THE BACK HOE BY 9:00 AM. THEN STARTED TO RAKE IT INTO PLACE AND 4:1 SLOPE. TOLD JOE W. THAT HE NEEDED TO DO A QUANTITY IN-PLACE SURVEY. HE'LL GET WITH NEIL TO SEE THAT IT IS DONE. FINISHED BY 12 NOON.

ATTACHMENTS: ______ SIGNATURE: Terence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/15/89
REPORT NO.: 41
SHEET 1 of 1
BY: TPK

WEATHER: CLOUDY, COOL, FOGGY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 56° HIGH ____

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST:
NEIL TURNAGE, JOE WILLING, DOUG BOYD

EQUIPMENT EMPLOYED: TRANSIT, ROD

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7:00 AM.
NEIL, JOE AND DOUG DID QUANTITY SURVEY
FOR SAND AND AGGREGATE LAYER.
FINISHED AT 9:00 AM. LEFT FOR PITTSBURGH
AS G&G SAID ALL OF THEIR TRUCKS ARE
DOWN AND WON'T HAVE ANY UNTIL 10/19/89

ATTACHMENTS: ____ SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/18/89
REPORT NO.: 42
SHEET 1 of 2
BY: TPK

WEATHER: COLD, OVERCAST, INTERMITTENT DRIZZLE

PRECIPITATION: TRACE (inches)   TEMPERATURE: LOW 40 HIGH 52

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: JOE WILLING (1/2 DAY), JOHN GREEN AND OTHERS FROM CONCRETE PLANT

EQUIPMENT EMPLOYED: DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARRIVED FROM PITTSBURGH ABOUT 12:30 PM. JOHN GREEN AND OTHERS WERE SPREADING OUT FILTER FABRIC. A RAMP OF COVER SOIL WAS BUILT ON WEST SIDE SO THAT THE TRUCKS COULD BACK UP ONTO CAP AND DUMP THEIR LOADS. ABOUT 3/4 OF SURFACE WAS COVERED WITH FABRIC.

ATTACHMENTS: ______________ SIGNATURE: Terrance P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/18/89
REPORT NO.: 42
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

THE TRUCKS STOPPED ABOUT 1:30 AM WHEN THE RAIN CAME FORCING THE JOB TO SHUT DOWN AS THE TRUCKS COULD NOT MAKE IT IN AND OUT OF THE BORROW AREA.

FINISHED AT 1:30. WENT TO SEE D. SMITH W/ DRILLERS AT SOUTH END OF PLANT TO CHECK OUT PROGRESS

ATTACHMENTS: ____________ SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/19/89
REPORT NO.: 43
SHEET 1 of 1
BY: TPK

WEATHER: OVERCAST, COLD, SLIGHT DRIZZLE

PRECIPITATION: 0.1 (inches) TEMPERATURE: LOW 40 HIGH 50

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN : JOE WILLING, NEIL TURNAGE, DOUG BOYD

EQUIPMENT EMPLOYED: NONE

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: INTERMITTANT DRIZZLE AT PLANT SITE WITH RAIN AT BORROW AREA. GREEN + GREEN DECIDED TO SHUT DOWN AS TRUCKS CAN'T PULL THE HILL FROM THE BORROW PIT. FINISHED AT PLANT AT 10:00AM. WORKED ON REPORTS.

ATTACHMENTS: NONE SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/20/89
REPORT NO.: 44
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, COLD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 32 HIGH 55

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: DOUG BOYD, BENJY HOWARD

EQUIPMENT EMPLOYED: D30 LGP DOZER, IH TRACTOR W/ BOX SCRAPER, RUBBER-TIRED ROLLER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE: MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: COMPACTION AND MOISTURE TESTS W/ HUMBOLDT TESTER (NUCLEAR)

VISITORS ON SITE: JOHN GREEN, NEAL TURNAGE: GREEN + GREEN

SUMMARY OF ACTIVITIES: ARR. 7:00 AM
G+G FINISHED LAYING OUT THE FILTER FABRIC AND THE SPREAD OUT THE FIRST LIFT OF THE COVER SOIL. FINISHED ROLLING THE FIRST LIFT BY 1:30 PM. JEFF VANCE OF MID-SOUTH TESTING TOOK COMPACTION AND MOISTURE TESTS W/ HUMBOLDT TESTER.

ATTACHMENTS: 44-1 SIGNITURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/20/89
REPORT NO.: 44
SHEET 2 **of** 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

OPTIMUM MOISTURE IS 18%. ALL TESTS PASSED HAVING ≥ 95% COMPACTION AND ± 5% OF OPTIMUM MOISTURE.

DIANE SMITH OF KEYSTONE BROUGHT THE DRILLERS DOWN TO WORK ON THE SURROUNDING WELLS: STABILIZING MOST WITH A NEW CONCRETE BASE AND REPAIRING R8-B (THE WELL KNOCKED DOWN BACK IN JULY).

TRUCKS STARTED ABOUT 3 PM DELIVERING COVER SOIL FOR SECOND 9" LIFT.

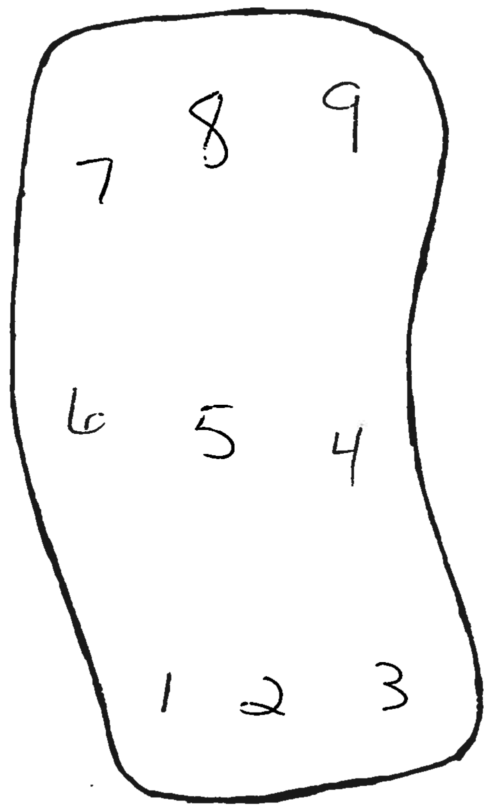
NEIL T. OF G+G SURVEYED FOR GRADE ONLY. WILL NEED A FEW MORE LOADS TOMORROW

FINISHED 6 PM.

ATTACHMENTS: ______ **SIGNATURE:** T. P. Kirkman

ATTACHMENT 44-1 DATE 10/20/89

TEST NO.	% MOISTURE	% COMPACTION
1	15.1	95.1
2	14.6	102.0
3	16.4	99.4
4	16.6	104.1
5	14.5	106.1
6	15.0	99.1
7	15.5	100.1
8	14.6	95.4
9	14.3	105.3
10		
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/21/89
REPORT NO.: 45
SHEET 1 of 2
BY: TPK

WEATHER: CLEAR, COLD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 32 HIGH 53

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN : BENJY HOWARD, DOUG BOYD, NEIL TURNAGE

EQUIPMENT EMPLOYED: IH 1066 TRACTOR, BOX SCRAPER, D3 LGP DOZER, BACK HOE

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JOHN GREEN : GREEN + GREEN

SUMMARY OF ACTIVITIES: TWO TRUCKS DUMPED THIS MORNING TO FILL IN LOW SPOT. NEIL, BENJY AND DOUG TOOK GRADE SURVEY. BENJY THEN RAN THE DOZER TO EVEN OUT THE SURFACE AND FIND OUT IF MORE SOIL IS NEEDED. AT 2:40 PM, MORE TRUCKS CAME TO FILL IN GAPS AND

ATTACHMENTS: SIGNATURE: Terrence P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/21/89
REPORT NO.: 45
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

TO STOCKPILE SOME SOIL FOR THE BACKHOE TO PLACE SOIL AROUND EDGES TRYING TO GET CLOSE TO 4:1 SLOPE. LOOKS CLOSE TO GRADE AND WILL BE CHECKED TOMORROW OR MONDAY.

FINISHED AT 6 PM

ATTACHMENTS:

SIGNATURE: T. P. Kuchar

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/22/89
REPORT NO.: 46
SHEET 1 of 1
BY: TPK

WEATHER: CLEAR, COLD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 35 HIGH 55

CONTRACTOR PERSONNEL ON SITE: NONE

EQUIPMENT EMPLOYED:

INSPECTORS ON SITE:

QUALITY CONTROL TESTS AND SAMPLES:

VISITORS ON SITE:

SUMMARY OF ACTIVITIES: ARRIVED 7:00 A.M.
WAITED TWO HOURS - NO ONE FROM G+G CAME.

ATTACHMENTS: SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/23/89
REPORT NO.: 47
SHEET 1 of 2
BY: TPK

WEATHER: CLOUDY, MILD

PRECIPITATION: ______ (inches) TEMPERATURE: LOW 45 HIGH 60

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: BENJY HOWARD, DOUG BOYD, NEAL TURNAGE

EQUIPMENT EMPLOYED: D30 LGP DOZER, IH 1066 TRACTOR, BOX SCRAPER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE
JEFF VANCE : MID-SOUTH TESTING

QUALITY CONTROL TESTS AND SAMPLES: COMPACTION AND MOISTURE TESTS

VISITORS ON SITE: JOHN GREEN : GREEN + GREEN

SUMMARY OF ACTIVITIES: ARR. 7 AM.
PUSHED COVER SOIL TO MAKE GRADE, REPAIRED MINOR RIPS IN FILTER FABRIC AND SLOPED EDGES AROUND S.I. ABOVE GRAVEL.
JEFF VANCE TOOK COMPACTION AND MOISTURE TESTS; COMPACTION WAS GOOD, BUT MOISTURE WAS MORE THAN 5 % LOWER THAN OPTIMUM.

ATTACHMENTS: 47-1 SIGNATURE: Terry P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/23/89
REPORT NO.: 97
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

JOHN GREEN INSISTED THAT SOIL WAS NOT DRY. I CALLED MIKE BOLLINGER OF KEYSTONE AND HE SAID TO GET ANOTHER PROCTOR OR TWO AND THAT THESE WILL BE COMPARED TO TODAY'S TEST RESULTS. (ORIGINAL PROCTOR MAY NOT BE REPRESENTATIVE.)
CLEANED UP SURFACE WITH TRACTOR AND BOX SCRAPER

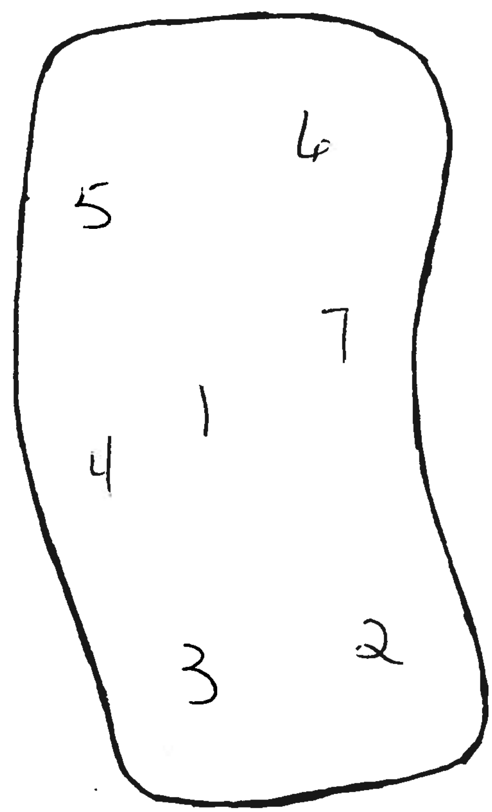
FINISHED 7 PM

ATTACHMENTS:

SIGNATURE: T.P. Kuhn

ATTACHMENT 47-1 DATE 10/23/89

TEST NO.	% MOISTURE	% COMPACTION
1	13.4	111.4
2	13.9	96.5
3	13.0	87.0
4	11.6	104.4
5	10.1	100.9
6	9.4	102.6
7	13.0	102.0
8		
9		
10		
11		
12		
13		
14		
15		



KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/24/89
REPORT NO.: 48
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 (inches)   TEMPERATURE: LOW 50 HIGH 77

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN:
BENJY HOWARD, DOUG BOYD, NEIL TURNAGE

EQUIPMENT EMPLOYED: D3 LGP DOZER

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7 AM.
DISCOVERED THAT EXTENSION DIMENSION OF IMPOUNDMENT CAP WAS APPROXIMATELY TEN FEET SHORT ALL AROUND. CORRECTED THIS BY LAYING OUT FILTER CLOTH AROUND EDGE AND PUTTING MORE SAND ONTO THE CLOTH. BOTH MIKE B. AND JOHN G. KNOW ABOUT THIS.

ATTACHMENTS:

SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/24/89
REPORT NO.: 48
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

G + G ORDERED TWO MORE ROLLS OF FILTER FABRIC WHICH ARE NEEDED TO FINISH EXTENSION. SPECS WERE RELAYED TO MIKE B. AND HE O.K'd THEM.

FINISHED EAST SIDE AND HALF OF WEST SIDE. REMOVED WEST SIDE RAMP SO THAT FABRIC AND SAND CAN BE PLACED THERE TOMORROW.

FINISHED 7 PM

ATTACHMENTS:

SIGNATURE: T. P. Kuchm

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/25/89
REPORT NO.: 49
SHEET 1 of 2
BY: TPK

WEATHER: CLEAR, COOL, PATCHY FOG

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 48 HIGH 81

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN: DOUG BOYD, BENJY HOWARD, NEIL T. (1/2 DAY)

EQUIPMENT EMPLOYED: BACK HOE

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: JEFF VANCE: MID-SOUTH TESTING

SUMMARY OF ACTIVITIES: ARR. 7 AM.
REMOVED FORD TRACTOR FROM SITE.
LAID OUT FILTER FABRIC ALONG REMAINDER OF WEST SIDE AND DOWN TOWARD SOUTH END.
GOT THREE LOADS OF GRAVEL AND STARTED SPOTTING IT AROUND SAND EDGE WITH THE BACK HOE.

ATTACHMENTS: ____ SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/25/89
REPORT NO.: 49
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

JEFF VANCE OF MID-SOUTH TESTING STOPPED BY TO RELAY RESULTS OF NEW PROCTOR TESTS ON THE COVER SOIL OPTIMUM MOISTURE PERCENTS ARE AS FOLLOWS:

SANDY SECTION → 14 % OPT. MOIST.
CLAYEY SECTION → 17 % OPT. MOIST.

THEREFORE, RESULTS FROM 10/23 ARE OK.

FINISHED 6:30 PM

ATTACHMENTS: ____________ SIGNATURE: T. P. Kirk[illegible]

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/26/89
REPORT NO.: 50
SHEET 1 of 2
BY: TPK

WEATHER: CLEAR, COOL, SOME FOG

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 40 HIGH 80

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN:
DOUG BOYD, BENJY HOWARD, NEIL TURNAGE (1/3)

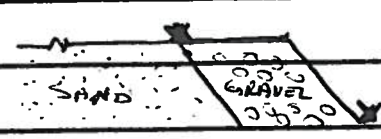
EQUIPMENT EMPLOYED: D30 LGP DOZER, BACK HOE,
BOX SCRAPER, IH 1066 TRACTOR

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR. 7 AM.
FINISHED SOUTH END WITH SAND AND GRAVEL
+ IMMEDIATELY THEREAFTER NEIL T. TOOK
A QUANTITY SURVEY (X-SECT.) WITH
STATIONS AT TOP OF SAND AND BOTTOM
OF GRAVEL.



ATTACHMENTS: SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/26/89
REPORT NO.: 50
SHEET 2 **of** 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

THE DOZER PUSHED ABOUT 12 LOADS OF COVER SOIL ONTO THE TEN FOOT EXTENSION. MORE GRAVEL WAS ADDED TO THE SIDES AFTER FABRIC WAS PULLED UP AT THE CORNERS. BOX SCRAPER WAS THEN USED TO SHAPE UP THE SURFACE. LEFT ABOUT A FOOT ON THE SIDES FOR SPILL OFF FROM THE TOP SOIL TO BE ADDED.

CALLED MIKE B. TO CHECK ON THE POSSIBLE CHANGE IN GRASS SEED AS BERMUDA PROBABLY WON'T START HERE THIS TIME OF YEAR. G+G RECOMMENDS RYE (AN ANNUAL) AND FESCUE AND SOME BERMUDA (FOR SPRING START). ALSO, MIKE WILL CHECK ON CHANGING ASPHALT TACK COAT TO CRIMP METHOD FOR MULCH. HE SHOULD KNOW BY TOMORROW.

FINISHED AT 6:30 PM

ATTACHMENTS: ____________ **SIGNATURE:** T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/27/89
REPORT NO.: 51
SHEET 1 of 2
BY: TPK

WEATHER: SUNNY, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 41 HIGH 81

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: DOUG BOYD, RUSTY HOWARD, NEIL TURNAGE (1/2)

EQUIPMENT EMPLOYED: D3 LGP DOZER, F1 10K4 TRACTOR, BOX SCRAPER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR 7 AM.
FINISHED GRADING COVER SOIL, NEIL T. TOOK QUANTITY SURVEY WITH TOP ~~[illegible]~~ AND TOE OF THE COVER SOIL.
STARTED TOP SOIL ABOUT 9:30 PM. - STOPPED WHILE SURVEYING - RESUMED AROUND 10:30 AM, AGAIN WITH TWO TRUCKS.

