STATE OF MISSISSIPPI
HAZARDOUS WASTE MANAGEMENT PERMIT

THIS CERTIFIES THAT

Fernwood Industries, LLC
1047 Fernwood Road
Fernwood, MS
Pike County
MSD 008 183 519

is hereby authorized to conduct post-closure care and corrective action for four closed surface impoundments.

This permit is issued under the authority of the Mississippi Solid Wastes 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 Management Regulations, and associated conditions included therein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit Issued: August 27, 2012

Expires: July 31, 2022

Permit No.: HW-008-183-519

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LIST OF ATTACHMENTS

MODULE 1 – GENERAL PERMIT CONDITIONS

I.A EFFECT OF PERMIT

The Permittee is required to conduct post-closure activities for the four closed hazardous waste surface impoundments (i.e., Surface Impoundment #1, Surface Impoundment #2, the Condenser Cooling Water Pond, and the Sand Filter Bed) and to conduct corrective action for contaminated groundwater resulting from releases from these regulated units in accordance with the conditions of this permit. Subject to MHWMR 270.4, compliance with this permit constitutes compliance, for purposes of enforcement, with Subtitle C of the Resource Conservation and Recovery Act (RCRA). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, and invasion of other private rights, or any infringement of state or local law or regulations or preclude compliance with any other Federal, State, and/or local laws. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3008(a), Section 3008 (h), Section 3013, of Section 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 Part 270.41, 270.42, 270.43, and 270.50(d). 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 conditions. [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)]

I.C. SEVERABILITY

The provisions of this permit are severable, and if any provisions 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, 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 or the generally accepted scientific or industrial meaning to the term. "Executive Director" means the Executive Director of MDEQ, or his designated or authorized representative.

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 RCRA and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or 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 Part 270.50, this permit shall be effective for a fixed term not to exceed ten (10) years. 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 and, through no fault of the Permittee, the Executive Director has not issued a new permit, as set forth in MHWMR 270.51. [MHWMR 270.50(a), MHWMR 270.51(d)]

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

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [MHWMR 270.30(c)]

I.E.5. Duty to Mitigate

In the event of noncompliance with the 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. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. [MHWMR 270.30(e)]

I.E.7. Duty to Provide Information

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

I.E.8. Inspection and Entry

Pursuant to MHWMR 270.30(i), the Permittee shall allow the Executive 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 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 facility, 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 RCRA, any substances or parameters at any location.

I.E.9. Monitoring and Records

The Executive 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 of the wastes to be analyzed must be the appropriate method from Appendix I of MHWMR Part 261, the EPA Region 4 Field Branches Quality System and Technical Procedures (SOP) (most recent version), or an equivalent method approved by the Executive Director. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods for the Examination of Water and Wastewater, or an equivalent method approved by the Executive Director and specified herein. [MHWMR 270.30(j)(1)]

I.E.9.b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 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. This period may be extended by the Executive Director at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall also maintain records for all groundwater monitoring wells and associated groundwater surface elevations for the duration of the post-closure care period. All records required by this condition shall be

maintained at the Fernwood Industries, LLC central file located in the office at the Fernwood site and shall be made available upon request. [MHWMR 264.74(b) and 270.30(j)(2)]

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

i. The date(s), exact place, and time(s) of sampling or measurements;

ii. The individual(s) who performed the sampling or measurements;

iii. The date(s) the analyses were performed;

iv. The individual(s) who performed the analyses;

v. The analytical techniques or methods used, including any method detection limits for said technique; and

vi. The results of such analyses.

I.E.10. Reporting Planned Changes

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

I.E.11. Anticipated Noncompliance

The Permittee shall give advance notice to the Executive 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 Executive Director. The Executive Director may require modification or revocation and reissuance of the permit pursuant to MHWMR 270.40. Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of MHWMR Parts 264 and 270 and of this permit. [MHWMR 270.30(l)(3), 264.12(c)]

I.E.13. Twenty-Four Hour Reporting

I.E.13.a. The Permittee shall report to the Executive Director any noncompliance with the permit which may endanger health or

the environment. Any such information shall be reported orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

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

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.13.b. The description of the occurrence and its cause shall include:

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

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

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

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

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

I.E.13.c. A written submission shall also be provided within five (5) 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 Executive 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.14. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above at the time monitoring reports are submitted. The reports shall contain the information listed in condition I.E.13. of this Permit. [MHWMR 270.30(l)(10)]

I.E.15. Obligation for Corrective Action

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

I.E.16. Other Information

Whenever the Permittee becomes aware that it failed to submit relevant facts in the permit application or submitted incorrect information in a permit application or any report to the Executive 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 Executive Director shall be signed and certified in accordance with MHWMR 270.11 and 270.30(k).

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

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

Environmental Permits Division, Chief
MDEQ, Office of Pollution Control
P.O. Box 2261
Jackson, MS 39225

I.H. CONFIDENTIAL INFORMATION

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

MODULE II – GENERAL FACILITY CONDITIONS

II.A. FACILITY DESCRIPTION

This permit is issued to Fernwood Industries, LLC for their closed wood treating facility in Fernwood, Pike County, Mississippi (MSD 008 183 519), as described in the permit renewal application submitted on May 4, 2009, including all subsequently submitted supplementary information and modifications; and hereinafter referred to as "the application." This permit authorizes the Permittee to conduct post-closure care for the four closed hazardous waste surface impoundments, which include Surface Impoundment #1, Surface Impoundment #2, the Condenser Cooling Water Pond, and the Sand Filter Bed; and to perform corrective action for the contaminated groundwater beneath these units.

II.B. DESIGN AND OPERATION OF FACILITY

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

II.C. SECURITY

The Permittee shall comply with the security provisions of MHWMR Section 264.14(b)(2) and (c) as described in Section 2.4 of Attachment A and maintained per the Post-Closure Plan in Attachment B.

II.D. GENERAL INSPECTION REQUIREMENTS

The Permittee shall comply with the inspection requirements of MHWMR Section 264.15 as described in the Post-Closure Plan (Attachment B). The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by MHWMR 264.15(c). Records of inspections shall be kept as required by MHWMR 264.15(d).

II.E. LOCATION STANDARDS

The facility is not located in an area described by MHWMR 264.18(a). A small portion of the facility is located within a 100-year floodplain. However, the closed surface impoundments are not within the floodplain and are designed such that flooding should not result in a washout.

II.F. GENERAL POST-CLOSURE REQUIREMENTS

II.F.1. Post-Closure Care Period

The Permittee shall conduct post-closure care for the closed surface impoundments for 30 years following the date of completion of closure, except as otherwise provided in Module III. Post-closure care of the units shall be in accordance with MHWMR 264.117 and the Post-Closure Plan required by MHWMR 264.118.

II.F.2. Amendment to Post-Closure Plan

The Permittee shall request a permit modification and amend the Post-Closure Plan, whenever necessary, in accordance with MHWMR Section 264.118(d).

II.F.3. Post-Closure Notices

II.F.3.a. The Permittee has submitted 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.F.3.b. Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the Permittee performed the following:

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

ii. Submitted a certification that the notation required by MHWMR 264.119(b)(1) has been recorded, in accordance with MHWMR 264.119(b)(2).

II.F.3.c. The Permittee shall request and obtain a permit modification prior to the post-closure removal of hazardous wastes, hazardous waste residues, liners, or contaminated soils in accordance with MHWMR 264.119(c).

II.F.4. Certification of Completion of Post-Closure Care

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

II.G. COST ESTIMATE FOR POST-CLOSURE CARE

II.G.1. The Permittee must have a detailed written estimate of the cost of providing post-closure care of the facility, prepared in accordance with MHWMR 264.144(a).

II.G.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 Section 264.144(c).

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

II.H. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE

The Permittee shall demonstrate continuous compliance with MHWMR 264.145 by providing documentation of financial assurance, as required by MHWMR 264.151, in at least the amount of the cost estimate required by Condition II.G. of this permit. Changes in financial assurance mechanisms must be approved by the Executive Director pursuant to MHWMR Section 264.145. The Permittee may request adjustments to and/or reimbursements from the financial mechanism in accordance with the procedures in MWHMR 264.145.

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

The Permittee shall comply with MHWMR 264.148 whenever necessary.

II.J OPERATING RECORD

Pursuant to MHWMR Part 264.73(a), the Permittee must keep a written operating record of post-closure care activities and those activities specified in MHWMR Part 264.73(b)(5) and (6), as well as post-closure cost estimates required by MHWMR 264.73(b)(8). These records shall be maintained at the facility.

II.K. SPECIAL CONDITIONS

II.K.1. Where a discrepancy exists between the wording of an item in the application and this permit, the permit requirements take precedence over the application.

II.K.2 Where a discrepancy exists between the wording of an item in an attachment and wording in the permit module, the module requirements take precedence over the attachment.

MODULE III – POST-CLOSURE CARE

III.A. APPLICABILTY

The Permittee shall provide post-closure care for the four closed surface impoundments, which include Surface Impoundment #1, Surface Impoundment #2, the Condenser Cooling Water Pond, and the Sand Filter Bed, as described in Section 1.1 of Attachment A and depicted in Figure 1 of Attachment C, in accordance with MHWMR 264.110(b). The closed surface impoundments were used in the treatment of wastewater and wastewater sludge from the wood preserving process. The sediment and sludge that accumulated in the impoundments met the K001 RCRA hazardous waste listing.

III.B. POST-CLOSURE CARE AND USE OF PROPERTY

III.B.1. Post-closure care for the surface impoundments shall continue throughout the effective period of this permit. The 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 Executive Director or his authorized representative finds this is necessary to protect human health and the environment. [MHWMR 264.117(a)]

III.B.2. The Permittee shall perform maintenance, monitoring, and reporting for the groundwater monitoring program in accordance with the applicable requirements of Subpart F of MHWMR Part 264 and Module IV of this permit during the post-closure period. [MHWMR 264.117(a)(1)]

III.B.3. For the closed surface impoundments, the permittee shall comply with the post-closure care requirements for surface impoundments in MHWMR Part 264, Subpart K, as follows [MHWMR 264.117(a)(1) and MHWMR 264.228(b)]:

III.B.4.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, or other events [MHWMR 264.228(b)(1)];

III.B.3.b. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of MHWMR Part 264, Subpart F [MHWMR 264.228(b)(3)]; and

III.B.3.c. Prevent run-on and run-off from eroding or otherwise damaging the final cover. [MHWMR 264.228(b)(4)]

III.B.4. The Permittee shall maintain the security measures specified in Section 2.4 of Attachment A and maintained per the Post-Closure Plan in Attachment B. [MHWMR 264.117(b)]

III.B.5. Post-closure use of property in which hazardous wastes remain after final closure must never be allowed to disturb the integrity of the final cover or the function of the facility's monitoring systems, unless allowed by the Executive Director under MHWMR 264.117(c)(1)-(2). [MHWMR 264.117(c)]

III.B.6. The Permittee shall implement the Post-Closure Plan found in Attachment B. All post-closure care activities must be conducted in accordance with the provisions of the Post-Closure Plan. [MHWMR 264.117(d)]

III.C. POST-CLOSURE INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the Post-Closure Plan found in Attachment B. The Permittee shall also comply with the General Inspection Requirement in Condition II.D.

III.D. POST-CLOSURE NOTICES

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 or contaminated soils, 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)]

III.E. CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Executive 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 a qualified engineer registered in the State of Mississippi. Documentation supporting the professional engineer's certification must be furnished to the Executive Director upon request until the Executive Director releases the Permittee from the financial assurance requirements for post-closure care under MHWMR 264.145(i). [MHWMR 264.120]

III.F. FINANCIAL ASSURANCE

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

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

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

III.G. RETENTION OF POST-CLOSURE PLAN

The person designated as the facility contact in the Post-Closure Plan (Attachment B) must keep the updated Post-Closure Plan during the remainder of the post-closure period. [MHWMR 264.118(c)]

III.H. POST-CLOSURE PERMIT MODIFICATIONS

The Permittee must submit a written request for a permit modification to authorize a change in the approved Post-Closure Plan. This request must be made in accordance with applicable requirements of MHWMR Parts 124 and 270 and must include a copy of the amended Post-Closure Plan for approval by the Executive 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 sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the Post-Closure Plan. The Executive Director will approve, disapprove, or modify this plan in accordance with the procedures in MHWMR Parts 124 and 270. [MHWMR 264.118(d)]

MODULE IV – GROUNDWATER MONITORING PROGRAM

IV.A. APPLICABILITY

The conditions of this module apply to the four closed surface impoundments, which include Surface Impoundment #1, Surface Impoundment #2, the Condenser Cooling Water Pond, and the Sand Filter Bed, as described in Section 1.1 of Attachment A and depicted in Figure 1 of Attachment C.

IV.B. GROUNDWATER MONITORING PROGRAM

The Permittee shall conduct a corrective action groundwater monitoring program as required by MHWMR 264.91(a)(3). When the concentrations of hazardous constituents in Condition IV.D. have not exceeded the groundwater protection standards under Condition IV.C. for a period of three consecutive years, then the Permittee may petition the Executive Director for a permit modification to conduct a compliance monitoring program per MHWMR 264.99.

