



Pearl River Basin, Mississippi, Federal Flood Risk Management Project

Appendix H - Hazardous, Toxic, and Radiological Waste Sites



July 2025

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Pearl River Basin, Mississippi
Federal Flood Risk Management Project
Hinds And Rankin Counties, Mississippi

**Environmental Evaluation of Hazardous, Toxic, and
Radiological Waste (HTRW) Sites**

September 2014 (Updated August 2021)

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ENVIRONMENTAL EVALUATION OF HAZARDOUS, TOXIC, AND RADIOLOGICAL WASTE (HTRW) SITES

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Figure 1: Alternative C and HTRW Sites

ATTACHMENTS

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1.0 INTRODUCTION

The Rankin-Hinds Pearl River Flood and Drainage Control District (RHPRFDCD) commissioned Allen Engineering and Science (AllenES) to assist in the preparation of an Environmental Impact Statement (EIS) in support of the Flood Damage Reduction project being proposed along the Pearl River in Rankin County and Hinds County, Mississippi. The project is being proposed to address current flooding issues faced by residential, commercial, and industrial properties along the banks of the Pearl River in Rankin and Hinds Counties. AllenES was commissioned to support the preparation of the EIS in regard to evaluation of environmental concerns related to chemicals and wastes that may be released from hazardous waste sites located within the planning boundary or that could affect the project alternatives.

Hazardous waste sites include a variety of sites that have historical environmental impacts from the release of hazardous substances, hazardous wastes, toxic chemicals, or radiological wastes (HTRWs) to the environment. The Pearl River Basin, within the proposed project area, contains a number of historical sites of concern in regard to environmental impacts from the release of HTRWs. Hazardous waste sites include historical sanitary and rubbish landfills and industrial or commercial facility sites where hazardous substances or wastes have been released to the environment. Hazardous substances are identified under the EPA Superfund Act (Comprehensive Environmental Response, Compensation, and Liability Act - CERCLA) and may include metals such as arsenic, lead, cadmium, and mercury; volatile organics such as solvents; semi-volatile organics such as creosote compounds, pesticides, herbicides, and PCBs; etc., that may have been released to the environment in amounts that pose a potential threat to human health and the environment. Hazardous wastes are solid wastes regulated under the federal Resource Conservation and Recovery Act (RCRA) due to characteristics such as acidity, corrosivity, reactivity, flammability, explosivity, or because they contain hazardous substances. Hazardous wastes include wastes that exhibit these characteristics, or are specifically identified waste streams, or wastes that are not properly managed and recycled such as oil and petroleum product wastes. Toxic wastes are those that contain toxic substances and substances regulated under the Toxic Substances Control Act (TSCA) that cause immediate health impacts to humans if exposed such as asbestos, toxic metals, and PCBs. Radioactive wastes include radiological elements such as radium, radon, uranium, strontium, and thorium that may originate from anthropogenic sources or from naturally occurring sources that get concentrated.

The purpose of this study was to identify sites with HTRW issues that may affect the project alternatives, or that might be affected by the project implementation. The objectives of this evaluation included descriptions of the sites and current conditions, identification of environmental and potential human health risks posed by these sites, and comparative analysis of impacts related to each of the sites in relation to the project alternatives. The goal of this study was to identify and present the environmental and potential human health risks associated with the HTRW sites for each of the project alternatives in order to assist in the selection of the best project alternative. AllenES performed the evaluation through a method of collection and review of readily available historical documents, performing a site reconnaissance at each of the sites, performing a comparative analysis based on AllenES' experience with HTRW sites, and preparing this report. A bibliography of reference sources is provided in **Attachment A**.

Three (3) separate alternatives and a "No Action" alternative are being proposed to accomplish the project goals and include the following: a non-structural plan or "Buy Out" of all affected properties (Alternative A), the construction of a levee system (Alternative B), or the construction of a channel improvement/weir/levee system (Alternative C). The purpose of the EIS was to identify existing environmental issues in the project area and to evaluate potential environmental impacts associated with each of the proposed project

alternatives. During the review process, AllenES identified three (3) potential HTRW sites within and proximal to the proposed project area considered to be sites of interest. The sites are generally located on upland areas adjacent to and within the floodplain of the Pearl River. Some of these sites have current and direct impacts on the water quality and aesthetics of the Pearl River.

The significant sites identified are listed as follows: the Lefleurs Landing Site (a.k.a. Jefferson Street Landfill), the Gallatin Street Dump, and the former Gulf States Creosoting Company Site. The following sections describe the setting and background, existing conditions, and geology/hydrogeology of each of the HTRW sites in relation to each of the proposed project actions.

2.0 SITES OF INTEREST

During the review process, AllenES identified three (3) major HTRW sites of concern related to the proposed project alternatives. These sites are listed as follows: the former Lefleurs Landing Site (a.k.a. Jefferson Street Landfill), the former Gallatin Street Dump Site, and the former Gulf States Creosoting Company Site. The following sections describe the history and background, existing conditions, geology/hydrogeology, and environmental and potential human health risks associated with each of the hazardous waste sites in relation to their current conditions. Several other potential hazardous waste sites were identified during the review process but were determined to have no known current impacts with respect to the project alternatives. These sites are also identified below. HTRW sites are identified on **Figure 1** and site photographs are provided in **Attachment B**.

2.1 LEFLEURS LANDING SITE (JEFFERSON STREET LANDFILL)

2.1.1 *Background and Setting*

The Lefleurs Landing Site (a.k.a. Jefferson Street Landfill) consists of a tract of land measuring approximately forty-five (45) acres and is located between the Pearl River and Jefferson and Pascagoula Streets. The site is owned by the City of Jackson. Historical data indicates that the City of Jackson has operated facilities on this property dating back to the early 1900s. Former activities included vehicle storage and maintenance operations, vehicle fueling utilizing underground storage tanks, incinerator, painting operations, animal control and shelter, administrative and police functions, and landfilling operations.

Findings from Phase II Environmental Site Assessment (ESA) activities and a Remedial Action Report (RAR) dated August 2004 completed by PPM Consultants, Inc. (PPM) indicated that a portion of the site was used as a landfill, along with motor fuel storage for fueling city owned vehicles. The purpose of the Phase II ESA was to determine if soil and/or groundwater in the vicinity of former underground storage tank (UST) areas had been impacted by motor fuels previously stored in the tanks. PPM concluded that all four (4) former UST areas showed some evidence of petroleum hydrocarbon impact to soils and groundwater. PPM and Fair Construction subsequently excavated the impacted soils in the UST areas. The RAR indicated that all actionable soils were removed to the satisfaction of the Mississippi Department of Environmental Quality (MDEQ) and groundwater concentrations of Polynuclear Aromatic Hydrocarbons (PAHs) were below the applicable regulatory limits; however, some residual contamination may remain as the dissolved benzene concentration in one monitoring well was 3.8 parts per million (ppm), which exceeded the then current regulatory standard of 1.4 ppm. PAHs are typical constituents of creosote used for treating or preserving wood.

PPM also investigated the landfill area. Evidence of wastes were noted in several places where the thin landfill cover had eroded resulting in exposure. Several borings were installed to investigate the nature of the waste matrix, depth of materials and groundwater occurrence. Selected soil and groundwater samples were analyzed for petroleum hydrocarbon constituents, additives, and lead. The investigation also identified the general extent of landfilling and boundary. The reports indicated that the landfill was not known to have a “constructed” cap or liner system; therefore, groundwater was believed to have the potential to interact with debris and leachate found in the landfill.

2.1.2 *Existing Conditions/Current Impact*

AllenES performed a visual inspection of the Lefleurs Landing Site on July 8, 2014. The City of Jackson is currently using the site and facilities for police activities, horse pasture and barn, and storage facilities. A number of the historical buildings were partially demolished or in poor condition. The low shrub and grass

vegetation covered the landfill area. Evidence of rubbish and residual inert solid wastes were noted in some areas of the landfill where the soil cover was thinning. No retroactive improvements (e.g. liners, caps, leachate collection systems, etc.) were observed or known to have been installed on the landfill; therefore, AllenES believes that groundwater may be interacting with debris and leachate. Substantial rubbish was observed to be protruding from the south bank of the landfill. Erosion during high water periods in the Pearl River have resulted in exposure of the waste materials and rubbish materials may be washed into the river during high water conditions.

2.1.3 Geology/Hydrogeology

The Lefleurs Landing Site is located on a point bar on the western (Hinds County) side of the Pearl River in Jackson, Mississippi at river mile 288. The entire landfill is located within the 100-year floodplain of the Pearl River. According to the potentiometric surface map created by PPM Consultants, Inc., dated March 2005, groundwater flow patterns appear to be flowing from the landfill to the Pearl River. It should be noted that the landfill does not have any formal engineering controls (i.e. liner, cap, leachate collection system, etc.) to prevent the offsite migration of leachate and compounds of concern.

Geological/hydrogeological information was obtained from the Phase II Environmental Site Assessment Report prepared by PPM Consultants, Inc. PPM installed thirteen (13) soil borings and ten (10) piezometers in these areas using Direct-Push Technology (DPT) to a general depth of five (5) feet below the depth at which saturated soil conditions were encountered 16 to 24 feet below ground surface (BGS). Site lithology was described as extremely heterogeneous, consisting of silts, clays, and sands at widely varying depths. Soils at the site were reported to consist entirely of fill material from earlier landfilling activities. Saturated soil conditions were encountered at average depths of fourteen (14) feet BGS, though thin saturated zones were encountered at other intervals in the fill material. Static groundwater levels in the piezometers were measured at depths of 12.81 to 20.04 feet BGS.

2.2 GALLATIN STREET DUMP SITE

2.2.1 Background and Setting

The former Gallatin Street Dump Site was a municipal sanitary landfill and is located approximately 1,000 feet east of the corner of Gallatin Street and East McDowell Road on a point bar on the west side of the Pearl River in Jackson, Hinds County, Mississippi from river mile 285 to 286. According to a Phase II ESA report by Ware, Lind, Furlow/Aquaterra, the total area of the landfill site is approximately 117 acres, approximately 62 acres of which were utilized for landfill purposes. According to documents reviewed during the file review process, the landfill was estimated to have been active from 1963 to 1980 and was operated as a municipal dump by the City of Jackson. The Gallatin Street Dump Site was not a constructed landfill and had no original engineering controls, such as a leachate collection system, cap or liner, to prevent leachate from migrating offsite and interacting with groundwater. However, a clay cap was retroactively installed to minimize human exposure pathways. Also, the State of Mississippi did not require the City to maintain any permit for the facility, nor were there any restrictions on the type or quantity of wastes that were accepted. No hazardous waste program was either in place or enforced by the City or the State with regards to the types of wastes accepted. The landfill was closed and is of no formal use to the City at this time. The following is a list of sources of common components of the waste that are known to have been deposited in the landfill:

- Household garbage.
- General industry.

- Construction debris and waste.
- Hospital waste.
- Municipal water & sewage sludges.
- Raw sewage from septic tankers.
- Dead animals.
- Contaminated produce, poultry, dairy products and meats.

The Phase II ESA report was completed by Ware, Lind, Furlow/Aquaterra in 1998. The report stated that the landfill had been retrofitted with a clay cap to minimize human exposure surface pathways to hazardous or toxic substances potentially contained in the landfill. The Phase II ESA report indicated that groundwater samples collected from borings placed within the landfill found leachate with concentrations of cadmium, lead and nickel which were above regulatory standards. The report also indicated that limited sampling of the surface water obtained from the Pearl River (upstream and downstream of landfill) did not detect landfill leachate at that time; however, the limited sampling was insufficient to demonstrate whether leachate release to the Pearl River was occurring or not.

2.2.2 Existing Conditions/Current Impact

AllenES performed a visual inspection of the Gallatin Street Dump Site on July 8, 2014. Relief at the site is mostly flat, with the exception of a depressed area in the center of the site. There are two (2) major utilities that traverse the site. High power electrical transmission lines cross the site in a line running generally north to south. A high pressure, natural gas transmission main also crosses the site. It runs in a line generally west to east. There is a 30 foot permanent easement associated with this line.

AllenES did not observe any evidence of stressed vegetation; however, debris was found to be protruding from the bank of the Pearl River. Also, leachate from the landfill was observed to be seeping out of the soils along the bank of the Pearl River. Due to the landfill's location on a cut-bank with a history of erosion issues and the presence of major utilities, AllenES believes the subject site is a potential threat for release of leachate and debris to the Pearl River.

2.2.3 Geology/Hydrogeology

The Gallatin Street Dump is situated in an alluvial plain of the Pearl River in Section 22, Township 5 North, Range 1 East. A review of the boring logs produced by Ware, Lind, Furlow/Aquaterra (Aquaterra) for use in the hydrogeological and bank stabilization study also indicates that the Gallatin Street Dump is situated within alluvial soil materials that overlie the Yazoo clay. A total of 11 borings were extended into the subsurface by Aquaterra within and adjacent to the Gallatin Street Dump during the hydrogeological and bank stabilization study. The following paragraphs provide a general description of the alluvial materials, waste, and Yazoo clay encountered beneath the site.

Alluvial Materials

The boring logs indicate that the alluvial materials consist of interbedded layers of silt, clay, sand, and gravel which extend to a depth of 250 feet above mean sea level (msl) in boring 8-6, and to a depth of 229 feet above msl in boring BH 9. The alluvial deposits within the area of study are located directly above the Yazoo Clays and appear to range between 10 and 14 feet thick. The clay and silt materials were generally encountered above the sands and gravel.

Waste Material

Monitor Well Installation Report No. 63677 prepared by Aquaterra indicated that garbage was found in borings BH-3, BH-4, 8-5, B-10 and B-11. The description in the boring logs generally described the garbage as a black garbage, consisting mostly of paper and plastic products. According to the boring logs, the thickness of the garbage ranged from three feet in boring BH-4 to 34 feet in B-11. Further inspection of the boring logs indicates that the bottom elevation of the garbage ranged from 265 feet above msl in boring 8-5 to 242 feet above msl in boring 8-10.

Yazoo Clay

A review of the boring logs reveals that the Yazoo clay formation is encountered in each of the borings except BH-5 and BH-10. The Yazoo clay is generally described in the boring logs as a hard blue clay with shell fragments. The top of the Yazoo Clay ranged from an elevation of 250 feet above msl in BH-6 to as low as 229 feet above msl in BH-9. Generally, however, the top of the Yazoo was found to be situated between an elevation of 232 feet above msl and 234 feet above msl. The geotechnical report produced for the bank stabilization study reported natural moisture contents of the Yazoo clay to range from 22 percent to 43 percent.

Groundwater

Aquaterra reported groundwater in 10 of the 11 borings advanced during their field investigation. The exception was Boring 8-6 which was located just north of the landfill. Two of the six monitor wells (MW-1 and MW-5) were installed with the screened interval within the waste layer. It is believed that the liquid level reported in these two wells may actually be indicative of leachate mounded within the landfill. A review of the boring logs for MW-5 and MW-6, as well as comparisons of the liquid levels reported in MW-5 and MW-6 (which are located adjacent to each other), further suggest that there may be a perched leachate mound within the landfill. More specifically, MW-6 was screened beneath the garbage layer revealing a water level of 246.1 feet above msl. This liquid level in MW-6 is some 12 feet below the groundwater level of 258.8 feet above msl reported in MW-5. Further observation of the boring logs depicted a five foot layer of clayey silt beginning at an elevation of 242 feet above msl, which puts it between the two screened intervals. Since MW-5 was screened above this layer, and since MW-6 was screened below this clayey silt layer in a seven foot layer of tan gray sand, this could possibly be an indication that the clayey silt is serving as a partially confining layer between the leachate and the actual groundwater. No groundwater samples were collected. Only one water sample for leachate characterization was collected from MW-5 and laboratory analyzed for typical leachate characterization parameters. Concentrations of various metals and semi-volatile parameters were detected. Cadmium, lead, and nickel were detected in concentrations above the Maximum Contaminate Levels (MCLs) established under the Safe Drinking Water Act for these parameters. The Aquaterra report recommended further leachate and groundwater investigations.

2.3 GULF STATES CREOSOTING COMPANY SITE

2.3.1 Background and Setting

The former 141-acre Gulf States Creosoting Company Site is located at 1625 Flowood Drive (Mississippi Highway 468) in Flowood, Rankin County, Mississippi. The property extends from the swampland and oxbow lakes along the Pearl River at river mile 290 to river mile 292. The information contained within this section was taken from the EPA Final Preliminary Assessment/Site Inspection (PA/SI) Report of the Gulf States Creosoting Company, December 2003, prepared by Weston Solutions, Inc. for the Environmental Protection Agency (EPA) Region 4. The PA/SI was conducted by EPA to determine whether the site would qualify as a National Priority List (NPL) Site under the federal Superfund Program. The investigation and sampling conducted were therefore limited to the objectives of the ranking program.

Gulf States Creosoting Company owned the property as early as 1929 and operated as a wood treating facility until the mid-1950's. In July 1958, American Creosoting Corporation obtained portions of the property

and operated for less than two (2) years. In June 1959, W.G. Avery Body Company purchased portions of the property and operated a body shop on the site.

During Gulf States Creosoting Company operations, railroad cross ties were treated at the facility and transported on and off-site by means of railroad box cars. Creosote was applied to the wood by commercial pressure treatment or by vat or tank dipping. Creosote is a wood preservative used to treat railroad ties, telephone poles, marine pilings, and fence posts.

Based on the analytical results for the samples collected during the PA/SI, soil impact from organic and inorganic hazardous substances was found to be present at the Gulf States Creosoting Company property. The hazardous substances found that were attributable to the former onsite operations included the metals of barium, cobalt, manganese, and zinc, and creosote residuals including a variety of semi-volatile polynuclear aromatic hydrocarbons (PAHs).

According to the PA/SI Report, the majority of population in the area receive their drinking water from the City of Flowood Water Department (CFWD). The CFWD's water supply wells are screened in the Cockfield Formation and the Sparta aquifers beneath a substantial confining layer. Due to the relatively small number of people served water by the CFWD and the fact that the municipal wells are screened at depths greater than 550 feet, the site did not rank high enough to become an NPL site under the EPA Superfund Program.

However, sediment samples collected from the oxbow slough located west of the Gulf States Creosoting Company property exhibited elevated levels of constituents used in the wood preserving industry. Creosote was observed on the surface of the waters in the adjacent swamp named "Creosote Slough". The extent of the creosote residuals occurring in the sediment were reported in the PA/SI report and were found to cover a broad area. However, the sampling program did not identify the nature and the extent of the creosote residuals. Creosote residuals were also found in the limited soil sampling performed in the historical areas of the treatment operations.