ATTACHMENTS: ________ SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/27/89
REPORT NO.: 51
SHEET 2 **of** 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

MORE GRADING WAS DONE AROUND THE GRAVEL EDGE, SPOTTING LOADS TO EVEN OUT THE EDGE.

PLACED FILTER FABRIC OVER NE SIDE OF GRAVEL FOR FINAL PUSH OF TOP SOIL

ABOUT 5 PM, EXTRA TRUCKS BROUGHT TOP SOIL UNTIL 6:30.

FINISHED 6:30 PM.

ATTACHMENTS: ______________________ **SIGNATURE:** T. P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/28/89
REPORT NO.: 52
SHEET 1 of 1
BY: TPK

WEATHER: SUNNY, COOL

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 40 HIGH 78

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN:
BENJY HOWARD, DOUG BOYD

EQUIPMENT EMPLOYED: D3OLGP DOZER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR 7:50 AM
RAKED OUT SIDES OF GRAVEL EDGE. NO TRUCKS UNTIL 9:30 AM.
ALMOST ENOUGH TOP SOIL DELIVERED TODAY. WILL NEED A FEW LOADS TOMORROW.
WILL GRADE ON MONDAY.
FINISHED 7:50 PM

ATTACHMENTS:

SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/29/89
REPORT NO.: 53
SHEET 1 of 1
BY: TPK

WEATHER: ______

PRECIPITATION: ______ (inches) TEMPERATURE: LOW ____ HIGH ____

CONTRACTOR PERSONNEL ON SITE: ______

EQUIPMENT EMPLOYED: ______

INSPECTORS ON SITE: ______

QUALITY CONTROL TESTS AND SAMPLES: ______

VISITORS ON SITE: ______

SUMMARY OF ACTIVITIES: OFF TODAY

ATTACHMENTS: ______ SIGNITURE: T.P Kinhner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/30/89
REPORT NO.: 54
SHEET 1 of 2
BY: TPK

WEATHER: PARTLY CLOUDY, MILD

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 50 HIGH 82

CONTRACTOR PERSONNEL ON SITE: GREEN + GREEN: BENJY HOWARD, DOUG BOYD, NEIL TURNAGE, CHARLES

EQUIPMENT EMPLOYED: D3CLGP DOZER

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES:

VISITORS ON SITE: JOHN GREEN: GREEN + GREEN

SUMMARY OF ACTIVITIES: ARR 7:00 AM
NEIL T. BLUE-TOP SURVEYED WITH BENJY + DOUG. THEN BENJY GRADED TOP SOIL TO GET UNIFORM TOP SURFACE.
STRAW ARRIVED ABOUT 9:30 AM.
LIME ARRIVED 2:10 (≈ 1000 lbs). IT WAS SPREAD WITH RENTAL SPREADER / DRIVER.

ATTACHMENTS: SIGNATURE: T. P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/30/89
REPORT NO.: 54
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

2:20 APPLIED APPROX 660 lbs (800 lb/AC × 0.8 AC)
2:40 DISKED LIME AND FERTILIZER (2 PASSES)

SEEDS:

1. FESCUE (FAWN TALL): 0% ENDOPHYTE, 9/5/89, LOT # P8-9-5-TF, No. 023798
   35 lbs / ACRE
2. HULLED BERMUDA: 66050 / 1005
   20 lbs / ACRE
3. RYE: 150 lbs TOTAL

COMPACTED LIGHTLY WITH TRACTOR-PULLED CULTI-PACKER 4:40 - 5:10 PM.

SPREAD ≈ 100 BALES OF STRAW BY HAND
COMPACTED WITH TRACTOR-PULLED CRIMPER

FINISHED AT 8:00 PM

ATTACHMENTS: ________ SIGNATURE: T.P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/31/89
REPORT NO.: 55
SHEET 1 of 2
BY: TPK

WEATHER: OVERCAST, COOL

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 50 HIGH 75

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN: BENJY HOWARD, DOUG BOYD

EQUIPMENT EMPLOYED: D3C LGP DOZER, BACK HOE

INSPECTORS ON SITE: TERRY KIRCHNER: KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: ARR: 7:00 AM.
SPREAD 4-5 MORE BALES OF STRAW TO COVER ANY SPOTS LEFT FROM LAST NIGHT'S SPREADING. BUCKED ALL LOOSE PILES OF GRAVEL, SAND AND COVER SOIL OVER INTO ONE SECTION.
DUG TRENCH AND APPLIED SEED & STRAW,

ATTACHMENTS: ______________ SIGNATURE: T. P. Kirchner

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 10/31/89
REPORT NO.: 55
SHEET 2 of 2
BY: TPK

SUMMARY OF ACTIVITIES (cont.):

AFTER CHECKING GRADE OF THE TRENCH.

THE EDGE OF THE FILTER FABRIC WAS THEN CUT / TRIMMED AROUND THE CAP.

RAKED GRAVEL TO SLOPE.
TOO DARK TO TAKE FINAL PICTURES TONIGHT, WILL GET THEM IN THE MORNING.

FINISHED AT 6 PM.

ATTACHMENTS:

SIGNATURE: T.P. Kuhn

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
CONSTRUCTION INSPECTION DAILY REPORT

BEAZER MATERIALS & SERVICES, INC.
SURFACE IMPOUNDMENT CLOSURE
KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT

DATE: 11/1/89
REPORT NO.: 56
SHEET 1 of 1
BY: TPK

WEATHER: COOL, HAZY, SUNNY

PRECIPITATION: 0 (inches) TEMPERATURE: LOW 49 HIGH 74

CONTRACTOR PERSONNEL ON SITE: GREEN & GREEN CONST.: NEIL TURNAGE, DOUG BOYD, BENJY HOWARD

EQUIPMENT EMPLOYED: NONE

INSPECTORS ON SITE: TERRY KIRCHNER : KEYSTONE

QUALITY CONTROL TESTS AND SAMPLES: NONE

VISITORS ON SITE: NONE

SUMMARY OF ACTIVITIES: GREEN & GREEN REMOVED ALL OF THEIR REMAINING EQUIPMENT. I TOOK FINAL PICTURES OF CAP + TRENCH.

FINISHED 9 AM

ATTACHMENTS: SIGNATURE: T. P. Kirchner

APPENDIX B

Soil Testing Data and Results

PERMEABILITY TESTING

Springer Engineering, Inc.
206 Glenn Street
Starkville, MS 39759
601-323-2296

September 29, 1989

MID-SOUTH TESTING LABORATORIES, INC.
Attn: Mr. Jeff Vance
133 Mound Street
Grenada, Mississippi 38901

RE: Permeability Analysis
Kopper's Lagoon
Grenada, Mississippi

Dear Mr. Vance:

Attached hereto is a recapitulation of test results obtained on samples submitted from the project referenced above. Please feel free to contact us should you have any questions concerning the information provided or if we may be additional assistance. Our invoice for services rendered is enclosed.

We appreciate the opportunity to assist Mid-South Testing Laboratories on this project.

Sincerely,

Clyde L. Pritchard

Clyde L. Pritchard, P.E.

CP:cs

PERMEABILITY ANALYSIS
KOPPER'S LAGOON
GRENADA, MISSISSIPPI

*DATE SAMPLED	DESCRIPTION	COEFF. OF PERMEABILITY (cm/sec)
7-31-89	Clay Liner - North Clay Liner - South	1.4×10^{-5} 8.2×10^{-6}
7-31-89	Coarse Sand Fill Harris Pit	6.9×10^{-3}
8-12-89	Clay Liner - S-1 Clay Liner - S-2	1.4×10^{-8} 8.4×10^{-9}
8-22-89	Clay Liner - ST-1 Clay Liner - ST-2	7.9×10^{-8} 7.7×10^{-8}
9-1-89	Clay Liner - North Clay Liner - South	4.2×10^{-8} 6.2×10^{-8}
9-12-89	Clay Liner - North Clay Liner - South	3.6×10^{-8} 8.4×10^{-9}
9-12-89	Course Sand Fill	5.6×10^{-2}

*Samples Delivered To Laboratory By Keystone Environmental Consultants.

DRAINAGE LAYER

Sieve Analysis

TMD-602
(REV. 4—70)

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 415 First Street
Grenada, Mississippi 38901

MISS.

PLANT LETTER

DATE 9-13-89

REPORT NO. 1

PROJ. NO. Koppers Lagoon

MATERIAL Fill Sand

COUNTY Grenada

NO. CARS

QUAN. REP.

CONSIGNEE Green + Green

DESTINATION Site

PRODUCER Memphis Stone

ADDRESS

TYPE OF CONSTRUCTION TO BE USED IN

SIEVE ANALYSIS (PER CENT PASSING)

CAR NO.						
SATISFACTORY CARD NO.						
2½" SIEVE						
2" SIEVE						
1½" SIEVE						
1¼" SIEVE						
1" SIEVE						
¾" SIEVE						
½" SIEVE						
3/8" SIEVE	100					
No. 4 SIEVE	98.6					
No. 8 SIEVE						
No. 10 SIEVE	89.5					
No. 16 SIEVE						
No. 20 SIEVE						
No. 30 SIEVE						
No. 40 SIEVE	35.0					
No. 50 SIEVE						
No. 60 SIEVE						
No. 80 SIEVE	1.3					
No. 100 SIEVE						
No. 200 SIEVE	0.7					
PER CENT LOSS ON WASH						
COLOR TEST						
FINENESS MODULUS						

This material has been inspected and is _______ for use in the abov
construction.

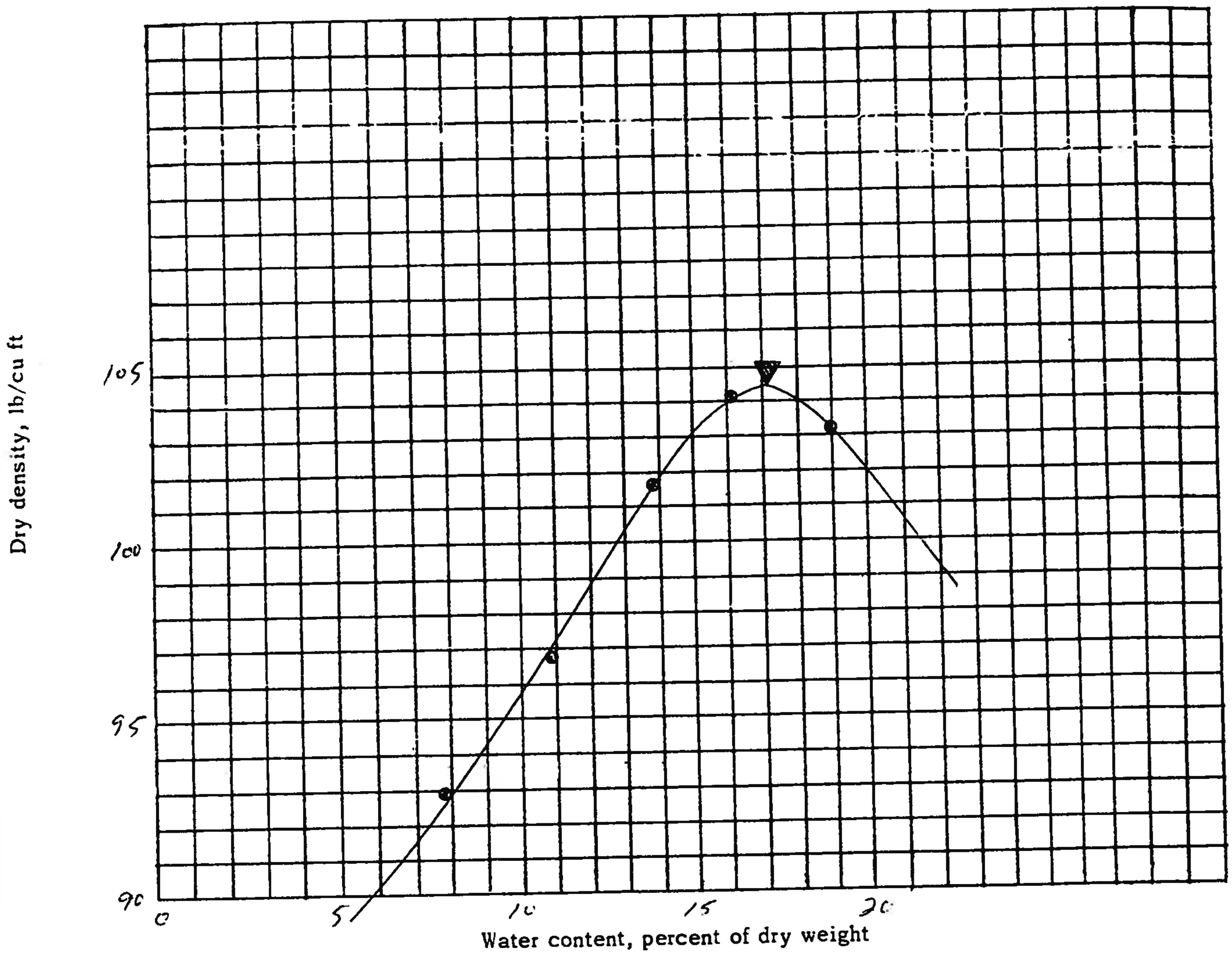
REMARKS:

Distribution:
Original to Testing Engineer;
1 copy to District Engineer;
1 copy to Project Engineer;
1 copy for Plant File.

SIGNED Jeff Vance

MATERIALS INSPECTOR

STANDARD PROCTOR TESTS



Standard compaction test

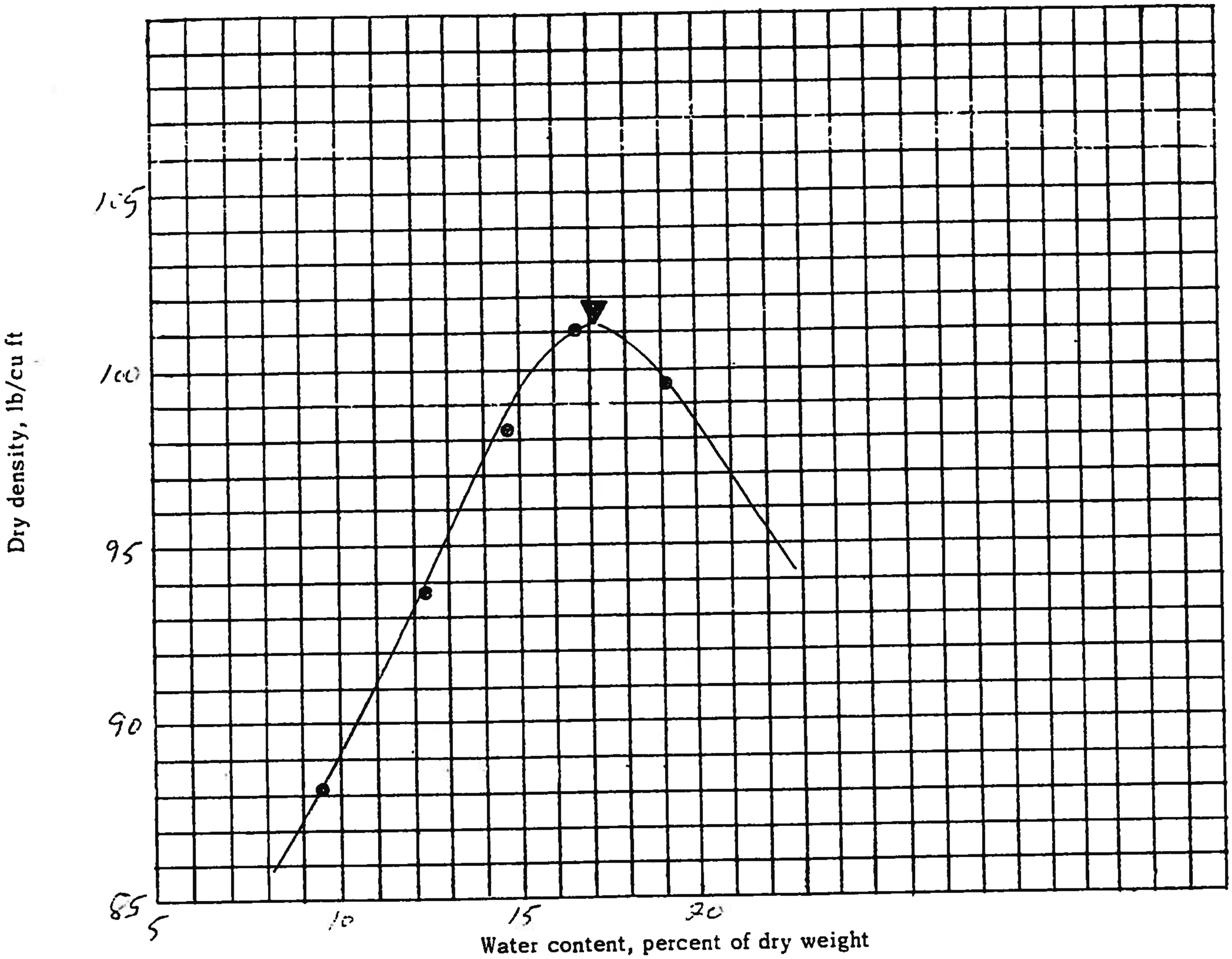
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.