IV.C. GROUNDWATER PROTECTION STANDARDS

The groundwater protection standards under MHWMR 264.92 shall be equal to the concentration limits under Condition IV.D. during the corrective action compliance period. These groundwater protection standards are based on the Maximum Contaminant Limits (MCLs) as established in the National Primary Drinking Water Regulations under the Safe Drinking Water Act (SWDA). In cases where MCLs have not been promulgated, the standard shall be the tapwater screening level from the "Regional Screening Levels for Chemical Contaminants at Superfund Sites" or, if no such levels have been established or these screening levels are below the Method Detection Limit (MDL), the standard shall be no detection of the constituent. The MDL for the test method used shall be at or below the Limit of Quantitation (LOQ) (or Practical Quantitation Limit, PQL) specified in the appropriate EPA Test Method. The Permittee may petition the Executive Director for a permit modification during the compliance period to establish additional groundwater protection standards based on alternate concentration limits (ACLs) under MHWMR 264.94(b). [MHWMR 264.100(a)]

IV.D. HAZARDOUS CONSTITUENTS AND CONCENTRATION LIMITS

The following constituents are present in the groundwater beneath the closed surface impoundments depicted in Attachment C. The groundwater protection standards of Condition IV.C. shall be based on the indicated concentration limits as required by MHWMR 264.94. The Permittee shall continue to implement a compliance monitoring program to ensure that the corrective action program is effectively reducing these hazardous constituents beneath regulated units to achieve compliance with the groundwater protection standards. The following

hazardous constituents and their concentration limits comprise the groundwater protection standards [MHWMR 264.100(a)(1)-(2)]:

Constituents	Concentration Limit (µg/L)[1]	Basis
Acenaphthene	400	SL[3]
Acenaphthylene	< MDL	MDL[2]
Acetophenone	1,500	SL[3]
Anthracene	1,300	SL[3]
Benz(a)anthracene	< MDL	SL[4]
Benzene	5.0	MCL
Benzo(a)pyrene	0.2	MCL[4]
Benzo(b)fluoranthene	< MDL	SL[4]
Benzo(k)fluoranthene	< MDL	SL[4]
Benzo(g,h,i)perylene	< MDL	MDL[2]
Chrysene	< MDL	MDL[2]
m-Cresol	< MDL	MDL[2]
o-Cresol	< MDL	MDL[2]
p-Cresol	< MDL	MDL[2]
Dibenz(a,j)acridine	< MDL	MDL[2]
Dibenz(a,h)anthracene	< MDL	SL[4]
3,3'-Dichlorobenzidine	< MDL	SL[4]
2,4-Dimethylphenol	< MDL	MDL[2]
2,4-Dichlorophenol	35	SL[3]
Fluoranthene	630	SL[3]
Fluorene	220	SL[3]
Indeno(1,2,3-c,d)pyrene	< MDL	MDL[2]
Methyl Chloride (Chloromethane)	190	SL[3]
Naphthalene	< MDL	SL[4]
Pentachlorophenol	1	MCL
Phenanthrene	< MDL	MDL[2]
Phenol	4,500	SL[3]

Constituents	Concentration Limit (µg/L)[1]	Basis
Pyrene	87	SL[3]
2,3,4,5-Tetrachlorophenol	< MDL	MDL[2]
2,3,4,6-Tetrachlorophenol	170	SL[3]
2,4,5-Trichlorophenol	890	SL[3]
2,4,6-Trichlorophenol	< MDL	SL[4]
Toluene	1,000	MCL

[1]Per the analytical methods in the Groundwater Sampling and Analysis Plan found in Attachment D (i.e., EPA's methods found in SW-846).
[2] The groundwater protection standard shall be less than the MDL (i.e., a Non-Detect result). The MDL should be less than or equal to the LOQ, which is the lower limit of quantitation from Method 8270D of EPA's SW-846 (generally 10 µg/L).
[3] SL = Tapwater screening level from "Regional Screening Levels for Chemical Contaminants at Superfund Sites" as of November 2011.
[4] If the SL is lower than the MDL, the MDL is specified as the groundwater protection standard. A sample result of "Non-Detect" shall indicate compliance with the groundwater protection standards, assuming appropriate test methods and QA/QC procedures are used.

IV.E. POINT OF COMPLIANCE

The point of compliance for the closed waste management areas (i.e., the four closed Surface Impoundments) shall be the vertical surface located at the hydraulically downgradient limit of the waste management areas that extends down into the uppermost aquifer underlying the waste managements areas. [MHWMR 264.100(a)(3)]

IV.F. COMPLIANCE PERIOD

The compliance period shall continue until the groundwater protection standards for all constituents specified in Condition IV.D. has not been exceeded in any compliance or effectiveness monitoring well for a period of three consecutive years. [MHWMR 264.100(a)(4)]

IV.G. WELL LOCATION, INSTALLATION AND CONSTRUCTION

The Permittee shall install and maintain a groundwater monitoring system as specified below and depicted in Figure 1 of Attachment C [MHWMR 264.100(d)]:

IV.G.1. Compliance Point Monitoring Wells
For the purposes of this permit, wells MW-7, MW-8, MW-9, and MW-10 shall be designated the Compliance Point Monitoring Wells.

IV.G.2. Effectiveness Monitoring Wells
For the purposes of this permit, wells MW-11, MW-12, MW-22, MW-25, MW-27A, and MW-31 shall be designated as Effectiveness Monitoring Wells used to determine the effectiveness of the corrective action program.

IV.G.3. Boundary Control Monitoring Wells
For the purposes of this permit, wells MW-17, MW-18, MW-24, and MW-28, shall be designated Boundary Control Monitoring Wells.

IV.G.4. Background Monitoring Well
For the purposes of this permit, well MW-4 shall be designated as the Background Monitoring Well.

IV.G.5. Additional Monitoring Wells
Due to changes that may occur in groundwater flow direction under the groundwater monitoring program; construction, redesignation, or deletion of wells from the monitoring program may be required. Any proposed addition, deletion, or change in designation of monitoring wells by the Permittee must first be approved by the Executive Director or his representative.

IV.G.6. Monitoring Well Inspection
The Permittee shall inspect the monitoring wells identified in Conditions IV.G.1-5 in accordance with the Post-Closure Plan included in Attachment B.

IV.G.7. Replacement Procedures
Should the Permittee determine during an inspection or sampling event that any well identified in Conditions IV.G.1-5 has been damaged such that it no longer meets the requirements of MHWMR 264.97(a) and (c), the Permittee shall notify the Executive Director in writing within seven (7) days of making such a determination and replace or repair the damaged well within thirty (30) days. The replacement well should be constructed to the same specifications as the well being replaced.

IV.G.8. Deletion Procedure
Any well deleted from the monitoring program shall be plugged and abandoned in accordance with the "Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells," US EPA 600/4-89/034, and the Mississippi Office of Land and Water regulations. Well plugging and abandonment methods and certification shall be submitted to the Executive Director within thirty (30) days from the date the well is removed from the monitoring program.

IV.H. GROUNDWATER MONITORING REQUIREMENTS

The Permittee shall monitor the effectiveness of the corrective action program on groundwater quality and on groundwater flow across the entire extent of the contaminant plume beneath the closed Surface Impoundments, as depicted in Figure 1 of Attachment C. [MHWMR 264.100(d)]

IV.H.1. Monitoring Parameters and Frequencies

The Permittee shall sample the Compliance Point, Effectiveness, and Boundary Control Monitoring Wells, in Condition IV.G. for the hazardous constituents underlined in Condition IV.D. above on an annual basis. No two sampling events used to comply with this condition shall occur within six months of each other.

IV.H.2. Additional Monitoring Requirements

IV.H.2.a. During the corrective action monitoring period, a compliance point monitoring well shall be sampled and analyzed twice during the permit term for all of the hazardous constituents (33 total) listed in Condition IV.D. One sampling event shall be conducted within the first five (5) years of the permit term and one shall be conducted during the last five (5) years of the permit term. The compliance point monitoring well shall be selected on a rotating basis.

IV.H.2.b. Sampling shall not be required in any well found to contain free product during the sampling event, provided that the condition of the well is noted in the sampling log.

IV.H.2.c. Within ninety (90) days after meeting the groundwater protection standards in Condition IV.D. for all of the Compliance Point and Effectiveness Monitoring Wells, the Permittee shall sample each Compliance Point and Effectiveness Monitoring Well for all MWHMR Part 264 Appendix IX constituents.

IV.H.3. Additional Parameters

IV.H.3.a. If additional Appendix IX constituents are found in the compliance point monitoring well, the Permittee shall resample the affected well(s) within thirty (30) days and repeat the Appendix IX analysis for the detected constituents.

IV.H.3.b. If the presence of Appendix IX constituents is confirmed, the Permittee shall report the concentrations of these additional constituents to the Executive Director within seven days after completion of the analysis and add these constituents to the monitoring list in Condition IV.D.

IV.H.3.c. The Permittee may elect to forego the requirements of Condition IV.H.3.a. and add the constituents to the monitoring list as required in Condition IV.H.3.b.

IV.I. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from groundwater monitoring wells described in Condition IV.G. [MHWMR 264.100(d)]:

IV.I.1. Samples shall be collected using the techniques in the Groundwater Sampling and Analysis Plan (Attachment D).

IV.I.2. Samples shall be preserved and shipped in accordance with the procedures specified in the Groundwater Sampling and Analysis Plan (Attachment D).

IV.I.3. Samples shall be analyzed in accordance with the procedures specified in the Groundwater Sampling and Analysis Plan (Attachment D).

IV.I.4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in the Groundwater Sampling and Analysis Plan (Attachment D).

IV.I.5. Appropriate QA/QC measures shall be used, including equipment, field, and trip blanks, as specified in the Groundwater Sampling and Analysis Plan (Attachment D).

IV.J. ELEVATION OF THE GROUNDWATER SURFACE

IV.J.1. The Permittee shall determine the elevation of the groundwater surface at each well each time the groundwater is sampled per Condition IV.H.1.

IV.J.2. The Permittee shall determine and record the surveyed elevation of any future monitoring well when installed. [MHWMR 264.100(d)]

IV.K. GROUNDWATER FLOW AND DIRECTION

The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually. [MHWMR 264.100(d)]

IV.L. RECORDKEEPING AND REPORTING

IV.L.1. The Permittee shall enter all monitoring, testing, and analytical data obtained in the operating record.

IV.L.2. The Permittee shall submit the analytical results required by Conditions IV.H., as well as the information required by IV.J. and IV.K., annually to the Executive Director no later than March 31 of the following year. [MHWMR 264.100(d)]

IV.M. REQUEST FOR PERMIT MODIFICATION

If the Permittee or the Executive Director determines the corrective action groundwater 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 264.100(d)]

MODULE V – CORRECTIVE ACTION PROGRAM FOR REGULATED UNITS

V.A. APPLICABILITY

The conditions of this module apply to the four closed surface impoundments, which include Surface Impoundment #1, Surface Impoundment #2, the Condenser Cooling Water Pond, and the Sand Filter Bed, as described in Section 1.1 of Attachment A and depicted in Figure 1 of Attachment C.

V.B. CORRECTIVE ACTION PLAN

The Permittee shall implement the corrective action measures described in Section 2.20.6 of the Facility Description (Attachment A). The corrective action measures shall include continued operation and maintenance of the groundwater recovery wells shown in Figure 2 of Attachment C. The groundwater recovery wells shall be operated at a minimum extraction rate sufficient to prevent further migration of the soluble plume. The recovered groundwater and dense non-aqueous phase liquids (DNAPL) are treated in wastewater treatment unit (i.e., a tanks system meeting the regulatory definition in MHWMR 260.10) prior to being directly discharged under the Clean Water Act. [MHWMR 264.100(b)]

V.C. CORRECTIVE ACTION PERIOD

V.C.1 The Permittee shall conduct the corrective action measures specified in this permit until the concentration of hazardous constituents specified in Condition IV.D. have been reduced to levels below their respective groundwater protection standards. [MHWMR 264.100(e)(4)]

V.C.2. The Permittee shall conduct corrective measures to the extent necessary to ensure that the groundwater protection standards are not exceeded. The Permittee may terminate corrective action measures if he can demonstrate, based on data from the groundwater monitoring program in Module IV, that the groundwater protection standards have not been exceeded for a period of three consecutive years. [MHWMR 264.100(f)]

V.C.3. Upon termination of the corrective action measures, the Permittee shall perform a complete MHWMR Part 264 Appendix IX analysis on all compliance point and effectiveness monitoring wells, designated in Conditions IV.G.1. and IV.G.2., to confirm that no hazardous constituents are present.

V.C.4. If corrective action procedures are terminated in accordance with Condition V.C.1., they shall be reinstated if at any time during the

post-closure care period the groundwater protection standards are exceeded for any hazardous constituent at the point of compliance.