2.3.2 Existing Conditions/Current Impact

A site reconnaissance was performed by AllenES on July 8, 2014 to document current conditions at the Gulf States Creosoting Site. The site is bounded to the east by Highway 468 and to the south by ConSteelCo. A levee bounds the western and northern portions of the site. Most of the original area of treatment operations is now covered by the facilities owned by ConSteelCo. Two small buildings are located on the middle portion of the site that are used for helicopter operations and hanger for a local TV and news media. The rest of the site is covered with pasture grass and isolated clumps of pine trees or pine tree stands. Horses are also currently grazed on the site pastures. During the visual inspection, AllenES did not identify any evidence of former operations or equipment, or any evidence of creosote residuals in the former treatment operations area. The PA/SI report indicated that no impoundments or berms that are commonly used in the creosoting process were used at this site; instead, the facility is reported to have used pressure tanks and vats to treat the wood products.

2.3.3 Geology/Hydrogeology

The geology and hydrogeology of the site were obtained from the references and information contained in the PA/SI report and a report prepared by the United States Environmental Protection Agency (EPA), Region 4, entitled: "Record of Decision: Summary of Remedial Alternative Selection" dated September 2010. The report was prepared for the Sonford Products Superfund Site Operable Unit 2 (Sonford), which is located

approximately 4,000 feet from the southern boundary of the Gulf States Creosoting Company Site. Due to the proximity to the subject site, AllenES believes that the regional and site specific geology and hydrogeology for the Sonford site should be similar to that of the Gulf States Creosoting Company Site. All information provided in this section was taken from the aforementioned reports prepared by the EPA. None of the references mentioned were reviewed in the preparation of the current report.

The Gulf States Creosoting Company Site is located within the Jackson Prairie Belt Physiographic Unit of the East Gulf Coastal Plain Physiographic Province of Mississippi (USDA, 1998; USGS, 1984; MGETS, 1971). In Rankin County, the East Gulf Coastal Plain ranges from gently rolling to steep with the elevation ranging from 220 to 612 feet above msl. The soils at the Sonford site were reported to belong to the Cascilla-Arkabutla soil group (nearly level, well-drained and somewhat poorly drained, silty soil) (USDA, 1998).

The Claiborne Group and the Wilcox Groups are reported to be found below the alluvial soils in the area. The Claiborne Group consists of multiple formations which include the following in descending order: the Cockfield, Cook Mountain, Sparta Sand, Zilpha, Winona, and Tallahatta formations (MGS, 1985). The Cockfield Formation is comprised of irregularly bedded laminated lignitic clay, sand, and lignite, which is slightly glauconitic (David Pentecost "Hydro Report", undated). The top of this formation is located at approximately 40 feet below the ground surface at the Sonford site and ranges in thickness from 120 to 180 feet near the Sonford site (Pentecost, undated; Sistrunk, 1981). The Cook Mountain Formation lies beneath the Cockfield and consists of marl, limestone, glauconitic sand, and chocolate colored clay (MGS, 1985). The Cook Mountain is approximately 220 feet thick in the review area (Pentecost, undated). The Sparta Sand Formation, also known as the Kosciusko Formation, is comprised of an irregularly-bedded sand with clay and some quartzite. The Sparta Sand is approximately 280 feet thick near the Sonford site, but reaches over 800 feet thick in southwestern Hinds County, west of the review area (USGS, 1964; Pentecost, undated). The Zilpha and Winona formations lie beneath the Sparta Sand and consist of a chocolate colored clay containing glauconitic sand (Zilpha) and a highly glauconitic clayey sand (Winona) (MGS, 1985). The Zilpha Formation ranges in thickness from 200 feet to 420 feet while the Winona ranges in thickness from 10 feet to 65 feet (MGETS, 1971). The Tallahatta Formation consists of glauconitic claystone and clay with lenses of sand and some sandstone (MGS, 1985). The Wilcox Group, which underlies the Claiborne Group, contains irregularly bedded fine to coarse sand, lignitic clay and lignite (MGS, 1985). The Wilcox ranges in thickness from 1,100 feet to 2,830 feet in southern Rankin County (MGETS, 1971).

Site Geology

Site-specific geologic information for the Sonford site was obtained from subsurface exploration using direct push technology (DPT) in December 2006, February 2008, and May/June 2008 and from previous investigations. Lithologic logging performed during these investigations extended to a maximum depth of 32 feet below ground surface (bgs) in 14 borehole locations. The surface soils at the Sonford site are reported to consist of plastic clays; sandy clays; silty clays; fine-grained silty sands; and coarse-grained to gravely sands. These interbedded clays, silts, and sands transition into blue-gray clay at roughly 24 to 28 feet bgs. The clay unit, most likely part of the Yazoo Clay, then transitions to interbedded clays, silts and sands (sand most likely part of the Cockfield and Cook Mountain Formations) to roughly 225 feet bgs. AllenES believes that the surficial soils on the Gulf States Creosoting Company Site are similar to the surficial soils at the Sonford site.

Site Hydrogeology

The surficial aquifer at the Sonford site is reported to be comprised of sands and gravels of the Pamlico Sands and Citronelle Formations. At ground surface, alternating layers of silty clay, sand, and clay are present to a depth ranging from the surface to approximately 24 feet bgs. Groundwater is typically

encountered at approximately 10 to 14 feet bgs across the Sonford site. The general direction of the groundwater flow is west-northwestward across the Sonford site. AllenES believes that the shallow soil lithology and groundwater occurrence under the Gulf States Creosoting Company Site are similar to the Sonford site. However, shallow groundwater at the Gulf States Creosoting Site is likely moving to the west/southwest due to the influence of the Pearl River.

There are three (3) aquifers in the project area that are currently available for drinking water supplies. In descending stratigraphic order, these aquifers are the Cockfield Formation, the Sparta Sand Formation, and the Wilcox Group. These aquifers are part of the larger Eocene aquifer system in Mississippi. This system extends west, southwest and south and contains freshwater in approximately 50 percent of the State. These three (3) aquifers are regional in extent and merge northward, with the exception of the Cockfield and the lower Wilcox, into a single aquifer south of Memphis, Tennessee (USGS, 1984).

According to the EPA 2010 report, groundwater in the surficial aquifer is classified as Class II, a current or potential source of drinking water. This classification does not specify whether or not the groundwater is Class II A, a current source of drinking water, or Class II B, a potential source of drinking water.

According to the EPA 2010 report, the majority of local residences have their drinking water supplied to them from the City of Flowood Water Department (CFWD) and from the City of Pearl Water Department (CPWD). The CFWD obtains its drinking water from six (6) wells in the area, which are screened in the Cockfield Formation and the Sparta Sand. The CPWD also obtains its drinking water from the Cockfield Formation and the Sparta Sand with eight (8) wells. Six (6) of these wells (two from CFWD and four from CPWD) are located within a four-mile distance to the proposed project site. All six (6) wells are screened in the Sparta Sand. The municipal well is 3,000 feet south from the Gulf States Creosoting Company Site.

2.4 OTHER SITES OF NOTE

Other HTRW sites are located adjacent to the proposed project area. AllenES reviewed these sites in an effort to determine the potential likelihood of impact on the project alternatives from these sites. The sites described in the following sections are known to be of environmental significance; however, due to a variety of factors, including distance, soil type, type of impact, and/or prior historical remedial actions, AllenES believes these sites do not have the potential to impact the proposed project alternatives.

2.4.1 *Rival Manufacturing Companies NPL Site*

The former Rival Manufacturing site is located approximately 1,500 feet east of the proposed project area on the west side of Highway 49 in Flowood, Rankin County, Mississippi. The Rival facility manufactured crockpots and was found to have contributed lead and polynuclear aromatic hydrocarbons (PAHs) to the surrounding soils and surface waters. A Phase I Environmental Site Assessment (ESA) was performed by BCM Engineers on the Rival Crockpot site and surrounding areas in the summer of 1993. The Phase I ESA reported that the Mississippi Department of Environmental Quality (MDEQ) performed an investigation of the site in 1982 and 1983 and found lead in the surface soils in concentrations ranging from 14 to 94,231 parts per million (ppm). The current Tier I Target Remedial Goal (TRG) established by the MDEQ for soils at restricted sites is 1,700 ppm. The Rival facility was added to the EPA's National Priorities List (NPL) in 1984. The EPA implemented a remedial action plan in 1992, the efforts of which were 90 percent complete at the time BCM was preparing the review area's Phase I ESA report. The report stated that impact was restricted to soil and surface water and no evidence of impact to groundwater was identified. Soils and sediments from an onsite pond were excavated and entombed in a soil mound containment structure constructed on the site.

and the pond was closed. For these reasons, in addition to the EPA's successful remedial efforts and the facility's distance from the proposed project area, impact from the former Rival Manufacturing Companies facility is considered unlikely.

2.4.2 Sonford Products Lumber Mill

The former Sonford Products Lumber Mill is located at 3506 Payne Drive in Flowood, Rankin County, Mississippi and is approximately half a mile east from the proposed project area. The site operated as a lumber mill and wood treatment facility from 1972 until 1985. Chemicals commonly produced during this time were pentachlorophenol (PCP), sodium pentachlorophenate, and pest control products.

On April 18, 1985, approximately 2,000 gallons of PCP spilled into wetland areas on a parcel directly south of the facility. The Mississippi Department of Natural Resources (MDNR) (now the MDEQ) initiated remedial actions and identified various Compounds of Concern (CoCs) including PCP, mercury, lindane, and phenylmercuric acetate. On April 21, 1985, the EPA took over remedial operations at the site and removed 2,500 cubic yards of impacted soils, disposed of 10,000 gallons of oil and treating solution, and 100,000 gallons of wastewater. Response actions were completed on May 10, 1985.

In 1989, the Mississippi Bureau of Pollution Control (MBPC) (now the MDEQ) issued a "No Further Action" status for the site without performing any verification sampling. In 2004, Weston Solutions, Inc. prepared a Preliminary Assessment/Site Inspection Report (PA/SI) for the review area and recommended the Sonford Products site be classified as an NPL site. The site was placed on the EPA's NPL in 2007.

In September 2009, a *Record of Decision: Summary of Remedial Alternative Selection* report was prepared by Region IV of the EPA. The remedy selected by the EPA for the Sonford Products site included "an in-situ treatment of contaminated media (both soils and groundwater) using chemical oxidation and enhanced subsurface biodegradation." The goals of the selected remedy were to restore impacted soils to conditions that would protect construction workers, onsite/offsite residents, and also the underlying aquifer and the environment; also, the remedy aimed to restore groundwater to conditions that would not pose threats to human health if ingested or physically contacted, as well as to eliminate the risk of inhalation of volatiles.

Due to the distance from the proposed project boundary, remedial efforts completed to date, and the future remedial efforts planned, AllenES believes that the Sonford Products site will not pose a significant threat of impact to the proposed alternative projects.

2.4.3 Various Automotive Junkyards

Multiple automotive junkyards were identified in proximity to the project area and are depicted in **Figure 1**. Historically, automotive junkyards have been known to contribute hydrocarbons, metals, solvents and other CoCs to the environment. However, no specific studies or information regarding environmental conditions at these automotive junkyards are readily available. For this reason, investigation and characterization of these sites would be recommended prior to the initiation of project activities.

3.0 ALTERNATIVES EVALUATION

The following sections provide an assessment of the environmental risks, environmental and human health impacts, remedial alternatives, and socio-economic impacts of the hazardous waste sites with regard to the Flood Damage Reduction project alternatives. The selected project alternatives for evaluation include: 1) a “buy out” program, 2) a levee system program, 3) a channel improvement, weir, and levee system, and 4) a no-action alternative. Each of these are addressed in the following sections.

3.1 ALTERNATIVE A (NON-STRUCTURAL PLAN)

3.1.1 Description of Proposed Action and Relationship to Hazardous Waste Sites

In order to address the flooding issues faced by the cities of Jackson and Flowood, a Non-Structural or “Buy Out” option has been proposed. A “Buy Out” would entail the purchasing of all private and commercial properties within flood prone areas (100 year flood plain) along the Pearl River within the proposed project area that have buildings constructed on them. This action would help protect human life and property during flood events; however, it would not address or eliminate environmental or potential human health threats from historical hazardous waste sites located within the proposed project area.

3.1.2 Risks Posed

There are no immediate environmental or potential human health risks proposed by the Alternative A, but current environmental threats from hazardous waste sites would not be addressed. The Lefleurs Landing Site which is owned by the City of Jackson would remain as it is with the south bank of the landfill continuing to erode and release waste materials into the Pearl River during high flows. Leachate from the landfill would continue to flow into the Pearl River. The Gallatin Street Dump Site, which is also owned by the City of Jackson, would continue to have erosion along the northern edge of the rip rap and along the southern boundary on the Pearl River potentially releasing wastes into the Pearl River. Leachate from the landfill would continue to discharge into the Pearl River. The Creosote Slough is privately owned, has no structure on it, so it would not be acquired. Therefore, it would continue to pose threats of release of creosote wood treatment chemicals into the oxbow lake water and into the Pearl River during high flows.

3.1.3 Remedial Alternatives

No remedial alternatives are associated with this action. It should be noted that the RHPRFDCD would not become responsible for the HTRW sites included in the land acquisition and would not be required to remediate these sites.

3.1.4 Short-Term Impacts

There are no short term impacts posed by the “Buy Out” action on the HTRW sites. Short-term environmental and potential human health risks from hazardous waste sites would not be addressed or eliminated by this action.

3.1.5 Long-Term Impacts

Long term environmental and potential human health risks from HTRW sites would not be addressed or eliminated by this action.

3.1.6 Community Acceptance

The “Buy Out” option would not address remediating potential environmental and human health risks posed by the HTRW sites which is likely to have a negative impact on community acceptance.

3.1.7 Pros

In the event that the “Buy Out” alternative was selected, the HTRW sites will not be acquired.

3.1.8 Cons

In the event that the “Buy Out” alternative was selected, the environmental impacts would generally be the same as the No Action alternative. The risk of flood damage to properties and the risk of potential human exposure to harmful hazardous substances associated with the HTRW sites would not be substantially changed or reduced. Impacts would include the exposure to leachate, creosote and other hazardous substances via the release into groundwater or surface water or the exposure to impacted sediments. The “Buy Out” alternative would continue the threat of flooding which will continue to have potential adverse effects upon the HTRW sites.

3.2 ALTERNATIVE B (LEVEE PLAN)

3.2.1 Description of Proposed Action and Relationship to Hazardous Waste Sites

Another alternative proposed to address the flooding issues faced by the properties along the banks of the Pearl River in Jackson and Flowood is the construction of a series of levees. No new levee construction would be planned at the Lefleurs Landing Site or the Gallatin Street Dump Site, and the existing levees located at the Lefleurs Landing Site and the Gulf States Creosoting Site would be used. A new levee section would be constructed at the Eubanks Creek location. Under the levee system, the current property owners of properties located within the existing levees would continue to own their properties. Properties on which the new levees would be placed would either be acquired or an easement obtained. The levee alternative would therefore have no direct impact on the HTRW sites since the levee construction would not physically impact the sites.

3.2.2 Risks Posed

The proposed levee system does not address the potential impacts from leachate migrating into the Pearl River. Since no levees are proposed for the Lefleurs Landing Site and the Gallatin Street Dump Site, the environmental risks identified for the no-action alternative for these sites would continue to exist. The use of the existing levee system at the Gulf States Creosoting Site would not address the creosote residuals existing in the Creosote Slough. Therefore, this alternative would not address the potential release of pollutants to the Pearl River and adverse impacts on water quality from the HTRW sites.

3.2.3 Remedial Alternatives

No remedial alternatives are proposed within the scope of this alternative action and the issues posed by the current HTRW sites would not be addressed. The construction of a levee system would not address or eliminate the current environmental and potential human health risks posed by the existing creosote impact from the Creosote Slough and the former Gulf States Creosoting facility or the leachate issues with the existing Lefleurs Landing and Gallatin Street Dump Sites.

3.2.4 Short-Term Impacts

The levee alternative would have no short-term impacts on the HTRW sites. The environmental risks identified for these sites would continue to exist. Since no new levees are proposed for the Lefleurs Landing Site and the Gallatin Street Dump Site, the environmental short-term risks identified for these sites would continue to exist. The construction of a levee system would not address or eliminate the current environmental and potential human health risks posed by the existing creosote impact from the Creosote Slough and the former Gulf States Creosoting Company Site or the leachate issues associated with the existing Lefleurs Landing and Gallatin Street Dump Sites.

3.2.5 Long-Term Impacts

Long-term impacts associated with the construction of a levee system in the Jackson and Flowood areas would have no impacts on the hazardous waste sites. The construction of a levee system would not address or eliminate the current environmental and potential human health risks posed by the existing creosote impact from the Creosote Slough and the former Gulf States Creosoting Company Site or the leachate issues associated with the existing Lefleurs Landing and Gallatin Street Dump Sites.

3.2.6 Community Acceptance

It is expected that the construction of a levee system would elicit a negative response from the public with regard to the HTRW sites since no action would be taken to mitigate the environmental and human health concerns. This alternative would not result in addressing the environmental conditions and human health threats posed by the HTRW sites.

3.2.7 Pros

Alternative B would be less expensive with regard to the HTRW sites since no mitigation would be performed. This alternative would likely result in little money spent in relation to the remediation of the HTRW sites.

3.2.8 Cons

Under Alternative B the construction of a levee system would not address or eliminate the current environmental and potential human health risks posed by the existing creosote impact from the Creosote Slough and the former Gulf States Creosoting Company Site or the leachate issues associated with the existing Lefleurs Landing and Gallatin Street Dump Sites.