Sample lb.				
Natural water content, percent				
Optiman water content, percent	17.1			
Max dry density, lb/cu ft	104.6			

Remarks	Project Koppers Lagoon
	Area Site - Brown Clayey Silt
	Lab. No. / Date 7-21-89



Standard compaction test

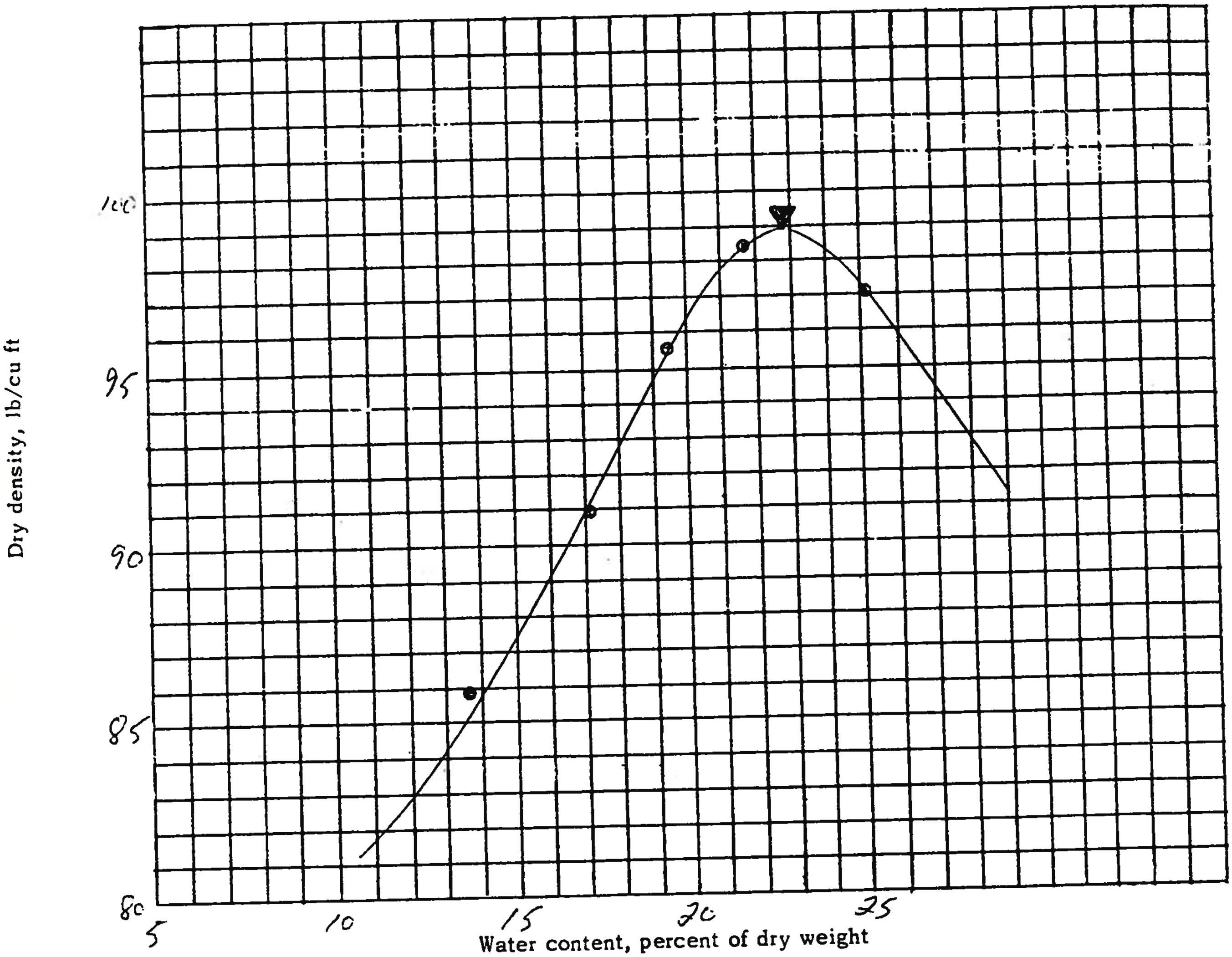
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.

Sample lb.				
Natural water content, percent				
Optiman water content, percent	17.1			
Max dry density, lb/cu ft	101.2			

Remarks	Project Koppers Lagoon
	Area Green Pit - Red Sand Clay
	Lab. No. / Date 7-22-89



Standard compaction test

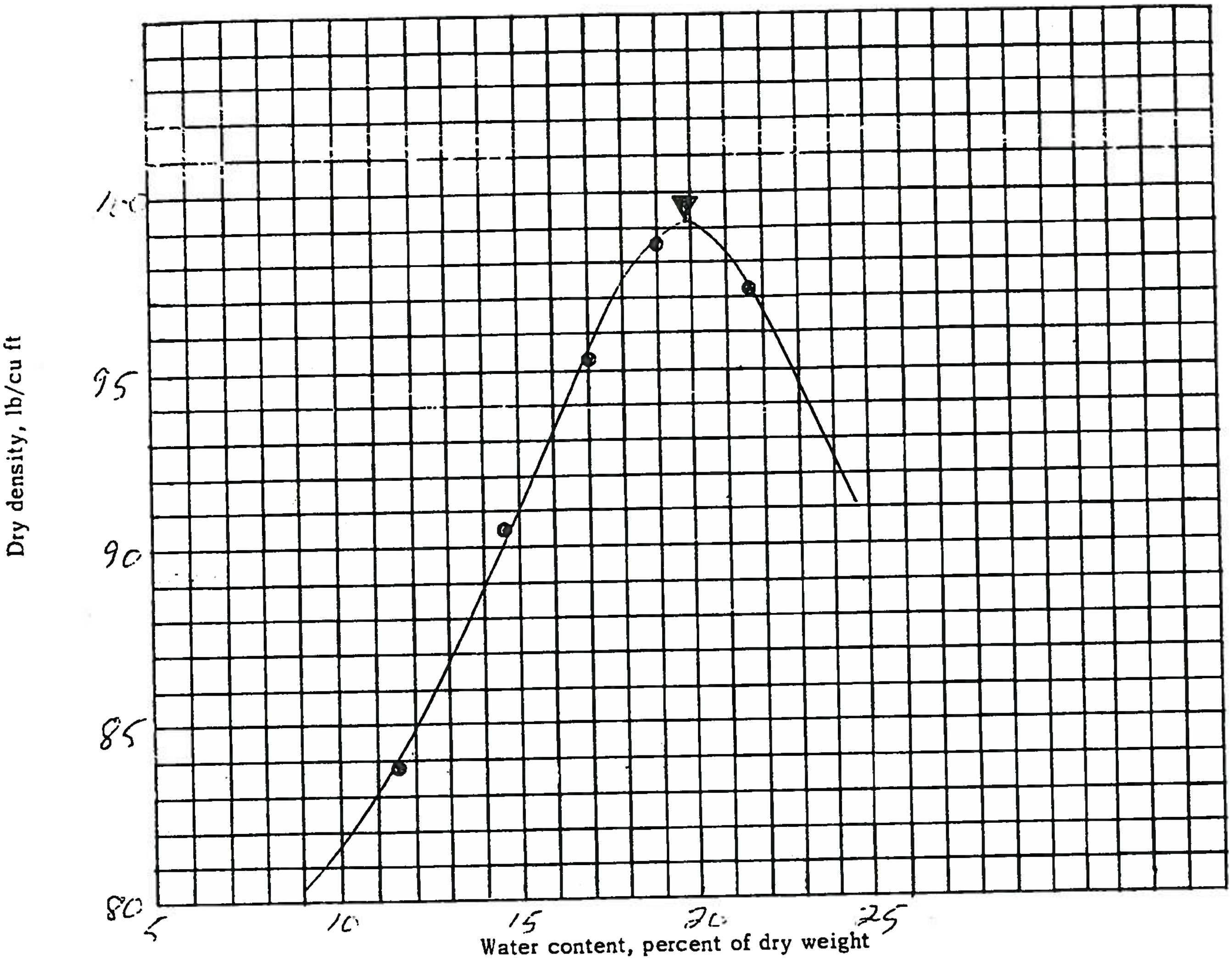
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.
		Bentonite - 2.2 pounds per cubic foot					

Sample lb.				
Natural water content, percent				
Optiman water content, percent	22.8			
Max dry density, lb/cu ft	98.9			

Remarks Jeff Vance	Project Koppers Lagoon
	Area Green Pit - Red Sand - Bentonite
	Lab. No. Date 7-27-89



Standard compaction test

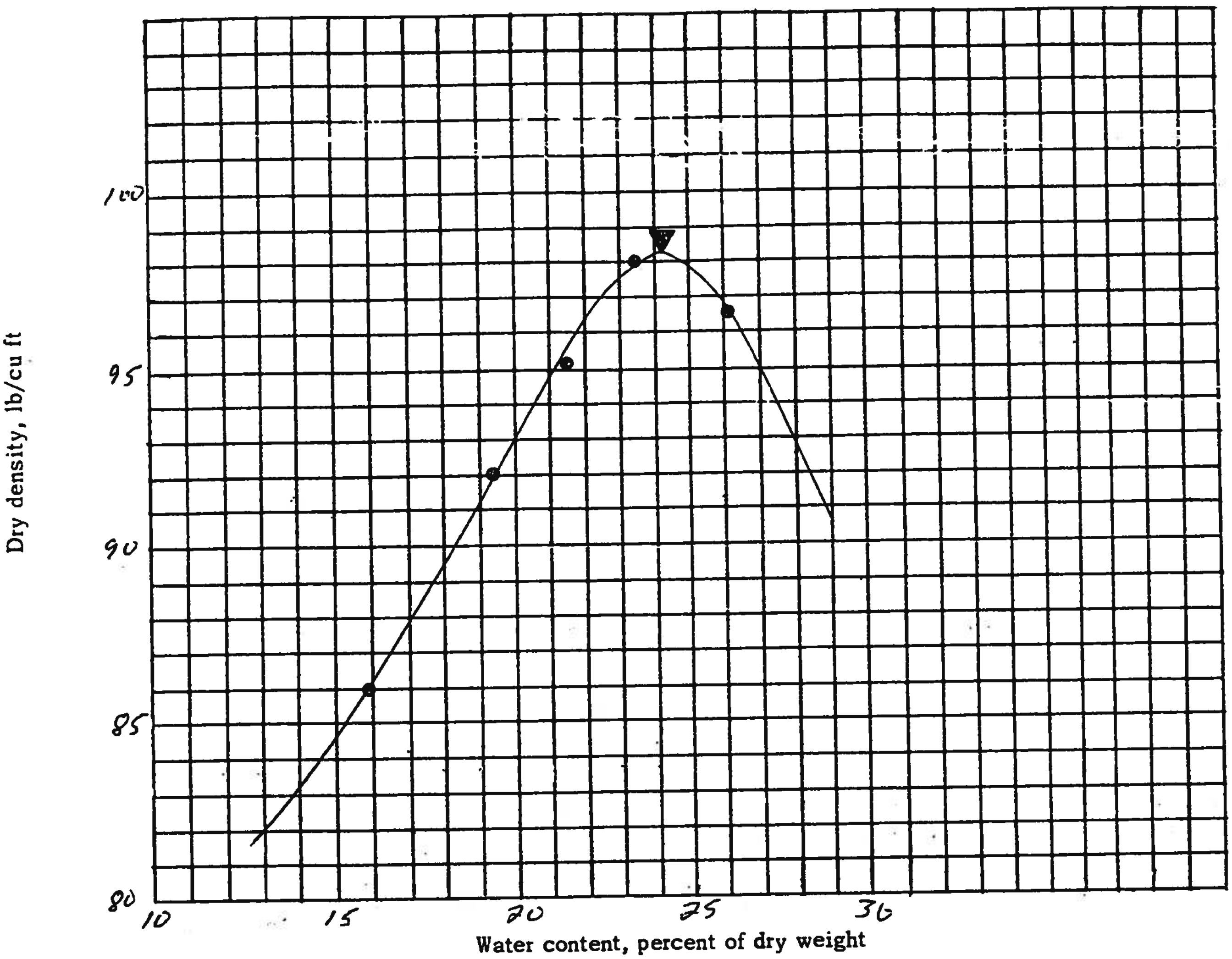
25 blows per each of 5 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.
		Bentonite 2.2 pounds					
		per Cu. Ft.					
		Composite Sample					

Sample lb.				
Natural water content, percent				
Optiman water content, percent	19.8			
Max dry density, lb/cu ft	99.3			

Remarks [signature]	Project Koppers Lagoon
	Area On-site - Red Sand Clay
	Lab. No. / Date 7-30-89



Standard compaction test

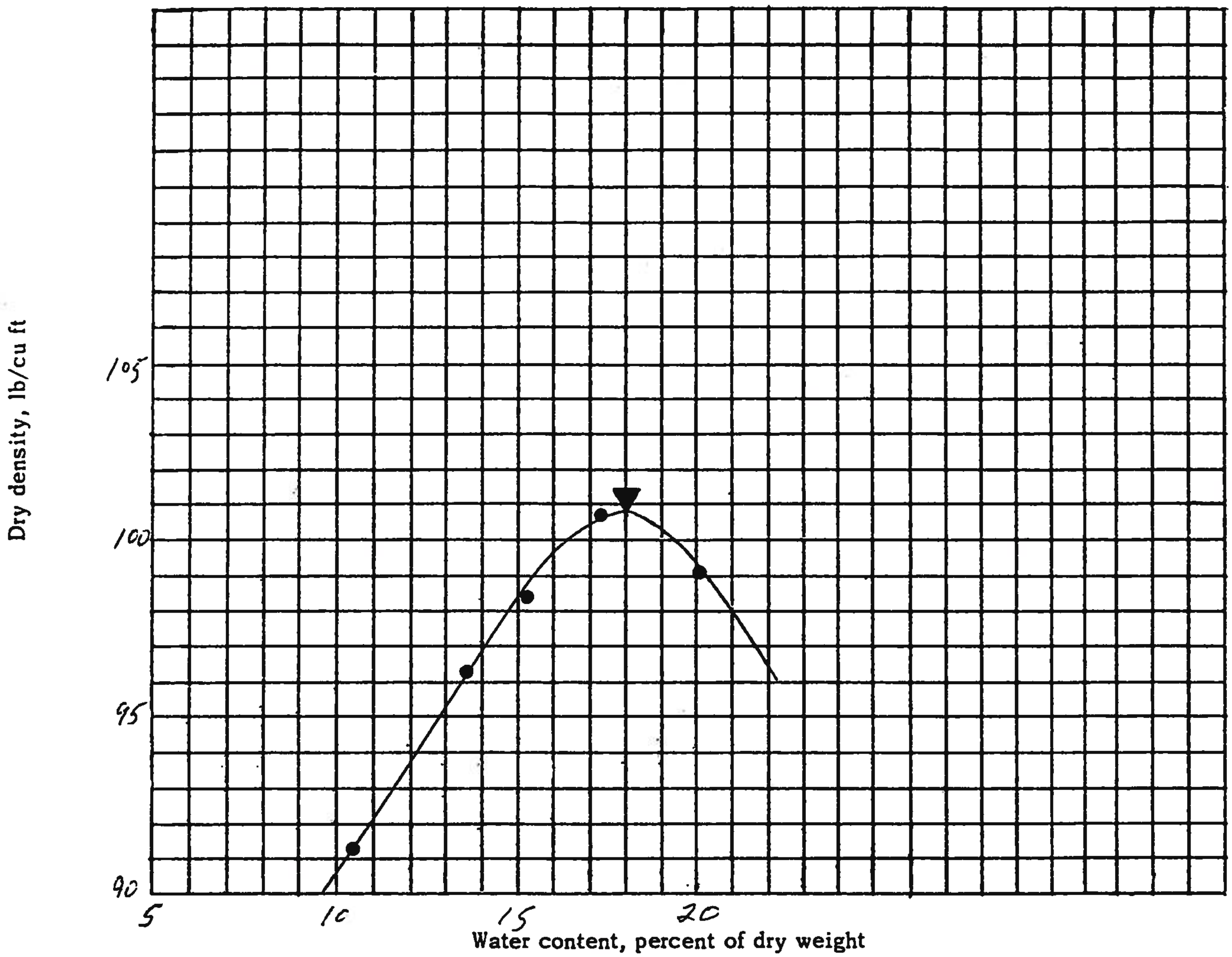
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.
		Bentonite - 1st Layer					
		2.2 / C.F.					