V.D. CORRECTIVE ACTION IMPLEMENTATION

All corrective action measures described in the application (Attachment A) have already been implemented. [MHWMR 264.100(c) and (e)(3)]

V.E. GROUNDWATER MONITORING PROGRAM

The permittee shall maintain and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. The requirements of the groundwater monitoring program are included as Module IV of this permit. [MHWMR 264.100(d)]

V.F. CORRECTION ACTION TO PROPERTY BOUNDARY

The Permittee shall monitor, capture, and remediate contaminated groundwater from the point of compliance to the property boundary. [MHWMR 264.100(e)(1)]

V.G. REPORTS

The Permittee shall submit reports of the effectiveness of the corrective action program on an annual basis for each calendar year. These reports shall be submitted no later than March 31 of the following year and shall contain the following information, at a minimum [MHWMR 264.100(g)]:

V.G.1. Groundwater elevations measured in all monitoring wells;

V.G.2. A potentiometric map showing groundwater flow direction;

V.G.3. The results of all groundwater analyses;

V.G.4. A determination of the groundwater flow rate; and

V.G.5. Isoconcentration maps showing plumes for each monitored constituent and a composite map indicating the total extent of groundwater contamination.

V.H. MODIFICATIONS

If the Permittee or the Executive Director determines that the corrective action 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 264.100(h)]

V.I. SPECIAL CONDITIONS

Construction and use of additional extraction wells, monitoring wells, and/or other components installed as a part of the corrective action measures shall not require a permit modification. However, the Permittee shall notify the Executive Director of such activities and obtain approval from the Executive Director or his representative before proceeding.

MODULE VI – LAND DISPOSAL RESTRICTIONS

VI.A. GENERAL RESTRICTIONS

MHWMR 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be land disposed. The Permittee shall maintain compliance with the requirements of MHWMR 268. Where the Permittee has applied for an extension, waiver or variance under MHWMR 268, the Permittee shall comply with all restrictions on land disposal under this Module once the effective date for the waste has been reached pending final approval of such application.

VI.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

VI.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 268, Subparts C and/or D are met.

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

MODULE VII – WASTE MINIMIZATION

VII.A. APPLICABILITY

No less than one year from the date of the future generation of hazardous waste and pursuant to MHWMR 264.73(b)(9); Section 3005(h) of RCRA, 42 U.S.C. 6925(h); and Section 49-31-1 et seq., Mississippi Code of 1972; the Permittee must certify, no less often than annually, that:

VII.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

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

VII.B. WASTE MINIMIZATION CERTIFICATION OBJECTIVES

Any future waste minimization program under Condition VIII.A should include the following elements:

VII.B.1. Top Management Support

VIII.B.1.a. Dated and signed policy describing management support for waste minimization and for implementation of a waste minimizing plan.

VIII.B.1.b. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

VIII.B.1.c. Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations and maintenance.

VII.B.2. Characterization of Waste Generation

Identification of types, amounts and hazardous constituents of waste streams with the source and date of generation.

VII.B.3. Periodic Waste Minimization Assessments

VIII.B.3.a. Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

VIII.B.3.b. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

VIII.B.3.c. Specify performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

VII.B.4. Cost Allocation System

VIII.B.4.a. Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight to the extent feasible.

VIII.B.4.b. Description of how departments are held accountable for the wastes they generate.

VIII.B.4.c. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

VII.B.5. Technology Transfer

Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

VII.B.6. Program Evaluation

VII.B.6.a. Description of types and amounts of hazardous waste reduced or recycled.

VII.B.6.b. Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

VII.B.6.c. Amendments to waste minimization plan and explanation.

VII.B.6.d. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

VII.B.6.e. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

VII.C. RECORDKEEPING AND REPORTING

VII.C.1. Annually, by July 31, the Permittee shall submit a certification report of the types and quantities of waste generated, and the types and quantities of waste reduced/minimized. This certified report shall include a narrative study explaining the waste generated and minimization data, a description of goals and progress made in reducing/minimizing the generation of wastes, and a description of any impediment to the reduction and minimization of waste.

VII.C.2. The Permittee shall maintain copies of this certification in the facility operating record as required by MHWMR 264.73.

ATTACHMENT A

FACILITY DESCRIPTION

1.0 INTRODUCTION

Fernwood Industries, LLC (Fernwood), Fernwood, Mississippi, was originally issued a Mississippi Hazardous Waste Permit, Number HW-89-519-01, by the Mississippi Department of Environmental Quality (MDEQ) on July 25, 1989. This permit provides for the post-closure care of the closed hazardous waste impoundments and a sand filter bed or sludge drying bed on the site, and for the remediation of groundwater contamination that exists at the site. The permit was reissued as permit number HW-008-183-519 for the second 10-year permit period on November 12, 1999.

This submittal constitutes the application for renewal of the Post-Closure Permit, and it is submitted in accordance with the request contained in correspondence from MDEQ dated November 25, 2008. Much of the information required for the renewal application remains unchanged from the original application, and to the extent possible, information provided in the original application was relied upon in preparation of the renewal application. Information from other site submittals, such as the Corrective Action Plan or Groundwater Quality Assessment, has been included as needed.

The revisions dated November 4, 2011 are made as a result of review and comments by MDEQ which rejected Fernwood's request to modify the corrective actions being employed for groundwater remediation. The November 4, 2011 revision reverts to the original corrective actions that have proved successful over the more than 20 years that they have been in place. This revision results in a renewal application essentially the same as the application that resulted in the reissuance of the permit for the second 10-year permit cycle, and it is expected to result in the renewal of the permit for the third 10-year permit cycle with little, if any, change in its permit terms and conditions.

1.1 Facility Background and History

The Fernwood site consists of approximately 150 acres, of which approximately 76 acres were previously used for manufacturing operations. The site is located east of U.S. Highway 51 near the town of Fernwood in southwestern Mississippi. The site location is shown on the USGS map included in Exhibit 1.

Fernwood does not presently conduct any commercial business activities. Wood preserving operations were conducted on the site from 1937 until 1988. The wood preserving operations utilized surface impoundments and a sludge drying bed for management of process wastewaters. These units became regulated units under the provisions of the Resource Conservation and Recovery Act (RCRA) regulations in 1980. The impoundments became regulated because they generated some quantity of bottom sediment sludge that was classified by EPA as a listed hazardous waste. The drying bed was used to dewater sludge from the wastewater treatment process. This waste was designated by EPA as K001, and it was defined as "bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol." These impoundments and sludge drying bed were closed between 1987 and 1989 in accordance with plans approved by the MDEQ. The locations of the closed impoundments and drying bed are shown on the site drawing in Exhibit 2.

Groundwater contamination was identified at the site during groundwater monitoring activities required by the RCRA regulations. This contamination was subsequently fully characterized and delineated through extensive groundwater investigations. The results of these investigations were included in a Groundwater Quality Assessment, dated July 1, 1987, and amended on March 1, 1990.

After completion of the groundwater contamination investigation, Fernwood prepared a Corrective Action Plan to contain and remediate the contamination. This plan was dated August 26, 1987, with final revisions dated May 11, 1989. The corrective action system was constructed and began operating in October of 1990. The corrective action activities have been effectively operating for more than 20 years and will be continued for the third 10-year permit cycle.

Solid waste management units (SWMU) are the subject of the Hazardous and Solid Waste Amendments (HSWA) Permit issued by EPA on August 25, 1989. EPA has never reissued the HSWA permit for the facility, so the terms of the original permit remain in place. The provisions of the HSWA Permit required investigations of other areas of the site which were not associated with any hazardous waste activity. These investigations of solid waste management units were conducted in accordance with an approved plan, and the results of the investigations were formalized in a Report of RCRA Facility Investigation, dated August 29, 1991, and a subsequent addendum dated January 15, 1993. After completion of the SWMU investigations, Fernwood agreed to perform certain activities to mitigate any potential risks associated with these SWMUs. These activities included improving site security through construction of a 6' high chain link fence around the SWMU areas, monitoring of groundwater from these areas, monitoring of rainfall runoff from these areas, deed notation of the areas having any significant soil contamination, and annual reporting of these additional activities. These activities constitute the EPA-agreed upon corrective actions for solid waste management units. These solid waste management unit activities have confirmed during the first two 10-year permit cycles that they adequately address any potential risks associated with these units.

All of the above referenced documents should be considered a part of this application. These documents comprise many volumes, and it would be impractical to physically incorporate them in this application. Where particular information from these documents has direct applicability to specific requirements in the permitting standards, it has been included.

1.2 Known Incompleteness Items

There are no known items of incompleteness in this permit application. However, many of the information requirements found in the regulations, and on the Information Requirements Checklist found in Exhibit 3, are not applicable to this facility.

This application is for renewal of a permit for post-closure care activities only. As stated in U.S. EPA OSWER Directive #9540.6-1A,

> *"Because of the inherent differences between an operating permit and a permit covering only post-closure care activities, some of the information requirements for an operating permit will not be applicable to a permit for post-closure care."*

Those items believed to be not applicable are so noted in the body of the application and in the information requirements checklist found in Exhibit 3.

1.3 Owner-Operator Certification

CERTIFICATION

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

11-7-2011
Date

Charles H. Rollins, Jr., P.E., President
Fernwood Industries, LLC
Fernwood, MS

2.0 GENERAL PERMITTING REQUIREMENTS

A hazardous waste management permit application consists of two parts: Part A and Part B. The information requirements for the Part A permit application are found in MHWMR 270.13, and the requirements for the Part B permit application are found at MHWMR 270.14 through 270.25, as applicable.

It has been recognized that certain information requirements listed for Part B permit applications are relevant only to applications for operating permits, and that those requirements are not applicable or relevant to a post-closure permit application. Those items considered to be not applicable are so noted in the application.

Fernwood is re-submitting a revised Part A permit application with this Part B application. The revised Part A permit application is found in Exhibit 4.

The requirements for specific information listed at MHWMR 270.14 are addressed in the following sub-paragraphs.

2.1 General Facility Description - 270.14(b)(1)

A general description of this facility is found in paragraph 1.1 of the application.

2.2 Waste Analysis and Characterization - 270.14(b)(2)

This permit renewal application is for post-closure care of three (3) closed surface impoundments and a closed sand filter bed, or sludge drying bed, which had been used to manage the listed hazardous waste, K001. There are no present or planned

future manufacturing or waste management activities on the site. No additional treatment, storage or disposal of hazardous wastes is planned at this facility. The waste was characterized in the approved closure plan, and there is no need for a continuing waste analysis plan. The chemical and physical properties of K001 are well known and documented in EPA documents such as the Background Document for the K001 waste listing.

2.3 Waste Analysis Plan - 270.14(b)(3)

For the reasons listed above in 2.2, there is no requirement for a waste analysis plan. No additional waste will be treated, stored, or disposed of during the remaining post-closure period. The groundwater treatment system generates some quantity of wastes that are presently being managed as hazardous waste. The constituents of this waste are identical to the K001 waste previously generated at this site.

2.4 Security Measures - 270.14(b)(4)

The security provisions of 270.14(b)(4) are not applicable to closed surface impoundments unless hazardous wastes remain exposed after completion of closure, or access by the public or domestic livestock may pose a hazard to human health. The closure performed on the impoundments and drying bed included a low permeability cap and cover system approximately three feet thick. Direct exposure to any of the wastes is not possible.

However, as added protection, 6-foot high chain link fencing prevents access to the closed hazardous waste management units and solid waste management units on the portion of the property located to the east of Fernwood Road. The closed RCRA-

regulated units located inside the perimeter fence are further protected by a 3-strand barbed wire fence. A combination of chain link fencing and barbed wire fencing is used to provide this extra protection around HWMU No. 2, the impoundment located on the western side of Fernwood Road. Fences around the RCRA-regulated units are marked with warning signs at 50-foot intervals. The locations of the fences are shown on the site drawing found in Exhibit 2.

2.5 General Inspection Schedule - 270.14(b)(5)

Inspections conducted as part of the post-closure care of the closed impoundments are described in the Post-Closure Plan found in Exhibit 5 of this application.

2.6 Preparedness, Prevention and Contingency Plan Requirements - 270.14(b)(6)and(7)

Preparedness, prevention, and contingency plans are associated with active hazardous waste facilities and are not applicable to closed units.

2.7 Operating Hazard Prevention Procedures - 270.14(b)(8)

This is not an operating treatment, storage, or disposal facility, and the provisions found in the referenced paragraph are not applicable.

2.8 Procedures for Incompatible, Reactive or Ignitable Wastes - 270.14(b)(9)

This is not an operating facility, and it did not handle these categories of wastes during its active life. The provisions found in the referenced paragraph are not applicable.

2.9 Traffic Control - 270.14(b)(10)

This is not an operating facility. The requirements of the referenced paragraph concern control of hazardous waste transportation vehicles, and they are not applicable to this closed site. Vehicles that need access to the groundwater treatment system have immediate access from the public road shown on the site drawing.

2.10 Location Information - 270.14(b)(11)

This facility is located in Pike County. This county is not listed in Appendix VI of 40 CFR Part 264. No further information is required to demonstrate compliance with the seismic standards found at MHWMR 264.18(a).