3.3 ALTERNATIVE C (CHANNEL IMPROVEMENT/WEIR/LEVEE PLAN)

3.3.1 Description of Proposed Action and Relationship to Hazardous Waste Sites

The proposed Channel Improvement/Weir/Levee alternative action would entail the construction of a weir or dam along the Pearl River at river mile 284 for the purposes of flood control and flood prevention measures for the Jackson metropolitan areas. The proposed project would impact the HTRW sites. The channel improvement would require moving portions of the Gallatin Street Dump Site, remediation of the Lefleurs Landing Site, and removal or capping of the Creosote Slough. Approximately two-thirds of the Gallatin Street Dump Site would be moved by excavation and placed on top of the remainder of the site to create a smaller footprint with a higher elevation. Actions associated with this alternative will have various environmental benefits on the affected areas and local communities. Remedial alternatives for the HTRW sites included in the proposed "Channel Improvement/Weir/Levee" project may include, for example, the construction of engineering controls, such as slurry walls and impermeable caps, to prevent the offsite migration of associated hazardous substances, in-situ bioremediation techniques, slope and bank stabilization methods, excavation and removal of impacted sediments, among others. The cost of the remedial actions potentially required for the HTRW sites are considered in the total cost of the "Channel Improvement/Weir/Levee" option.

LeFleurs Landing Site (Jefferson Street Landfill)

Under the "Channel Improvement/Weir/Levee" alternative, environmental impacts associated with the Lefleurs Landing Site will be evaluated and mitigated during the implementation of the project. The potential environmental impacts that will be addressed include, but are not limited to, the following: the release or exacerbation of current releases of solid and hazardous substances and leachate to groundwater and/or surface water, and temporary alteration of groundwater flow patterns, possibly resulting in the migration of leachate and hazardous substances towards developed areas, as well as toward the proposed channel improvement. This alternative will have a beneficial impact on the environment and human health since these potential environmental impacts will be addressed in the design and implementation of the project.

Gallatin Street Dump Site

Under the "Channel Improvement/Weir/Levee" alternative, a majority of the eastern 2/3rds of the landfill will be excavated and placed on top of the remaining site. Potential environmental impacts will be evaluated and mitigated during the implementation of this alternative. Environmental impacts associated with the Gallatin Street Dump could include, but are not limited to, the following: the temporary introduction of large amounts of sediment to the Pearl River, the release or exacerbation of current releases of leachate and/or solid and hazardous substances to groundwater and/or surface water, and temporary alteration of groundwater flow patterns, possibly resulting in the migration of hazardous substances and leachate towards developed areas as well as the proposed project. This alternative will have a beneficial impact on the environment and human health since these potential environmental impacts will be addressed in the design and implementation of the project.

Gulf States Creosoting Company Site

The boundaries of the Gulf States Creosoting Company Site extend from the wetlands found adjacent to the cut-bank on the south/east (Rankin County) side of the Pearl River at river mile 292 to the wetlands and oxbow lakes located on the east side of the Pearl River at river mile 290 in Flowood, Mississippi. The wetland areas and oxbow sloughs (Creosote Slough) that the proposed Channel Improvement/Weir/Levee action

would dredge and inundate have been found to have visible amounts of creosote residual impact in sediments. An existing levee separates the majority of the Gulf States Creosoting Company Site from the Pearl River and the proposed project area. Under the Channel Improvement/Weir/Levee alternative, portions of the existing levee on the Gulf States Creosoting Company Site will be removed and relocated slightly to the west of the current levee location.

Under the Channel Improvement/Weir/Levee Weir alternative, environmental impacts associated with the Gulf States Creosoting Site and Creosote Slough would be addressed. Environmental impacts that will be addressed include, but are not limited to, the following: the temporary introduction of large amounts of creosote impacted sediments to the Pearl River, and temporary alterations in groundwater flow, possibly leading to the migration of hazardous substances to unaffected areas. These potential environmental impacts will be evaluated and mitigated during the implementation of this alternative. This alternative will therefore have a beneficial impact on the environment and human health since these potential environmental impacts will be addressed in the design and implementation of the project.

3.3.2 Risks Posed

Risks associated with the construction of the channel improvement/weir/levee system for flood control purposes along the Pearl River includes directly impacting the HTRW sites. The Creosote Slough would be located within the project area proposed for excavation and dredging for the channel improvement; therefore, the impacted sediments within the Creosote Slough will be evaluated and mitigated. Remedial mitigation alternatives could include, but are not limited to, capping in order to and permanently cover and not disturb the sediments, or excavating and removing the impacted sediments prior to dredging the proposed project. The Lefleurs Landing Site would be located along the edge of the proposed channel improvement and would require additional capping and bank stabilization. Further investigations would be necessary to determine potential leaching of landfill waste chemicals to the groundwater and movement of groundwater into the channel improvement. Groundwater controls and a slurry wall may be appropriate remedial actions in this event. The Lefleurs Landing Site would then be potentially useful for park areas. The channel improvements would also bisect the Gallatin Street Dump Site; therefore, it would require excavation and removal of approximately half of the landfill site to create the proposed project. This material may be incorporated into the current remaining landfill area to further elevate the area, cap the area, and provide bank stabilization. An elevated mound could be created for public access and to provide a public park, boat launch, recreational facilities, and scenic views. Further investigations would be necessary here also to determine potential leaching of landfill wastes to the groundwater and movement of groundwater into the proposed project. Groundwater controls and a slurry wall may be appropriate remedial actions.

3.3.3 Remedial Alternatives

LeFleurs Landing (Jefferson Street) Site

In the event that the "Channel Improvement/Weir/Levee" project alternative is initiated, certain measures will be taken to prevent environmental impact from the LeFleurs Landing Site. Such measures may include, but are not limited to,

- Construction of a slurry wall.
- Installation of a clay cap.
- Installation of bank stabilization controls.
- Installation of a series of groundwater extraction wells.

Gallatin Street Dump Site

In the event that the “Channel Improvement/Weir/Levee” alternative is initiated, certain measures will be taken to prevent environmental impact from the Gallatin Street Dump Site. Such measures may include, but are not limited to, the following:

- Excavation and removal of up to fifty per cent of the landfill materials.
- The installation of bank stabilization controls.
- The construction of a slurry wall.
- The installation of a series of groundwater extraction wells.

Gulf States Creosoting Company Site

In the event that the Channel Improvement/Weir/Levee alternative is initiated, certain measures will be taken to prevent environmental impact from the Gulf States Creosoting Company Site and the Creosote Slough. Such measures may include, but are not limited to, the following:

- Excavation and offsite disposal of impacted sediments.
- Installation of an impermeable cap over impacted areas and no dredging.
- Installation of a series of groundwater extraction wells or slurry wall.

3.3.4 Short-Term Impacts

The proposed “Channel Improvement/Weir/Levee” alternative could potentially have a series of immediate short-term impacts on the proposed project area. Short-term impacts of this alternative will include mitigation activities for the Gallatin Street Dump Site, the Lefleurs Landing Site, and the Creosote Slough eliminating or controlling environmental and human health concerns. Construction activities have the potential to increase noise levels, erosion and runoff of silt, generation of air borne dust, and the release of hazardous substances from these HTRW sites. These short-term impacts from construction will be mitigated through project management and controls. The mitigation measures for each of the hazardous waste sites will result in beneficial environmental and human health impacts by eliminating or controlling pathways of exposure to HTRWs.

Other immediate effects that may result from construction of the proposed project could include a temporary loss of the secondary water supply intake for the City of Jackson. Jackson utilizes an existing water treatment plant which is located on the Pearl River at a location scheduled for dredging and development of the “Channel Improvement/Weir/Levee” alternative. This water treatment plant is used as a secondary source and backup water supply source for the City. The dredging of sediments and subsurface soils in the Pearl River could potentially increase the turbidity of the surface waters to levels unacceptable for human consumption; therefore, the City of Jackson would need to evaluate temporary water supply alternatives during the duration of dredging and construction activities.

3.3.5 Long-Term Impacts

The potential long-term impacts associated with the proposed “Channel Improvement/Weir/Levee” project in regard to the HTRW sites are beneficial for environmental and potential human health impacts. Over the long term environmental concerns of leaching from the Gallatin Street Dump and the Lefleurs Landing Site

will have been alleviated and the sites will have been stabilized with new covers. The sites will have been remediated and transformed into new public uses. Potential land use activities will be expanded and the sites beneficially reused. The Creosote Slough will have been mitigated and no longer present a continuing source of release of creosote chemicals to the environment and to the City of Jackson's drinking water. The Slough area will become a part of the bottom of the channel improvements following mitigation. The former Gulf States Creosoting Company Site along with other areas will have been further investigated and evaluated during project implementation for groundwater or other runoff impacts and remediated if they pose an environmental or human health threat to the proposed project. The water quality of the proposed project as well as the channel bottom will have been improved and protected in relation to the HTRW sites because of their mitigation.

3.3.6 Community Acceptance

It is expected that the construction of a channel improvement pool of the magnitude proposed in the "Channel Improvement/Weir/Levee" alternative for the Jackson metropolitan area would be favorably accepted by the community. In addition to providing flood control measures for the cities of Jackson and Flowood, the proposed project could serve as a scenic recreational area for local residents and tourists to visit and could create new opportunities for businesses to develop and expand. The HTRW sites will be mitigated under this alternative.

3.3.7 Pros

In addition to flood control measures, the project would benefit the environment and protection of human health. Under this alternative the remediation and implementation of engineering controls on several sites in the project area will be performed. The Channel Improvement/Weir/Levee system would reduce erosional and leachate problems associated with the LeFleurs Landing Site and the Gallatin Street Dump Site. At present, the Pearl River is eroding the banks of these landfills and creating potential exposure pathways to subsurface debris and leachate. With the decreased velocity of the Pearl River, erosional effects could be minimized. Leachate generation from the landfills will be addressed and surface pathways of exposure to hazardous substances will be eliminated by capping. The impacted sediments in the Creosote Slough will be addressed by removal or mitigation. Under this alternative, the hazardous waste sites will be addressed, remediated, and available for redevelopment. Current sources of pollution would be removed or mitigated and water quality would be improved and protected.

3.3.8 Cons

There are potential negative impacts associated with the implementation of the proposed "Channel Improvement/Weir/Levee" alternative with regard to the hazardous waste sites. The most obvious of cons is associated with the expense of remediating the hazardous waste sites. The project would require environmental investigation and remediation, engineering studies, and construction of remedial actions at the hazardous waste sites. In the short-term, implementation of the Channel Improvement/Weir/Levee action has the potential to cause the release of, or temporarily exacerbate current rates of the release of hazardous substances from the HTRW sites in the proposed project area (e.g. Gulf States Creosoting Company Site, Gallatin Street Dump Site, etc.). Remediation and mitigation actions at the HTRW sites will be performed in a manner to protect against the potential release of HTRWs during mitigation as part of the project.

3.4 NO ACTION ALTERNATIVE

The “No Action” alternative of not implementing a project at all consists of pursuing no construction activities or remedial efforts with regard to the hazardous waste sites. The following sections describe the risks, remedial alternatives, environmental impacts, and other variables associated with this alternative with respect to the HTRW Sites.

3.4.1 Description of Proposed Action and Relationship to Hazardous Waste Sites

The “No Action” alternative would allow for conditions to remain unaffected and would not pursue any further construction activities or remedial efforts in regard to the HTRW sites. In essence, this would allow for the potential continued release of hazardous substances and leachate currently being discharged to groundwater and the Pearl River from the HTRW sites.

3.4.2 Risks Posed

Risks associated with the “No Action” alternative would consist of the risks associated with current conditions previously described. Issues previously identified in relation to environmental impacts from the local landfills at Gallatin Street Dump and Lefleurs Landing Site, and creosote residuals from the Creosote Slough at the Gulf States Creosoting Company Site would not be addressed.

3.4.3 Remedial Alternatives

No remedial alternatives would be associated with this action.

3.4.4 Short-Term Impacts

The short-term impacts associated with this action would include those that are currently present. Namely, these impacts would include the exposure to leachate, creosote and other hazardous substances via the release into groundwater or surface water or the exposure to impacted sediments. The No Action Alternative would continue the threat of flooding which will continue to have potential adverse effects upon the HTRW sites.

3.4.5 Long-Term Impacts

The long-term impacts associated with this action would include those that currently pose risks. These impacts include potential human health effects, biota impacts, impacts to important habitats such as wetlands, recreational impacts, and other various environmental impacts from continued exposure to hazardous substances that could be released to soil and groundwater from the hazardous waste sites. No project would be constructed and the threat of flooding would continue to have potential adverse effects upon the HTRW sites.

3.4.6 Community Acceptance

Community acceptance of the current situation and potential adverse flooding is likely to be unfavorable.

3.4.7 Pros

While the “No Action” alternative would not have immediate impacts to the community or the HTRW sites, it does not address the current environmental and socioeconomic concerns. A lack of activity would not exacerbate these issues and would be of little or no cost to the taxpayers in the short term.

3.4.8 Cons

The “No Action” alternative has potential short-term impacts and will definitely have long-term impacts when a significant flooding event occurs again. The “No Action” alternative would allow current environmental issues to continue to deteriorate with regard to HTRW sites. If no action is taken, current potential threats to human health and the environment would not be eliminated.

4.0 SUMMARY AND CONCLUSIONS

HTRW sites have been identified within the boundary of the proposed project, as well as adjacent to the boundary. The HTRW sites include the Gallatin Street Dump Site, Lefleurs Landing Site (Jefferson Street Landfill), and the Gulf States Creosoting Company Site and associated Creosote Slough. Proposed project alternatives have been evaluated and determined to have impacts to the HTRW sites, and, in a similar manner, the HTRW sites will have impacts on the proposed project alternatives. Other hazardous waste sites that were outside of but adjacent to the project boundary were also evaluated and no significant adverse environmental impacts on the proposed project were found.

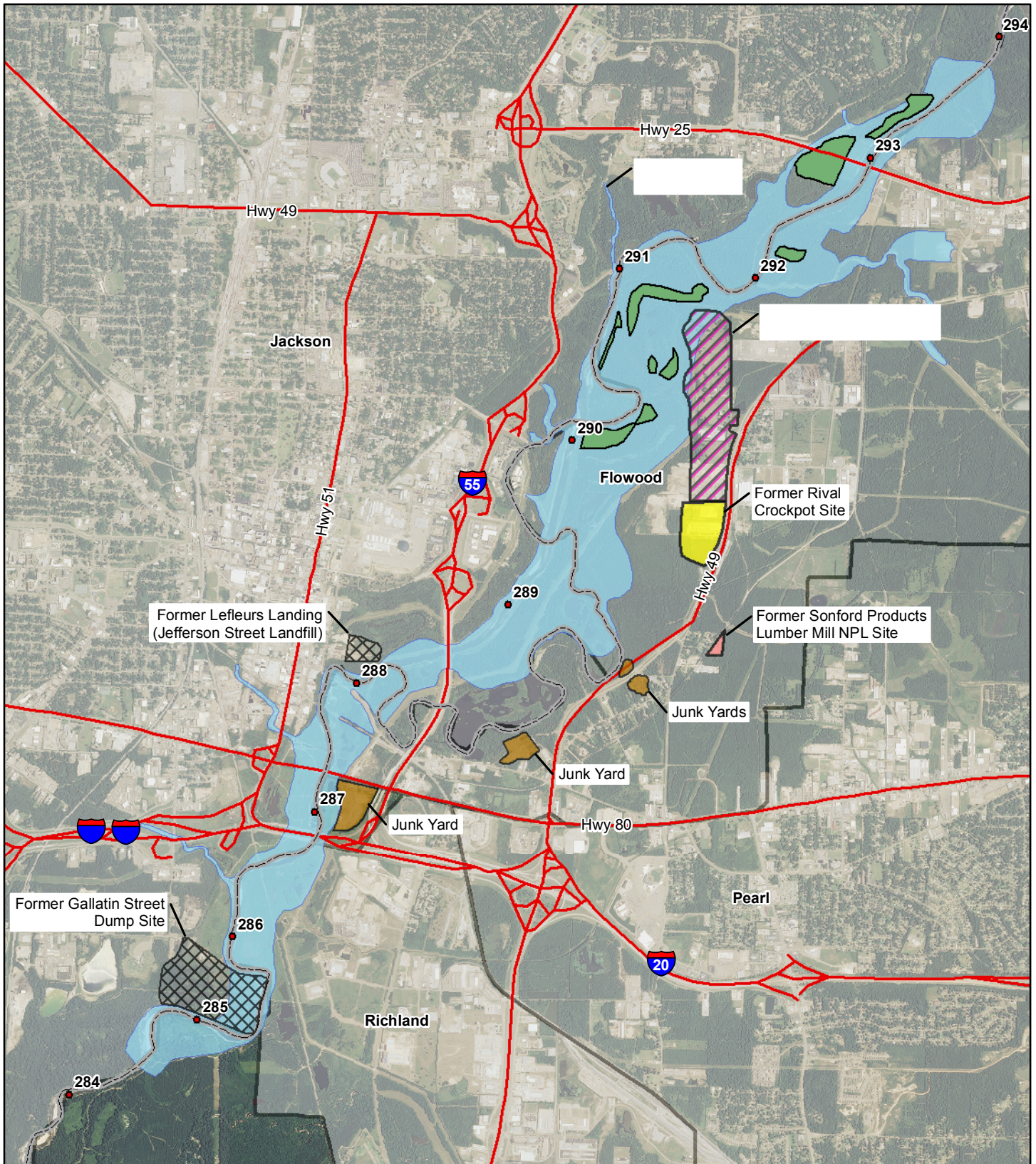
The Gallatin Street Dump Site and the Lefleurs Landing Site are former landfills that were not designed to contain wastes. Rainwater percolating down through the waste matrix into the groundwater, and then groundwater moving through the wastes are generating leachate. The leachate is currently migrating into the Pearl River. The leachate potentially contains a variety of pollutants. Pearl River currents and flood waters are continually eroding the banks of these two landfills, releasing rubbish, debris, trash, and chemicals into the river. The Creosote Slough contains sediments with creosote residuals that are released to the environment and the Pearl River during periods of inundation such as flood or high water conditions.

The “No Action” alternative is undesirable because it will leave the HTRW sites as they are today; thus continuing their threat of release of HTRWs to the environment, potential adverse impacts to human health and the environment, and posing environmental cleanup liabilities for the current owners. Under the “Buy Out” alternative, the hazardous waste sites will remain in the same condition, will continue to pose a threat of release of HTRW, and will not be redeveloped. Under the “Levee” alternative the hazardous waste sites will remain as they are, continuing to pose environmental liabilities for the current owners. The “Channel Improvement/Weir/Levee” alternative will include remediation and mitigation measures to address the hazardous waste sites to remove or eliminate the environmental threats posed by the sites, as well as further investigations of other potential sites such as the former Gulf States Creosoting Company Site to assure no adverse impacts.