Sample lb.				
Natural water content, percent				
Optiman water content, percent	24.2			
Max dry density, lb/cu ft	98.3			

Remarks	Project Koppers Lagoon
	Area
	Lab. No. Date 8-9-89



Standard compaction test

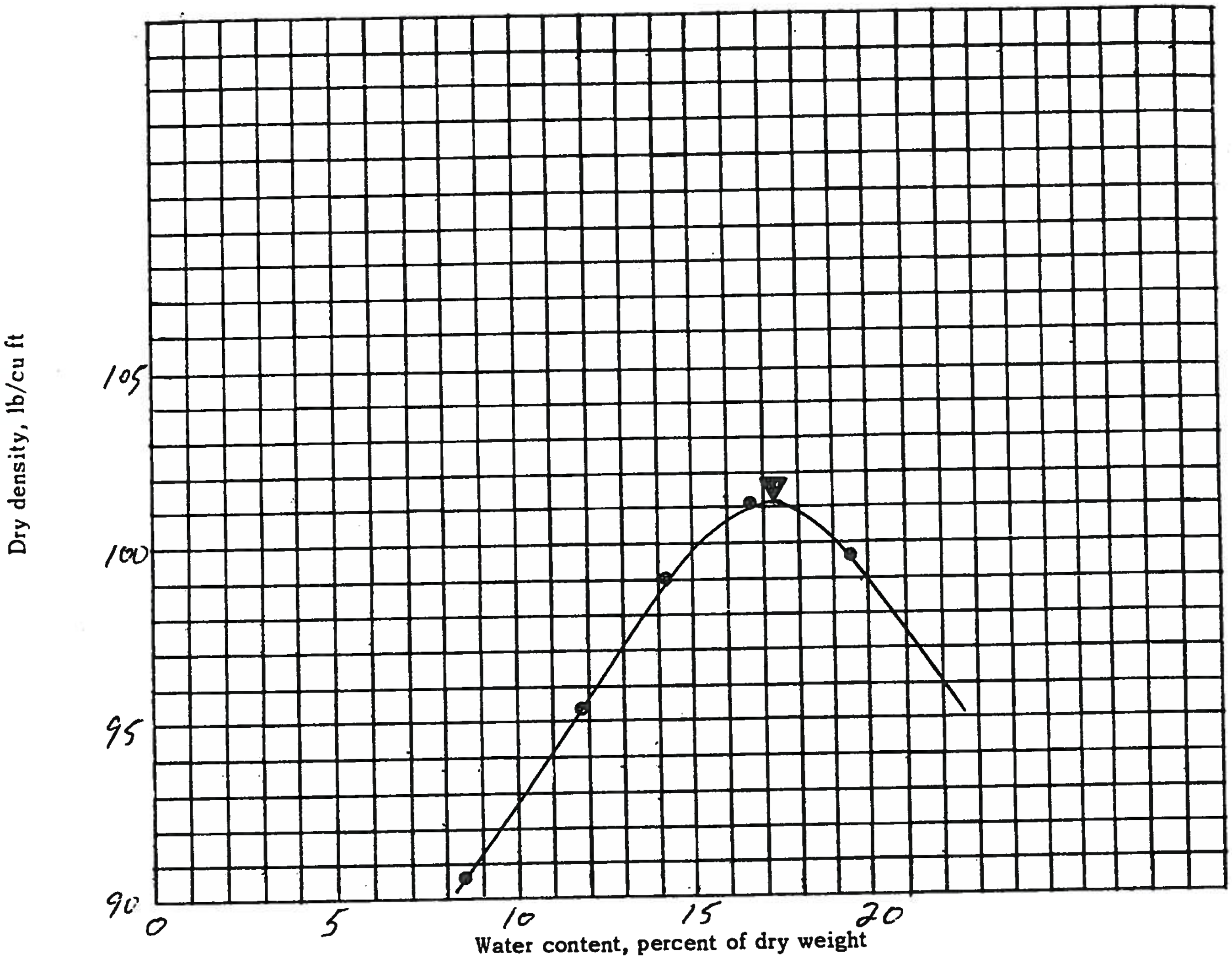
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.

Sample lb.				
Natural water content, percent				
Optiman water content, percent	18.0			
Max dry density, lb/cu ft	100.7			

Remarks Jeff Vance	Project Koppers Lagoon
	Area Green Pit - red Sand Clay
	Lab. No. / Date 10-14-89



Standard compaction test

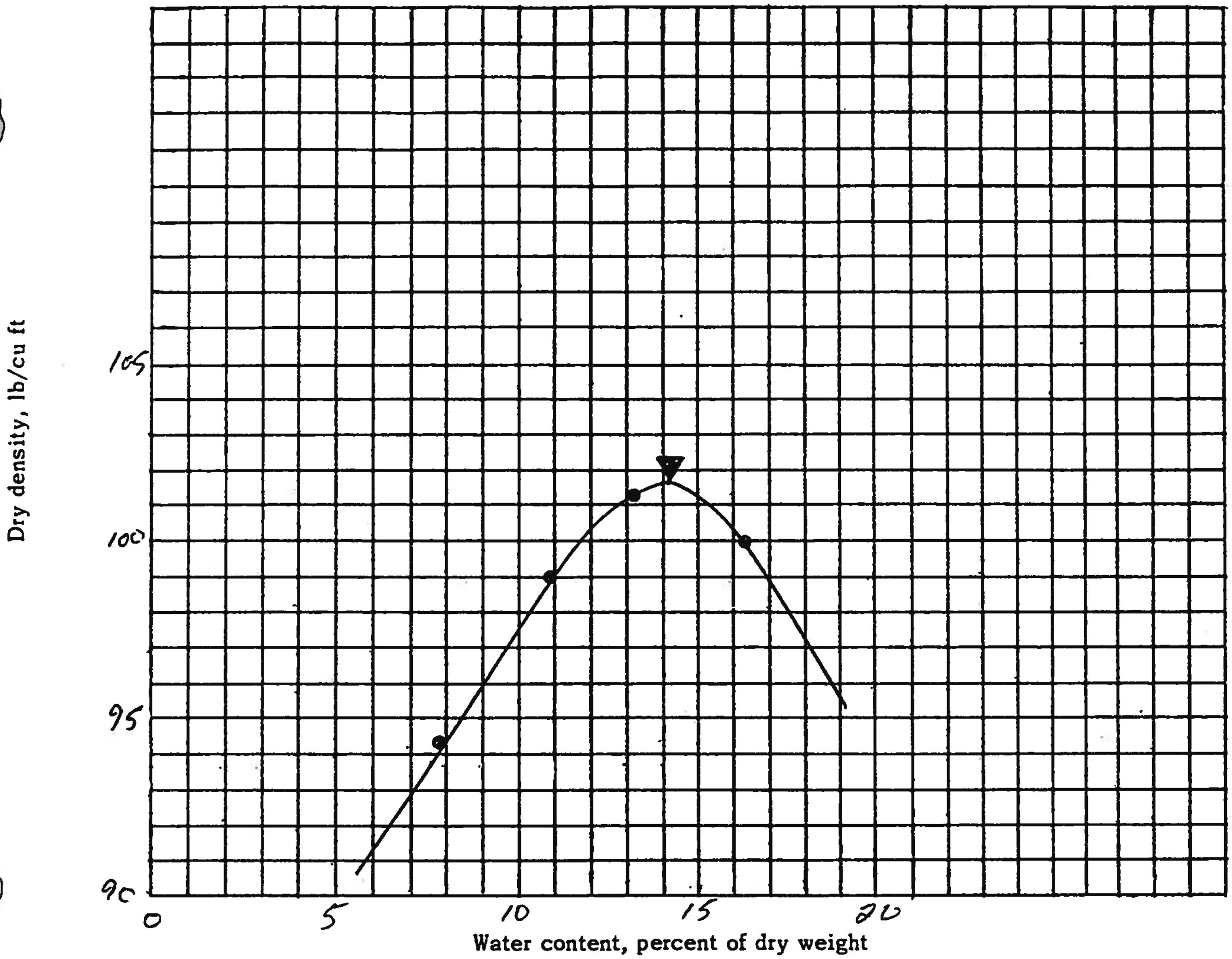
25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.

Sample lb.				
Natural water content, percent				
Optiman water content, percent	17.3			
Max dry density, lb/cu ft	101.1			

Remarks Jeff Vance	Project Koppers Lagoon		
	Area Red Sandy Clay - on site		
	Lab. No.	Date 10-24-89	



Standard compaction test

25 blows per each of 3 layers, with 5.5 lb rammer and

12 inch drop. 4 inch diameter mold.

Sample No.	Elev or Depth.	Classification	G	LL	PL	%> No. 4	%> ¾ in.

Sample lb.				
Natural water content, percent				
Optiman water content, percent	14.1			
Max dry density, lb/cu ft	101.6			

Remarks	Project Koppers Lagoon	
	Area Site - red sand	
	Lab. No.	Date 10-24-89

SOIL-BENTONITE LAYER

Atterberg Limits

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos. ______ Proj. No. Koppers Lagro

Road ______ County Grenada

Submitted by Mid South Testing Sampled by Vance

Reported to Keystone Env. Date Sampled 7 31-89

Producer Onsite Soil (raw soil) Date Received ______

Date Reported 8-2-89

TEST RESULTS*

Lab. No.								
Sample No.	1							
Station No.								
Depth								
PHYSICAL CHARACTERISTICS								
Liquid Limit	28							
Plastic Limit	20							
Plasticity Index	8							
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								
MECHANICAL ANALYSIS								
%Pass No. 10 Sieve	100							
%Pass No. 40 Sieve	90.1							
%Pass No. 60 Sieve	60.5							
%Pass No. 200 Sieve	29.3							
%Pass No. 270 Sieve	19.3							
% Silt	9							
% Clay	10							
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos.

Proj. No. Koppers Lagoon

Road

County Grenada

Submitted by Mid South Testing

Sampled by Vance

Reported to Keystone

Date Sampled 8-7-89

Producer Onsite Samples

Date Received

Date Reported 8-8-89

TEST RESULTS*

Bentonite per Cu. Ft.	1 Pounds	2 Pounds	3 Pounds
Lab. No.			
Sample No.	1	2	3
Station No.			
Depth			
PHYSICAL CHARACTERISTICS			
Liquid Limit	30	32	34
Plastic Limit	20	20	19
Plasticity Index	10	12	15
Shrinkage Limit			
Shrinkage Ratio			
Centrifuge Moisture			
Field Moisture			
Volume Change			
MECHANICAL ANALYSIS			
%Pass No. 10 Sieve	100	100	100
%Pass No. 40 Sieve	93	91	90
%Pass No. 60 Sieve	61	63	59
%Pass No. 200 Sieve	34	33	31
%Pass No. 270 Sieve			
% Silt			
% Clay			
% Colloids			
Dust Ratio**			
Consistency			
HCL Reaction			
GROUP			
U. S. C.			
Est. CBR			
Bearing Capacity			

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

All Samples had 2.2pds per Cu. Ft. before Additional Bentonite was Added.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos. ______ Proj. No. Koppers Lagoon

Road ______ County Grenada

Submitted by Mid South Testing Sampled by Vance

Reported to Keystone Env. Date Sampled 8-9-89

Producer Onsite - Before Bentonite Date Received ______

Date Reported 8-10-89

TEST RESULTS*

Lab. No.								
Sample No.								
Station No.								
Depth								
PHYSICAL CHARACTERISTICS								
Liquid Limit	33	35						
Plastic Limit	19	20						
Plasticity Index	14	15						
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								
MECHANICAL ANALYSIS								
%Pass No. 10 Sieve	100	100						
%Pass No. 40 Sieve	93	95						
%Pass No. 60 Sieve	89	90						
%Pass No. 200 Sieve	87	85						
%Pass No. 270 Sieve								
% Silt								
% Clay								
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos. ______ Proj. No. Koppers Lagoon

Road ______ County Grenada

Submitted by Mid South Testing Sampled by Vance

Reported to Keystone Date Sampled 8-11-89

Producer 1st Layer Bentonite Date Received ______

Date Reported 8-14-89

TEST RESULTS*

Lab. No.								
Sample No.	1	2						
Station No.								
Depth								
PHYSICAL CHARACTERISTICS								
Liquid Limit	38	37						
Plastic Limit	20	19						
Plasticity Index	18	18						
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								
MECHANICAL ANALYSIS								
%Pass No. 10 Sieve	100	100						
%Pass No. 40 Sieve	94	95						
%Pass No. 60 Sieve	88	91						
%Pass No. 200 Sieve	86	86						
%Pass No. 270 Sieve								
% Silt								
% Clay								
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos.

Proj. No. Koppers Lagoon

Road

County Grenada

Submitted by Mid South Testing

Sampled by Vance

Reported to Keystone

Date Sampled 8-18-89

Producer onsite Stockpile - 2nd layer - raw soil

Date Received

Date Reported 8-19-89

TEST RESULTS*

	x							
Lab. No.								
Sample No.	1	2						
Station No.								
Depth								
PHYSICAL CHARACTERISTICS								
Liquid Limit	32	34						
Plastic Limit	20	20						
Plasticity Index	12	14						
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								
MECHANICAL ANALYSIS								
%Pass No. 10 Sieve	100	100						
%Pass No. 40 Sieve	90	95						
%Pass No. 60 Sieve	85	89						
%Pass No. 200 Sieve	78	83						
%Pass No. 270 Sieve								
% Silt								
% Clay								
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos. ______ Proj. No. Koppers Lagoon

Road ______ County Grenada

Submitted by Mid South Testing Sampled by Vance

Reported to Keystone Date Sampled 8-28-89

Producer On-site - Stockpile - raw soil Date Received ______
THIRD Lift - Soil

Date Reported 8-29-89

TEST RESULTS*

Lab. No.								
Sample No.	1	2						
Station No.								
Depth								
PHYSICAL CHARACTERISTICS								
Liquid Limit	35	37						
Plastic Limit	20	21						
Plasticity Index	15	16						
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								
MECHANICAL ANALYSIS								
%Pass No. 10 Sieve	100	100						
%Pass No. 40 Sieve	91	95						
%Pass No. 60 Sieve	86	90						
%Pass No. 200 Sieve	80	84						
%Pass No. 270 Sieve								
% Silt								
% Clay								
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.
**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

MID-SOUTH TESTING LABORATORIES, INC.
P. O. Box 147 - 133 South Mound Street
Grenada, Mississippi 38901

Report on SOIL SAMPLES

Lab. Nos. ______ Proj. No. Koppers Lagoon

Road 4th Lift County Grenada

Submitted by Mid South Testing Sampled by Vance

Reported to Keystone Date Sampled 9-5-89

Producer Onsite Stock Pile — raw Soil Date Received ______

Date Reported 9-7-89

TEST RESULTS*

Lab. No.								
Sample No.	1	2						
Station No.								
Depth								

PHYSICAL CHARACTERISTICS

Liquid Limit	34	33						
Plastic Limit	20	19						
Plasticity Index	14	14						
Shrinkage Limit								
Shrinkage Ratio								
Centrifuge Moisture								
Field Moisture								
Volume Change								

MECHANICAL ANALYSIS

%Pass No. 10 Sieve	100	100						
%Pass No. 40 Sieve	90	91						
%Pass No. 60 Sieve	83	87						
%Pass No. 200 Sieve	77	86						
%Pass No. 270 Sieve								
% Silt								
% Clay								
% Colloids								
Dust Ratio**								
Consistency								
HCL Reaction								
GROUP								
U. S. C.								
Est. CBR								
Bearing Capacity								

*Particles above 0.074 mm. in diameter by sieve method; particles below 0.074 mm. in diameter by hydrometer method.

**Percentage of material finer than No. 40 sieve passing No. 200 sieve.

Reported by Jeff Vance

BACKFILL DENSITY TESTS

MID-SOUTH TESTING LABORATORIES, INC.