A Flood Hazard Boundary Map, issued by the Federal Insurance Administration, U.S. Department of Housing and Urban Development, is included as Exhibit 6. A minor portion of the facility lies within the flood plain.

This is an application for renewal of a post-closure permit for existing closed regulated units. The cap design incorporated two feet of compacted clay, a

vegetative cover system, and gentle slopes, so that in the event that the impoundment area flooded, the likelihood of washout would be remote.

2.11 Training Outline - 270.14(b)(12)

This application is for renewal of a post-closure permit. Training requirements for operating, treatment, storage, and disposal facilities are not applicable.

2.12 Closure Plan/Post-Closure Plan - 270.14(b)(13)

The closure plan portion of this requirement is not applicable because the units are already closed. A copy of the revised post-closure plan is found in Exhibit 5. This plan describes the post-closure care, maintenance and monitoring activities being conducted.

2.13 Documentation of Required Notices - 270.14(b)(14)

After closure of the regulated units, Fernwood had a licensed land surveyor survey the areas and prepare a plat of the site. Fernwood provided a copy of this plat, and documentation concerning the type, location and quantity of waste disposed of in the units, to the MDEQ and the Pike County Board of Supervisors as the local authority with control over land use. Within 60 days of completing closure, Fernwood provided the deed notice required at 264.119. Copies of the plat and deed notice are found in Exhibit 9. In addition, in order to resolve issues involving solid waste management units, Fernwood fenced the SWMU area, surveyed the area, and provided a deed notice to ensure future administrative control of this area of the site. The survey plat for this area of the site is also found in Exhibit 9.

2.14 Closure Cost Estimate - 270.14(b)(15)

This section is not applicable because closure is complete.

2.15 Post-Closure Cost Estimate - 270.14(b)(16)

The original cost estimate for 30 years of post-closure care was $165,840. A copy of this cost estimate is found in Exhibit 10. Only 10 years remain in 30-year post-closure period required by the regulations.

The current corrective action cost estimate is $150,565 per year. A copy of this cost estimate is found in Exhibit 21. Fernwood compares actual system costs to this estimate on an annual basis and provides MDEQ with the results of this analysis. Fernwood was required to have financial assurance equal to 15 years of corrective action costs.

Financial assurance is provided by a trust fund that covers both post-closure care and corrective action. A copy of the financial assurance documentation is found in Exhibit 11. At this point, the existing financial assurance exceeds the estimate of the required post-closure and corrective action costs.

2.16 Insurance Requirements - 270.14(b)(17)or(18)

The insurance requirements found in the referenced paragraph are not applicable to this closed facility.

2.17 Topographic Map of the Facility - 270.14(b)(19)

A site drawing, including surface topography of the facility, is found at Exhibit 2. This drawing was developed from an existing base drawing prepared for Fernwood by a licensed land surveyor. It shows estimated topographic contours, surface waters, surrounding land use, the locations of the closed regulated units, access control fences, solid waste management unit areas, and other applicable information required by 270.14(b)(19). The USGS map found in Exhibit 1 shows the topography at greater distances from the site. The drawing in Exhibit 6 shows the flood plain in the area of the site. A wind rose is included in Exhibit 22.

2.18 Compliance with Other Federal Statutes - 270.14(b)(20)

The application for renewal of the post-closure permit at this facility does not appear to be in conflict with applicable provisions of:

- Wild and Scenic Rivers Act
- National Historical Preservation Act of 1966
- Endangered Species Act
- Coastal Zone Management Act
- Fish and Wildlife Coordination Act

2.19 Case-by-Case Extension - 270.14(b)(21)

This facility has not requested an extension of the land ban provision contained in the paragraph referenced above, and therefore this section is not applicable.

2.20 Additional Information Requirements - 270.14(c)

This section requires the submittal of information concerning groundwater quality at the facility. The information contained in this section was derived from prior submittals made by Fernwood, unless otherwise stated.

Fernwood has previously identified and fully defined the existing groundwater contamination beneath the site. This information is contained in the 3-volume Groundwater Quality Assessment dated July 1, 1987, with amendment dated March 1, 1990. The areal extent of contamination is shown on the drawings in Exhibit 12. The plume extent has remained stable, or has been slightly reduced, during the corrective action period. The groundwater corrective action system has been operating since October 1990, and semiannual reports on the effectiveness of the system have been prepared and submitted to MDEQ.

2.20.1 Summary of Interim Status Monitoring - 270.14(c)(1)

Interim status monitoring initially identified a plume of contamination. Over 35 groundwater monitoring wells were installed over several years to complete the groundwater investigations. Information concerning these wells regarding their depths, construction, and boring logs have been previously submitted in several prior submittals. Exhibit 13 includes a drawing showing the typical groundwater monitoring well construction. The Groundwater Sampling and Analysis Plan in Exhibit 14 includes a complete list of all monitoring wells, their depths, construction materials, and measuring point elevations.

The results of Appendix IX sampling of the monitoring wells are found in Exhibit 15. A summary of the results of the groundwater monitoring conducted since 1990 through the original renewal application date of May 4, 2009, is included in Exhibit 16.

2.20.2 Uppermost Aquifer Information - 270.14(c)(2)

The uppermost aquifer at the site is a water table aquifer in the Citronelle formation. This aquifer is separated from deeper aquifers by a locally continuous low permeability clay member of sufficient thickness to effectively preclude interconnection. A full and complete discussion of the first aquifer is found in the Groundwater Quality Assessment and Corrective Action Plans referenced earlier. Site geologic cross sections extracted from prior submittals are included as Exhibit 17.

Groundwater in the water table aquifer flows from the higher topographic elevations to the lower topographic elevations and toward the Little Tangipahoa River. The river is a groundwater discharge point and functions as a groundwater divide. The natural groundwater contours are a muted image of the surface topography. Groundwater flow is toward the river from both sides. Groundwater flow direction under most of the site is toward the southwest, whereas in the area west of the river, the flow is toward the east and northeast. A groundwater equipotential drawing is included as Exhibit 18.

Information developed during prior investigations developed the following estimated aquifer properties:

Average Saturated Thickness	25 ft.
Coefficient of Permeability	47 ft./day
Transmissivity	1,170 $ft.^2$/day
Storage Coefficient	4.8×10^{-4}
Porosity	25%

Using an average gradient of 0.01 results in an estimated linear groundwater velocity of 2 ft/day.

The Citronelle formation is not used for drinking water in the local area. A discussion of local groundwater usage is contained in the Exposure Information Report found in Exhibit 20. Information on known groundwater withdrawal wells within three miles of the site is found in Exhibit 19. The well overlay in Exhibit 19 is intended for use with the USGS map in Exhibit 1.

2.20.3 Topographic Map Requirements - 270.14(c)(3)

The site drawing included in Exhibit 2 shows the property boundary, the locations of the waste management units, the point of compliance (wells MW-7, MW-8, MW-9, and MW-10), and the locations of the groundwater monitoring wells. Groundwater flow direction is perpendicular to the groundwater equipotential lines and this information is shown on the drawing in Exhibit 18.

2.20.4 Description of Groundwater Contamination Plume - 270.14(c)(4)

The groundwater contamination plume is fully defined and described in the Groundwater Quality Assessment referenced earlier. The contaminants identified are all associated with the wood preservatives previously used at the facility.

The contamination exists as soluble constituents, constituents sorbed to the soil matrix, and droplets of free product resembling creosote. This free product material is generally slightly heavier than water and is classified as a dense non-aqueous phase liquid (DNAPL). In areas where micelles of free product exist, groundwater samples may produce analytical results in excess of solubility limits for the various constituents due to the presence of free product in the sample. During the first two permit cycles, extensive groundwater monitoring was continued. A summary of these results is included in Exhibit 16. The horizontal extent of contamination is shown on the drawings in Exhibit 12. The results of the Appendix IX analyses of the monitoring wells are found in Exhibit 15.

2.20.5 Groundwater Monitoring Requirements - 270.14(c)(5),(6),(7)

Fernwood has been conducting corrective action groundwater monitoring during the first two permit cycles and expects to remain in this mode through the next permit cycle. During the corrective action period, four different categories of wells are being monitored. These wells include the compliance point wells (MW-7, MW-8, MW-9, and MW-10); effectiveness

wells (MW-31, MW-27A, MW-25, MW-22, MW-12, and MW-11); boundary wells (MW-28, MW-28A, MW-24, MW-18, and MW-17) to determine the effectiveness of corrective action; and solid waste management unit monitoring wells, including well MW-1 and the natural spring previously used for boiler water, known as the "boiler spring."

Included in Exhibit 14 is a Groundwater Sampling and Analysis Plan. This plan includes the required information including the constituent list, sampling procedures, and analytical methods. Statistical comparisons are not used at Fernwood because the background values of the constituents of concern are below routine method detection limits.

2.20.6 Corrective Action - 270.14(c)(8)

Fernwood submitted a Corrective Action Plan on August 26, 1987, with subsequent revisions through May 11, 1989. This plan was approved, the corrective actions system was installed, and operation commenced in October 1990. There has only been one physical modification to the corrective action system since that time, and this modification simply consisted of adding a second groundwater recovery well near the location of each of the original groundwater recovery wells. This was done to reduce well losses and ensure long-term maintenance of system groundwater withdrawal rates.

Fernwood plans to continue the existing corrective actions during the third 10-year permit cycle.

2.20.6.1 Corrective Action Discussion

Fernwood's corrective action system was designed to arrest the migration of the contaminant plume and remove the contaminants from the groundwater. The intent of the corrective action was to prevent the contamination of unaffected areas and to ensure the protection of human health and the environment. Recovery wells were located at positions intended to minimize the discharge of contaminated groundwater to the river. The system was activated in October of 1990.

2.20.6.1.1 System Description

The corrective action system consists of both groundwater and DNAPL recovery wells and a treatment system utilizing oil/water separation and activated carbon adsorption. Exhibit 18 contains a drawing showing groundwater equipotential lines and the locations of the corrective action wells. The groundwater recovery wells were designed to capture the soluble extent of the plume on both sides of the river by extracting approximately 115,000 gallons per day. This design rate is almost 50% greater than the calculated necessary capture rate and is considered as a safety factor for the anisotropic and nonhomogeneous conditions that theoretical equations assume. There are five recovery well pairs that make up the groundwater recovery system, each utilizing a submersible pump for groundwater extraction.

These wells are constructed of 4" diameter, 304 stainless steel. The slotted well screens are 0.010 inches and are continuous in the well from the top of the saturated zone down to seven feet above the clay base of the aquifer at each well location. Not screening to the underlying clay layer prevents the recovery wells from becoming clogged with any DNAPL's present at the aquifer bottom and prevents emulsification with the high volume of groundwater recovered.

The potentially mobile portions of the DNAPL plume are addressed by six DNAPL recovery wells. The DNAPL recovery wells are constructed of 4" stainless steel and have 0.020" slotted screens to allow for DNAPL flow. The screen length on the DNAPL wells 1 through 4 is four feet, and the bottom of the screens are in contact with the underlying Miocene clay layer. Since the DNAPL recovery wells are installed within five feet of groundwater recovery wells, longer screens are not needed since groundwater and DNAPL flow to the area will be influenced by the groundwater recovery wells. DNAPL recovery wells 5 and 6, which are not situated close to the groundwater recovery wells, are screened throughout the first aquifer rather than just the bottom four feet of the aquifer. Below the screen of all the DNAPL wells, there is a five-foot sump to provide a DNAPL reservoir. The DNAPL's are removed from the wells using surface pumps operated on timers set to maximize the

DNAPL recovery while minimizing the formation of emulsions due to pumping.

All recovered groundwater and DNAPL's are piped to the groundwater treatment system building for treatment. Flow from the DNAPL wells is processed through an oil/water separator and the water then goes to a surge tank where the water is mixed with incoming water from the groundwater recovery wells. This water then travels through another oil/water separator and is then subjected to activated carbon adsorption by three carbon columns in series, each containing 3,000 pounds of carbon. The water is then discharged to the Little Tangipahoa River in accordance with Fernwood's NPDES Permit.

Over the life of the system it has had an average discharge of approximately 115,000 gallons per day, or 42.0 million gallons per year. The total groundwater recovered and treated through May of 2009 is approximately 750 million gallons.

The following discharge limits have been set on Fernwood's groundwater discharge, which is sampled monthly:

Constituent	Quarterly Average (mg/l)	Monthly Maximum (mg/l)
Total Suspended Solids (TSS)	30	45
2,4,6-Trichlorophenol	0.030	0.060
Pentachlorophenol	0.019	0.039
Naphthalene	0.212	0.424
Acenaphthene	0.157	0.314
Flouranthene	0.015	0.030

In the more than 20 years of operation of the system, rarely have any of the above organic constituents ever been detected in the discharge. There has never been a permit exceedance.

During the groundwater investigation, the only area identified with significant DNAPL was that area downgradient from closed Impoundment #1. DNAPL recoveries were substantial in the early period of system operation, but they have declined markedly with time. Approximately 80,000 gallons of material characterized as DNAPL have been shipped off-site through May of 2009. One shipment containing the residues from a general system cleaning was made in the 2008 - 2009 time period. The material shipped as DNAPL has included some quantity of DNAPL with the balance being carbon fines, oil-water emulsions, biological slime, scale, water, and other system residues.