Remedial alternatives for the HTRW sites included in the proposed “Channel Improvement/Weir/Levee” project may include, but are not limited to, the construction of engineering controls, such as slurry walls and impermeable caps to prevent the offsite migration of hazardous substances, in-situ bioremediation techniques, groundwater controls, slope and bank stabilization methods, excavation and removal of impacted sediments, and sediment capping, among others.

Upon evaluation of readily apparent environmental, economic and social benefits and impacts associated with the HTRW sites in relation to each of the alternative actions for the Pearl River flood reduction project, Alternative C – termed the “Channel Improvement/Weir/Levee” project – is believed to be the choice most beneficial to the community. This action would address and/or eliminate current environmental impacts from the HTRW sites. Although there will be costs for mitigation of the HTRW sites, the economic benefits of the selected alternative will far outweigh the costs over the long term.

FIGURES



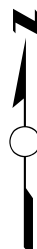
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LEGEND

- Approximate County Boundary
- Approximate Proposed Lake Location
- Approximate Proposed Island Locations
- Approximate Major Interstates/Highways
- Approximate River Mile Location and Identification

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MENDROP ENGINEERING RESOURCES HINDS/RANKIN COUNTY, MISSISSIPPI



ENGINEERING AND SCIENCE

SCALE: 1"=4,000'	DRAWN BY: PML	DATE: 09-09-2014
	CHKD BY: CHD	DATE: 09-09-2014

PROJECT NO. FILE
14120 14120 090914 FIG01 R01 D AC&HTRWS

ALTERNATIVE C AND HTRW SITES

FIGURE
1

ATTACHMENT A

Gallatin Street Dump Site

Gallatin Street Dump Slope Stability and Landfill Analysis Project, Gresham, Smith & Partners/Ware, Lind, Furlow (Aquaterra), January 1998.

Gulf States Creosoting Company

Final Preliminary Assessment/Site Inspection Report: Gulf States Creosoting Company - Flowood, Rankin County, Mississippi, Revision 1, Weston Solutions, Inc., December 31, 2003.

Record of Decision: Summary of Remedial Alternative Selection – Sonford Products Superfund Site Operable Unit 2 – Flowood, Rankin County, Mississippi, U.S. EPA, Region 4, September 2009.

Lefleurs Landing Site (Jefferson Street Landfill)

Phase II Environmental Site Assessment Report at Lefleurs Bluff Landing Site – Phase II Site Assessment for Areas 2 and 3B, 658 South Jefferson Street – Jackson, Mississippi, PPM Consultants, Inc., April 20, 2005.

Remedial Action Report: Mississippi Department of Environmental Quality – Lefleurs Bluff Festival Grounds Jefferson Street – Jackson, Mississippi, PPM Consultants, Inc. August 2004.

Rival Manufacturing Companies

Phase I Environmental Site Assessment: W.G. Avery and Body Company – 141 Acre Parcel – Mississippi Highway 468, BCM Engineers, Planners, Scientists and Laboratory Services, July 1993 – Revised August 1993.

Sonford Products Lumber Mill

Record of Decision: Summary of Remedial Alternative Selection – Sonford Products Superfund Site Operable Unit 2 – Flowood, Rankin County, Mississippi, U.S. EPA, Region 4, September 2009.

ATTACHMENT B

Gulf States Creosoting Company Site



Picture 1 – Creosote Slough



Picture 2 – Creosote Slough

Gulf States Creosoting Company Site



Picture 3 – Former Wood Treatment Area looking Southeast



Picture 4 – Former Wood Treatment Area looking East

Gulf States Creosote Company Site



Picture 5 – Former Wood Treatment Area looking Northeast



Picture 6 – Levee looking North

Lefleurs Landing Site (Jefferson Street Landfill)



Picture 7 – River Bank look West



Picture 8 – Exposed Rubbish in Landfill Edge

Lefleurs Landing Site (Jefferson Street Landfill)



Picture 9 – Rubbish Exposed on South Bank of Landfill



Picture 10 – Landfill Area looking West

Gallatin Street Dump Site



Picture 11 – Landfill Area looking East



Picture 12 – Rip Rap Area along Bank of Pearl River

Gallatin Street Dump Site



Picture 13 –Evidence of Rubbish in the Pearl River Bank



Picture 14 – Erosion and Seepage Area along Pearl River

Gallatin Street Dump Site



Picture 15 –Evidence of Leachate Seepage into Pearl River



Picture 16 – Evidence of Gas Bubbles in Sediment at Bank of Pearl River

Eubanks Creek Site



Picture 17 – Eubanks Creek looking North



Picture 18 – Eubanks Creek looking South

**REASSESSMENT OF POTENTIAL HAZARDOUS, TOXIC, AND
RADIOLOGICAL WASTE (HTRW) SITES**

Prepared by:



J5 GBL, LLC

605 2nd Avenue North

Columbus, Mississippi 39701

August 2021

Prepared as an Addendum to:

**ENVIRONMENTAL EVALUATION OF HAZARDOUS, TOXIC, AND
RADIOLOGICAL WASTE (HTRW) SITES**

SEPTEMBER 2014

Originally prepared by Allen Engineering and Science

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Appendix B – Gallatin Street Dump Site Photographs

Appendix C – Gulf States Creosoting Site Photographs

1.0 INTRODUCTION

J5 GBL, LLC (J5) was retained by the Rankin-Hinds Pearl River Flood and Drainage Control District (RHPRFDCD) to reassess potential hazardous, toxic, or radioactive waste (HTRW) sites identified in the *Environmental Evaluation of Hazardous, Toxic, and Radiological Waste (HTRW) Sites* report prepared by Allen Engineering and Science (AllenES) in September 2014. This reassessment, which evaluates the major HTRW sites, including Lefleurs Landing Site (Jefferson Street Landfill), Gallatin Street Dump, and the former Gulf States Creosoting Company Site has been prepared as an addendum to the September 2014 report.

The September 2014 report prepared by AllenES was incorporated in the Final Integrated Feasibility Study and Environmental Impact Statement (EIS) prepared for the Jackson Flood Risk Management Project. The Final Integrated Feasibility Study and EIS addressed the current flooding issues along the banks of the Pearl River and Hinds Counties affecting residential, commercial, and industrial properties. The 2014 AllenES report evaluated the environmental impacts associated with hazardous waste chemicals released from hazardous waste sites within the project area.

The project conducted by AllenES identified sites associated with HTRW environmental issues that may potentially impact the implementation goals of the project. The goal of the study was to identify HTRW issues that may affect selection of project alternatives or project implementation. The study identified and presented the environmental and potential human health risks associated with the HTRW sites. AllenES performed the evaluation by collecting and reviewing historical documents, evaluating current site conditions, and considering the impact of each construction alternative on the potential HTRW sites. Since completion of the original report, construction Alternative C as described in the report has been selected as the preferred alternative to move forward with the project. Alternative C consists of the construction of a channel improvement/weir/levee system. The proposed Channel Improvement/Weir/Levee alternative action would require the construction of a weir or dam along the Pearl River at river mile marker 284 for the purposes of flood management through use of flood control and flood prevention measures with the Jackson, Mississippi metropolitan areas.

In reevaluating the potential HTRW sites identified in the 2014 report, careful consideration has been given to what constitutes an HTRW site as defined by the United States Army Corps of Engineers (USACE): The definition of HTRW according to ER 1165-2-132, page 1, paragraph 4(a) is as follows:

“Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as a "hazardous substance" under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA). (See 42 U.S.C. 9601(14).) Hazardous substances regulated under CERCLA include "hazardous wastes" under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; "hazardous substances" identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, "toxic pollutants" designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, "hazardous air pollutants" designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and "imminently hazardous chemical substances or mixtures" on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).) (2) Dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the EPA or a state for a response action (either a removal action or a remedial action) under CERCLA, or 2 ER 1165-2-132 26 June 92 if they are a part of a National Priority List (NPL) site under CERCLA. Dredged material and sediments beneath the navigable waters proposed for dredging shall be tested and evaluated for their suitability for disposal in accordance with the appropriate guidelines and criteria adopted pursuant to Section 404 of the Clean Water Act and/or Section 103 of the Marine Protection Research and Sanctuaries Act (MPRSA) and supplemented by the Corps of Engineers Management Strategy for Disposal of Dredged Material: Containment Testing and Controls (or its appropriate updated version) as cited in Title 33 Code of Federal Regulations, Section 336.1.” (USACE, 1992)

Non-hazardous solid wastes that may be encountered during completion of the Jackson Flood Risk Management project will be managed in accordance with applicable rules within the Mississippi Administrative Code, Title 11, Part 4, Chapter 1.

2.0 REASSESSMENT OF PREVIOUSLY IDENTIFIED SITES OF INTEREST

Eight sites were identified as potential HTRW sites in the 2014 AllenES report. Of those eight sites, three warranted additional evaluation within the AllenES report due to proximity to proposed project-related construction areas along the Pearl River and the potential for construction activities in those areas to disturb or otherwise impact potential HTRW at those sites. Those three sites (the Lefleurs Landing Site [Jefferson Street Landfill], the Gallatin Street Dump Site, and the Gulf States Creosoting Company Site) are shown on the Site Location Map, included as Figure 1. The overall project plan for the selected construction alternative is provided in Figure 2. J5 visited each of the three sites on May 6, 2021, and photographs from the site visits are provided in Appendices A, B, and C.

2.1 Lefleurs Landing Site (Jefferson Street Landfill)

The Lefleurs Landing Site/Jefferson Street Landfill (Lefluers Landing) is located east of South Jefferson Street in Jackson, Mississippi, near the Morris Street intersection, west/north of the Pearl River. A Site Plan for the Lefleurs Landing Site is provided as Figure 3. The Lefleurs Landing site has been utilized by the City of Jackson for a variety of purposes since approximately 1900, including the following:

- Use as a landfill from approximately 1900 to 1970;
- City vehicle refueling via underground storage tanks (USTs) installed on the property;
- City equipment maintenance/repair/painting in various locations on the property;
- Use of a portion of the property as an asphalt plant; and
- Use of a portion of the property for operation of a refuse burner.

As observed by J5 during the May 6, 2021 site visit, the site is still in active use by the City of Jackson as an equipment storage area and as a barn/pasture facility for the City of Jackson Police Department's horses. While historical operations at the site may have impacted soil and groundwater, the selected construction option for the Jackson Flood Risk Management project does not include any construction activities that impact the Lefluers Landing site beyond fill placement on the east end of the property along with stabilization and protection of the south slope of the property (north bank of the Pearl River). Stabilization and protection of the south slope of the property will be necessary to limit erosion of the riverbank due to natural alluvial processes and are therefore unrelated to potential HTRW at the Lefleurs Landing site. A secondary effect of limiting erosion at the Lefleurs Landing site is to reduce the potential for erosion-related disturbances of potential HTRW at the site. In reevaluating this site with

respect to the selected construction alternative, the Lefleurs Landing Site should not be considered an HTRW site for the Jackson Flood Risk Management project since no intrusive construction activities will take place on the property and the property will not be located within the footprint of the Jackson Flood Risk Management waterway.

2.2 Gallatin Street Dump Site

The approximately 117-acre former Gallatin Street Dump site is located on the banks of the Pearl River, approximately 1,000 feet east of the intersection of Gallatin Street and East McDowell Road in Jackson, Mississippi. The former Gallatin Street Dump site was operated as a municipal landfill by the City of Jackson from approximately 1963 to 1980, at which time use of the site as a landfill was terminated. Approximately 62 acres of the 117-acre site were used for waste disposal. In its current state, erosion of the former landfill area is occurring along the northern and eastern slopes of the property, which are located on the south/west bank of the Pearl River. The landfill was constructed prior to the implementation of solid waste management regulations and therefore was reportedly constructed without an impermeable liner or a leachate capture system. A portion of the site is currently used for City of Jackson Fire Department training, as confirmed during J5's May 6, 2021 site visit. The remainder of the site appears to be unused at this time. A Site Plan for the Gallatin Street Dump Site is provided as Figure 4.

The current channel configuration forms a "cut bank" along the north property boundary where the channel transitions from southward flow to an east protruding bend around the Gallatin Street Dump site before transitioning gradually back to south/southwest flow. Erosion along the "cut bank" has exposed municipal waste from the former dump site and this exposed waste is in direct contact with the Pearl River, particularly during elevated river stage conditions.

The protrusion formed by the presence of the Gallatin Street Dump site creates a constricted area within the floodway for the Pearl River, with the east side of the Gallatin Street Dump site forming the west side of the constriction and an existing railroad/levee system just 800 feet away forming the east side of the constriction. With respect to the Gallatin Street Dump site, the primary goal of the selected construction alternative will be to lessen the constriction formed by the Gallatin Street property. In order to accomplish the primary goal of the selected construction alternative, the eastern half of the Gallatin Street property will be excavated to the appropriate design depth. The most economical

alternative for disposition of the excavated material will be placement of this material on the remaining western portion of the property. The eastern slope of the property will be properly stabilized and armored to prevent erosion once excavation activities are completed.

While accomplishing the primary goals of the construction efforts at the Gallatin Street Dump site, some consideration of the former use of the property as a municipal waste landfill will be required: 1) In stabilization of the post-construction eastern slope of the property, in completing excavation to the design depth, and in placement of the excavated material. For stabilization, a relatively impermeable layer of soil will be placed along the eastern slope of the property if any residual waste is observed in the exposed slope. The slope will then be armored or otherwise protected to prevent erosion of the slope and potential exposure of any remaining waste from the former landfill. For placement of the excavated material (at least some portion of which is expected to contain municipal waste), a lined disposal cell will be constructed on the west side of the Gallatin Street property. Once all excavated waste-containing material has been relocated to the disposal cell, the cell will be capped with impermeable cover material.

By implementing the selected construction alternative, the condition of the Gallatin Street property will be improved considerably by eliminating the potential for exposure of municipal waste by alluvial erosion and constructing and properly closing a stabilized disposal cell for the municipal waste historically deposited at the Gallatin Street site. Considering that the property is classified as a closed non-hazardous waste landfill by the Mississippi Department of Environmental Quality (MDEQ) and that the facility reportedly accepted municipal waste for disposal, the relocation of municipal waste required for implementation of the selected construction alternative does not meet the definition of HTRW as defined by the USACE and therefore this site, while requiring limited additional effort for relocation of municipal waste, should not be considered an HTRW site with respect to the Jackson Flood Risk Management project.

2.3 Gulf States Creosoting Company Site

The former Gulf States Creosoting Company Site (Gulf States) is a 141-acre property located on Flowood Drive in Flowood, Mississippi. The site is located east of the Pearl River and the western portion of the site lies within the projected footprint of the Jackson Flood Risk Management project. The existing Pearl

River levee system runs north-south along the western side of the property, with a small sliver of the property located west of the levee system. A Site Plan for the Gulf States Creosoting Company Site is provided as Figure 5.

The Gulf States site was operated as a wood-treating facility from approximately the 1920s to the 1950s. Multiple subsurface investigations have identified contaminant compounds typically associated with wood-treating operations in surface (0-1 foot below grade) and subsurface soil (up to 8 feet below grade) at the site. Creosote dense non-aqueous phase liquid (DNAPL) has been identified both in the subsurface on site and historically identified seeping into a Pearl River slough located along the west side of the property. J5 completed a brief reconnaissance visit to the slough during the May 6, 2021 site visit but did not observe any creosote seepage during the site visit. Anecdotal evidence indicates that creosote has not been observed seeping into the slough since the early 2010s.

The site has been assessed by EPA and scored for inclusion on the National Priorities List (NPL), however, the site did not score high enough to be placed on the NPL list. The low score was based on both natural and installed barriers (fencing) that limited access to the site, the absence of residential properties in the vicinity of the site, the lack of detected contaminant concentrations and exposure targets for surface water, and the absence of detected contaminants in groundwater.

The general construction details for the project indicate that the western portion of the property, west of the levee system, may be impacted by construction activities and fall within the footprint of the Jackson Flood Risk Management project. Excavated material from the west side of the levee system, both from the Gulf States property and west of the Gulf States property, will be placed on the east side of the existing levee system, however no intrusive activities will take place east of the levee system. Based on the selected construction alternative, the environmental and HTRW concerns for the Jackson Flood Risk Management project associated with the Gulf States site may pertain to the historically observed creosote seep into the Pearl River slough.

Based on the limited extent of the Gulf States site on the west side of the levee system, subsurface investigation of the Gulf States property may be necessary during the Pre-construction Engineering and Design (PED) phase of the Jackson Flood Risk Management project. The investigation will be completed as final design details are developed and may allow some or all of the potentially impacted area of the Gulf States site to be managed in such a way to reduce potential environmental and financial risk for the

project. Current design concepts provide for fill materials to be placed over a large portion of the site at depths exceeding ten to fifteen feet which will act a cap and further reduce exposure path-ways of any residual creosote.

2.4 Other Sites of Note

The 2014 report identified the Rival Manufacturing Companies NPL Site, the Sonford Products Lumber Mill NPL Site, and three automotive junkyards located on the east side of the project area as potential HTRW sites.

The Rival Manufacturing Companies NPL Site is located approximately 1,500 feet east of the project area. Soil and surface water contaminants were identified during site investigations at the site. Remediation activities were completed by EPA in 1993 and the site was removed from the NPL list in 1996. As of the most recent EPA Five Year Review (2016), the remedy at the site was considered protective of human health and the environment. Based on the distance from the project area and the results of the most recent EPA Five Year Review, the site should not be considered an HTRW site with respect to the Jackson Flood Risk Management project.

The Sonford Products Lumber Mill NPL Site is located approximately 0.5-mile east of the project area. Contaminant impacts to soil, sediment, surface water, and groundwater were identified by investigation activities at the site. Based on investigation findings, EPA placed the Sonford site on the NPL list in 2009. Interim remedial actions have taken place at the site since 2012, with development of a final remedy still in progress. A Five-Year Review was completed by EPA in 2018, with the results of the review indicating that the interim remedial actions have adequately addressed all exposure pathways that could result in unacceptable risks in those areas. Based on the distance from the project area and the results of the most recent EPA Five Year Review, the site should not be considered an HTRW site with respect to the Jackson Flood Risk Management project.