FIELD DENSITY DATA

226-7415

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

1. Section No.							
2. Test No.		1	2	3	4	5	6
3. Date		7-24-89	7-24-89	7-24-89	7-24-89	7-24-89	7-24-
4. Time							
5. Station							
6. Location		North	South	North	Center	South	Sout
7. Depth		1st Lift	1st Lift	2nd Lift	2nd Lift	2nd Lift	2nd Li
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	19.1	18.0	20.5	22.7	18.7	18
Standard Density	20. From Standard Density Curve	104.6	104.6	104.6	104.6	104.6	104
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	95.8	96.1	96.4	97.6	96.5	9
	23. Specified percent of Standard Density	95	95	95	95	95	95
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution:

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Keppler Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

1. Section No.							
2. Test No.		7	8	9	10	11	
3. Date		7-25-89	7-25-89	7-25-89	7-25-89	7-26-89	
4. Time							
5. Station							
6. Location		Center	South	North	South	North	
7. Depth		3rd Lift	3rd Lift	3rd Lift	4th Lift	4th Lift	
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	14.6	13.0	14.9	15.8	16.6	
Standard Density	20. From Standard Density Curve	101.2	101.2	101.2	101.2	101.2	
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	100.5	96.1	104.2	103.2	99.8	
	23. Specified percent of Standard Density	95	95	95	95	95	
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution:

Signed J. H. Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 FIELD DENSITY DATA Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician J. Arcl COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	12	13	14	15	16	17
	3. Date	7-26-89	7-26-89	7-26-89	7-26-89	7-27-89	7-27-[illegible]
	4. Time						
	5. Station						
	6. Location						
	7. Depth	5th Lift	5th Lift	6th Lift	6th Lift	7th Lift	7th Li[illegible]
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	15.8	18.9	18.0	16.9	16.8	17[illegible]
Standard Density	20. From Standard Density Curve	101.2	101.2	101.2	101.2	101.2	101.[illegible]
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	97.8	101.6	103.6	104.1	103.1	102.[illegible]
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution:

Signed J. McCance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	18	19	20	21	22	23
	3. Date						
	4. Time						
	5. Station						
	6. Location	N	S	N	S	N	S
	7. Depth	8th Lift	8th Lift	9th Lift	9th Lift	10th Lift	10th Li
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	18.8	16.8	18.9	18.5	16.6	18.
Standard Density	20. From Standard Density Curve	101.2	101.2	101.2	101.2	101.2	101.2
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	101.8	100.9	100.6	104.1	104.0	104.
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution:

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ________ Name ________

Technician Vance COMPONENT: (circle one) ________ MATERIAL: (circle one) ________ TREATMENT: ________

Lift ________ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ________

Depth Measured Inches ________ Subbase Base ________ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ________

Lot Size ________ Block Base Binder Base Class ________ 2nd Appl. ________

Unit of Deviation ________ Base ________ Design Depth ________ Inches ________ Cement (% by Vol.) ________

	1. Section No.						
	2. Test No.	24	25	26	27	28	
	3. Date						
	4. Time						
	5. Station						
	6. Location	North	South	South	Center	North	
	7. Depth	11th Lift	11th Lift	Final Soil	Final Soil	Final Soil	
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	18.8	19.8	17.0	16.9	18.2	
Standard Density	20. From Standard Density Curve	101.2	101.2	101.2	101.2	101.2	
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	100.7	101.4	102.9	104.7	99.7	
	23. Specified percent of Standard Density	95	95	95	95	95	
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg I Dev. applicable lots = Blk 27 / Blk 28						

Distribution:

Signed Jeff Vance

Title S.C.T.

SOIL-BENTONITE LAYER DENSITY TESTS

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift 1st Course: Basement Soil Design Soil Soil(Type) Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	7-31-89	7-31-89	7-31-89	7-31-89	7-31-89	7-31-8
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	23.7	22.7	20.9	24.1	24.7	25
Standard Density	20. From Standard Density Curve	99.3	99.3	99.3	99.3	99.3	99
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	98.6	99.7	101.2	98.6	98.5	100
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg l Dev. applicable lots = Blk 27 / Blk 28						

MID SOUTH LAB COPY

Distribution: 1st Bentonite Layer density taken at random area.

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ____ Frame ____

Technician Vance COMPONENT: (circle one) ____ MATERIAL: (circle one) ____ TREATMENT: ____

Lift 1st Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ____

Depth Measured Inches ____ Subbase Base ____ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ____

Lot Size ____ Block Base Binder Base Class ____ 2nd Appl. ____

Unit of Deviation ____ Base ____ Design Depth ____ Inches ____ Cement (% by Vol.) ____

	1. Section No.						
	2. Test No.	7	8	9	10		
	3. Date	7-31-89	7-31-89	7-31-89	7-31-89		
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	23.9	20.6	22.4	20.6		
Standard Density	20. From Standard Density Curve	99.3	99.3	99.3	99.3		
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	98.5	103.8	100.2	105.7		
	23. Specified percent of Standard Density	95	95	95	95		
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

MID-SOUTH LAB COPY

Distribution: 1st Bentonite Layer.

Signed Jeff Vance

Title ____

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 — **FIELD DENSITY DATA** — Grenada, MS

Project Koppers Lagoon County Grenada District______ Frame______

Technician Vance COMPONENT: (circle one)______ MATERIAL: (circle one)______ TREATMENT:______

Lift______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None______

Depth Measured Inches______ Subbase Base______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl.______

Lot Size______ Block Base Binder Base Class______ 2nd Appl.______

Unit of Deviation______ Base______ Design Depth______ Inches______ Cement (% by Vol.)______

1. Section No.							
2. Test No.		1	2	3	4	5	6
3. Date		8-12-89	8-12-89	8-12-89	8-12-89	8-12-89	8-12-
4. Time							
5. Station							
6. Location from ℄							
7. Depth Below Subgrade(Emb.)							
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	25.2	24.9	22.7	26.1	25.1	2[illegible]
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98.[illegible]
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	99.5	102.7	103.4	103.3	100.1	9[illegible]
	23. Specified percent of Standard Density	95	95	95	95	95	9[illegible]
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution: 1st Layer of Bentonite

Signed Jeff Vance

Title S.C.T

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

1. Section No.							
2. Test No.		7	8	9	10	11	12
3. Date		8-12-89	8-12-89	8-12-89	8-12-89	8-12-89	8-12-
4. Time							
5. Station							
6. Location from ℄							
7. Depth Below Subgrade(Emb.)							
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	25.7	24.4	26.0	29.0	22.8	2
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	96.8	98.5	98.3	95.0	105.0	105.
	23. Specified percent of Standard Density	95	95	95	95	95	95
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution: 1st LAYER OF BENTONITE

#12 - OVEN moisture - 25.1

Signed Jeff Vance

Title ______

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Pr[oject] Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type) Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	1	2	3	4		
	3. Date	8-19-89	8-19-89	8-19-89	8-19-89		
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	19.7	24.0	23.4	27.4		
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3		
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	104.7	97.1	102.8	97.3		
	23. Specified percent of Standard Density	95	95	95	95		
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 1st Lift of Bentonite
Retest after rain and
re compaction

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

FIELD DENSITY DATA

226-7415 Grenada, MS

Project Koppers Lagoon County Grenada District ____ Frame ____

Technician Vance COMPONENT: (circle one) ____ MATERIAL: (circle one) ____ TREATMENT: ____

Lift ____ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ____

Depth Measured Inches ____ Subbase Base ____ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ____

2nd Appl. ____

Lot Size ____ Block Base Binder Base Class ____

Unit of Deviation ____ Base ____ Design Depth ____ Inches ____ Cement (% by Vol.) ____

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	8-22-89	8-22-89	8-22-89	8-22-89	8-22-89	8-22-[illegible]
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count				retest		
	15. Air-gap Count(If Used)				#3		
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	24.9	25.0	23.0	26.7	26.2	2[illegible]
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98.[illegible]
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	95.3	95.5	101.7	96.6	97.6	95[illegible]
	23. Specified percent of Standard Density	95	95	95	95	95	9[illegible]
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 2nd Layer-Bentonite

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Proj. Koppers Lagoon County Grenada District ______ Frame ______

Technician VANCE COMPONENT: (circle one)______ MATERIAL: (circle one)______ TREATMENT:______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl.______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl.______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.)______

	1. Section No.						
	2. Test No.	7	8	9	10	11	12
	3. Date	8-22-89	8-22-89	8-22-89	8-22-89	8-22-89	8-22-
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	24.8	25.3	24.2	27.5	24.7	2
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	99.5	97.3	95.3	95.1	99.7	100
	23. Specified percent of Standard Density	95	95	95	95	95	9
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 2nd LAYER - BENTONITE

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	13					
	3. Date	8-22-89					
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count	retest					
	14. Density Count						
	15. Air-gap Count(If Used)	#12					
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	24.2					
Standard Density	20. From Standard Density Curve	98.3					
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	97.8					
	23. Specified percent of Standard Density	95					
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 2nd Layer - Bentonite

Signed J. W. Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

2[illegible]-7415 FIELD DENSITY DATA Grenada, MS

Project Hoppers Layer County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one)______ MATERIAL: (circle one)______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None______

Depth Measured Inches______ Subbase Base______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl.______

Lot Size______ Block Base Binder Base Class______ 2nd Appl.______

Unit of Deviation______ Base______ Design Depth______ Inches______ Cement (% by Vol.)______

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	8-31-89	8-31-89	8-31-89	8-31-89	8-31-89	8-31-
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	27.0	29.0	26.0	31.8	31.6	2
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	96.6	92.8	98.8	89.8	87.8	9
	23. Specified percent of Standard Density	95	95	95	95	95	9
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 3rd Layer - Bentonite

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Hoppers Layer County Grenada District ____ Frame ____

Technician Vance COMPONENT: (circle one) ____ MATERIAL: (circle one) ____ TREATMENT: ____

Lift ____ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ____

Depth Measured Inches ____ Subbase Base ____ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ____

Lot Size ____ Block Base Binder Base Class ____ 2nd Appl. ____

Unit of Deviation ____ Base ____ Design Depth ____ Inches ____ Cement (% by Vol.) ____

	1. Section No.						
	2. Test No.	7	8	9	10	11	12
	3. Date	8-31-89	8-31-89	8-31-89	8-31-89	9-1-89	9-1-8
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF					retest	rete
Density	13. Standard Count					#2	#4
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	25.5	27.0	26.5	26	25.5	2
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98.
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	98.3	95.6	94.5	96.3	99	9
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 3rd Layer - Bentonite

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 **FIELD DENSITY DATA** Grenada, MS

Project Koppers Lagoon County Grenada District ____ Frame ____

Technician Vance COMPONENT: (circle one)____ MATERIAL: (circle one)____ TREATMENT:____

Lift ____ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None____

Depth Measured Inches ____ Subbase Base ____ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl.____

Lot Size ____ Block Base Binder Base Class ____ 2nd Appl.____

Unit of Deviation ____ Base ____ Design Depth ____ Inches ____ Cement (% by Vol.)____

1. Section No.							
2. Test No.		13	14	15	16		
3. Date		9-1-89	9-1-89	9-1-89	9-1-89		
4. Time							
5. Station							
6. Location from ℄							
7. Depth Below Subgrade(Emb.)							
8. Sta. Limits Sect. Being Tested				retest	retest		
Moisture	9. Standard Count			#13	#14		
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	29.8	31.7	25.5	24.8		
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3		
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	94.3	91.0	99.7	99.8		
	23. Specified percent of Standard Density	95	95	95	95		
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution: 3rd Layer - Bentonite

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Keppers Lagoon County Grenada District Frame

Technician Vance COMPONENT: (circle one) MATERIAL: (circle one) TREATMENT:

Lift Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None

Depth Measured Inches Subbase Base Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl.

Lot Size Block Base Binder Base Class 2nd Appl.

Unit of Deviation Base Design Depth Inches Cement (% by Vol.)

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	9-12-89	9-12-89	9-12-89	9-12-89	9-12-89	9-12-8
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count		retest				
	14. Density Count		#1				
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	28.6	24.9	24.7	25.2	24.2	20
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	91.4	100.2	97.8	101.1	103.9	103
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 4th Lift - Bentonite

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226[illegible]115 — FIELD DENSITY DATA — Grenada, MS

Project: [illegible]kippers Lagoon County: Grenada District: ______ Frame: ______

Technician: Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

1. Section No.							
2. Test No.		7	8	9	10	11	12
3. Date							
4. Time							
5. Station							
6. Location from ℄							
7. Depth Below Subgrade(Emb.)							
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count	retest	retest				retes
	14. Density Count	#6	#6+7				#11
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	22.4	26.9	26.9	25.9	28	28
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98.
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	102.9	99.3	96.4	103.1	94.7	96
	23. Specified percent of Standard Density	95	95	95	95	95	95
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. [illegible]l No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

Distribution: 4th Lift - Bentonite

Signed: Jeff Vance

Title: S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

FIELD DENSITY DATA

226-7415

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	13	14	15	16	17	18
	3. Date	9-12-89	9-12-89	9-12-89	9-12-89	9-12-89	9-12-8
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count	retest	retest				rete
	14. Density Count						#1
	15. Air-gap Count(If Used)	11+12	11,12,13				
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	23.1	24.0	25.8	24.3	27.2	27
Standard Density	20. From Standard Density Curve	98.3	98.3	98.3	98.3	98.3	98
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	100.2	104.0	96.4	102.1	94.6	94
	23. Specified percent of Standard Density	95	95	95	95	95	95
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

Distribution: 4th Lift - Bentonite

Signed Jeff Vance

Title S.C.T.

DRAINAGE LAYER DENSITY TESTS

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project *Koppers Lagoon* County *Grenada* District ______ Frame ______

Technician *Vance* COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

1. Section No.							
2. Test No.	1	2	3	4	5	6	
3. Date	10-13-89	10-13-89	10-13-89	10-13-89	10-13-89	10-13-8	
4. Time							
5. Station							
6. Location from ℄							
7. Depth Below Subgrade(Emb.)							
8. Sta. Limits Sect. Being Tested							
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF	108.9	107.1	107.8	106.6	109.9	108.
	19. Moisture Content, %	5.7	5.7	5.9	5.1	5.5	4.
Standard Density	20. From Standard Density Curve						
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard						
	23. Specified percent of Standard Density						
24. No. of Samples in Lot							
25. Algebraic Sum of Deviations in Lot							
26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot							
27. Algebraic sum of deviation in applicable lots							
28. Total No. of Samples Used							
29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28							

12" Fill Sand Layer

Signed *Jeff Vance*

Title *S.C.T.*

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 **FIELD DENSITY DATA** Grenada, MS

Proj Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	7	8				
	3. Date	10-13-89	10-13-89				
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF	106.9	106.1				
	19. Moisture Content, %	6.2	4.9				
Standard Density	20. From Standard Density Curve						
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard						
	23. Specified percent of Standard Density						
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. [illegible] Dev. applicable lots = Blk 27 / Blk 28						

Signed J. M. Vance

Title S.C.T.

COVER SOIL DENSITY TESTS

MID-SOUTH TESTING LABORATORIES, INC.

22 7415 | FIELD DENSITY DATA | Grenada, MS

Project Koppers Lagoon County Grenada District ____ Frame ____

Technician Vance COMPONENT: (circle one) ____ MATERIAL: (circle one) ____ TREATMENT: ____

Lift ____ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ____

Depth Measured Inches ____ Subbase Base ____ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ____

Lot Size ____ Block Base Binder Base Class ____ 2nd Appl. ____

Unit of Deviation ____ Base ____ Design Depth ____ Inches ____ Cement (% by Vol.) ____

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	10-20-89	10-20-89	10-20-89	10-20-89	10-20-89	10-208
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	15.1	14.6	16.4	16.1	14.5	15
Standard Density	20. From Standard Density Curve	100.7	100.7	100.7	100.7	100.7	100.
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	95.1	102.0	99.4	104.1	106.1	99.1
	23. Specified percent of Standard Density	90	90	90	90	90	90
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

1st 9" Lift of Cover Soil

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415

FIELD DENSITY DATA

Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	7	8	9			
	3. Date	10-20-89	10-20-89	10-20-89			
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	14.3	14.6	15.1			
Standard Density	20. From Standard Density Curve	100.7	100.7	100.7			
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	100.1	95.4	105.0			
	23. Specified percent of Standard Density	90	90	90			
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg 1 Dev. applicable lots = Blk 27 / Blk 28						

1st 9" Lift of Cover Soil

Signed Jeff Vance

Title S.C.T.

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 | **FIELD DENSITY DATA** | Grenada, MS

Proj Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	1	2	3	4	5	6
	3. Date	10-23-89	10-23-89	10-23-89	10-23-89	10-23-89	10-23-8
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	13.4	11.6	12.0	11.6	10.1	9.
Standard Density	20. From Standard Density Curve	100.7	100.7	100.7	100.7	100.7	100.
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	111.4	99.6	92.2	104.6	100.9	102.
	23. Specified percent of Standard Density	90	90	90	90	90	90
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. ...al No. of Samples Used						
	29. ...g l Dev. applicable lots = Blk 27 / Blk 28						

2nd 9" Lift of
Cover Soil

Signed Jeff Vance

Title S.C.T

MID-SOUTH TESTING LABORATORIES, INC.

226-7415 — FIELD DENSITY DATA — Grenada, MS

Project Koppers Lagoon County Grenada District ______ Frame ______

Technician Vance COMPONENT: (circle one) ______ MATERIAL: (circle one) ______ TREATMENT: ______

Lift ______ Course: Basement Soil Design Soil Soil(Type): Sandy, Silty, Clayey None ______

Depth Measured Inches ______ Subbase Base ______ Sand Clay, Semi-Gr., Clay-Gr. Lime (% by Wt.): 1st Appl. ______

Lot Size ______ Block Base Binder Base Class ______ 2nd Appl. ______

Unit of Deviation ______ Base ______ Design Depth ______ Inches ______ Cement (% by Vol.) ______

	1. Section No.						
	2. Test No.	7					
	3. Date	10-23-89					
	4. Time						
	5. Station						
	6. Location from ℄						
	7. Depth Below Subgrade(Emb.)						
	8. Sta. Limits Sect. Being Tested						
Moisture	9. Standard Count						
	10. Moisture Count						
	11. Moisture Count Ratio						
	12. Moisture, PCF						
Density	13. Standard Count						
	14. Density Count						
	15. Air-gap Count(If Used)						
	16. Density Count Ratio						
	17. Wet Density, PCF						
Test Values	18. Dry Density, PCF						
	19. Moisture Content, %	13.0					
Standard Density	20. From Standard Density Curve	100.7					
	21. Standard Density Curve Number						
	22. In-Place Density % of Standard	102.0					
	23. Specified percent of Standard Density	90					
	24. No. of Samples in Lot						
	25. Algebraic Sum of Deviations in Lot						
	26. Dev. from SV = Algebraic sum of Lot / No. of Smpls in Lot						
	27. Algebraic sum of deviation in applicable lots						
	28. Total No. of Samples Used						
	29. Avg l Dev. applicable lots = Blk 27 / Blk 28						

2nd 9" Lift of
Cover Soil

Signed Jeff Vance

Title S.C.T.