2.20.6.1.2 Current Conditions

The corrective action system has been in operation for over 20 years and during that time the site conditions have been affected by the operation of the system. Several changes are noteworthy for discussion.

The influent to the system is monitored on a monthly basis. A summary of the data from influent monitoring is found in Exhibit 23, which includes graphs of selected parameters. One important parameter that provides an understanding of site conditions is Total Organics, which is the total of the individual organic compounds for which analyses are conducted. This indicator peaked after three years of system operation in 1994. The yearly average for Total Organics in 1994 was 4.06 mg/l. After nine years of system operation, this indicator began to stabilize. In 1999, the Total Organics annual average concentration was 1.72 mg/l, a contamination reduction of approximately 57% from its 1994 peak. Since 2000, the values have fluctuated around the 2000 - 2008 average.

The other organic analytes have similar data to the results above. However, 2,4,6-trichlorophenol differs as it is no longer detected in the influent stream. This compound is one of the more soluble constituents. It peaked in 1991 at a yearly average of 0.101 mg/l and declined until 1998, and it

has been undetected ever since. The influent pentachlorophenol concentrations have been reduced since system startup by approximately 80% from an average high of 0.161 mg/l in 1992 to an 8-year average since 2000 of 0.037 mg/l.

Since the naphthalene concentrations are significantly higher than the remaining organic constituents, it has a tendency to mask the changes of the other organics when looking at the Total Organics analytical results. Because of this, a separate chart is included for Total Organics with naphthalene removed. This value is most heavily influenced by fluoranthene and acenaphthene, and shows that these constituents lag naphthalene in their ramp up to maximum concentrations. Whereas the naphthalene high occurred in 1994, the high of the other organics did not occur until 1997.

The review of current and historic conditions confirms the effectiveness of the corrective action measures. The areal extent of contamination has not expended, and the levels of constituents observed in the groundwater have been greatly reduced.

2.21 Information Requirements for Solid Waste Management Units - 270.14(d)

There have been no new solid waste management units identified on the site during the second permit cycle. During the first permit cycle a complete RCRA Facility Investigation (RFI) was conducted regarding those solid waste management units previously identified. The original RFI was submitted on August 29, 1991, and an addendum incorporating other work and agreed upon corrective actions was submitted on January 15, 1993. A summary of the RFI narrative concerning these units is included as Exhibit 8.

The RFI proposed specific corrective measures with respect to the SWMUs. The first of these measures was the enclosure of the area encompassing SWMUs 1, 2, 3, 4, 5, 6, and 8 by a 6' high chain link fence. These SWMUs were chosen due to the results of the sampling conducted during the RFI. A deed notation was also to be filed for those areas having significant levels of surface contamination. In addition, the RFI proposed additional monitoring of groundwater from wells at or near the SWMUs and from a natural spring located downgradient, and an annual sampling of the storm water runoff from these areas. The results of these monitoring events were to be submitted in January of each year.

These proposed activities were approved by the U.S. EPA in their letter dated June 10, 1993. In accordance with the guidance contained in that letter, the chain link fence was constructed, and the deed to the property was notated appropriately. The survey plat and deed notice can be found in Exhibit 9, and the location of the security fencing can be seen on the drawings in Exhibits 2 and 7.

Additionally, Fernwood has performed the additional monitoring required by the EPA, and has reported the results of that monitoring in a SWMU Corrective Action Effectiveness Report annually since January 1993.

Natural attenuation mechanisms will continue to mitigate the remaining surface contamination and continuation of the existing monitoring and reporting requirements will ensure that no off-site impact associated with solid waste management units occurs in the future.

2.22 Additional Not Applicable Requirements - 270.15 through 270.26

The unit specific information requested in the above cited sections is not applicable for a post-closure permit.

ATTACHMENT B

POST-CLOSURE PLAN

FERNWOOD INDUSTRIES, LLC
FERNWOOD, MS

EPA ID No. MSD 008 183 519

POST-CLOSURE PLAN

Prepared By:
H. M. Rollins Company, Inc.
P. O. Box 3471
Gulfport, Mississippi 39505
(228) 832-1738

May 10, 2012

TABLE OF CONTENTS

1.0 GENERAL INFORMATION

This plan describes the activities that will be performed at this site during the post-closure care period. These activities will include: routine care and maintenance of the closed regulated units and groundwater monitoring system; groundwater monitoring activities; and reporting and other activities required during the post-closure period.

Fernwood Industries, LLC (Fernwood) certified closure of three (3) surface impoundments and a sand filter bed, or sludge drying bed, between 1987 and 1989. The required 30-year post-closure care period began when the units were certified as closed; however, Fernwood will consider the post-closure period to run from the effective date of the initial RCRA permit, July 25, 1989, until July 25, 2019, unless extended or shortened by the Mississippi Department of Environmental Quality. At the time of permit renewal, the facility will have completed 23 years of post-closure care.

2.0 SELECTION OF MAINTENANCE ACTIVITIES

The selection of maintenance activities is influenced by the type of the closed hazardous waste management units (HWMUs) and the method of closure. For preparation of this post-closure plan, guidance was obtained from Mississippi Hazardous Waste Management Regulations, Parts 264, 265, and 270, and EPA SW-968, "Permit Applicant's Guidance Manual for the General Facility Standards of 40 CFR 264."

The HWMUs at this site consist of the condenser pond, impoundment #1, impoundment #2, and a sand filter bed used as a sludge drying bed. All of these units may be referred to as impoundments. These facilities were closed in accordance with an approved closure plan. The closure incorporated a low permeability cap (consisting of two feet of

10^{-7} cm/sec permeability clay) with a final cover of 12" of sandy loam and a good stand of native grass.

The following items were considered for inclusion as required maintenance activities:

Maintenance Item	Action/Discussion
Erosion Damage	Included.
Final Containment Structures	Not included; there are no structures.
Facility Monitoring Equipment	Not included; there is no facility monitoring equipment as this term is used. Groundwater monitoring equipment is discussed separately.
Security Devices	Included, although there are no wastes exposed and no physical security should be required, the facility has installed security fences around the HWMUs.
Vegetative Cover	Included.
Run-on, Run-off Control System	Included; under erosion control.
Leachate Collection, Detection, and Removal System	Not included; these are unlined surface impoundments, therefore there is no leachate collection, detection, and removal system.
Gas Venting System	Not included; there is no gas venting system needed. The small quantity of waste remaining is not subject to rapid biological breakdown or chemical degradation resulting in significant gaseous product.
Groundwater Monitoring System	Included.

Maintenance Item	Action/Discussion
Fugitive Dust Control	Not included; due to the method of closure and use of the closed site, there is no need for a fugitive dust control system.
Crop Prohibitions	Not included; no crops will be grown on this site.
pH Control	Not included; there will be no pH control at this site.
Benchmark Integrity	Not included. The benchmarks used in the survey of this site were set by the Coast and Geodetic Survey. In the event of their destruction, sufficient additional benchmarks are available to re-establish locations as necessary.

The additional requirements listed below, applicable to owners/operators of surface impoundments closed with wastes in place, have also been investigated for inclusion in the maintenance checklist:

Maintenance Item	Action/Discussion
Procedures for Maintenance & Repair of Final Cover	Included.
Procedures for Maintenance & Monitoring of Leak Detection System	Not included; there is no leak detection system.
Procedures for Maintenance & Monitoring of Groundwater Monitoring System	Included.
Procedures for Sampling, Analysis, & Quality Control	Included.

Maintenance Item	Action/Discussion
Procedures for Preventing Run-on/Run-off and Final Cover Damage	Included.

3.0 FREQUENCY OF ACTIVITIES

Given the long history of post-closure care already completed, the activities are now well understood. There have been no issues identified during the first 23 years of post-closure care that warrant inspections of the cap and other items requiring maintenance or care more frequently than annually. However, MDEQ has requested that inspections continue to be conducted on a quarterly basis. These inspections will be conducted by the personnel that visit the site on a daily basis to monitor the corrective action system. Therefore, no costs for the quarterly inspections will be included in the Post-Closure Cost Estimate as these personnel costs are already included in the Corrective Action Cost Estimate.

The site will be inspected on a quarterly basis for items requiring maintenance or care, as detailed in the Post-Closure Care Instructions and Checklist presented later in this plan. Maintenance and care will be provided on an as-needed basis, based on observations made during the inspections.

Groundwater monitoring activities will be conducted on a frequency as specified in paragraph 7.0 of this section, Groundwater Monitoring Plan, or as specified in the Part B Post-Closure Permit.

4.0 POST-CLOSURE PLAN CUSTODY AND CONTROL

Fernwood Industries, LLC, P. O. Drawer 90, Fernwood, MS 39635, will maintain one copy of this plan at its office on 1047 Fernwood Road, Fernwood, Mississippi. The President of the company will be responsible for maintaining and updating this Post-Closure Plan during the post-closure care period. The facility is not active, but messages can be left at (601) 684-2011. The President will also ensure that any and all changes to this plan will be submitted to the Chief, Environmental Permits Division, Office of Pollution Control, Mississippi Department of Environmental Quality, P. O. Box 2261, Jackson, MS 39225. These changes will be forwarded via U.S. Postal Service, Certified Mail, Return Receipt Requested, or by other means which allow for documentation of delivery.

5.0 NOTICES REQUIRED FOR DISPOSAL FACILITIES

The required notices for disposal facilities have been filed. Copies of notices and plats are found in Exhibit 9 of the Renewal Application for the Post-Closure Permit, dated May 4, 2009, with latest revision dated May 10, 2012.

6.0 POST-CLOSURE INSTRUCTIONS AND CHECKLIST

6.1 General

These instructions are to provide guidance for the post-closure care and maintenance of the closed surface impoundments, groundwater monitoring system, and security fencing. Care and maintenance of these items is essential to insure proper functioning of these systems. A checklist for recording inspection

and maintenance activities during the post-closure period is found as an attachment to this plan.

6.2 Care and Maintenance Instructions

The area of the closed surface impoundments will be inspected quarterly, and following any storms that may have resulted in site flooding. The checklist will be used to record all findings of the inspection and to record corrective actions taken.

The design of the closure system of these impoundments incorporated the placement of a highly impervious clay cap over the impoundments with a cover layer of soil, graded and drained to minimize surface infiltration of rainfall, to eliminate rainfall run-on, and to control surface erosion. The vegetative cover of native grasses was established to maximize evapotranspiration of infiltrated rainfall and to control erosion. The species of grass was also selected to ensure that the root zone of the grass does not intrude into the clay cap, thereby damaging the integrity of the cap.

The following activities associated with the proper care of the facility will be performed at the frequency shown:

1. **Bimonthly (May through October):** The grass within the security fence around the site will be mowed. (3 mowings per year)

2. **Biennially:** The grass within the security fence around the site will be fertilized. The application rate recommended by USDA Soil Conservation

Service for the grass cover is 200 lbs/acre. The fertilizer used shall contain 13% Nitrogen, 13% Phosphorus, and 13% Potassium, as recommended by the USDA Soil Conservation Service for soils in this area.

3. **Quarterly:** The site will be inspected quarterly for items requiring maintenance or further care. The following is a list of areas or items to be inspected and a list of proper corrective actions to be taken if deficiencies are found:

A. Final Cover and Cap

If the final cover shows signs of erosion, the area will be brought back to grade using topsoil. The affected area will be reseeded, fertilized, and covered with hay to prevent short term erosion.

If erosion or subsidence has affected the clay cap, it will be refilled with clay of the same type and will be recompacted using pneumatic tamping equipment. With this type of waste, subsidence is not likely. The final cover and vegetation will be restored as above.

If the vegetation is not dense enough to provide runoff protection, the affected area will be disked to a 3" depth, fertilized, and reseeded.

Erosion and subsidence have not been an issue during the first 23 years of post-closure care and are unlikely in the future.

The drainage system consisting of shallow ditches will be checked to ensure that free flow of rainfall off of the site will occur and that run-on is prevented.

B. Monitoring Wells

The quarterly inspection of the monitoring wells will consist of inspection of the condition of the outer protective casing or cover, lock, concrete surface collar and the well casing.

Locks will be lightly lubricated as needed. Protective outer covers or casings will be painted if rusted. Care must be taken to insure that these activities do not contaminate the wells.

The concrete surface collar will be repaired or replaced if broken or badly cracked.

The well casing will be inspected for cracks or other damage. Other internal deterioration such as silting, incrustation, and plugging may become apparent during sampling events. In the event that these problems progress to a point that interferes with the functioning of the monitoring well, appropriate well maintenance and rehabilitation activities will be carried out. In the event that maintenance and rehabilitation procedures do not return the well to a functioning condition, the well will be abandoned. If any well must be abandoned, a new well will be installed. During the initial permit cycle, two of the compliance point wells, MW-9 and MW-10, were replaced with stainless steel wells. The original wells were of PVC

construction and at their location, immediately downgradient of closed impoundment #1, the concentration of organics in the subsurface caused the screens to swell. This impaired the ability to adequately purge and sample the wells. The remainder of the monitoring system appears to be functioning properly, and it is not anticipated that any other monitoring wells will require replacement during the post-closure period.