The three (3) junkyard facilities identified in the AllenES report are all located to the east of the proposed project area and will not be impacted from a structural standpoint by this project. The three (3) facilities are located as follows:

- Facility 1 – Located on the East side of the Highway 80/Pearl River bridge, east of and adjacent to the Pearl River levee system which will form the eastern boundary of the Jackson Flood Risk Management waterway in this area.
- Facility 2 – Located on Caseys Lane approximately 1,000 feet northwest of the intersection of Flowood Drive and Old Brandon Road. This location is approximately 1,200 feet south-southeast of the expected footprint of the Jackson Flood Risk Management waterway at the nearest point.
- Facility 3 – Located at the intersection of Caseys Lane and Flowood Drive, approximately 800 feet south-southeast of the expected footprint of the Jackson Flood Risk Management waterway at the nearest point.

Based on the location of the junkyard facilities relative to the project area, the junkyard facilities should not be considered HTRW sites with respect to the Jackson Flood Risk Management project.

3.0 SUMMARY AND CONCLUSIONS

A total of eight properties were identified as HTRW sites in the 2014 AllenES report. Three of those sites were considered as major HTRW sites. This HTRW Reassessment serves as an addendum to the original report dated 2014. The previously identified HTRW sites have been reassessed with respect to what constitutes classification as an HTRW site. Specifically, the focus of the reassessment is on how implementation of the selected Jackson Flood Risk Management construction option affects those properties and/or HTRW present on those properties impacts construction requirements for implementation of the selected construction option. The findings of this reassessment are summarized in the table below:

Site Name	HTRW Contaminants Possibly Present?	Site Located Within Jackson Flood Risk Management Waterway Footprint?	Site Impacted by Intrusive Construction Activities?	Site Meets Criteria to be Classified as HTRW Site
Lefleurs Landing (Jefferson Street Landfill)	Yes	No	No	No
Gallatin Street Dump	No	Yes	Yes	No
Gulf States	Yes	Yes	Yes	Yes
Rival NPL Site	Yes	No	No	No
Sonford NPL Site	Yes	No	No	No
Three (3) Junkyard Sites	Yes	No	No	No

Of the identified sites, only the Gulf States site will potentially require consideration of HTRW for implementation of the selected construction alternative. The remaining sites have been ruled out based on 1) the absence of HTRW; 2) the location of the property relative to the proposed Jackson Flood Risk Management waterway; and/or 3) lack of intrusive construction activity on the property.

4.0 REFERENCES

Allen Engineering and Science, September 2014. Environmental Evaluation of Hazardous, Toxic, and Radiological Waste (HTRW) Sites, September 2014.

Arcadis, 2002. Phase II Environmental Site Assessment – Lefleurs Landing Site, Jackson, Mississippi, November 18, 2002.

PPM Consultants Inc., 2003. Phase II Environmental Site Assessment - Lefleurs Bluff Festival Grounds, March 5, 2003.

PPM Consultants Inc., 2005. Phase II Site Assessment - Lefleurs Bluff Landing Site Areas 2 and 3B, April 20, 2005.

Rankin-Hinds Pearl River Flood and Drainage Control District, 2020. Integrated Final Feasibility Study & Environmental Impact Statement – Pearl River Basin, Mississippi Federal Flood Risk Management Project, Hinds & Rankin Counties, MS, February 7, 2020.

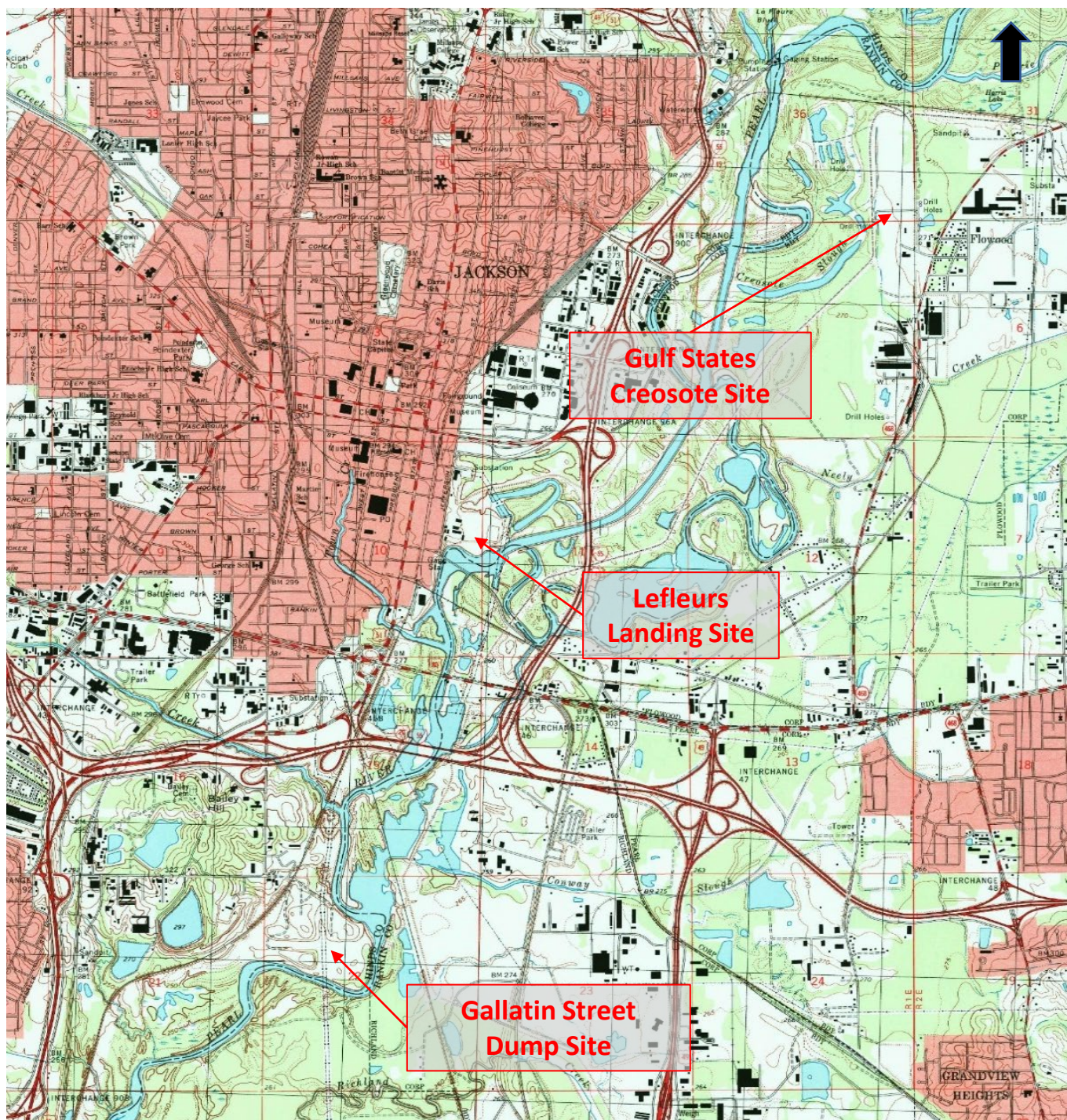
T N & Associates, Inc., 2008. Reassessment Report – Gulf States Creosoting Company, Flowood, Rankin County, Mississippi – USEPA ID No. MSN000407423. July 30, 2008.

USACE, 1992. CECW-PO Engineer Regulation No. 1165-2-132, Department of the Army U.S. Army Corps of Engineers, Washington, DC 20314-1000, ER 1165-2-132. 26 June 1992. Water Resources Policies and Authorities, HAZARDOUS, TOXIC AND RADIOACTIVE WASTE (HTRW) GUIDANCE FOR CIVIL WORKS PROJECTS, June 26, 1992.

USEPA, 2008. Gulf States Creosoting Company Site Inspection Worksheets. July 30, 2008.

FIGURES

Figure 1
Site Location Map



One Lake HTRW
Reassessment

Source: USGS Jackson, MS
Quadrangle 1998

Pearl River, Mississippi

Date: 05/06/21 Checked: GM
Drawn: JM

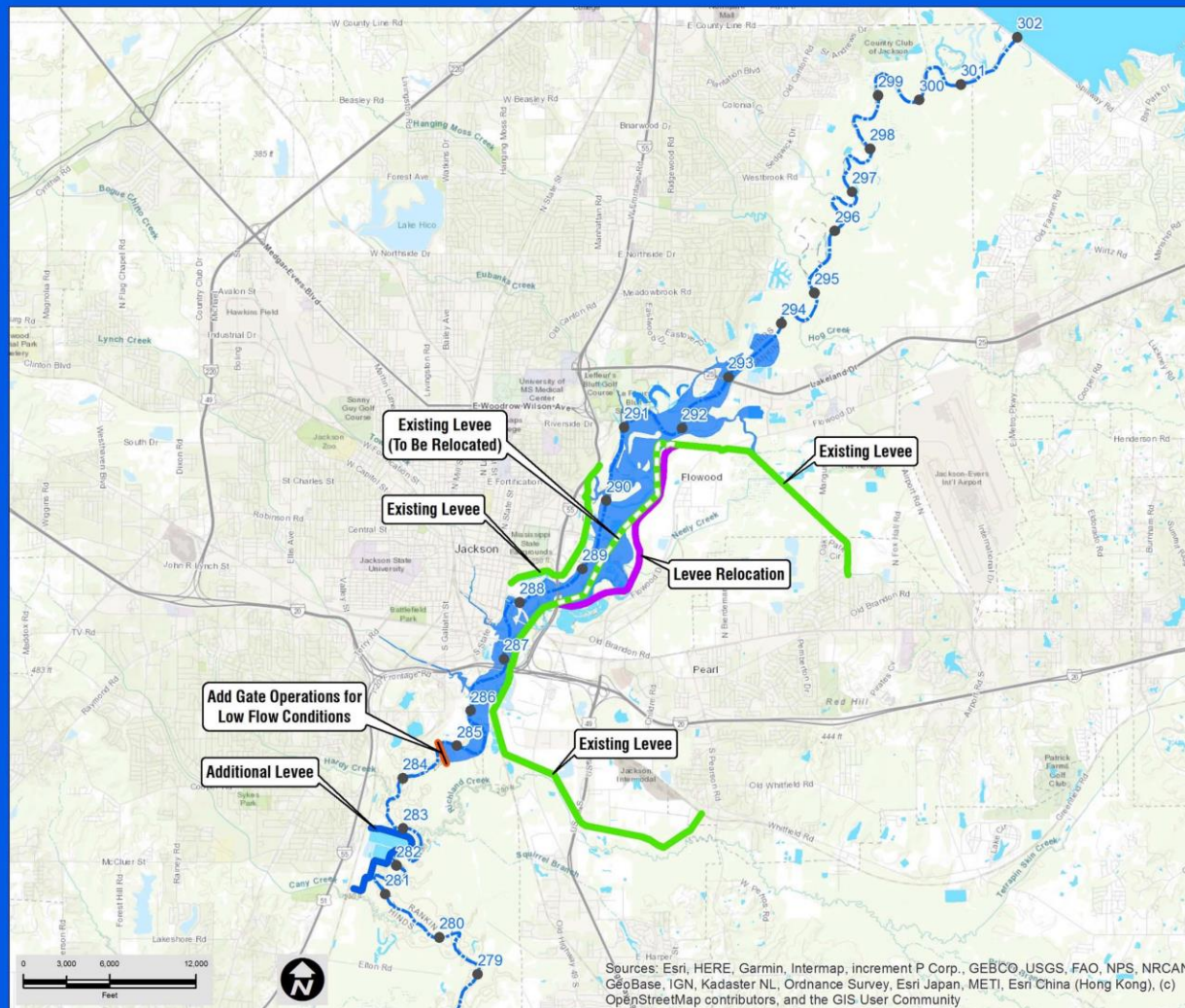


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Site Location Map

Figure 1

Figure 2
Project Design Plan



Pearl River Basin, Mississippi Federal Flood Risk Management Project Hinds and Rankin Counties, Mississippi

Integrated Feasibility Study and Environmental Impact Statement

Rankin-Hinds Pearl River Flood and Drainage Control District

**Figure 3-6
Alternative C**

Legend

- River Mile
- Additional Levee
- Existing Levee (To Be Relocated)
- Existing Levees
- Additional Levee
- Levee Relocation
- Weir Location
- Pearl River Channel
- Channel Improvements

One Lake HTRW Reassessment

Source: Integrated Final FS-EIS, 2020
Scale: As Shown on Scale Bar

2300 14th Avenue North, Columbus, Mississippi

Date: 05/10/21 Checked: GM Drawn: JM

Construction Alternative C

Figure 2



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Figure 3
Lefleurs Landing Site (Jefferson Street Landfill)



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One Lake HTRW Reassessment

2300 14th Avenue North, Columbus, Mississippi

Source: Google Earth Aerial Photograph, 2020
Scale: As Shown on Scale Bar

Date: 05/06/21 Checked: GM Drawn: JM

Lefleurs Landing Site

Figure 3

Figure 4
Gallatin Street Dump Site



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One Lake HTRW Reassessment

2300 14th Avenue North, Columbus, Mississippi

Source: Google Earth Aerial Photograph, 2020
 Scale: As Shown on Scale Bar

Date: 05/06/21 Checked: GM Drawn: JM

Gallatin Street Dump Site

Figure 4

Figure 5
Gulf States Creosoting Site



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One Lake HTRW Reassessment

Pearl River, Mississippi

Source: Google Earth, 2020
 Scale: As Shown on Scale Bar

Date: 05/06/21 Checked: GM
 Drawn: JM

Gulf States Creosote Site

Figure 5

APPENDICES

Appendix A

Lefleurs Landing (Jefferson Street Landfill) Site Photographs



One Lake HTRW Reassessment Photograph Log
Lefleurs Landing Site



Facing east/southeast, view toward the Pearl River from the east end of the Lefleurs Landing Site.



Facing west, view of pastures and barns/storage buildings on the Lefleurs Landing property.

Appendix B

Gallatin Street Dump Site Photographs



One Lake HTRW Reassessment Photograph Log
Gallatin Street Dump Site



Facing north, view along the eastern slope of the Gallatin Street Dump Site.



Facing southeast, view along the top of the closed landfill.

Appendix C

Gulf States Creosoting Site Photographs



One Lake HTRW Reassessment Photograph Log
Gulf States Creosote Site



Facing east, view of a portion of the former operations area at the Gulf States Site.



Facing north, view of a slough at the western edge of the Gulf States Site.



State of Mississippi

TATE REEVES

Governor

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHRIS WELLS, EXECUTIVE DIRECTOR

May 9, 2024

Mr. Keith W. Turner
Rankin-Hinds Pearl River Flood and Drainage Control District
P.O. Box 320069
Flowood, MS 39232-0069

Re: Pearl River (Federal) Flood Risk Management Project
*Modifications to Conceptual Approach for Assessment, Remediation, and Reuse of
Hazardous, Toxic, and Radiological Waste (HTRW) Sites* dated April 19, 2024

Dear Mr. Turner:

The Mississippi Department of Environmental Quality (MDEQ) has reviewed the above referenced submittal from PPM Consultants. Based on the proposed modifications to the conceptual approach, MDEQ has the following comments:

- It appears that the project has been modified such that the Gulf State Creosote Wood Treatment Facility and Gallatin Street Dump HTRW sites will no longer be directly disturbed (i.e., excavation, capping, consolidation, or fill) by project activities in the Pearl River Watershed. If these two HTRW sites are not being disturbed, then neither the Groundwater Assessment Remediation Division (GARD) nor Waste Division anticipate requiring additional assessment or remediation of these sites for this project. Theoretically, the widening of the Pearl River should also reduce the frequency of flooding thereby reducing potential impacts to environmental conditions that may currently exist.
- The north/northeast bank at the Gallatin Street Dump HTRW Site (Figure 1) has previously been enhanced to include additional fill, modification and reinforcement of the bank, and the placement of bend way weirs to help slow water velocity and minimize erosion at the site. The Rankin-Hinds Pearl River Flood and Drainage Control District (District) must provide additional information evaluating how the proposed channel widening project will affect river flow characteristics in this area. If the river flow changes would negatively impact the effectiveness of these existing enhancements, the District will need to develop plans and implement controls to further reinforce and stabilize the river bank to prevent exposure of the former dump and potential wash out of wastes from erosion. Since this is not specifically a remedial action, MDEQ will formally review and provide further comment once water quality and stormwater applications are received.
- MDEQ understands that the Jefferson Street Dump (LeFleur's Landing) HTRW Site would receive 3 to 15 foot of fill and be converted into a non-residential green space. MDEQ

OFFICE OF POLLUTION CONTROL

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concur that this appears to be a viable remedial alternative and reuse of the site that would minimize disturbance of subsurface soils and wastes while being protective for recreational and commercial use.

- Additional assessment of this site is necessary to establish current subsurface environmental conditions and to model potential changes in groundwater elevations due to proposed changes in the Pearl River Watershed. Please submit an assessment work plan to GARD prior to environmental assessment activities at the site.
- Once assessed, a remedial action plan will be necessary to submit to GARD for review prior to site activities. This remedial action plan will need to include the remedial design for fill and cap, soil management, implementation of institutional controls, and any monitoring or other remedial actions that may be necessary based on the additional assessment findings. In addition, engineering controls to prevent groundwater mounding (i.e., an increase in groundwater levels may cause more interaction with subsurface rubbish) and/or to reinforce the riverbanks along this site may be addressed in this plan if groundwater and river flow modeling indicate such measures are necessary.
- Regarding the MDEQ correspondence issued on September 6, 2018, which suggested that excavation of the landfill sites should be considered, MDEQ acknowledges that this response was related to previous versions of the Pearl River Watershed project and design considerations at that time. If no excavation, disturbance, or changes in water inundation at these HTRW sites are anticipated, MDEQ concurs that an excavation and relocation alternative would likely be more costly by comparison to avoidance and/or a cap and fill approach.
- As previously mentioned, The Mississippi Brownfield Program is an available option, and the application can be found at: <https://www.mdeq.ms.gov/wp-content/uploads/2022/10/TBAapp.pdf>. In addition, federal brownfield funding through MDEQ may be available to assist with the additional assessment of the Jefferson Street Dump HTRW site.

Please continue to inform GARD throughout the water quality certification and permitting process of any modifications to the conceptual approach that would potentially affect the HTRW sites. Please contact Mr. Thomas Wallace at TWallace@mdeq.ms.gov or (601) 961-5240 with any questions or concerns.

Sincerely,



Chris Sanders, P.E.
Director, Office of Pollution Control

Technical Memorandum

Date: December 18, 2023

To: Keith Turner
Watkins & Eager, PLLC

From: Jere (Trey) Hess, P.E.