APPENDIX C

Waste Manifests for Sludge Removal

Rollins Environmental Services (FS) Inc.
One Rollins Plaza, P.O. Box 2349, Wilmington, Delaware 19899
(302) 479-2920

Rollins

August 26, 1988

Mr. Jack L. Stephenson
KOPPERS COMPANY, INC.
801 Koppers Building
Pittsburgh, PA 15219

Dear Jack:

Please find corrected invoices for the Florence, SC, and Grenada, MS plants. Sorry for the confusion.

Yours Very Truly,

John C Robbins

John C. Robbins, P.E.

cc: Koppers Company, Grenada Plant
Koppers Company, Florence Plant

JCR:jch

They will Pay in PGh

5-LTHS

****
* INVOICE *
****

CUSTOMER: KOPPERS COMPANY, GRENADA, MS PROJ NO.: 8187
CUSTOMER ORDER NO.: 14-8-50523 SALESMAN: GANCE/ULEKOW
DATE: AUGUST 25, 1988 SALESMAN # 089/041

ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
MOBILIZATION	1	LS	$7,835.00	$7,835.00
STABILIZATION	3031.47	TONS	$32.09	$97,279.87
ADMIX USED	800.71	TONS	$38.36	$30,715.24
PRIMARY DISPOSAL (CWM)	3031.47	TONS	$125.19	$379,509.73
PRIMARY TRANSPORT	3031.47	TONS	$29.90	$90,640.95
SECONDARY DISPOSAL (PDC)	0	TONS	N.A.	$0.00
SECONDARY TRANSPORT	0	TONS	N.A.	$0.00
			TOTAL	$605,980.79

DATE	ADMIX (LOADS)	ADMIX (TONS)	DISPOSAL (LOADS)	DISPOSAL (TONS)
14-Jul-88	4	103.42		
15-Jul-88	4	97.62		
16-Jul-88	5	122.77		
17-Jul-88	3	75.06		
18-Jul-88	3	75.64	10	250.4
19-Jul-88	3	75.5	12	301.8
20-Jul-88	4	98.2	14	379.56
21-Jul-88	5	127.5	17	434.08
22-Jul-88	1	25	14	339.6
23-Jul-88				
24-Jul-88				
25-Jul-88			25	647.57
26-Jul-88			9	235.66
27-Jul-88			9	215.42
28-Jul-88			9	227.38
29-Jul-88				
	32	800.71	119	3031.47

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3 | Manifest Document No.: 0 0 0 0 1

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA A18572

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	45200	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D151 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Bobby Pratt	Bobby Pratt	07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	[illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00 [illegible]

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413574

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	51000	LB	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANNY M. CORKREN — Signature: Danny M. Cork — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-8

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00013
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413575
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	58030	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D31 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN — Signature: H. L. Corken — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00014
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413576

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	56780	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJ1 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Michael — Signature: [signature] — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B. Miller — Signature: [signature] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No. 00005 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc., P. O. Box 160, Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413577

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co. | 6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC., Emelle Facility, Alabama Highway 17 at Mile Marker 163, Emelle, Alabama 35459 | 10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	45870	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above: a. D.J1 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 071888

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charles Michael | Signature: Charles Michael | Month Day Year: 071888

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Brielle | Signature: Burell | Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543
Manifest Document No.: 00006
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413578

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7000

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46280	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 31
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross
Signature: James Ross
Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B. Miller
Signature: Bill Mill
Month Day Year: 7/18/88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 Manifest Document No.: 007
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413579

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD098658825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	45860	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren | Signature: Tommy Corkren | Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bnulla | Signature: Buack | Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3
Manifest Document No.: 0 0 0 0 8
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413580

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	44810	P	
b. — CWM Profile Number					
c. — CWM Profile Number					
d. — CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton 7-19-88
Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks
Signature: Willis Hicks
Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Miller
Signature: Bill Miller
Month Day Year: 7/19/88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 — Manifest Document No. 0 0 0 0 9
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413581

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52760	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 51 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus Moore — Signature: Estus Moore — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Mellis — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00010

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 413582

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47100	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dudly Mitchell — Signature: Dudly Mitchell — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bmille — Signature — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-3[illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 0007

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 413585

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	48190	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no dissolvent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004-(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt — Signature: Bobby Pratt — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 21 988

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 — Manifest Document No. 0 0 0 1 2

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 413584

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID 219-938-7020 562786

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	52650	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c)(1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN — Signature: H G Corkren — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 19 88

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30-

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 0013

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

A. State Manifest Document Number: CWMA 413583

B. State Generator's ID

C. State Transporter's ID

D. Transporter's Phone

E. State Transporter's ID

F. Transporter's Phone

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	50120	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880718029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. 0-81
b.
c.
d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves

PER RCRA 3004(C-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANNY M. COKREN — Signature: Dany M. C[illegible] — Month Day Year: 07 18 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Karen McKinnis — Signature: Karen McKinnis — Month Day Year: 07 19 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 1 4

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413591

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID (9[illegible])

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	45360	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charles Michael — Signature: Charles Michael — Month Day Year: 07 19 88 (GP)

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Form Approved. OMB No. 2050-0039. Expires 9-30-88

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 | Manifest Document No. 00015 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 413590

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	47480	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~18~~19029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 ~~18~~ 19 88 (GP)

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Michael | Signature: [signature] | Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00070

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 413589

B. State Generator's ID

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49550	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807~~18~~19029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

PER RCRA 3004 (c-1)

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 ~~18~~ 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tommy Cochren — Signature: Tommy Cochren — Month Day Year: 07 ~~18~~ 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: B. Miller — Signature: B. Miller — Month Day Year: 7 21 88

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 0017

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413586

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46355	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~28~~ 19 029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 0sX
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (C-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 ~~18~~ 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus M. Moore | Signature: Estus M Moore | Month Day Year: 07 ~~18~~ 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B Moll | Signature: B Moll | Month Day Year: [illegible]

GENERATOR
TRANSPORTER
FACILITY

S 004

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00018

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413587

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	44390	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 081
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
RER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks — Signature: Willis Hicks — Month Day Year: 07 19 88 GP

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Brickell — Signature: Brickell — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00079 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413588

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	52860	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~18~~19029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 ~~18~~ 19 88 (GP)

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross — Signature: James Ross — Month Day Year: 07 ~~18~~ 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B[illegible] — Signature: B[illegible] — Month Day Year: [illegible]

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00 RD

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 413592

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50240	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88071029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PERRCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dudley Mitchell — Signature: Dudley Mitchell — Month Day Year: 07 19 88 (GP)

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Brown — Signature: Brown — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 | Manifest Document No. 0 0 0 2 1
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413593
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52130	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJ1 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no solvent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c-1)

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 18 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt | Signature: Bobby Pratt | Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00028

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 413594

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	47520	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88072029 (GP)
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJI c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN — Signature: H G Corkren — Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B Miller — Signature: Bill Miller — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 2 3
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412375

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: 0 H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID: 80,770

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	58550	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584
PERRCRA 3004 (e-1)

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID MICHAEL — Signature: David Michael — Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 20 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00024
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412374

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49250	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren
Signature: Tommy Corkren
Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis
Signature: Roger McKinnis
Month Day Year: 07 20 88

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00025
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc., P. O. Box 160, Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412373

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC., Emelle Facility, Alabama Highway 17 at Mile Marker 163, Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	46230	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880719029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

PERRCRA 3004 (c-1)

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
J. D. Clayton	J. D. Clayton	07	19	88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Willis Hicks	Willis Hicks	07	19	88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Roger McKinnis	Roger McKinnis	07	20	88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3 | Manifest Document No.: 0 0 0 2 6
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412372

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	56370	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
RER RCRA 3004

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 19 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus M. Moore | Signature: Estus M. Moore | Month Day Year: 07 19 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis | Signature: Roger McKinnis | Month Day Year: 07 20 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-8

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00027
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 412371

B. State Generator's ID

3. Generator's Name and Mailing Address: Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	55020	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880719029
RES P.O. No. 28-0631 3004
Emergency Contact - (601) 226-4584
PERRCRA (C-1)

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 11 988

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES Michael — Signature: Charles Michael — Month Day Year: 07 11 988

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 12 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00028
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

A. State Manifest Document Number: CWMA 412370

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49310	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-11 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross
Signature: James Ross
Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3 — Manifest Document No.: 0 0 0 2 9
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412369

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	52190	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~19022~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584
(PER RCRA 3004 (c-1))

K. Handling Codes for Wastes Listed Above
a. D31 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: H G CORKREN — Signature: H.G. Corkren — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B McNutt — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00030
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412368

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD098658525

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	51960	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~18029~~ 30050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D01 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (C-1)

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt | Signature: Bobby Pratt | Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bridle | Signature: Bi[illegible] | Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-3

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543000 / Manifest Document No. 03/	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412367

B. State Generator's ID

5. Transporter 1 Company Name Dart Transportation Co.
6. US EPA ID Number OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	5000/0	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Tommy Cochran	Tommy Cochran	07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	[illegible]

GENERATOR

TRANSPORTER

FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3
Manifest Document No.: 0 0 0 3 2
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412366
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47070	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (C-1)

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 20 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks
Signature: Willie Hicks
Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

ase print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00033
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412365
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52070	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D.S1 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PERRCRA 3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES MICHAEL — Signature: Charles Michael — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B Moffitt — Signature — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00034
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412364

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	58740	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PERRCRA 3004 (1)

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Michael — Signature: David Michael — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B Mello — Signature: B Mello — Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00035
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412363

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	60540	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~0023~~ 30050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 0.S1
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and glove
PER RCRA 3004 (K-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus M. Moore — Signature: Estus M. Moore — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Miller — Signature — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00036
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412362

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID 96040

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vo	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	4810	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880720050 ~~19021~~
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
FERRCRA 3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: MARION WILLIAMS — Signature: Marion William — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: ROBERT McKINNIS — Signature: Robert McKinnis — Month Day Year: 07 21 88

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires [illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 0037
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412361

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50400	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 51 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protective equipment such as impervious clothing and glove protection and protective equipment such as impervious clothing and glove protection.
PER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brady Pate — Signature: Brady Pate — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00038
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412360
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	45875	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~19029~~ 20050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3005(c-1)

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Sherman W. Shrader JR | Signature: [illegible] (4574) | Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires [illegible]-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3 — Manifest Document No. 0 0 0 3 9

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412359

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	75420	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029 721067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and glove
PERRCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 21 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
James Ross	James Ross	07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	7 22 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

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Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543
Manifest Document No.: 0 0 040
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412358
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	59120	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~19029~~ 721067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(C-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 0 7 28 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN
Signature: H G Corkren
Month Day Year: 0 7 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30-8

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 4 7

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 412357

B. State Generator's ID

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	44310	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88071~~9829~~
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: E. Jordan — Signature: Ed Jordan — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Karen McKinnie — Signature: Karen McKinnie — Month Day Year: 07 21 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00042
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412356

B. State Generator's ID: 5850

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47010	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

AUG 8 1988

J. Additional Descriptions for Materials Listed Above
Work Order No. 880719029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PERRCRA3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 20 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jerry Robinson — Signature: Jerry Robinson — Month Day Year: 07 20 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 21 88

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00043	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412355

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020
H. Facility's Phone 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	58010	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880 ~~719029~~ 31067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 0 11 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 ~~25~~ 21 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt | Signature: Bobby Pratt | Month Day Year: 07 ~~25~~ 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

se print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 0 0 0 4
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc., P. O. Box 160, Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412354

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC., Emelle Facility, Alabama Highway 17 at Mile Marker 163, Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	51490	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807~~19029~~ 31067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. 051 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.

PERRCRA 3004(C-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: CHARLES MICHAEL — Signature: Charles Michael — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Bill Miller — Signature: Bill Miller — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00045
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412353

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47650	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88071 ~~0029~~ 21067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004 (c-1)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 10 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID MICHAEL — Signature: [illegible] — Month Day Year: 10 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 Manifest Document No. 0 0 0 4 6
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 412352

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

GENERATOR

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50560	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807~~19029~~ 21067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DS1 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PERRCRA T004 (7-1)

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year 0 7 ~~1 9~~ 21 8 8

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren Signature: Tommy Corkren Month Day Year 0 7 ~~1 9~~ 21 8 8

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Miller Signature: [illegible] Month Day Year [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3	Manifest Document No. 0 0 0447	2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 412351

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: 0 H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	43460	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~19089~~ 21067
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 11
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. When handling wear eye protection and protective equipment such as impervious clothing and gloves.
PER RCRA 3004(c-1)

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 10 7 21 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks
Signature: Willis Hicks
Month Day Year: 10 7 21 8 8

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00048
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-22-88 KE
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414077
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	47520	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D J1 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brady Bate — Signature: Brady Bate — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Nichols — Signature: Bill — Month Day Year: 7 22 88

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 5-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 0 | Manifest Document No. 00149 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-22-88 RL

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414100

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co. | 6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	45480	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D.J1
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. FERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus M. Moore | Signature: Estus M. Moore | Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD 007027543 — Manifest Document No.: 00150
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-22-88

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414099

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD 009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	52750	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D 81 c.

b. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANNY M. CORKREN — Signature: Danny M. Corkren — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00057

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414098

B. State Generator's ID:

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 -1-22 88 82

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID:

D. Transporter's Phone:

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	47760	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880721029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D.81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ed JordAN — Signature: Ed Jordan — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00152

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 722-8872

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414097

B. State Generator's ID

5. Transporter 1 Company Name
Dart Transportation Co.

6. US EPA ID Number OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47270	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 051 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JERRY ROBINSON — Signature: Jerry Robinson — Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Miller — Signature: Bill Miller — Month Day Year

EPA Form 8700-22 (Rev. 9-86)

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-8

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00053
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414096

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	43510	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D S1 c.

b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCPA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Marion Williams | Signature: Marion Williams | Month Day Year: 07 21 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Bill M. | Signature: Bill M. | Month Day Year

160

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 0 Manifest Document No. 00134
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7228 M

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414095

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	53940	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88072/029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt Signature: Bobby Pratt Month Day Year 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis Signature: Roger McKinnis Month Day Year 07 22 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Form Approved. OMB No. 2050-0039. Expires 9-

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00035
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414094

B. State Generator's ID

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-22-88

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52940	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88072l029
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: HG CORKREN | Signature: H G Corkren | Month Day Year: 07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Roger McKinnis | Signature: Roger McKinnis | Month Day Year: 07 21 88

ATTACHMENT B

Professional Engineer Certification of Closure

PROFESSIONAL ENGINEER CERTIFICATION OF CLOSURE

I, Michael W. Bollinger, a Professional Engineer registered in the State of Mississippi, hereby certify, to the best of my knowledge and belief, that I have verified closure activities at:

Koppers Industries, Inc.
Grenada Plant
Tie Plant, MS

for the surface impoundment system, EPA I.D. #MSD007027543, owned by Koppers Industries, Inc. and operated by Beazer Materials and Services, Inc. and that closure of the aforementioned facility has been performed in accordance with the facility's closure plan and as noted herein.

Michael W Bollinger — January 3, 1990

Signature — Date

Temporary Permit No. 8907 — Mississippi

Professional Engineer License No. — for State of

Keystone Environmental Resources, Inc. 3000 Tech Center Drive

Business Address

Monroeville, Pennsylvania 15146

City/State/Zip Code

(412) 825-9600

Business Telephone (With Area Code)

DCC #R415

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

(Plea)se print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-8(8)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD 0 0 7 0 2 7 5 4 3 0 | Manifest Document No. 0 0 0 5 6

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 725-88

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414093

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	40910	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~D29~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 0 7 2 2 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren | Signature: Tommy Corkren | Month Day Year: 0 7 2 2 8 8

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR
TRANSPORTER
FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00057
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 725 8812
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414092
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	44520	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~029~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJI b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks Signature: Willis Hicks Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] Signature: [illegible] Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00158
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414091

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46800	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~029~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D S1
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross — Signature: James Ross — Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bnell[illegible] — Signature: B[illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00059

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number CWMA 414090

B. State Generator's ID

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-25-88

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47640	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~021~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES MICHAEL | Signature: Charles Michael | Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00166

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 1-25 88 JL

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414089

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46380	P	
b. CWM Profile Number					
c. CWM Profile Number					
CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~032~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DL
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Michael | Signature: [signature] | Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [signature] | Month Day Year: [illegible]

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30-88

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD 007027543 0 — Manifest Document No.: 0061/7
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414088

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 725-8860

4. Generator's Phone (601) 226-4584

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	46178	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807 ~~025~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 c.

b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Estus M. Moore — Signature: Estus M. Moore — Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bail — Signature: [illegible] — Month Day Year: 7 22 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD070275430 — Manifest Document No. 00612

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-25-88

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414087

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47490	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~029~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brady Pate — Signature: Brady Pate — Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name [illegible] — Signature [illegible] — Month Day Year [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD 007027543 | Manifest Document No.: 0063
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414086

B. State Generator's ID

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 725 88 R

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD 009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49600	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~D22~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANNY M. CURKREN | Signature: Danny M. C[illegible] | Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

Logo: Chemical Waste Management

Side labels: GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027643 Manifest Document No. 00064	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-25-88 JE

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co. 6. US EPA ID Number: OHD009865825

7. Transporter 2 Company Name: 8. US EPA ID Number:

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

A. State Manifest Document Number: CWMA 414085
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49710	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~029~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 051 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN Signature: H G Corkren Month Day Year: 07 22 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Signature: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Brick Signature: Brick Month Day Year:

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00165
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 12588 &

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name ~~Dart Transportation Co.~~ 12588 &
6. US EPA ID Number ~~OHD000816581125~~

7. Transporter 2 Company Name WPI TRANSPORTATION CO
8. US EPA ID Number TXD105064114631

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number ALD000622464

A. State Manifest Document Number CWMA 414084
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID 219-938-7020
H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	40900	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~029~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name J. D. Clayton Signature J. D. Clayton Month Day Year 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year ~~07 22 88~~

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name DARRELL BLACK Signature Darrell Black Month Day Year 07 22 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name D Miller Signature [illegible] Month Day Year 7 22 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD070275430 Manifest Document No. 00066
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms.