If the measurement of the total depth of a well indicates that more than 12 inches of sediment is in the bottom of a well, a surface pump with a suction pipe capable of reaching the bottom of the well will be used to remove the silt accumulation. Smaller amounts of silt are acceptable provided that reasonably clear samples are produced. If silt removal doesn't eliminate problems of sample turbidity then the well will be scheduled for redevelopment prior to the next sampling event. Well siltation has not been an issue in the 23 years of post-closure care already completed.

Guidance for well maintenance and rehabilitation activities and well abandonment procedures will be obtained from those found in Section 8, pgs. 246-264, "Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells," Aller et. al., U.S. EPA and NWWA, 1989. A copy of this material is included in Exhibit 14 of the renewal application.

C. Security Fence

The security fence will be inspected for damage due to vandalism or other causes. Maintenance will consist of repairing or replacing broken wires,

tensioning loose strands, etc. After 23 years of the post-closure period, the fence remains in excellent condition, and it is expected that the fence will remain in a serviceable condition for the balance of the post-closure period with continued minor maintenance.

The warning signs will be inspected to ensure that they are present and readable. They will be replaced or repainted as needed.

7.0 GROUNDWATER MONITORING PLAN

This plan prescribes the groundwater monitoring activities to be conducted at this site during the post-closure care period. The site presently remains in a corrective action monitoring mode, with analyses being performed for site-specific constituents for which the background values are below the present method detection limits.

Post-closure care groundwater monitoring activities will consist of sampling the four (4) compliance point wells, consisting of wells MW-7, MW-8, MW-9, and MW-10. The location of these wells is shown on the site drawing found in Exhibit 2 of the Renewal Application for the Post-Closure Permit. Additional groundwater monitoring is conducted as part of the corrective action program.

7.1 Sampling and Analysis Procedures

The groundwater monitoring to be conducted will be performed in accordance with the facility Groundwater Sampling and Analysis Plan. A copy of the plan is found in Exhibit 14 of the Renewal Application for the Post-Closure Permit.

7.2 Wells to be Sampled

The compliance point wells MW-7, MW-8, MW-9, and MW-10, will be sampled on an annual basis.

7.3 Monitoring Parameters

This section prescribes the monitoring parameters to be used during the post-closure care period.

A. Field Data

At each sampling event, the groundwater elevation shall be determined in each sampled well. The total depth will be measured on an annual basis. The pH, specific conductance, and temperature of each sample will be measured and recorded during sampling.

B. Chemical Parameters

During the post-closure permit period, all monitoring well samples will be analyzed for six (6) constituents of the K001 waste that was previously generated at the facility. These constituents are typically found in the highest concentrations and have the highest water solubilities. These compounds are: naphthalene, fluoranthene, acenaphthalene, pentachlorophenol, benzo(a)pyrene, and 2,4-dimethylphenol. These parameters have been used during the first two permit cycles of post-

closure care, and the monitoring history confirms their suitability as monitoring constituents.

Starting with the third permit cycle, MDEQ has required testing of one compliance point well every five years on a rotating basis for the list of all Appendix IX parameters identified in the earlier Appendix IX monitoring.

7.4 Background Determination

Monitoring conducted during the first two permit cycles of post-closure care confirms that background values for the site-specific monitoring parameters are below present method detection limits. Any quantifiable levels of the monitored parameters will be considered as evidence of contamination.

7.5 Evaluation of Sampling Results

Fernwood anticipates remaining in a corrective action monitoring mode during the next post-closure permit cycle. Since the background concentration of the constituents of concern is below the method detection limits, statistical comparisons of monitoring results to background values are not possible, or necessary. Any positive finding is considered to be an indication of contamination.

A positive finding in a boundary well will result in a resampling within 30 days of receipt of the initial results. The resampling will consist of two separate and discrete samples (i.e., second sample taken after repurging the well). If the resampling does not confirm the presence of contamination, detection monitoring

of the monitoring wells will be resumed. If the resampling confirms the presence of contamination, Fernwood will notify MDEQ in writing within seven days.

Within 30 days of notification to MDEQ, Fernwood will develop a plan to determine if the horizontal extent of the plume has actually migrated to the location of the boundary well. This may include: additional monitoring with sample splits going to different labs; well integrity testing, investigation of malicious tampering; and installation of a new well.

If a release is ultimately confirmed, Fernwood will install a new boundary well at a location further removed from the extent of the plume. At that time, the corrective action system will be reevaluated to determine its effectiveness in containing the contaminant plume.

Constituent concentrations in one of the compliance point wells, MW-7, have declined to near background, while the other wells continue to show high concentrations and some evidence of DNAPL. Groundwater sampling at the compliance point wells will be continued for the remainder of the 30-year post-closure period, or until such time as cessation of activities is approved by the MDEQ.

8.0 DETERMINATION OF GROUNDWATER FLOW RATE AND DIRECTION

Annually, the flow rate and direction of groundwater flow will be determined from static water level measurements and estimated permeabilities, porosities, and conductivities.

This information will be presented to MDEQ in the Corrective Action Effectiveness Report submitted each year.

9.0 POST-CLOSURE COMPLETION ACTIVITIES

In accordance with MHWMR 264.120, when MDEQ agrees that post-closure care can be terminated, Fernwood will submit a certification that the post-closure care period was performed in accordance with this Post-Closure Plan. This certification will be signed by the President of Fernwood Industries, LLC and by an independent registered professional engineer.

The certification, and any documentation supporting it, must be submitted to the Director of the Mississippi Department of Environmental Quality within 60 days after MDEQ has agreed that the post-closure care period is complete.

FERNWOOD INDUSTRIES, LLC
HAZARDOUS WASTE FACILITY
POST-CLOSURE INSPECTION CHECKLIST

INSPECTOR: _____ **DATE:** _____

CLOSED IMPOUNDMENT SITES

Cap And Cover System: Inspect grass cover for dead spots or poor coverage. Look for subsidence, ponding, and any damage from surface water run-off. Inspect for encroaching woody vegetation and remove. Check drainage channels for erosion, sedimentation, or blockage. Correct any deficiencies found and note type of corrective action and date below.

ITEM	CONDITION	CORRECTIVE ACTION
Cap		
Drainage		
Channels		

FERNWOOD INDUSTRIES, LLC
HAZARDOUS WASTE FACILITY
POST-CLOSURE INSPECTION CHECKLIST **DATE:**_____

Monitoring Well System: Inspect surface slabs for cracking. Check protective standpipe, covers and locks for rust and serviceability. Inspect well casing for cracks or other defects. Correct any deficiencies found and note type of corrective action and date below.

WELL NO.	CONDITION	CORRECTIVE ACTION

Security Fence: Inspect fence and gate. Look for rust, loose, damaged or missing strands of wire. Check function of lock and gate. Inspect warning signs for presence and readability. Correct any deficiencies found and note type of corrective action and date below.

ITEM	CONDITION	CORRECTIVE ACTION
Fence		
Gate		
Warning		
Signs		

ATTACHMENT C

FIGURES

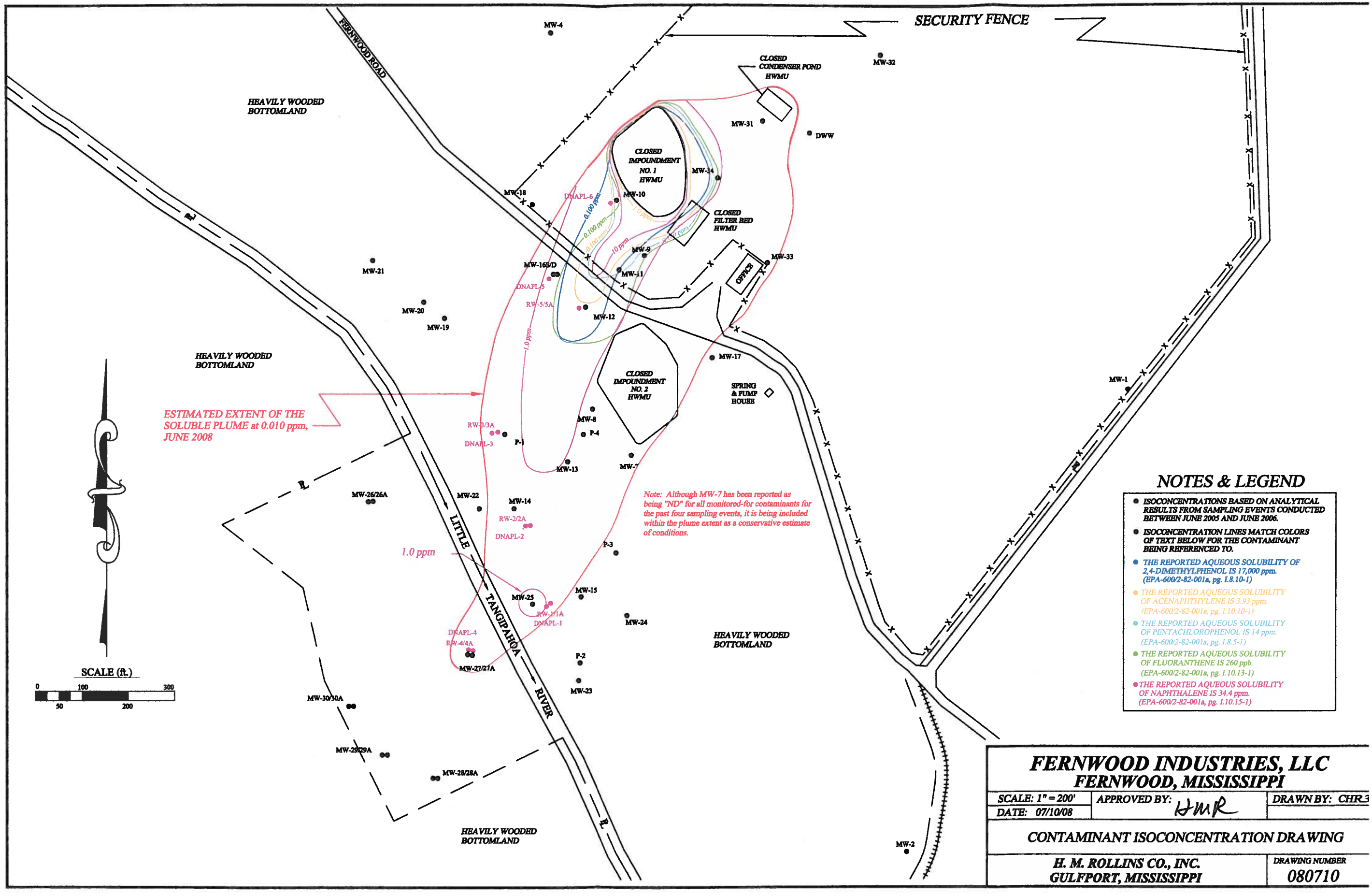
SECURITY FENCE
FERNWOOD ROAD
HEAVILY WOODED BOTTOMLAND
CLOSED CONDENSER POND HWMU
CLOSED IMPOUNDMENT NO. 1 HWMU
CLOSED FILTER BED HWMU
CLOSED IMPOUNDMENT NO. 2 HWMU
OFFICE
SPRING & PUMP HOUSE
MW-4
MW-32
MW-31
DWW
MW-18
MW-10
MW-14
MW-9
MW-33
MW-16S/D
MW-11
MW-21
MW-20
MW-19
MW-12
MW-17
MW-1
MW-8
MW-7
MW-13
MW-26/26A
MW-22
MW-14
MW-25
MW-15
MW-24
MW-27/27A
MW-30/30A
MW-29/29A
MW-28/28A
MW-23
MW-2
DNAPL-6
DNAPL-5
RW-5/5A
RW-3/3A
DNAPL-3
RW-2/2A
DNAPL-2
RW-1/1A
DNAPL-1
DNAPL-4
RW-4/4A
P-1
P-2
P-3
P-4
0.100 ppm
1.0 ppm
10 ppm
ESTIMATED EXTENT OF THE SOLUBLE PLUME at 0.010 ppm, JUNE 2008
Note: Although MW-7 has been reported as being "ND" for all monitored-for contaminants for the past four sampling events, it is being included within the plume extent as a conservative estimate of conditions.
LITTLE TANGIPAHOA RIVER
SCALE (ft.)
0 100 300
50 200
NOTES & LEGEND
ISOCONCENTRATIONS BASED ON ANALYTICAL RESULTS FROM SAMPLING EVENTS CONDUCTED BETWEEN JUNE 2005 AND JUNE 2006.
ISOCONCENTRATION LINES MATCH COLORS OF TEXT BELOW FOR THE CONTAMINANT BEING REFERENCED TO.
THE REPORTED AQUEOUS SOLUBILITY OF 2,4-DIMETHYLPHENOL IS 17,000 ppm. (EPA-600/2-82-001a, pg. I.8.10-1)
THE REPORTED AQUEOUS SOLUBILITY OF ACENAPHTHYLENE IS 3.93 ppm. (EPA-600/2-82-001a, pg. I.10.10-1)
THE REPORTED AQUEOUS SOLUBILITY OF PENTACHLOROPHENOL IS 14 ppm. (EPA-600/2-82-001a, pg. I.8.5-1)
THE REPORTED AQUEOUS SOLUBILITY OF FLUORANTHENE IS 260 ppb. (EPA-600/2-82-001a, pg. I.10.13-1)
THE REPORTED AQUEOUS SOLUBILITY OF NAPHTHALENE IS 34.4 ppm. (EPA-600/2-82-001a, pg. I.10.15-1)
FERNWOOD INDUSTRIES, LLC
FERNWOOD, MISSISSIPPI
SCALE: 1" = 200'
DATE: 07/10/08
APPROVED BY: HMR
DRAWN BY: CHR3
CONTAMINANT ISOCONCENTRATION DRAWING
H. M. ROLLINS CO., INC.
GULFPORT, MISSISSIPPI
DRAWING NUMBER
080710