Re: Regulatory Framework for Assessment, Remediation, and Reuse of Hazardous, Toxic, and Radiological Waste (HTRW) Sites
Pearl River Basin, Mississippi
Federal Flood Risk Management Project
Hinds & Rankin Counties, Mississippi
PPM Project #30062014

PPM Consultants, Inc. (PPM) has been retained by the Rankin-Hinds Pearl River Flood and Drainage Control District to evaluate information related to three historical sites of concern within Hinds and Rankin counties within the Pearl River Watershed to (1) determine the appropriateness of the Mississippi Brownfield Program as the regulatory framework for assessment, remediation, and reuse of those sites within the project area, (2) establish a conceptual approach for remediation of each site, and (3) identify similar projects in scope and size that have successfully satisfied regulatory requirements that are protective of human health and the environment. The three historical sites of concern include two former municipal dumps and one former wood treatment facility. The sites include:

former Gallatin Street dump;
former Jefferson Street dump (LeFleur's Landing Site); and
former Gulf States Creosote Wood Treatment Facility;

A summary of the history of each site is presented below. Detailed information is presented in Appendix C of the Integrated Draft Feasibility and Environmental Impact Statement, dated June 22, 2022. Additional information related to the regulatory framework for assessment, remediation, and reuse of these sites, including case study examples, are cited in this memorandum and included as attachments.

1.0 Site Histories:

1.1 Gallatin Street Dump (former)

The former Gallatin Street dump is currently owned by the City of Jackson and is generally located at latitude/longitude (32.2645/-90.1865). According to a report dated January 1998, entitled "Gallatin Street Dump Slope Stability and Landfill Analysis Project," by Gresham Smith & Partners, Ware, Lind, Furlow/Aquaterra, and Browning Inc, hereafter referred to as

the 1998 Report, the site was used as a municipal dump for approximately 10 years in the 1970s and was closed in 1979. It is important to note that at the time that the dump was closed, the federal government had not yet promulgated regulations regarding hazardous and nonhazardous waste under the Resource Conservation and Recovery Act (RCRA), therefore, the State of Mississippi had not yet adopted the Nonhazardous Waste Management Regulations (11 Miss. Admin. Code, Pt. 4, Ch. 1) (PC/S-1, August 24, 1992). Prior to the initiation of this Study [1998 Report], the City of Jackson retained no formal documents with regards to the physical location of the waste on the site. It is known that dumping took place in two (2) areas. The waste in Area No. 1, which is located north of the east-west running United Gas easement is bisected by power lines running north and south and has been estimated to cover between 38 to 44 acres, while Area No. 2, located south of the United Gas easement has been estimated to cover between 13 to 18 acres. The location of waste in each of the areas was field located using an all-terrain drill rig according to the 1998 Report. Areas which appeared to be candidates for waste deposition were then bored. These findings are detailed in the Appendix of the 1998 Report and are shown in a figure from the 1998 Report entitled "Limits of Waste," which has been provided as an attachment to this Technical Memorandum (**Attachment A**).

Figure 1 (**Attachment B**) from the Appendix of the 1998 Report also depicts borings and monitoring well locations by Aquaterra for the Gallatin Street Site. From a review of the boring logs and the 1998 Report, the thickness of the garbage ranged from three feet in boring BH-4 to 34 feet in B-11. Further inspection of the boring logs indicates that the bottom elevation of the garbage ranged from 265 feet M.S.L. in boring B-5 to 242 feet M.S.L. in boring B-10. In order to obtain an understanding of the quality of the leachate within the Gallatin Street Dump, a sample of leachate was taken from MW-5 for laboratory analytical testing. To characterize the leachate, the laboratory ran analytical tests which included scanning for both Appendix I and Appendix II solid waste groundwater parameters as well as for Biochemical Oxygen Demand (BOD 5), nitrogen as ammonia, nitrogen as nitrate and nitrite, cyanide, sulfide, suspended solids, total dissolved solids, chloride, and total organic carbon. According to the 1998 Report, the only parameters in the leachate that exceeded the Maximum Contaminant Levels (MCL) for drinking water were cadmium, lead and nickel. A further review of the data revealed that none of the organic compounds detected by the laboratory analytical tests exceeded MCLs which is depicted on Table LC1 from the 1998 Report (**Attachment C**).

Four surface water samples from the Pearl River were also collected and analyzed in order to evaluate the quality of the river water and are found in Table SC1 (**Attachment D**) of the 1998 Report. The laboratory testing included scanning for both Appendix I and Appendix II solid waste groundwater parameters as well as for Biochemical Oxygen Demand (BOD 5), nitrogen as ammonia, nitrogen as nitrate and nitrite, cyanide, sulfide, suspended solids, total dissolved solids, chloride, and total organic carbon in each of the four river water samples. None of the constituents detected from the lab tests exceeds the constituents maximum contaminant level (MCL).

1.2 LeFleur's Landing Site (Jefferson Street Dump - former)

The LeFleur's Landing site is currently owned by the City of Jackson and consists of approximately 45 acres of land. It is along the 600 block of Jefferson Street in Jackson, Mississippi and is generally located at latitude/longitude (32.2913/-90.1754). It is depicted in Figure 3 (**Attachment E**) from a 2005 Phase II Environmental Site Assessment Report by PPM Consultants, Inc. Extensive environmental assessment activities have been conducted on the site funded by the Environmental Protection Agency (EPA) through its Brownfield Program and relationship with the United States Army Corps of Engineers (USACE), the City of Jackson, and MDEQ through its Targeted Brownfield Assessment (TBA) and USTFields Grant Programs. Plans to reuse the site dating back to as early as 2000 have been proposed to convert it into greenspace for an amphitheater and festival grounds. Local leadership in the early 2000s aimed to revitalize an unsightly Brownfield Recovery Zone bordering the Pearl River, just above Interstate 55. The roughly 45-acre parcel stands as one of the few land-based locations that has access to the Pearl River within the city limits of Jackson. The planned Festival Park, intended for public enjoyment, would encompass various recreational activities, such as boating and fishing. The proposed riverfront park included plans for an amphitheater, retail establishments, a nature center, a pavilion, a riverside trail, and an overlook of the Woodrow Wilson bridge. The project cost estimated by a local architectural firm in the early 2000s was \$1.4 million. Their strategy involved capping the landfill and fortifying the river's banks.

The City of Jackson retained URS Corporation (URS) through the USACE to perform a Phase I Environmental Site Assessment in 2000. Findings from the Phase I ESA indicated the 45-acre property was used for a variety of activities including landfill, incinerator, maintenance shop, fuel distribution, animal control, testing laboratory, asphalt plant, paint shop, and law enforcement activities. Based on the findings of URS, 70 percent of the property was used as a landfill from 1900 through 1970. URS identified some of the former activities that may have impacted subsurface conditions of the property. These activities included the following:

Former landfill activities. The City of Jackson used the facility as a municipal landfill from approximately 1900 through 1970.

City of Jackson refueling activities. These activities required the operation of underground storage tanks (USTs). The site was listed on the Leaking Underground Storage Tank (LUST) database. Contamination was reported during a UST removal in which confirmation sampling was not conducted.

City of Jackson equipment maintenance activities at the former City Garage and current Jackson Mounted Police buildings. Three fires occurred at the City Garage during the 1980s and impacts to the soil and groundwater may have resulted during these incidents.

Activities associated with the operation of the City Paint Shop, Meter Repair Facility, City Asphalt Plant, and City Refuse Burner Facility.

In the fall of 2000, the City of Jackson received a "Brownfield Showcase Community" designation from the EPA which allowed the City to utilize the resources of the USACE for conducting brownfield assessment activities. The USACE retained ARCADIS to prepare a

Quality Assurance Project Plan and conduct a Phase II Environmental Site Assessment. The QAPP was approved by USACE, USEPA, and MDEQ in April, 2002 and focused on identifying environmental impacts resulting from past uses that would prevent the site from being developed into festival grounds. Once the former activities and potential impacts were identified, the site was subdivided into four different areas with Area 3 subdivided into two specific areas. These are listed below:

- Area 1:** Former City Landfill (trash piles, tar residuals, concrete, tires, and empty drums)
- Area 2:** Existing City Buildings
- Area 3A:** Foundation 14 in the area of the former City Paint Shop and Meter Repair Facility; Foundation 15 in the area of the former City Asphalt Plant and City Refuse Burner; concrete tank saddle; Foundation 16; and two ozone generators and open sewer
- Area 3B:** Old City Garage Maintenance foundation slab
- Area 4:** UST and Refueling Areas

The ARCADIS Phase II ESA report, including the following conclusions, are relevant in the evaluation of the reuse of the site in the proposed Federal Flood Risk Management Project:

Surficial fill material comprises of the top 5 feet of sediments across the site. At a majority of locations, a sequence of clay, fill, sand, as well as poor sample recovery represents landfilled materials in Area 1. Based upon these observations, the depth of fill is estimated at 24 feet below land surface (ft bls).

Additional information pertaining to the shallow groundwater conditions beneath the site indicated that groundwater is generally encountered between 21 and 24 ft bls. Groundwater flow beneath the site follows the configuration of the Pearl River, located south of the site.

Soil data collected within the former landfill (Area 1) indicate very low concentrations of arsenic and total petroleum hydrocarbons-diesel range organics (TPH-DRO) in two soil samples. Very low concentrations of other site constituents were reported for several collected soil samples at levels below Tier 1 TRGs (Restrictive). Detected constituents may be indicative of impacts associated with the operations of the former landfill. The detections of arsenic and TPH-DRO above Tier 1 TRGs were reported for samples collected at a depth (between 22 and 28 ft bls) that will not be disturbed during any site-related development. Based upon these conditions, no further assessment of soil at these locations within the former landfill appears warranted.

Groundwater quality data collected within the former landfill (Area 1) indicate detected concentrations of TPH-DRO, lead, and arsenic at temporary monitoring wells located within the northern portion of the site. Concentrations of other site constituents were detected at levels below Tier 1 TRGs. It was determined that site conditions were delineated at downgradient locations. No further assessment of the site is recommended for the constituents referenced above. However,

concentrations of barium above Tier 1 TRGs were identified at a downgradient location.

Based on the results and conclusions of this Phase II ESA, it is further concluded that the development of the festival grounds, specifically in the areas addressed during this investigation, should be allowed to occur provided that disturbance of deep subsurface soil (greater than 14 ft bls) is kept to a minimum. Precautions should be taken to assure that no construction pilings or other support structures create pathways for contamination to migrate through subsurface sediments beneath the site....

The City of Jackson then requested assistance from the MDEQ Brownfields Program to address Areas 2 and 3, while the conditions of Area 4 were addressed under the MDEQ's USTfields grant, managed by the MDEQ UST Program. Phase II ESA activities were conducted by PPM Consultants, Inc. in the spring of 2005. Findings and conclusions were generally consistent with the previous Phase II ESA reporting by ARCADIS. Among the findings were the following:

No VOC constituents exceeded the Tier 1 Restricted and Unrestricted TRGs for soil.

Low level concentrations of PAHs were found at 12 to 16 feet bls depth at levels below the restricted TRG, except for benzo(a)pyrene (1.1 mg/kg) which exceeded the restricted TRG of 0.784 mg/kg at sample location PB-8/7 which was installed to the south of the paint shop foundation.

In February 2003, PPM conducted a Phase II ESA at the site under the MDEQ's USTfields Program to address Area 4. The purpose of the Phase II ESA was to determine if soil and/or groundwater in the vicinity of former underground storage tank (UST) areas had been impacted by motor fuels previously stored in the tanks. Findings from the assessment indicated that tanks were located in four separate areas at the site, designated as Areas 1 through 4 by PPM for clarity. PPM installed 13 soil borings and ten piezometers in these areas using Direct-Push Technology (DPT) to a general depth of 5 feet below the depth at which saturated soil conditions were encountered [16 to 24 feet bls]. Selected soil and groundwater samples were analyzed for petroleum hydrocarbon constituents, additives, and lead. Site lithology was extremely heterogeneous, consisting of silts, clays, and sands at widely varying depths. Soils at the site appeared to consist entirely of fill material from earlier landfilling activities.

On May 6, 2003, PPM met with the MDEQ to discuss alternatives for utilizing remaining funds in the USTfields grant for remediating the site. MDEQ subsequently requested that PPM provide alternatives for remediating the impacted soil in the UST Refueling areas. Excavation and on-site aeration was considered to be the most feasible method for addressing the petroleum contamination. After reviewing the work plan, MDEQ approved the excavation and on-site aeration in the vicinity of former UST areas that had been impacted by diesel fuel. In the summer of 2004, diesel impacted soil was excavated and aerated for remediation purposes. Analysis of soils collected from the base and sidewalls of the excavated area indicate that all contaminated soils with PAH concentrations exceeding the MDEQ Tier 1 TRGs had been removed from the site. Analytical results

indicate PAH concentrations in the groundwater in the excavation area are below the Tier 1 TRGs as show in Figure 2 (**Attachment F**). Due to historically high dissolved BTEX concentrations, piezometer well PZ-2-2 was sampled on July 20, 2004. The total dissolved BTEX concentration of 3.8 ppm was below the MDEQ petroleum action level of 18 ppm. MDEQ subsequently completed the USTFields Project in the UST Refueling area of the site and has not required any further action.

1.3 Gulf States Creosote Wood Treatment Facility (former)

The former Gulf States Creosote Wood Treatment Facility, generally located at latitude/longitude (32.3157/-90.1436), is depicted in Figure 4 (**Attachment F**) from a 2008 EPA Reassessment Report dated July 30, 2008 (prepared by TN & Associates, Inc. on behalf of the US EPA Region 4). The site is privately owned and consists of roughly 141 acres in Flowood, Mississippi upon which wood treating operations were conducted from the 1930s to the mid-1950s. Subsequent operators of portions of the property include American Creosote Works (ACW) and W.G. Avery Body Company, which operated an auto body shop. Gulf States' operations included coal-tar creosote treatments of railroad cross-ties and transport on- and off-site via railroad boxcars. Some portions of the property are in current use: one area as a horse farm, and another area occupied by ConSteel Inc. for steel fabrication.

Past work by EPA (summarized for EPA's 05-16-2007 CERCLIS decision) indicated the need for a Removal Assessment to investigate two areas: one area possibly of buried creosote waste material and another area consisting of drainage pipes and pipelines whose entrance points and possible exit points had been discovered during field work and extensive site reconnaissance efforts. These drainage pipes and pipelines were believed to run from the site, under the levee, and out onto the marshland. At the time, creosote waste material was thought to be present in an area of contaminated soil on one part of the site discovered by a consultant working for Consteel. Concurrent with EPA's Removal Assessment, an Integrated Expanded Site Inspection (ESI) was planned that would allow coordination of sampling and supporting lab analysis, use of data by both remedial and removal programs, and a faster overall evaluation of the site by EPA.

Between August and October, 2007, EPA Region 4's Emergency Response and Removals Branch (ERRS) performed a Removal Assessment while ESI sample planning proceeded. No creosote waste materials were found in any of the suspect areas, nor in the drain lines and drain-entrance culverts. In January 2008, EPA concluded its Removal Assessment and initiated a Site Reassessment using all available information gathered for the site to date.

Results from the Site Reassessment indicated that the main contributor to the site profile under the Hazard Ranking System was the potential for groundwater contamination. The 2003 Preliminary Assessment/Site Investigation (PA/SI) did record shallow groundwater contamination of several metals at >3x background, but recorded only one organic compound, MEK (a possible laboratory contaminant) at a single-parts-per-billion level. For the surface water pathway, past sediment samples along the Pearl River have not shown releases. Detections have occurred in Creosote Slough which eventually drains to the river, but has no normal flow-through, and is not in the river flow path. Contrary to past

conclusions, while there is clearly fishing along the river, the evidence for fishing in Creosote Slough is uncertain. The possibility of exposure of nearby residents to site contaminants via fishing in the slough (Creosote Slough) was investigated in the 2006 EPA Region 4 SEDS fish tissue study. Site contaminants capable of posing risks were not found in the fish. Furthermore, the target values associated with the river are very low (no intakes or wetlands), and this results in a very low contribution for the surface water pathway. EPA concluded that in view of the absence of the large waste quantities that were originally suspected, and the lack of clear threats to the river and/or nearby residents, the site was designated by EPA Region 4 as “No Further Remedial Action Planned” (NFRAP) under CERCLA.

2.0 Regulatory Framework for Assessment, Remediation, and Reuse of Hazardous, Toxic, and Radiological Waste (HTRW) Sites

2.1 State Response Programs and CERCLA Section 128(b)

State cleanup programs, such as the Mississippi Brownfield Program, play a significant role in assessing and cleaning up sites that are not a federal priority like Superfund sites on the National Priority List (NPL) or sites regulated under the federal corrective action program of EPA’s Resource Conservation and Recovery Act (RCRA). State cleanup programs typically are programs authorized by state statutes to address brownfields and other lower-risk sites. The EPA has historically supported the use of state cleanup programs and continues to provide grant funding to establish and enhance those programs. The EPA also provides general enforcement assurances to individual states to encourage the voluntary assessment and cleanup of sites addressed under state oversight. This approach was codified in 2002 as Section 182 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLA § 128(b) addresses the “enforcement bar,” which limits EPA enforcement actions under CERCLA §§ 106(a) and 107(a) at “eligible response sites” addressed in compliance with state response programs that specifically govern cleanups to protect human health and the environment.

As memorialized in a letter dated March 27, 2008 (**Attachment G**), EPA Region 4 had evaluated the statutory and regulatory authorities contained in the “Mississippi Brownfields Voluntary Cleanup and Redevelopment Act, “ (Section 49-35-1 et seq.), and its implementing regulations, and concluded that the Mississippi Brownfield Program has sufficient authority and mechanisms to meet the four requirements identified in CERCLA Section 128(a)(2) and further stated that as long as the State maintains its public record, with the required annual updates, the enforcement bar provision in CERCLA Section 128(b)(1) will be applicable in the appropriate circumstances.

The two dump sites have a history of being assessed or remediated with assistance from MDEQ through the Nonhazardous Solid Waste Corrective Action Trust Fund (CATF) Program for the former Gallatin Street dump and the Brownfield Program for the Lefleur’s Landing Site (Jefferson Street dump). As for the former Gulf States Creosote Wood Treatment Facility, EPA Region 4 issued a “Remedial Site Assessment Decision,” dated

July 30, 2008 (**Attachment H**) wherein the EPA had “determined that no further remedial action by the Federal Superfund Program is warranted at the referenced site” at that time.