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414083

B. State Generator's ID

5. Transporter 1 Company Name ~~Dart Transportation Co.~~ 6. US EPA ID Number ~~OHD000865825~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name WPI TRANSPORTATION CO 8. US EPA ID Number TXD050641463

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50690	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~D23~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D1 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 22 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year: ~~07 22 88~~

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Freddie Buckner | Signature: Freddie Buckner | Month Day Year: 07 22 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00067
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms.

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414082

B. State Generator's ID

5. Transporter 1 Company Name: ~~Dart Transportation Co.~~
6. US EPA ID Number: ~~OHD009865825~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name: WPI TRANSPORTATION CO TX
8. US EPA ID Number: D051064146 3

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	47750	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807 ~~D29~~ 22048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 081
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 10 7 2 2 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year: ~~10 7 2 2 8 8~~

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Houser — Signature: Bobby Houser — Month Day Year: 10 7 2 2 8 8

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B McC[illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD 070275430 — Manifest Document No. 0068

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414081

B. State Generator's ID: 16,120

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-25-88 JE

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: ~~Dart Transportation Co.~~ 7-5-88
6. US EPA ID Number: ~~IHD009186582B~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name: WPT TRANSPORTATION CO
8. US EPA ID Number: TXD 105064463

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	45900	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807-~~B29~~ 25048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 23 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: J — Signature — Month Day Year: ~~07 1 88~~

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jerry D. Lee — Signature: Jerry D. Lee — Month Day Year: 07 23 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 0 — Manifest Document No.: 00169
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc. P. O. Box 160 Tie Plant, Ms.
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414080
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: DHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name: WPI TRANSPORTATION CO
8. US EPA ID Number: TXD050641463

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	42490	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807 ~~023~~ 25048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 01 23 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: D — Signature: — Month Day Year: 01 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: DENNIS Schuster — Signature: Dennis Schuster — Month Day Year: 01 23 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 01 25 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD 007 027 543 0 — Manifest Document No. 00170	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms.

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414079

B. State Generator's ID

5. Transporter 1 Company Name: ~~Dart Transportation Co.~~ 1-25-88 — 6. US EPA ID Number: ~~OHD 009 865 825~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name: WPI TRANSPORTATION COTXO — 8. US EPA ID Number: 1050641463

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	41020	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~020~~ 25048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	0 1 2 3 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
		~~0 1 8 8~~

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Wayne E. Long	Wayne E. Long	0 7 2 3 8 8

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Roger McKinnis	Roger McKinnis	0 7 2 5 8 8

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD 007 027 543 Manifest Document No. 00171
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number CWMA 414078

B. State Generator's ID

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960 7-25-88

4. Generator's Phone 601) 226-4584

5. Transporter 1 Company Name
Dart Transportation Co.

6. US EPA ID Number
~~UHD 009 865 825~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
WPI TRANSPORTATION CO TXD

8. US EPA ID Number
050641463

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number
ALD000622464

G. State Facility's ID
219-938-7020

H. Facility's Phone
205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46950	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 8807 ~~028~~ 25048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 23 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year: ~~07 1 1 88~~

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willie Wagin
Signature: Willie Wagin
Month Day Year: 07 23 88

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] McKinnie
Signature: [illegible] McKinnie
Month Day Year: 07 25 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00172
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms.

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414101

B. State Generator's ID

5. Transporter 1 Company Name: ~~Dart Transportation Co.~~
6. US EPA ID Number: ~~[illegible]~~

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name: WPI TRANSPORTATION CO
8. US EPA ID Number: TXD050641463

E. State Transporter's ID: 40369

F. Transporter's Phone: 713 579 1402

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	39330	P	[illegible]
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 8807 ~~D29~~ 25048
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 06 23 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year: 0 7 1 1 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: A. B. Cox | Signature: A. B Cox | Month Day Year: 10 7 2 3 8 8

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis | Signature: Roger McKinnis | Month Day Year: [illegible]

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00073
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414106
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020
H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50275	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross
Signature: James Ross
Month Day Year: 07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00074
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414104

B. State Generator's ID 53961

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	54210	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt — Signature: Bobby Pratt — Month Day Year: 07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis — Signature: Roger McKinnis — Month Day Year: 07 2_ 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-8

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00075
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414103

B. State Generator's ID: 63,560

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	63210	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information

I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 21 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: HG CORKREN | Signature: H G Corkren | Month Day Year: 07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: Roger McKinnis | Signature: Roger McKinnis | Month Day Year: 07 25 88

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00076
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414111
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	48090	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren | Signature: Tommy Corkren | Month Day Year: 07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Roger McKinnis | Signature: Roger McKinnis | Month Day Year: 07 25 88

Form 8700-22 (Rev. 9-86)

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

...ease print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00077	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: GWMA 414109

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD010986582 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	44400	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Willis Hicks	Willis Hicks	07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Roger McKinney	Roger McKinney	07 26 88

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00028
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414108

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	44080	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D-81 c.

b. d.

15. Special Handling Instructions and Additional Information

I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 24 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Brady Pate	Brady Pate	07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Roger McKinnis	Roger McK	[illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00079	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414107

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	66590	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88 0725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 21 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Darwin M. Corkren	Darwin M. C[illegible]	07 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Roger McKinnis	Roger McKinnis	07 25 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00080	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414110
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52470	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Charles Michael	Charles Michael	07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	[illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543	Manifest Document No. 0008/	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414105

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	55250	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. P81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
DAVID Michael	David Michael	07 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Kevin McKinney	Kevin McKinney	07 25 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Use print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00082
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414102

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: DHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52490	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 c.

b. d.

15. Special Handling Instructions and Additional Information

I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	10 12 58 8

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
H G CORKREN	H G Corkren	0 7 12 58 8

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Lester Burrell	Lester Burrell	10 12 58 8

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00083
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414127

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52110	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88P725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 25 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
DAWN M. CORKREN	Dawn M. Corkren	07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543	Manifest Document No. 0081	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414126

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	50880	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D.S
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. FERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 25 8

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Brady Pate	Brady Pate	07 25 8

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
R[illegible]	B[illegible]	1 26 8

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

se print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00085
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414125
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50010	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D31 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no free liquids had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross — Signature: James Ross — Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00086
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc. P. O. Box 160 Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584
5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

A. State Manifest Document Number: CWMA 414124
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	49510	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D.51 c.
b. d.

15. Special Handling Instructions and Additional Information

I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Bobby Pratt — Signature: Bobby Pratt — Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD097027543	Manifest Document No. 00087	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414123

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46440	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJ c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Corkren | Signature: Tommy Corkren | Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00088
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414122
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vo	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	46870	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks Signature: Willis Hicks Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B Nolley Signature: B Nolley Month Day Year

GENERATOR / TRANSPORTER / FACILITY

EPA Form 8700-22 (Rev. 9-86) Previous edition is obsolete.

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-3

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543
Manifest Document No.: 00089
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414121
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	56120	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a.
b. P81
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Michael
Signature: [signature]
Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Lester Burrell
Signature: Lester Burrell
Month Day Year: 0 7 2 9 88

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: M S D 0 0 7 0 2 7 5 4 3 — Manifest Document No.: 0 0 0 9 0
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414120
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: 0 H D 0 0 9 8 6 5 8 2 5
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	54020	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. FERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 25 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES MICHAEL
Signature: Charles Michael
Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Smith
Signature: R...
Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 | Manifest Document No. 00097 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414119

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	56840	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJ
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANNY M. CURRELL | Signature: [signature] | Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [signature] | Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543
Manifest Document No.: 00092
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414118

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	58830	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880725048
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D31
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 25 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: H G CORKREN
Signature: H G Corkren
Month Day Year: 07 25 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Form Approved. OMB No. 2050-0039. Expires 9-30-88

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00093 | 2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414117

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD010986582 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	54560	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880726050
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brady Pate | Signature: Brady Pate | Month Day Year: 07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00074
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414116

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	56580	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880726050
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 21
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James Ross | Signature: James Ross | Month Day Year: 07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

EPA Form 8700-22

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD097027543 — Manifest Document No.: 00093
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414114

B. State Generator's ID

3. Generator's Name and Mailing Address: Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	55040	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880726050
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D51 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt — Signature: Bobby Pratt — Month Day Year: 07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: R[illegible] — Signature: R[illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00096

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414113

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	47460	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880726050
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 b. c. d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year 07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tommy Corkren | Signature: Tommy Corkren | Month Day Year 07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Bill Miller | Signature: | Month Day Year

GENERATOR

TRANSPORTER

FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00917

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960
Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414112

B. State Generator's ID

Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

1. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
RCRA Hazardous Waste, Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	44840	P	
CWM Profile Number					
CWM Profile Number					
CWM Profile Number					

Additional Descriptions for Materials Listed Above
Work Order No. 880726050
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D31 c.
b. d.

5. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

6 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 26 88

7. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks — Signature: Willis Hicks — Month Day Year: 07 26 88

8. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

9. Discrepancy Indication Space

0. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 98 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00098	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc. P. O. Box 160 Tie Plant, Ms. 38960		A. State Manifest Document Number CWMA 414136
4. Generator's Phone (601) 226-4584		B. State Generator's ID
5. Transporter 1 Company Name: Dart Transportation Co.	6. US EPA ID Number: OHD009865825	C. State Transporter's ID
		D. Transporter's Phone
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID
		F. Transporter's Phone
9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459	10. US EPA ID Number: ALD000622464	G. State Facility's ID 219-938-7020
		H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	52240	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880726050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D S1 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no amendment had been added to the above waste which would prohibit it from being land filled. FERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Charles Michael	Charles Michael	07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	[illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

lease print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 99 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: USD070275430
Manifest Document No.: 0017

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Koppers Company, Inc. P. O. Box 160 Tie Plant, Ms. 38960

A. State Manifest Document Number: CWMA 414135

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459
10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	54570	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880726050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. DJ
b.
c.
d.

15. Special Handling Instructions and Additional Information

I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 26 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DAVID MICHAEL
Signature: [signature]
Month Day Year: 07 26 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible]
Signature: [signature]
Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00098
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414134

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	54070	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880726050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. 081
b.
c.
d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
J. D. Clayton	J. D. Clayton	07	26	88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
DAWTON CORKREN	Day M. Cork	07	26	88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]			

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30-88

ease print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 0 7 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

A. State Manifest Document Number CWMA 414133

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	51760	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880726050
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 51 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 0 7 26 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN — Signature: H G Corkren — Month Day Year: 0 7 26 8 8

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 102 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 1SD007027543 0 Manifest Document No. 0[illegible]02

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414132

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	51290	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88072770144
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D JI
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 10 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES ROSS — Signature: James Ross — Month Day Year: 10 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

ease print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 103 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. MSD007027543 Manifest Document No. D00103	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number **CWMA 414131**

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD098658215

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone **205/652-9721**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	42690	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D51 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Brady Pate	Brady Pate	07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
B Mellin	Bill [illegible]	[illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 104

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 | Manifest Document No.: 00104
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

A. State Manifest Document Number: CWMA 414130
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 — CWM Profile Number RES-H-53976	001	DT	45790	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
J. D. Clayton	J. D. Clayton	07 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Bobby Pruitt	Bobby Pruitt	07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	[illegible]

GENERATOR / TRANSPORTER / FACILITY

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Form Approved. OMB No. 2050-0039. Expires 9-30-88

ase print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 — Manifest Document No. 00105

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414129

B. State Generator's ID

3. Generator's Name and Mailing Address: Koppers Company, Inc. P. O. Box 160 Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation Co.

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	41560	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 88
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D 81   b.   c.   d.

15. Special Handling Instructions and Additional Information

I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 21 88 (8-1-88)

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tommy Cockrell — Signature: Tommy Cockrell — Month Day Year: 07 22 88 (8-1-88)

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

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Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 1 0 6 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414128
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co. — 6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste,Solid N.O.S.(K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	43260	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D S1 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks — Signature: Willis Hicks — Month Day Year: 07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Brickett — Signature — Month Day Year

EPA Form 8700-22

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 107 Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 0107
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414137

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	50740	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88D727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D J1 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. FERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year: 07 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVid Michael Signature: [signature] Month Day Year: 07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B. Mills Signature: [signature] Month Day Year: [illegible]

GENERATOR / TRANSPORTER / FACILITY

Chemical Waste Management

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 108 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M S D 0 0 7 0 2 7 5 4 3 0 — Manifest Document No. 0 0 1 0 8
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414138
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: O H D 0 0 9 8 6 5 8 2 5
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: A L D 0 0 0 6 2 2 4 6 4
G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	0 0 1	D T	45840	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 11
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 0 7 2 7 8 8

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES MICHAEL — Signature: Charles Michael — Month Day Year: 0 7 2 7 8 8

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B [illegible] — Signature: [illegible] — Month Day Year: [illegible]

GENERATOR — TRANSPORTER — FACILITY

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

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Form Approved. OMB No. 2050-0039. Expires 9-30-88

ise print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 | Manifest Document No. 00109 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414139

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	57250	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880-727-044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D 81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. FERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 27 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANNY M. CORKREN | Signature: Danny M. Corkren | Month Day Year: 07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 110 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 0 — Manifest Document No. 00100 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414140

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation Co.
6. US EPA ID Number: OHD000986582 5

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA-9189 CWM Profile Number RES-H-53976	001	DT	57030	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880727044
RES P.O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above

a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 27 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HG CORKREN — Signature: H G Corkren — Month Day Year: 07 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: D Mellet — Signature: Buck 72 — Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD 007 027 543 | Manifest Document No.: 00/11 | 2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414141

3. Generator's Name and Mailing Address:
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD 009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	44130	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Willis Hicks | Signature: Willis Hicks | Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bulldog | Signature: B[illegible] | Month Day Year: 1 [illegible] 8 [illegible]

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 112 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00112
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414142
B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020
H. Facility's Phone 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 — CWM Profile Number RES-H-53976	001	DT	47440	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Cockran — Signature: Tommy Cockran — Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B. Nolls — Signature: [illegible] — Month Day Year: 8/1/88

GENERATOR / TRANSPORTER / FACILITY

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 113 Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007102754 Manifest Document No. B00113
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414143

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020
H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	49990	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. 01 b. c. d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton Signature: J. D. Clayton Month Day Year 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bobby Pratt Signature: Bobby Pratt Month Day Year 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: B. McH[illegible] Signature: [illegible] Month Day Year [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 114

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00114

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414144

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation

6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	51490	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton
Signature: J. D. Clayton
Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES ROSS
Signature: James Ross
Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)* 115 Form Approved. OMB No. 2050-0039. Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027548 — Manifest Document No. 00115
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414145

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 — CWM Profile Number RES-H-53976	001	DT	47680	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. DJ
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brady Pate — Signature: Brady Pate — Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

lease print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. USD007027543 Manifest Document No. 0176
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number CWMA 414146

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	47270	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D11
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no adsorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton | Signature: J. D. Clayton | Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID MICHAEL | Signature: David Michael | Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill [illegible] | Signature: Bill [illegible] | Month Day Year: [illegible]

A Form 8700-22 (Rev. 9-86) [illegible]

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Chemical Waste Management

Form Approved. OMB No. 2050-0039. Expires 9-30-

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00177

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: CWMA 414147

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	47270	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D-81
b.
c.
d.

15. Special Handling Instructions and Additional Information
I certify that no absorbent had been added to the above waste which would prohibit it from being land filled. PERRCRA 3004(C-1) When handling wear eye protection and protective equipment such as impervious clothing and gloves.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 072888

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: CHARLES MICHAEL — Signature: Charles Michael — Month Day Year: 072888

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] Burrell — Month Day Year: 072888

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MSD007027543 — Manifest Document No.: 00718
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

4. Generator's Phone (601) 226-4584

A. State Manifest Document Number: CWMA 414148

B. State Generator's ID

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelie Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID: 219-938-7020

H. Facility's Phone: 205/652-9721

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 — CWM Profile Number RES-H-53976	001	DT	58550	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above

Work Order No. 880728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81 c.
b. d.