FIGURE 1

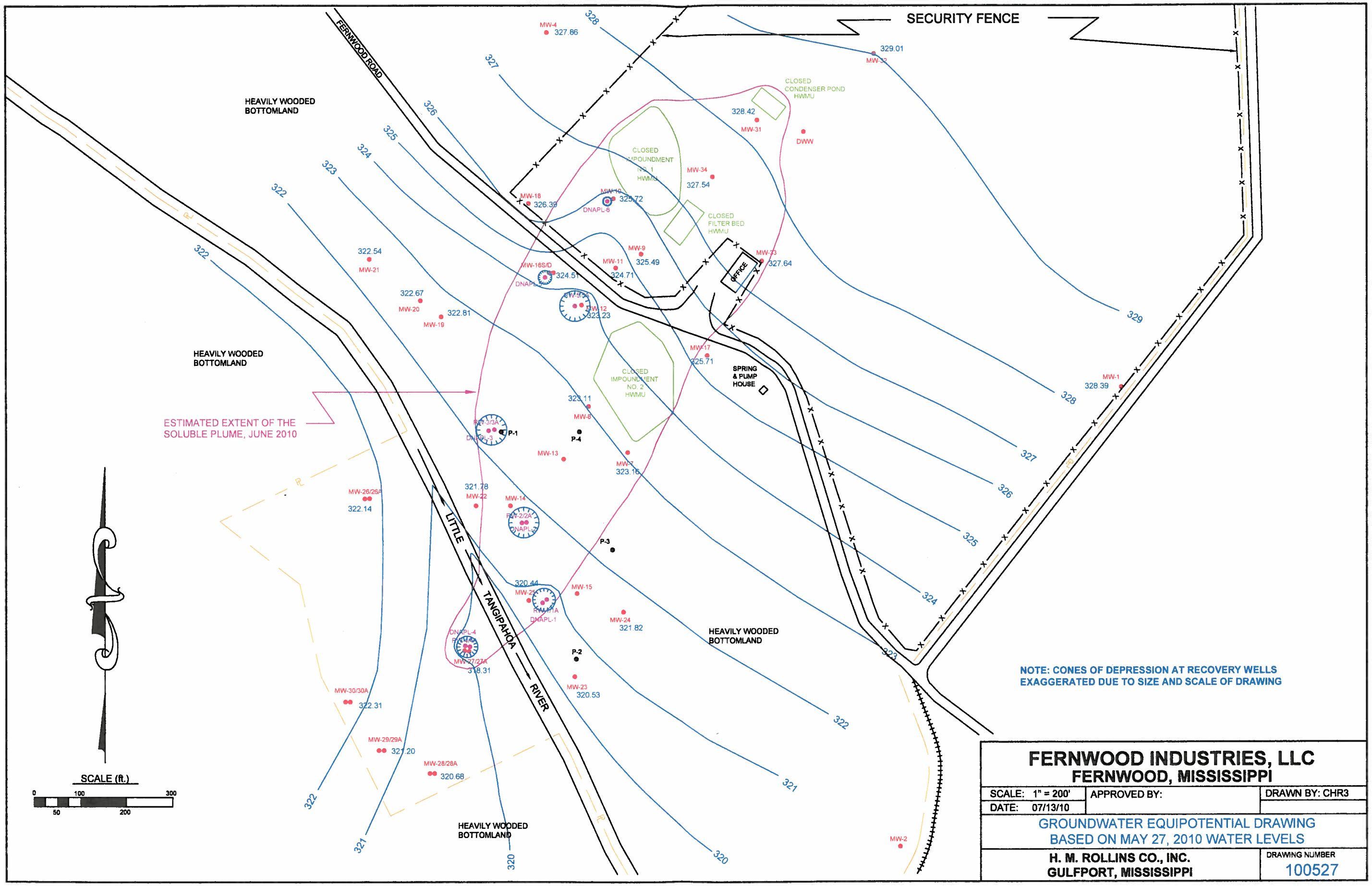
SECURITY FENCE
FERNWOOD ROAD
HEAVILY WOODED BOTTOMLAND
HEAVILY WOODED BOTTOMLAND
HEAVILY WOODED BOTTOMLAND
HEAVILY WOODED BOTTOMLAND
ESTIMATED EXTENT OF THE SOLUBLE PLUME, JUNE 2010
LITTLE TANGIPAHOA RIVER
CLOSED CONDENSER POND HWMU
CLOSED IMPOUNDMENT NO. 1 HWMU
CLOSED FILTER BED HWMU
CLOSED IMPOUNDMENT NO. 2 HWMU
OFFICE
SPRING & PUMP HOUSE
DWW
MW-4 327.86
MW-32 329.01
MW-31 328.42
MW-34 327.54
MW-18 326.39
MW-10 325.72
DNAPL-6
MW-9 325.49
MW-11 324.71
MW-33 327.64
MW-16S/D
DNAPL-3
324.51
MW-12 323.23
MW-21 322.54
MW-20 322.67
MW-19 322.81
MW-17 325.71
MW-1 328.39
MW-8 323.11
MW-13
MW-7 323.16
P-1
P-4
P-3
P-2
MW-26/26A 322.14
MW-22 321.78
MW-14
RW-2/2A
DNAPL-2
MW-25 320.44
RW-1/1A
DNAPL-1
MW-15
MW-24 321.82
DNAPL-4
RW-4/4A
MW-27/27A 318.31
MW-23 320.53
MW-30/30A 322.31
MW-29/29A 321.20
MW-28/28A 320.68
MW-2
SCALE (ft.)
0 100 300
50 200
NOTE: CONES OF DEPRESSION AT RECOVERY WELLS EXAGGERATED DUE TO SIZE AND SCALE OF DRAWING
FERNWOOD INDUSTRIES, LLC
FERNWOOD, MISSISSIPPI
SCALE: 1" = 200'
APPROVED BY:
DRAWN BY: CHR3
DATE: 07/13/10
GROUNDWATER EQUIPOTENTIAL DRAWING
BASED ON MAY 27, 2010 WATER LEVELS
H. M. ROLLINS CO., INC.
GULFPORT, MISSISSIPPI
DRAWING NUMBER
100527

FIGURE 2

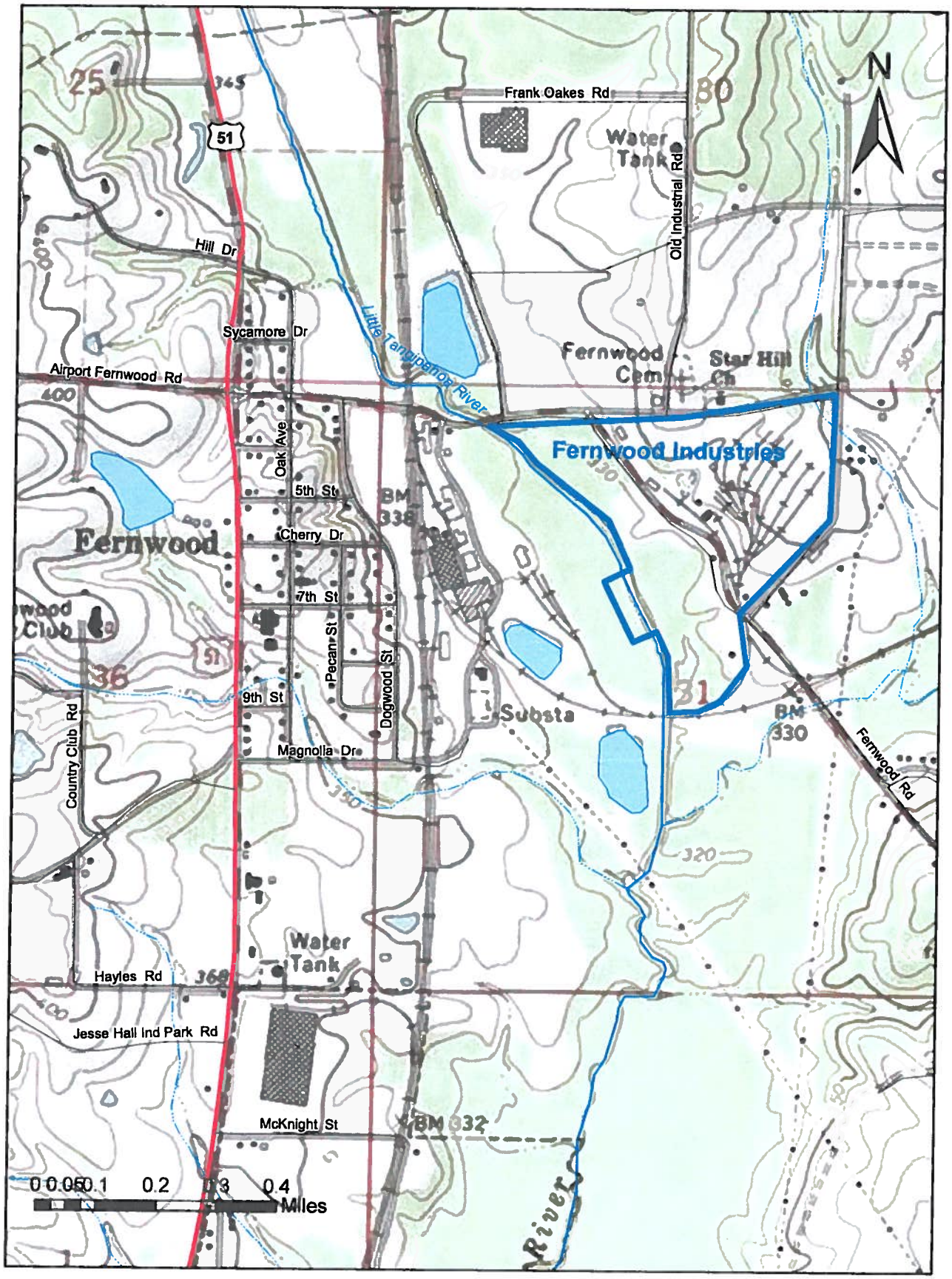

Figure 3 - Fernwood Industries Location

SECTION D

GROUNDWATER SAMPLING AND ANALYSIS PLAN

FERNWOOD INDUSTRIES, LLC
FERNWOOD, MS

GROUNDWATER SAMPLING AND ANALYSIS PLAN

Prepared By:
H. M. Rollins Company, Inc.
P. O. Box 3471
Gulfport, Mississippi 39505
(228) 832-1738

April 28, 2009
Revised May 10, 2012

TABLE OF CONTENTS

1.0 GENERAL

This Sampling and Analysis Plan is to be used and followed by all personnel engaged in groundwater sampling and analysis activities at this site. Proper procedures and techniques for sample collection, sample preservation and shipment, chain-of-custody, and laboratory and field analysis will result in data which fairly represent the groundwater quality at the site.

2.0 QUALITY CONTROL/QUALITY ASSURANCE

Groundwater samples will be analyzed by an independent commercial laboratory. All phases of a laboratory's qualifications, experience, personnel, equipment, reputation and QA/QC procedures will be considered in selection of the laboratory.

The procedures outlined in this plan are the basis of the Quality Assurance Plan at this site. Where appropriate, each section within this plan addresses the specific quality control aspects of the subjects covered by that section. The President shall designate the Quality Assurance Coordinator for the Company. The Quality Assurance Coordinator is responsible for seeing that the specific quality control procedures as outlined in this plan are followed, and for tracking and recording the results of specific quality control (QC) programs. The Quality Assurance Coordinator is responsible for the field analysis QC program, the sampling event records, analytical results, and notifying the appropriate persons of any observed problems.

The President is responsible for seeing that personnel receive adequate training in order to provide the required quality control for sampling operations. In addition, he may periodically observe the professional contract personnel and Fernwood employees under actual field operating conditions to ensure that the Sampling Plan as outlined in this document is being followed.

Corrective actions will be taken any time when deemed necessary. Problems with field quality control may result from contamination of field blanks or contamination of field equipment and supplies either from the vendor, during the cleaning/loadout process, or during field operations. Corrective actions must be taken immediately when data is of questionable quality. These corrections may range from modifying certain procedures to reconducting an entire sampling event.