Given this information and after careful consideration of the site eligibility requirements of the Mississippi Brownfields Program, it appears that all three HTRW sites are eligible for acceptance into the Mississippi Brownfield Program.

2.2 Mississippi Brownfield Program

The Mississippi Brownfield Program utilizes risk-based criteria for site assessment and remediation of eligible sites. The risk-based procedures and rationale for evaluating environmental contamination on or under a site are presented in Subchapter 2 of Title 11, Part 3, Chapter 2 of the Mississippi Commission on Environmental Quality Final Regulations Governing Brownfield Voluntary Cleanup and Redevelopment in Mississippi (Brownfield Regulations). The risk-based criteria establish remediation requirements that are protective of human health and the environment; and all remediation and/or corrective actions must be approved by the Mississippi Department of Environmental Quality (MDEQ). MDEQ and the Mississippi Commission on Environmental Quality (MCEQ) are authorized to administer the requirements of the Mississippi Brownfield Voluntary Cleanup and Redevelopment Act and the regulations promulgated thereunder as set forth in Mississippi Code Annotated Section 49-35-1 through 27.

2.2.1 Applicability of Subchapter 2 – Risk Evaluation Procedures

The cornerstone of the Mississippi Brownfields Program is a three-tiered risk-based process for evaluating human health and environmental risks. These tiers are referred to as Tier 1, Tier 2, and Tier 3. These tiers are designed to allow the applicant for the Brownfield Program to evaluate and determine appropriate remedial options for site specific conditions.

3.0 Conceptual Remedial Approaches

The risk evaluation procedures of the Brownfield Regulations involve three approaches to remediation that can be used alone or in conjunction with the other two approaches. A description of the types of remedial actions follow:

(1) Active Cleanup - The active cleanup (i.e., removal, treatment, etc.) of contamination to levels that are protective of human health and the environment can reduce or eliminate the potential for exposure to contaminants. If active cleanup is used to "shut off" exposure to contamination, the Site Characterization Report and/or Corrective Action Plan must document the active cleanup activities to be implemented. Active Cleanup may involve technologies like removal and disposal of the contaminated media through excavation or groundwater pump and treat. It may also involve in-situ approaches like injecting engineered, oxygen release compounds designed specifically for enhanced, in situ aerobic bioremediation of contaminants. It can also, particularly for low-level, limited impact sites, involve Monitored Natural Attenuation (MNA) which is often used at brownfield, RCRA, and Superfund sites to achieve regulatory limits over time.

(2) Engineering Controls - The use of engineering controls can reduce or eliminate the potential for exposure to contaminants through containment. Engineering Controls may include, but are not limited to, physical or hydraulic control measures (such as groundwater recovery trenches and leachate collection systems), groundwater treatment systems, engineered caps, liner systems, slurry walls or permanent structures, but shall not include the exclusive use of security fencing. Ingestion and dermal contact of soil contamination that exists under a building may be considered "shut off" provided the institutional control restricts the removal of the slab, thus eliminating the future potentially complete exposure route to soil contamination via ingestion or dermal contact. If an engineering control is used to "shut-off" exposure to contamination, the Site Characterization Report and/or Corrective Action Plan must document the appropriate engineering control and/or institutional control to be implemented. An institutional control must be coupled with the engineering control to ensure the engineering control is maintained until the site is remediated to an unrestricted level. Engineering controls typically involve capping an area of contaminated media to effectively eliminate direct exposure and to minimize infiltration and potential migration of contaminants beyond the existing contaminated area. Consolidation of materials in a controlled area with a constructed cap, as described in several of the case studies listed in Section 4 of this memorandum, is a common approach used in Superfund, RCRA, PCB, and Brownfield Programs, both on the state and federal levels.

(3) Institutional Controls - The use of institutional controls (land use restrictions and agreed order with MDEQ) can serve to prevent future contact with soils and groundwater. Site land-use may be "unrestricted" or "restricted" and relates generally to residential (unrestricted) and industrial/commercial (restricted), respectively. The potential to restrict the future use of the site (example: use of the site to a defined industrial use only, or the limitations of future construction activities, prohibiting groundwater use, no drilling, or excavating) can be considered in the remediation of the Site. If no restrictions for future use will be placed on the property by the Applicant, the identified remediation goals will be based on the future unrestricted (residential) use of the Site. Documentation of the institutional controls must be provided to support the proposed site remediation. A land use restriction and agreed order with MDEQ shall be used for "restricting" the Site. Institutional controls are used to "shut off" exposure to contamination. The Site Characterization Report and/or Corrective Action Plan must document the appropriate restrictions to be implemented. The Environmental Covenant, established by the Mississippi Uniform Environmental Covenants Act, has been used by MDEQ and EPA Region 4 for a variety of sites, including Superfund sites, RCRA sites, PCB sites, former waste disposal sites, uncontrolled sites, and Brownfield sites to establish notification and enforcement requirements for activity and use limitations.

To establish the risk-based criteria for each HTRW site that is protective of human health and the environment, additional site assessment may be necessary. Once MDEQ accepts each site into the Mississippi Brownfield Program, MDEQ will assign staff to review and comment on the work plans, site sampling and analysis plans, quality assurance project plans, and field investigation procedures and techniques that are required to satisfy adequate site characterization of the sites. Remedial approaches that satisfy the risk-based remediation requirements of the Mississippi Brownfields Program will be presented in Corrective Action Plans (CAP) for MDEQ review and approval. A mixture of the three types of remedial actions (i.e., Active Cleanup,

Engineering Controls, and Institutional Controls) in the forms of excavation, consolidation, capping, and/or environmental covenants are expected for each site. For each HTRW site, the conceptual remedial approaches are outlined below.

3.1 Gallatin Street Dump (former) – Excavation, Waste Consolidation, Capping, and Environmental Covenant

Prior to implementation of any remedial activities, further assessment activities, including delineation and analytical sampling will be conducted to adequately characterize site conditions. The conceptual remedial approach for the Gallatin Street dump is to excavate, consolidate and cap waste material as depicted in Figure 1 (**Attachment I**). Waste material will be excavated from Area 1A, transported to Area 1B, and then consolidated under an engineered cap that will effectively eliminate the direct exposure pathway, minimize infiltration, and the persistent erosion control measures that plague the northern boundary of Area 1A. Furthermore, excavation limits can be adjusted as necessary once the full project limits have been determined. Area 2 will be capped to eliminate direct exposure to waste materials and to minimize infiltration. Structural (e.g., rock, aggregate, concrete, etc.) and bioengineering methods (grasses, trees, or other living plants) of streambank erosion control will be used along the southern boundary of Area 2 to protect the riverbank and to eliminate the potential for waste in Area 2 from becoming exposed by erosion. A minimum of three feet of clean fill material excavated from the widening of the river channel will serve as the engineering cap for both Areas 1B and 2. For Areas 1B and 2, institutional controls, in the form of an environmental covenant, will be utilized to protect human health and the environment.

3.2 LeFleur's Landing Site (Jefferson Street Dump - former) – Capping and Environmental Covenant

Prior to implementation of any remedial activities, further assessment activities, including delineation and analytical sampling will be conducted to adequately characterize site conditions. The LeFleur's Landing Site has undergone extensive environmental assessment as described in Section 1.2 of this memorandum. Depending upon the needs of the project, the area is likely to be used as greenspace. Since it was used as a dump site, an environmental covenant will be implemented ensuring protection of human health and the environment. Like the Gallatin Street dump site, the area will be capped with more than 10 feet of clean fill material excavated from the widening of the river channel, as shown in Figure 2 (**Attachment J**). For those areas with residual contamination that are capped, institutional controls, in the form of an environmental covenant, will be utilized to protect human health and the environment.

3.3 Gulf States Creosote Wood Treatment Facility (former) – Excavation, Containment of Waste, Capping, and Environmental Covenant

Prior to implementation of any remedial activities, further assessment activities, including delineation and analytical sampling will be conducted to adequately characterize site conditions. This site has had numerous investigations conducted over the years by USEPA, MDEQ and private citizens. These investigations have revealed where potential

contamination may remain and indicated where actual creosote treating activities took place. Because there is no current threat to human health or the environment, the property is currently being used for light industry and aviation (helicopter storage and use). The past results also indicated that surface waters, sediment, and fish samples (including those from the slough) were not a concern for human exposure. Most of the soil samples had results below federal and state target clean up levels. There was a small area (former lagoon) discovered with action levels of creosote contamination, but this site is not within the proposed project area and has had institutional controls put into place via a restrictive use covenant. Certain areas on the east side of the levee will require further investigations, but these locations are planned to be capped with excavated soil from the west side of the levee as depicted in blue (Area 3A) as shown in Figure 3 (**Attachment K**). Should contaminated material be encountered in Area 3A, the contaminated material will be consolidated and capped in Area 3B with clean fill material excavated from the widening of the river channel. No excavation of the former facility is planned or necessary, particularly in light of the 2008 EPA NFRAP designation. The thickness of clean fill cap may be as great as 15-20 feet in some areas even though most remedial approaches to eliminate direct exposure and to minimize infiltration typically range from 2-5 feet thick. For those areas where excavated material with residual contamination is consolidated and capped, an institutional control, in the form of an environmental covenant, will be utilized to protect human health and the environment. Finally, much like the Gautier Oil Brownfield Agreement Site described in the following section (Section 4.4), the construction of multilayer subaqueous caps over water bottoms along and adjacent shorelines will be considered in the Contingency Plans of the Corrective Action Plan (CAP) when it is developed and after further planned assessment activities are conducted in this area.

4.0 Project Examples

4.1 Davis Timber Superfund Site (Hattiesburg, Mississippi) – Excavation, Consolidation of Waste, Capping, and Institutional Control

In 2000, the U.S. Environmental Protection Agency listed the Davis Timber Co. wood preserving site in Lamar County on the National Priority List (NPL) for environmental cleanup due to contamination of groundwater, soil, and sediment caused by the facility's operations. The 30-acre site once hosted Davis Timber Co.'s wood-preserving operations from 1972 to the late 1980s. The cleanup initiative commenced in October 2011 and concluded approximately one year later. It involved various activities such as site clearing, excavation of contaminated soil and sediment, containment of waste within a 3-acre capped area, management of surface water flow and erosion, demolition of on-site structures, and the installation of an impoundment liquid extraction and relocation system. A containment structure was erected around the area with contaminated water and soil and the grading of the site was finalized. To prevent future land use issues, the agency introduced land use restrictions for the contained area and the overall site. In a 2016 review, the EPA determined that the measures previously undertaken effectively protected both human health and the environment at the site. The Site includes a fenced, closed impoundment. The Hub City Humane Society animal shelter currently operates on site. It includes a public dog park called Fields of Barktopia. The animal shelter's plans call for more community-oriented programs, especially for disadvantaged children and children with disabilities. There is also a parking

area for the Longleaf Trace Rails to Trails recreational trail that runs along the south of the Site. Total Cost of cleanup was roughly \$5M. Further information can be found in the EPA's "Second Five-Year Review Report for Davis Timber Company Superfund Site," dated January 2022 (<https://semspub.epa.gov/work/04/11167389.pdf>).

4.2 Arizona Chemical (former) Asbestos Burial Site (Picayune, Mississippi) – Environmental Covenant

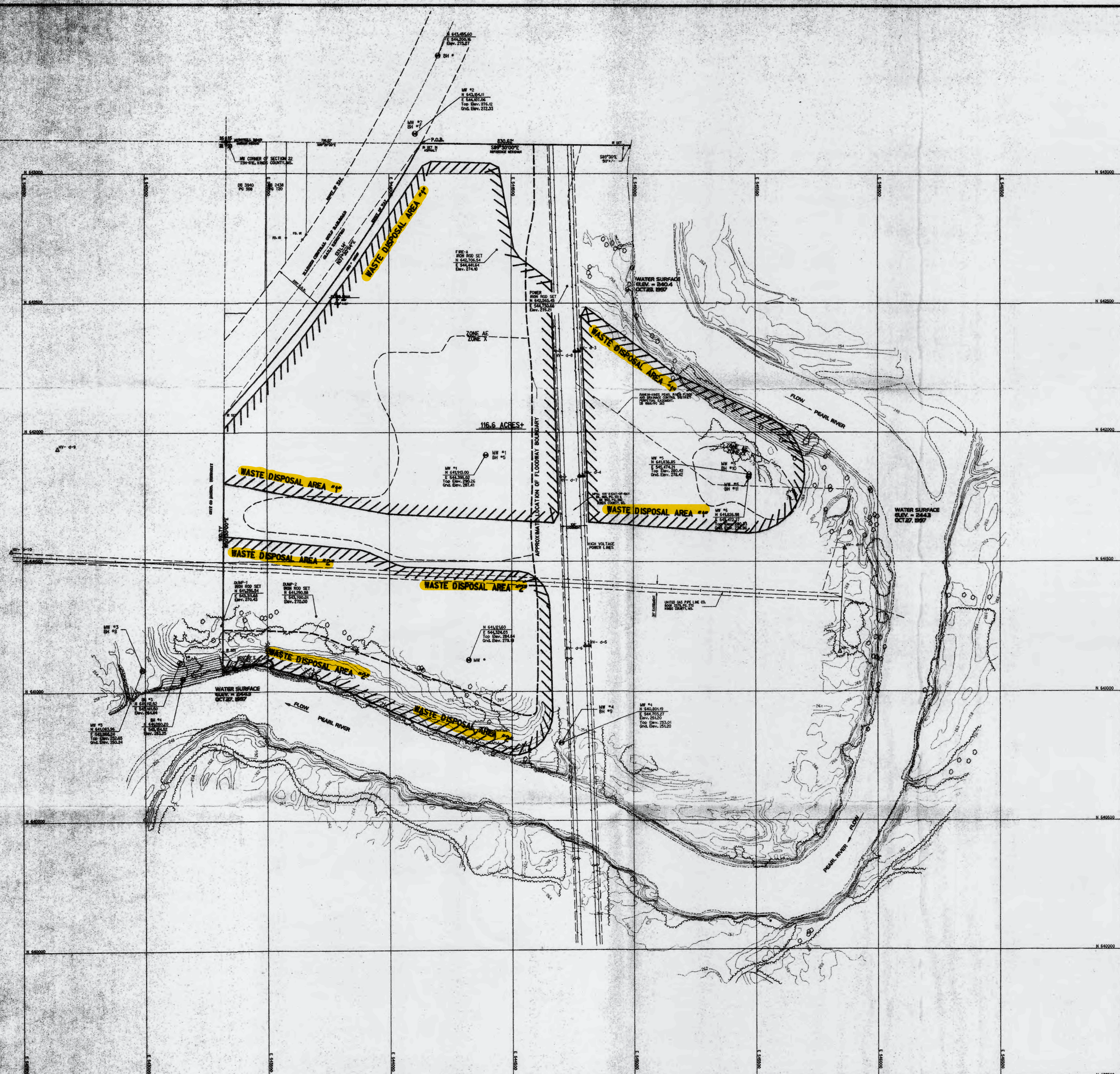
The former Arizona Chemical facility in Picayune, MS consists of approximately 220 acres. Crosby Chemical owned and operated the site from the early 1920's until SylvaChem took over operation in 1981. In 1986, Arizona Chemical became the owner/ operator of the site. The site was purchased by International Paper (IP) in 2004. IP dismantled the operation and sold off equipment on site. Beginning in June 2005, IP performed assessment on the site in order to determine if there were any potential areas of concern that would serve as a hindrance to redevelopment. International Paper performed remediation by excavation in an area known as the Skim Pond which was a unit used as part of the NPDES permit. Once remediated, the only remaining concern on the property was an asbestos burial site at the back of the property. In 2006, IP sold the property to the City of Picayune. In late 2010, the City of Picayune was approached by Stockstill Brothers Investments, LLC to purchase the property to open an asphalt plant, creating jobs and putting the site back on the tax rolls. A Brownfield Agreement was reached with MDEQ to allow for the property to be transferred. The remedial action involved the execution of an Environmental Covenant that included activity and use restrictions, signage, and notification requirements, and maintenance of the asbestos burial area.

4.3 CSXT former Gautier Oil Site (Gautier, Mississippi) - Excavation, Consolidation of Waste, Capping, and Institutional Control

In recognition of a successful environmental remediation project that restored the ecosystem of a 24-acre former wood treatment site in Gautier, Miss., CSX Corporation Transportation (CSXT) and its partners were awarded the annual Phoenix Award for sustainable brownfield redevelopment at the National Brownfields Conference on May 13, 2013. In March 2011, CSXT reached a Brownfield Agreement (#5930-11) with MDEQ which laid out the risk-based remedial approach to cleanup. As part of the MDEQ-approved remediation, implementation of the final selected remedy included construction of approximately 24 acres of low-permeability soil caps on the upland portions of the site, construction of multilayer subaqueous caps over approximately 6 acres of water bottoms along and adjacent to the shorelines, and the mitigation/restoration of over 3 acres of fringe wetland around the shorelines of the bayou.

ATTACHMENTS

ATTACHMENT A
FIGURE NO. 2 - LIMITS OF WASTE
“GALLATIN STREET DUMP SLOPE STABILITY AND LANDFILL ANALYSIS
PROJECT,” 1998 (1998 REPORT)



Seattle-Tacoma Dump Site

A parcel of land situated in the NE1/4 of the NE1/4 of Section 22, Township 5 North, Range 1 East, Idaho, Camas, Washington, and more particularly described as follows:

Beginning at a corner of the NE1/4 of the NE1/4 of Section 22, Township 5 North, Range 1 East, Idaho, Camas, Washington, run thence South 89 degrees 30 minutes East along the north line of said Section 22 a distance of 100 feet, to the intersection of said north line of said Section 22 and the eastern right-of-way line of the Molloa Central Railroad and to the point of beginning.

Thence South 89 degrees 30 minutes East along the north line of said Section 22 for a distance of 100 feet, to the intersection of said north line of said Section 22 and the western right-of-way line of the Molloa Central Railroad and to the point of beginning.

Thence nothing along said north line of Section 22 for a distance of 50 feet, more or less, to a point on the west bank of the Foothill River.

Thence southerly and westerly along the meanders of said Foothill River to the intersection of said north line of said Section 22,

Thence North 10 degrees 30 minutes East along said west line of Section 22 for a distance of 50 feet, more or less, to the point of beginning.