15. Special Handling Instructions and Additional Information
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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: H G CORKREN — Signature: H G Corkren — Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bnell — Signature: Bnell — Month Day Year

HAZARDOUS WASTE MANIFEST

Chemical Waste Management

(As Required By The Alabama Department of Environmental Management)

lease print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MSD007027543 Manifest Document No. 00719
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Koppers Company, Inc.
P. O. Box 160
Tie Plant, Ms. 38960

A. State Manifest Document Number CWMA 414149

B. State Generator's ID

4. Generator's Phone (601) 226-4584

5. Transporter 1 Company Name: Dart Transportation
6. US EPA ID Number: OHD009865825

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
Emelle Facility
Alabama Highway 17 at Mile Marker 163
Emelle, Alabama 35459

10. US EPA ID Number: ALD000622464

G. State Facility's ID 219-938-7020

H. Facility's Phone 205/652-9721

11. US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RCRA Hazardous Waste, Solid N.O.S. (K-001) ORM-E NA 9189 CWM Profile Number RES-H-53976	001	DT	53185	P	
b. CWM Profile Number					
c. CWM Profile Number					
d. CWM Profile Number					

J. Additional Descriptions for Materials Listed Above
Work Order No. 88 0728049
RES P. O. No. 28-0631
Emergency Contact - (601) 226-4584

K. Handling Codes for Wastes Listed Above
a. D81
b.
c.
d.

15. Special Handling Instructions and Additional Information
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16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: J. D. Clayton — Signature: J. D. Clayton — Month Day Year: 07 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANNY M. CORKREN — Signature: Danny M. Cor[illegible] — Month Day Year: 07 28 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year: [illegible]

ATTACHMENT A

Operator Certification of Closure

OPERATOR CERTIFICATION OF CLOSURE

I, Matthew C. Plautz
(Authorized Representative)

of Beazer Materials and Services, Inc.
436 Seventh Avenue, Pittsburgh, PA 15219
(Name and Address of Facility)

hereby state and certify that, to the best of my knowledge and belief, the

Surface Impoundment System, EPA I.D. #MSD007027543
(Hazardous Waste Management Unit(s)

has been closed in accordance with the Facility's closure plan.

Matthew C. Plautz
Signature

1/8/90
Date

PROGRAM MGR. — ENVIRONMENTAL SERVICES
Title

DCC #R415

APPENDIX I-2
INSPECTION LOGS

KOPPERS INDUSTRIES, INC.
GRENADA, MISSISSIPPI PLANT
TIE PLANT, MISSISSIPPI
CLOSED SURFACE IMPOUNDMENT INSPECTION REPORT

Inspected By	Date of Inspection	MONTHLY INSPECTION Security				MONTHLY INSPECTION Impoundment					ANNUAL INSPECTION		
		Fence Perimeter	Fence Gate	Fence Lock	Warning Signs	Erosion	Water Ponding	Tampering	Grass Cover	Surface Variation	Well Lock	Well Casing	Benchmark Integrity

Notes:
(1) Inspections are to be performed monthly and after unusual heavy rains or winds.
(2) If inspections identify any deficiencies in the unit's security or cover, they are to be explained on an attached sheet and corrected immediately, if possible.

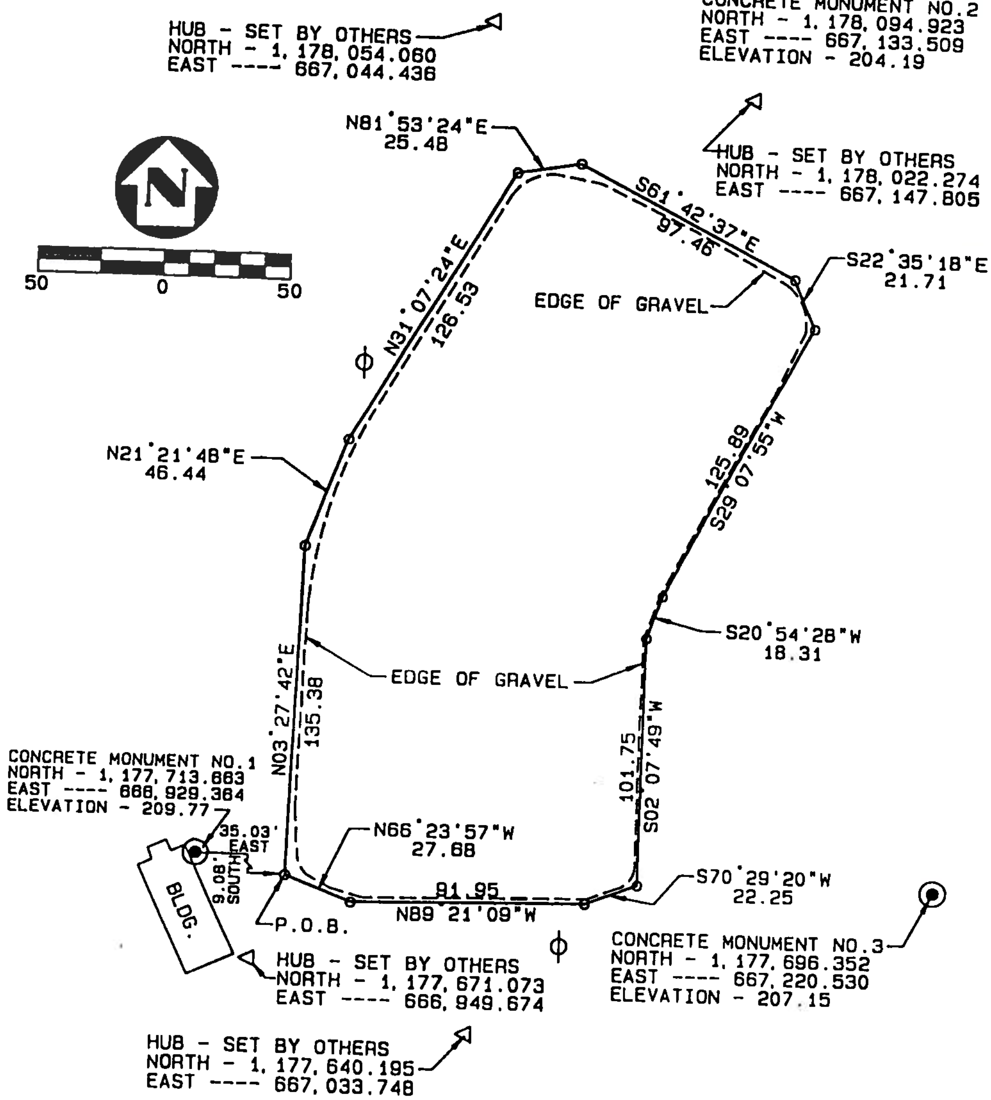
P:\projects\beazer\grenada\APPTAB.WK4

FLUOR DANIEL GTI

APPENDIX I-3

SURVEY PLAT

NOTE:
THE AREA DESCRIBED HEREON PREVIOUSLY CONTAINED A WASTE MANAGEMENT UNIT DESIGNATED U.S.EPA IDENTIFICATION NUMBER MSD 007027543. THE USE OF THE DESCRIBED AREA IS RESTRICTED AND ANY FUTURE USES MUST NOT DISTURB THE INTEGRITY OF THE FINAL COVER SYSTEM WITHOUT THE PRIOR APPROVAL OF THE STATE OF MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES, BUREAU OF POLLUTION CONTROL. MAINTENANCE, INSPECTIONS AND MONITORING ARE TO BE PERFORMED IN ACCORDANCE WITH THE APPROVED CLOSURE/POST-CLOSURE PLAN.



-- DESCRIPTION --

A PART OR PARCEL OF SECTION 28, TOWNSHIP 22 NORTH, RANGE 5 EAST, GRENADA COUNTY, MISSISSIPPI AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT THAT IS 9.08 FEET SOUTH AND 35.03 FEET EAST OF CONCRETE MONUMENT NO.1 THENCE RUN NORTH 03°27'42"EAST FOR 135.38 FEET TO A POINT; THENCE RUN NORTH 21°21'46"EAST FOR 46.44 FEET TO A POINT; THENCE RUN NORTH 31°07'24"EAST FOR 126.53 FEET TO A POINT; THENCE RUN NORTH 81°53'24"EAST FOR 25.48 FEET TO A POINT; THENCE RUN SOUTH 61°42'37" EAST FOR 97.46 FEET TO A POINT; THENCE RUN SOUTH 22°35'18"EAST FOR 21.71 FEET TO A POINT; THENCE RUN SOUTH 29°07'55"WEST FOR 125.89 FEET TO A POINT; THENCE RUN SOUTH 20°54'28"WEST FOR 18.31 FEET TO A POINT; THENCE RUN SOUTH 02°07'49"WEST FOR 101.75 FEET TO A POINT; THENCE RUN SOUTH 70°29'20" WEST FOR 22.25 FEET TO A POINT; THENCE RUN NORTH 89°21'09"WEST FOR 91.95 FEET TO A POINT; THENCE RUN NORTH 66°23'57"WEST FOR 27.68 FEET TO THE POINT OF BEGINNING OF HEREIN DESCRIBED PARCEL OF LAND CONTAINING 40,729.681 SQ.FT. OR 0.935 ACRES MORE OR LESS.

I, JACK T. WILLIS, SR., HEREBY CERTIFY THAT I HAVE MADE A SURVEY OF THE LANDS DESCRIBED HEREINABOVE AND THAT THE PLAT AND DESCRIPTION OF SAID LANDS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WITNESS MY SIGNATURE, THE 9 DAY OF [illegible] 1990.

REGISTERED PROFESSIONAL ENGINEER NO. 4049
REGISTERED LAND SURVEYOR NO. 2344
MISSISSIPPI

APPENDIX I-4

FINANCIAL ASSURANCE FOR POST-CLOSURE CARE

CLOSURE/POST - CLOSURE COST ESTIMATE WORKSHEET
For Fiscal Year Ending
September 27, 1997

STATE: Mississippi

FACILITY NAME: Koppers Industries, Inc.
Grenada
MSD 007027543

Program Manager: Mike Bollinger

INFORMATION BASE

Unit / Facility	Closure Plan Submittal Date	Closure Cost Estimate		Post-Closure Cost Estimate
Surface Impoundment	06-08-88		$	887,250
Less seven (7) years Post-Closure Care cost @ $ 29,575 per year.				(207,025)
Adjusted Post-Closure Cost Estimate			$	680,225
Boiler Ash Landfarm	11-30-87		$	707,940
Less seven (7) years Post-Closure Care cost @ $ 23,598 per year.				(165,186)
Adjusted Post-Closure Cost Estimate			$	542,754

CALCULATIONS — 1997 Cost Estimat

The Surface Impoundment cost reflects 1988 dollars; the adjusted cost estimate has been voluntarily inflated to 1997 dollars.

Post-Closure

							1997 Cost Estimat
For 1989:	680,225	X	1.0357	=	$	704,509	
For 1990:	704,509	X	1.0378	=	$	731,139	
For 1991:	731,139	X	1.0410	=	$	761,116	
For 1992:	761,116	X	1.0360	=	$	788,516	
For 1993:	788,516	X	1.0263	=	$	809,254	
For 1994:	809,254	X	1.0186	=	$	824,306	
For 1995:	824,306	X	1.0150	=	$	836,671	
For 1996:	836,671	X	1.0250	=	$	857,588	
For 1997:	857,588	X	1.0227	=			$ 877,055

The Boiler Ash Landfarm cost reflects 1987 dollars; the adjusted cost estimate has been voluntarily inflated to 1997 dollars.

Post-Closure

							1997 Cost Estimat
For 1988:	542,754	X	1.0357	=	$	562,130	
For 1989:	562,130	X	1.0357	=	$	582,198	
For 1990:	582,198	X	1.0378	=	$	604,205	
For 1991:	604,205	X	1.0410	=	$	628,977	
For 1992:	628,977	X	1.0360	=	$	651,620	
For 1993:	651,620	X	1.0263	=	$	668,758	
For 1994:	668,758	X	1.0186	=	$	681,197	
For 1995:	681,197	X	1.0150	=	$	691,415	
For 1996:	691,415	X	1.0250	=	$	708,700	
For 1997:	708,700	X	1.0227	=			$ 724,787

Total Cost Estimate for 1997: $1,601,842

SECTION J. OTHER FEDERAL LAWS

Other than the regulations stated in this permit reapplication, no known other federal laws are applicable to the post-closure care activities detailed herein.

SECTION K. CERTIFICATION

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

James P. Brennan
(Name)

James P. Brennan
(Signature)

Vice President and General Manager
(Title)

Beazer East, Inc.
(Company Name)

12/16/97
(Date)

SECTION K. CERTIFICATION

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

James P. Brennan
(Name)

____
(Signature)

Vice President and General Manager
(Title)

Beazer East, Inc.
(Company Name)

____
(Date)

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.

<u>Potential Natural Attenuation</u>

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.

ATTACHMENT M

SOLID WASTE MANAGEMENT UNIT SUMMARY

M.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

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.

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) .

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

M.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

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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.

M.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).				

ATTACHMENT N

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 O). 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,
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 Permittees shall provide information on the environmental setting at the facility. The Permittees 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. Hydrogeology

The Permittees 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. <u>Soils</u>

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.

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. Air

The Permittees 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 Permittees 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. <u>Waste Characteristics</u>:

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. 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. <u>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.</u>

7. <u>A description of any known or documented endangered or threatened species near the facility.</u>

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

The Permittees 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 <u>Standard Operating Procedure and Quality Assurance Manual</u> (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. <u>Sampling Strategy</u>

   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. <u>Sampling Procedures</u>

   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 Permittees 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. <u>Tabular Displays</u>

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 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 Permittees shall present data results obtained pursuant to the RFI Work Plan. The Permittees shall identify any work plan proposals which were not completed and explain why such actions were not finished. The Permittees 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 Permittees shall discuss the results of data quality/data review.

E. Data Quality Assurance/Data Quality Data Review

The Permittees 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 Permittees 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 Permittees 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 Permittees shall provide a work plan to complete characterization of the release(s).

ATTACHMENT O

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.

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

B. Description of Current Situation

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

2. Screening: The Permittees 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 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. <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 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).

3. Control of Sources of Releases

   The Permittees 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 Permittees 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 Permittees 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 Permittees 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 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. Preliminary Identification of the Financial Assurance Mechanism

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

ATTACHMENT P

SCHEDULE OF COMPLIANCE SUMMARY

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs *Condition V.B.1. and* *Condition V.B.2.*	Within fifteen (15) calendar days of discovery
SWMU Assessment Report *Condition V.B.3.*	Within ninety (90) calendar days of notification
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs *Condition V.C.1.*	Within fifteen (15) calendar days of discovery
Confirmatory Sampling Work Plan for SWMUs identified under Condition V.B.4. or AOCs identified under Condition V.B.1. *Condition V.D.2.*	Within forty-five (45) calendar days of notification by the Regional Administrator (RA)
Confirmatory Sampling Report *Condition V.D.5.*	In accordance with the approved CS Work Plan
RFI Work Plan for SWMU(s) and AOC(s) Identified under Condition V.B.4., Condition V.C.2., or Condition V.D.5. *Condition V.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 V.E.3.a.*	In accordance with the approved RFI Work Plan
Final RFI Report *Condition V.E.3.c*	Within thirty (30) calendar days after receipt of RA's final comments on Draft RFI Report
RFI Progress Reports *Condition V.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 V. A.1. *Condition V.F.1.a.*	Dependent on the Interim Measures Stage of the SWMUs and AOCs (see Condition V.F.1.a.)
Interim Measures Work Plan *Condition V.F.1.b.*	Within thirty (30) calendar days of notification by RA
Interim Measures Progress Reports *Condition V.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 V.F.3.b.*	Within ninety (90) calendar days of completion
CMS Work Plan *Condition V.G.1.a.*	Within ninety (90) calendar days of notification by RA that a CMS is required
Implementation of CMS Work Plan *Condition V.G.2.*	Within fifteen (15) calendar days after receipt of RA approval of Plan
Draft CMS Report *Condition V.G.3.a.*	In accordance with the schedule in the approved CMS Work Plan
Final CMS Report *Condition V.G.3.a.*	Within thirty (30) calendar days of RA's final comments on Draft CMS Report
Demonstration of Financial Assurance *Condition V.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.

ATTACHMENT Q

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 Permittees to conduct a Corrective Measure Study (CMS) to meet the requirements of permit Condition V.G., Attachment O, and 40 MHWMR 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 V.G., Attachment O, and 40 MHWMR264.101.

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 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 Industries, Inc.	Air-AIRS AFS	10/12/2000	
096000012	Koppers Industries, Inc.	Air-Title V Fee Customer	03/11/1997	
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	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	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
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	
	PT CIU - Timber Products		

Water	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

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