3.0 SITE SPECIFIC CONDITIONS

3.1 History

The groundwater at this site has been impacted by the use of surface impoundments to manage the hazardous waste listed as K001. The chemical constituents used as the basis for listing K001 as a hazardous waste are listed in Appendix VII of 40 CFR Part 261.

3.2 Dense Non-Aqueous Phase Liquids (DNAPL's)

The presence of a DNAPL in the first aquifer has been documented. This DNAPL is a black oily liquid which physically resembles coal tar creosote.

If the presence of DNAPL is detected in a well during water level and well depth measurement or during well purging activities, all efforts will be taken to remove the DNAPL prior to sampling. If a DNAPL-free sample cannot be obtained, sampling activities will be terminated for that well, and a note explaining the reason that no sample was taken will be placed in the sampling record.

4.0 ANALYTICAL PARAMETERS

4.1 Analytes

All wells will be sampled annually and analyzed for the six K001 constituents specified in the Post-Closure Permit. These six chemicals are pentachlorophenol, 2,4-dimethylphenol, acenaphthalene, naphthalene, fluoranthene, and benzo(a)pyrene. Every five years, one of the compliance point wells will be sampled on a rotating basis for a larger list of constituents. This list of constituents includes all of the organic constituents identified in earlier Appendix IX monitoring.

4.2 Analytical Procedures

All samples shall be analyzed using only methodology approved for each target analyte, listed in US EPA SW-846, latest edition. Organic analyses shall routinely

be performed using gas chromatographic methods listed in the above reference. The use of gas chromatographic/mass spectroscopy methods from the above reference will be acceptable as alternate analytical procedures.

5.0 SAMPLING PROCEDURES

5.1 Sampling Event Planning

Prior to each sampling event, the sampling team leader will review the appropriate permit conditions to ensure that the proper samples will be taken. The team leader will use personal knowledge or a review of prior sampling results to determine the expected ranking of the total contaminant level to be found in each well to be sampled. All measurements and sampling activities will be conducted in inverse order of expected contamination. The cleanest well will be sampled first, the dirtiest last. This will minimize any potential for cross-contamination between wells. The sampling team leader shall not schedule a sampling event immediately following any well maintenance activities (such as painting of the protective well casing) that could affect sample quality.

5.2 Sample Containers and Preservation

Samples to be analyzed for extractable organic compounds shall be collected in glass containers with Teflon lid liners. The minimum volume shall be one quart (0.946 l). No preservative chemicals are required.

In the event that samples are to be analyzed for purgeable or volatile organic compounds (VOC's), 40-ml glass vials with Teflon lined septum sealed caps will be used. Four drops of concentrated hydrochloric acid (HCL) will be added to each vial before filling.

If samples are to be analyzed for the metallic elements, polyethylene containers with polyethylene caps will be utilized. The minimum size shall be one quart (0.946 l). Two milliliters of 50% nitric acid shall be added to each container prior to filling (Micro-Methods, Inc., Ocean Springs, MS, advised that this will ensure a sample pH of < 2 S.U.'s).

Sample containers will either be furnished by the analytical laboratory or they will be purchased. If purchased, the containers shall be ordered from a reputable supplier of laboratory supplies and equipment, and shall be pre-cleansed according to approved EPA protocols.

5.3 Sample Labels

Each sample container will be labeled with:

FERNWOOD INDUSTRIES
WELL NUMBER
DATE AND TIME OF COLLECTION
NAME OF SAMPLER
HCL ____ y ____ n HNO3 ____ y ____n

The labels will be marked with water-proof ink and the glue must be as water-proof as possible to ensure that the labels remain on the containers. The labels will be affixed to the container prior to filling. As a secondary identification, the well designation will also be marked on the container top with an indelible marker.

5.4 Sample Seals

Sample seals will not be used for individual samples. In the event that the samples will leave the sampler's immediate control, such as UPS shipment, the shipping container will be sealed with a tape which must be cut or broken if the shipping container is opened.

5.5 Sampling Field Records

Prior to the start of each sampling event, a sampling record coversheet will be completed. A monitoring well sampling record will be completed for each well sampled during that sampling event. The completed monitoring well sampling records and coversheet will be maintained in the permanent facility files. These records will be the permanent field records. A sampling record coversheet and monitoring well sampling record are attached to this plan.

5.6 Water Level/Well Depth Measurements

Prior to opening the well cover, the area surrounding the lock shall be inspected to ensure that no excess oil is present which may inadvertently contaminate the well. Any excess oil shall be wiped away prior to opening.

After opening the well cover and removing the cap, the distance from the top of the well casing to the static water level in the well will be measured. The measurement will be made by use of a water level meter which gives an audible and/or visual indication or signal.

The distance to the static water shall be measured at the measuring point marked with black ink on the top of each casing, and shall be measured to the nearest 0.01 ft. and recorded on the monitoring well sampling record.

Once per year, the total depth of each well will be measured. If no non-aqueous phase liquids are expected, the water level meter may be used. Otherwise, a weighted steel tape will be used to determine total depth. If measurement of dense non-aqueous phase liquids is required, an interface probe or alternate method will be used.

The water level probe, interface probe, and any wetted cable or tape will be washed with non-phosphate laboratory detergent and thoroughly rinsed with distilled water between wells. The equipment should be protected from dust and dirt between uses.

5.7 Well Purging

After water level/depth measurements are completed, the volume of water present in each well casing will be calculated. Each well will be purged prior to sampling by the removal of three times that calculated volume. This will increase the probability that a representative sample is obtained.

In a 1¼" ID well, each foot of water column contains 0.064 gallons of water. Three times that volume is 0.191 gallons, which is rounded to 0.2 gallons. Therefore, for each foot of water present in a 1¼" well, the required purge volume is 0.2 gallons.

In a 2" ID well, each foot of water column contains 0.163 gallons of water. Three times that volume is 0.49 gallons, which is rounded up to 0.50 gallons. Therefore, for each foot of water in a 2" well, the required purge volume is ½ gallon.

In a 4" ID well, each foot of water column contains 0.652 gallons. Three times that volume is 1.956 gallons, which is rounded up to 2.0 gallons. Therefore, for each foot of water in a 4" well, the required purge volume is 2 gallons.

If any well fails to recover rapidly enough to allow purging of three well volumes in a reasonable time period, then the well will be purged to dryness prior to sampling. Field parameters should be checked during sampling to ensure sample consistency.

All wells will be purged by use of: (1) a single-use bailer, which will be raised and lowered by a new length of nylon twine; (2) by a suction lift pump using dedicated or single use suction tubing; or (3) by submersible pump.

All purge water will be collected and transported to the groundwater treatment system.

5.8 Sampling, Field Analysis, Preservation and Holding Times

After the required volume of purge water has been removed from the well, the temperature, specific conductivity, and pH of the water will be measured and recorded on the well sampling records.

Samples shall be collected in the order of their volatility. All samples will be obtained by the use of sufficiently inert single-use disposable bailers, raised and lowered by new white nylon twine. Given the fact that the majority of the wells to be sampled are constructed of PVC, these bailers may be constructed of polyethylene or PVC, which have been shown to be sufficiently inert through their use in all prior groundwater investigations at this site.

All personnel handling the twine, the bailer, or the sample container shall wear single-use medical examination gloves to minimize potential contamination.

Sample containers of one quart or larger will be carefully filled, leaving a small amount of headspace. If 40-ml vials are required for purgeable or volatile analytes, they will be carefully and slowly filled, ensuring that no air remains in the filled vial. The sample containers will be placed into a cooler, cushioned as needed to minimize the risk of breakage, and cooled to 4°C (39.8°F). Samples will be immediately delivered to the laboratory by the sampler or by common carrier to ensure that sample holding times are not exceeded.

5.9 Trip Blanks

Prior to each sampling event, one sample container will be filled with organic free water and labeled "Trip Blank." This container will accompany the sample containers to and from the field. This blank will be analyzed for the same list of constituents as the well samples, and will serve as an indication of any contamination or cross-contamination during handling and transportation.

5.10 Field Blanks

At each sampling event, one sample container will be filled with organic free water at a well site, and this container will be labeled "Field Blank". This blank will be analyzed for the same list of constituents as the well samples themselves, and will serve as an indicator of laboratory error or contamination, container batch contamination, airborne contaminants, or handling contamination.

5.11 Field Duplicate

At each sampling event, one sample container will be filled with a duplicate sample from one monitoring well. This sample will be analyzed for the same list of constituents as the original sample, and will be used to document precision, in accordance with paragraph 9.2.2.5.3 of US EPA SW-846, Test Methods for Evaluating Solid Waste.

6.0 CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Prior to relinquishing custody of the samples, the analysis request and chain-of-custody record will be completed and signed by the leader of the sampling team. The original completed chain-of-custody shall be kept in a suspense file until the analytical results are received. At that time, the original chain-of-custody will be filed with the analytical results. A sample chain-of-custody and analysis request record is found attached to this plan.

7.0 EVALUATION AND REPORTS

Data generated at each sampling event will be compared to previous values to look for obvious errors and significant trends. Results of the analyses will be reported in Semiannual Corrective Action Effectiveness Reports, and/or Annual Solid Waste Management Unit Corrective Action Reports.

FERNWOOD INDUSTRIES, LLC
FERNWOOD, MS

SAMPLING RECORD COVERSHEET

SAMPLE DATE(S): _____ PROTOCOL: ☐ SEMIANNUAL - CP & BNDY Wells.
☐ ANNUAL - Effectiveness Wells.

WEATHER CONDITIONS: _____

_____

_____

SAMPLING TEAM PERSONNEL:

TEAM LEADER: _____

_____ _____

_____ _____

_____ _____

EQUIPMENT:

☐ WATER LEVEL METER: _____
(TYPE, MODEL & SERIAL NO.)

☐ pH METER: _____ (TYPE, MODEL & SERIAL NO.)
CALIBRATED? _____ INITIAL _____

☐ SPECIFIC CONDUCTIVITY

METER: _____ (TYPE, MODEL & SERIAL NO.)
CALIBRATED? _____ INITIAL _____

☐ SOURCE/TYPE/SIZE OF SAMPLE CONTAINERS: _____

_____

_____

☐ SOURCE AND TYPE OF BAILERS: _____

_____

_____

COMMERCIAL LABORATORY: _____

COMMENTS: _____

_____

_____

_____

FERNWOOD INDUSTRIES

MONITORING WELL SAMPLING RECORD

SAMPLE PERIOD:			SAMPLER:			
WELL NUMBER	MW-28	MW-17	MW-18	MW-24		
WELL CATEGORY	Boundary	Boundary	Boundary	Boundary		
SAMPLE DATE						
DEPTH OF WELL						
DISTANCE TO WATER						
WATER IN WELL, ft						
PURGE FACTOR (gal/ft)	0.5	0.5	0.5	0.5		
PURGE VOLUME						
pH, SU						
SPECIFIC CONDUCT.						
TEMP., °C or °F						
NOTES						

WELL NUMBER	MW-22	MW-31	MW-27A	MW-25	MW-11	MW-12
WELL CATEGORY	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness
SAMPLE DATE						
DEPTH OF WELL						
DISTANCE TO WATER						
WATER IN WELL, ft						
PURGE FACTOR (gal/ft)	0.5	0.5	0.5	0.5	2.0	2.0
PURGE VOLUME						
pH, SU						
SPECIFIC CONDUCT.						
TEMP., °C or °F						
NOTES						

WELL NUMBER	MW-7	MW-8	MW-9	MW-10	MW-1	BOILER SPRING
WELL CATEGORY	Compliance	Compliance	Compliance	Compliance	SWMU	SWMU
SAMPLE DATE						
DEPTH OF WELL						NA
DISTANCE TO WATER						NA
WATER IN WELL, ft						NA
PURGE FACTOR (gal/ft)	2.0	2.0	2.0	2.0	2.0	NA
PURGE VOLUME						NA
pH, SU						
SPECIFIC CONDUCT.						
TEMP., °C or °F						
NOTES						

H. M. ROLLINS CO., INC., P. O. BOX 3471, GULFPORT, MS 39505

RCRA MONITORING WELL SAMPLING RECORD
ANALYSIS REQUEST AND CHAIN-OF-CUSTODY DOCUMENT

FERNWOOD INDUSTRIES
P.O. DRAWER 90 (601)684-2011
FERNWOOD, MS 39635 684-4732

SAMPLERS: (Signature)

DATE	TIME	WELL NUMBER	NUMBER OF CONTAINERS	ANALYZE FOR: (USE SW-846 OR EQUIVALENT METHODS) K001 (see list below) SW-846 Method 8270				NOTES

Notes: K001 List - Pentachlorophenol, 2,4-Dimethylphenol, Acenaphthalene, Naphthalene, Fluoranthene, Benzo(a)pyrene

RELINQUISHED BY: TIME/DATE:	RELINQUISHED BY: TIME/DATE:	LABORATORY:
RECEIVED BY: TIME/DATE:	RECEIVED BY: TIME/DATE:	LAB COMMENTS:

FlWellcofc xls

Revised May 23, 2006