Thence continue North 10 degrees 30 minutes East along said west line of Section 22 for a distance of 100 feet, to the intersection of said west line of said Section 22 and the western right-of-way line of the above described Molloa Central Railroad and the west line of said Section 22.

Thence southerly and easterly, along a circular curve having a radius of 600 feet and a deflection angle of 88 minutes 45 seconds, to the third bearing station of the NE1/4 of Section 22, 31 degrees 30 minutes 34 seconds East, 133.51 feet, back to the point of beginning.



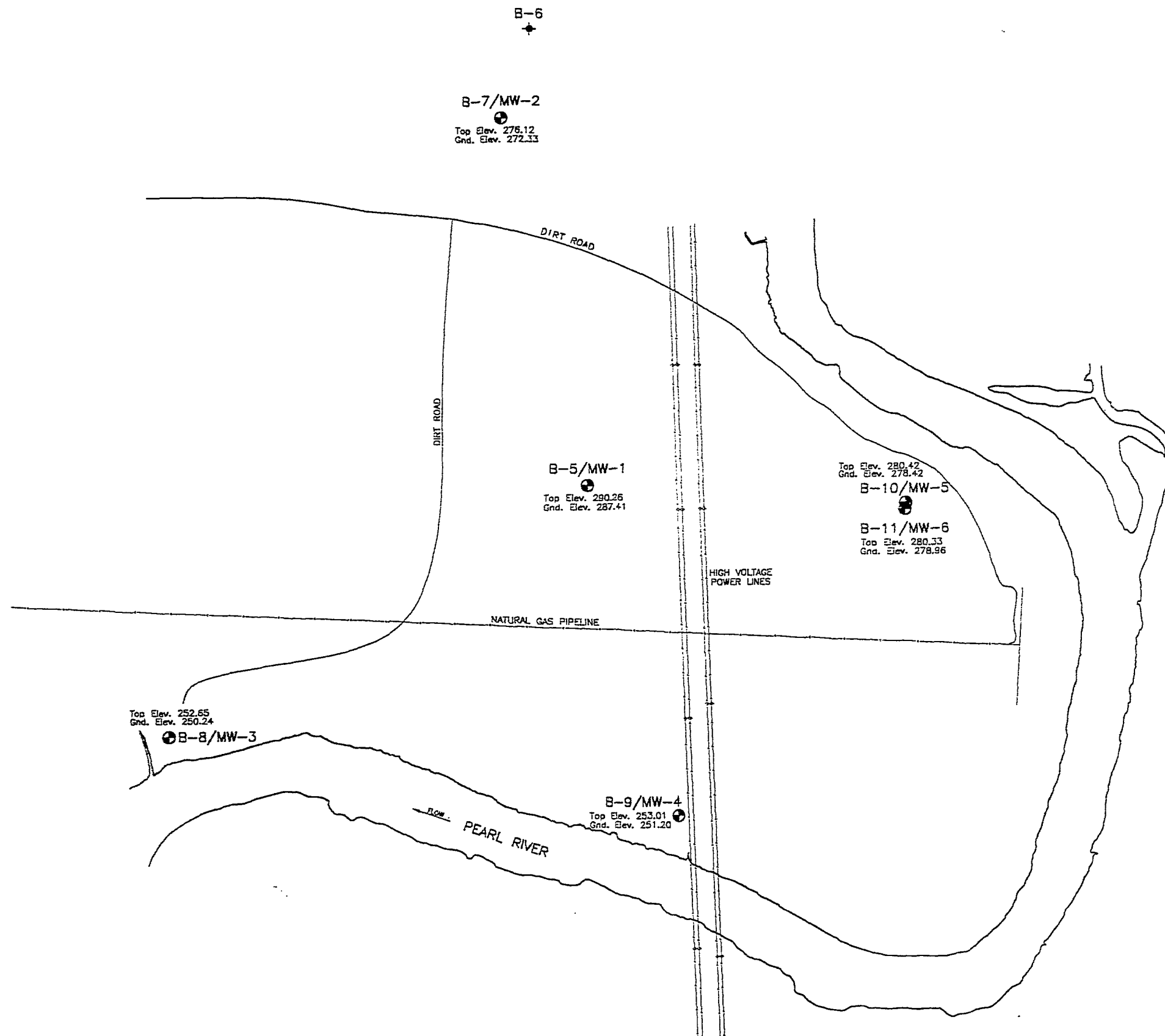
LEGEND		
VALVE	M	TRANSFORMERS
WATER	B	GV
ELECTRIC	—	FLOODLIGHT
COMMUNICATION	C	STREET LIGHT
SEWER SINKER	ST	POLE
SANITARY SINKER	SS	CONC. MONUMENT
GILDED WATER	GW	CATCH BASIN
—	S	PLASTIC SIB
SEWER DRAIN	SD	SDN
FUEL	F	SPIN OR K/L SPIKE
UNDERGROUND ELECTRIC	—	TELEPHONE PED
STORM SINKER MK	⊙	TELEPHONE MK
SANITARY SINKER MK	⊗	TELEPHONE MK
WATER	—	METER
ROAD	—	POLE
POCK CONTOUR	E	FIRE HYDRANT
INTERMITTENT CONTOUR	—	POST ELEVATIONS
PEACE	—	BUILDINGS
		TRAILING PINE

GENERAL NOTES

1. THE REFERENCE MERIDIAN USED FOR THIS SURVEY IS BASED ON BENCHMARK USED IN A PREVIOUS SURVEY AND REFERRED TO IN D.B. 3940, PG. 556, HINDS COUNTY, MISSISSIPPI.
2. THIS PROPERTY IS ZONED "1-P, LIGHT INDUSTRIAL."
3. THIS PROPERTY IS LOCATED IN ZONE "AE" & ZONE "F" OF THE FLOOD INSURANCE RATE MAPS FOR THE CITY OF JACKSON, HINDS COUNTY, MISSISSIPPI, ACCORDING TO PANEL NO. 280077 0046 F DATED APRIL 4, 1994.

ATTACHMENT B

**GALLATIN STREET DUMP BORINGS AND MONITORING WELL LOCATIONS
GALLATIN STREET LANDFILL, AQUATERRA, 12/02/1997**



LEGEND:

- MONITOR WELL
- + SOIL BORING



DRAWN BY: STB	CHECKED BY: BGT	SCALE: 1"=400'	DATE: 12/2/97	PROJECT NO: 63677
PROJECT: GALLATIN STREET LANDFILL - JACKSON, MISSISSIPPI				
TITLE: BORING AND MONITOR WELL LOCATIONS				PLATE 1

ATTACHMENT C

**TABLE – LC1: DETECTED LEACHATE CONCENTRATIONS - GALLATIN
STREET LANDFILL, 1998 REPORT**

TABLE - LC 1

<u>DETECTED LEACHATE</u>	<u>CONCENTRATION</u>	<u>MCL</u>
Arsenic	0.0120	0.0500
Barium	0.9400	2.0000
Beryllium	0.0011	0.0040
Cadmium	0.0112	0.0050
Chromium(total)	0.2780	0.1000
Cobalt	0.0720	
Copper	0.0680	1.0000
Lead	0.2930	0.0500
Nickel	0.2290	0.1000
Silver	0.0030	0.0100
Tin	0.0430	
Vanadium	0.0280	
Zinc	0.9600	5.0000
Mercury	0.0008	0.0020
Cyanide	0.0090	0.2000
Sulfide	0.2700	
Nitrate and Nitrite	0.0200	10.00
Chloride	21.00	250.00
Acetone	0.014	
Chlorobenzene	0.011	0.100
1,4 Dichlorobenzene	0.002	0.075
Acenaphthene	0.006	
Bis(2-chloroethyl)ether	0.002	
Dibenzofuran	0.003	
Fluoranthene	0.001	
Fluorene	0.004	
Phenanthrene	0.009	
Pyrene	0.001	
Napthalene	0.013	

ATTACHMENT D

**TABLE – SC1: RIVER SAMPLE CONTITUENT CONCENTRATIONS -
GALLATIN STREET LANDFILL, 1998 REPORT**

PEARL RIVER SAMPLING AND ANALYSIS

Gresham, Smith and Partners obtained four water samples from the Pearl River in order to evaluate the quality of the river water. The locations of the four river water samples are illustrated on Drawing SC 1. The samples were collected and transported to Resource Consultants Laboratory in Brentwood, Tennessee for analytical testing. The laboratory testing included scanning for both Appendix I and Appendix II solid waste groundwater parameters as well as for Biochemical Oxygen Demand (BOD 5), nitrogen as ammonia, nitrogen as nitrate and nitrite, cyanide, sulfide, suspended solids, total dissolved solids, chloride, and total organic carbon in each of the four river water samples.

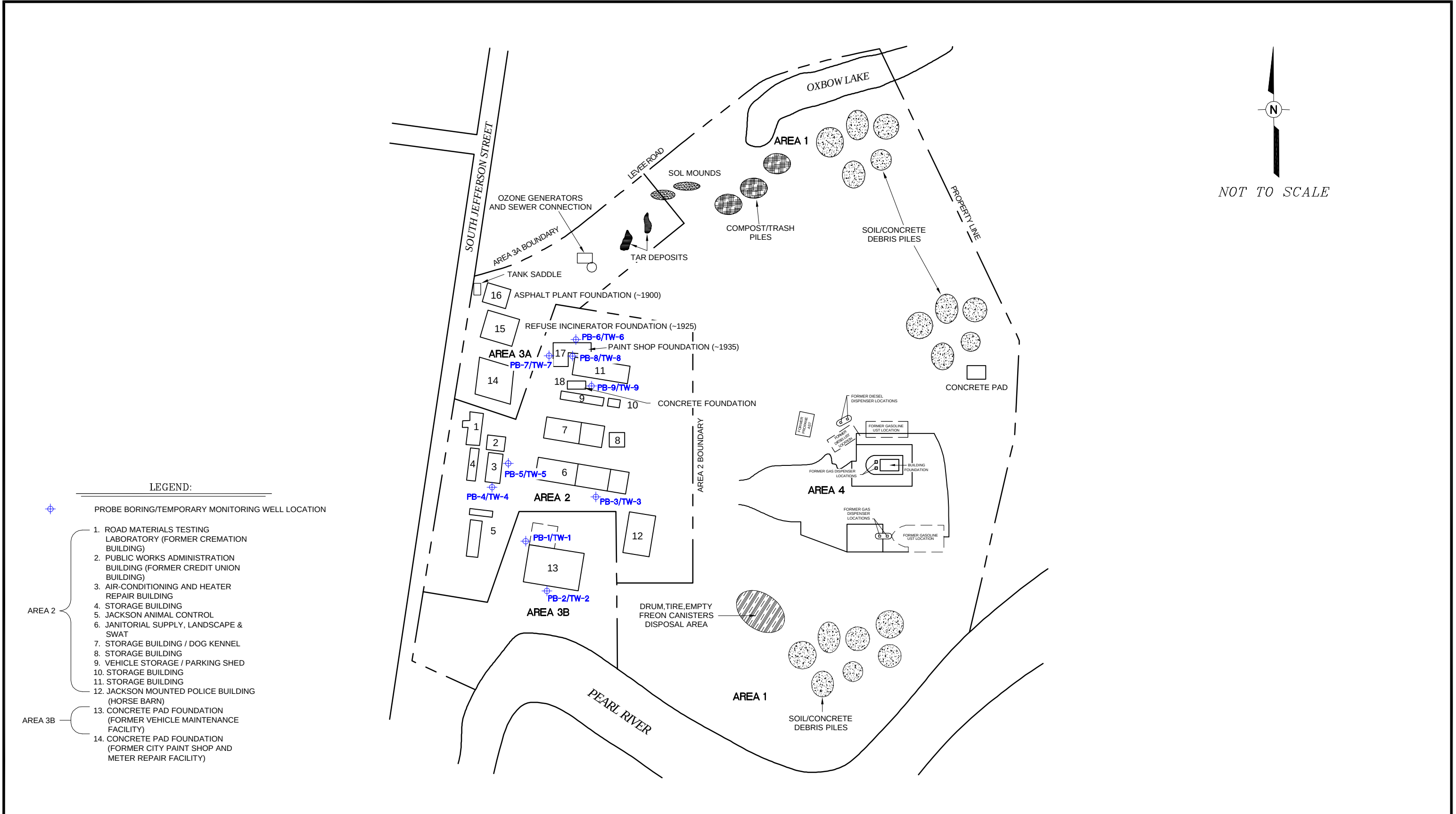
Table SC 1 provides a summary of the results of the laboratory analytical testing. The table reports the results of the constituents which were actually detected in the river water samples. An inspection of the Table SC 1 reveals that none of the constituents detected from the lab tests exceeds the constituent's maximum contaminant level (MCL).

TABLE - SC 1

<u>CONSTITUENT</u>	<u>River Sample Locations</u>				<u>MCL mg/l</u>
	<u>SW-1 mg/l</u>	<u>SW-2 mg/l</u>	<u>SW-3 mg/l</u>	<u>SW-4 mg/l</u>	
BARIUM	0.03	0.04	0.04	0.04	2.0
COPPER	0.012	0.012	0.009	0.016	1.0
LEAD	0.003	0.004	0.003	0.003	0.05
ZINC	0.02	0.01	0.02	0.10	5.0
CHLORIDE	4.0	4.0	4.0	4.0	250.0
pH	7.8	7.3	7.4	7.3	-
NITROGEN NITRATE-NITRITE	ND	0.45	0.02	ND	10.0
NITROGEN AMMONIA	0.71	0.59	0.20	ND	-
TOTAL ORGANIC CARBON	6.0	6.0	7.0	7.0	-

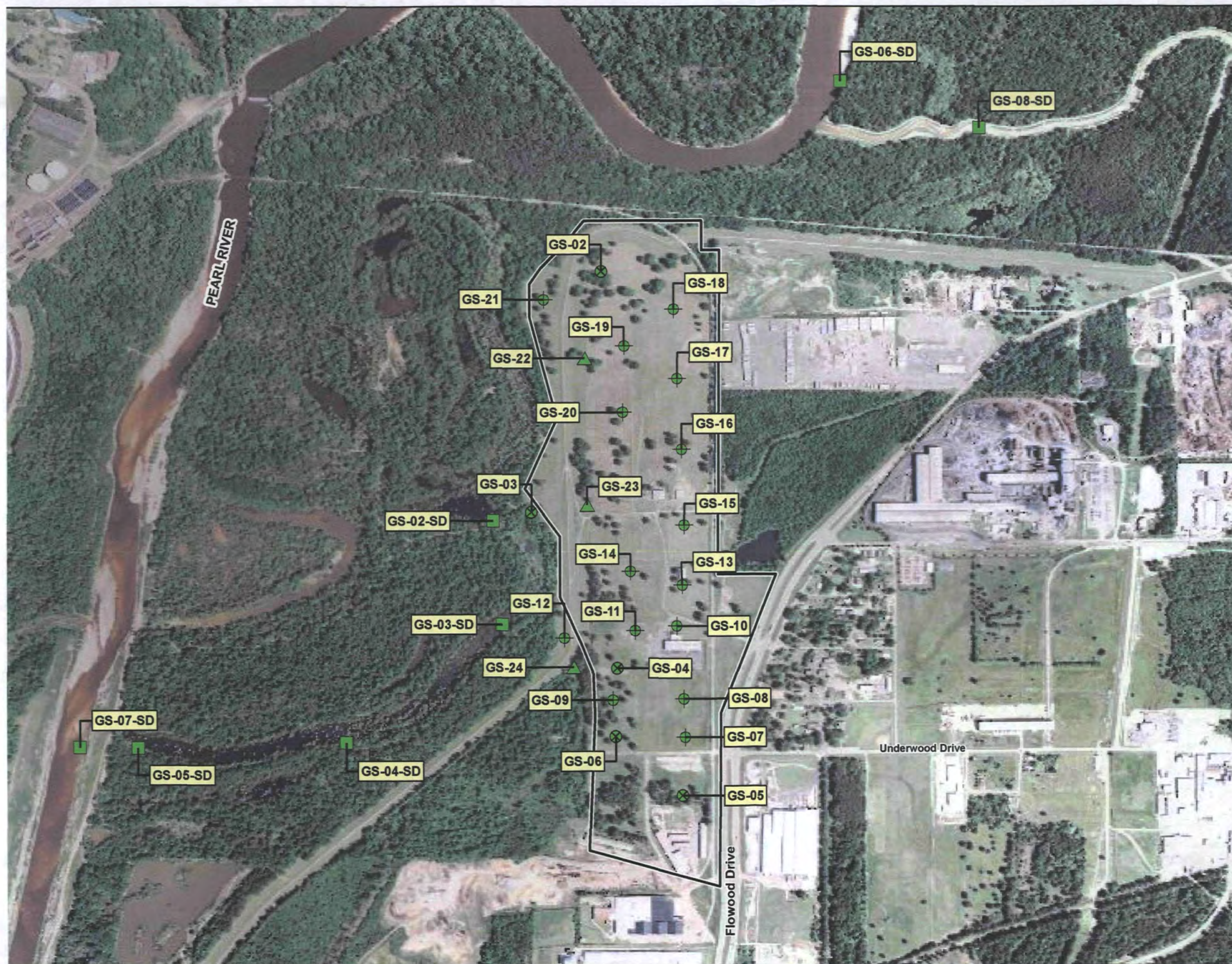
ATTACHMENT E

**FIGURE 3: SITE PLAN/SOIL BORING LOCATIONS – LEFLEUR’S BLUFF SITE,
PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT, PPM
CONSULTANTS, INC., 2005**



ATTACHMENT F

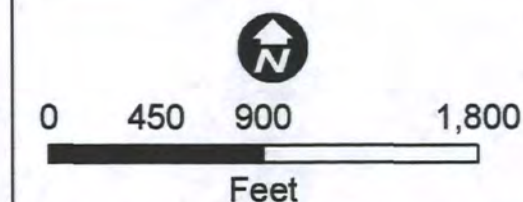
**FIGURE 4: 2003 SAMPLE LOCATIONS – GULF STATES CREOSOTING
COMPANY – 2008 EPA REASSESSMENT REPORT**



Legend

- Surface Soil, Subsurface Soil, & Groundwater Sample
- Sediment Sample
- Surface Soil & Subsurface Soil Sample
- Surface Soil Sample

Site Boundary



United States Environmental Protection Agency

**GULF STATES
CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY,
MISSISSIPPI
TDD No. TNA-05-003-0045**

**FIGURE 4
2003 SAMPLE LOCATIONS**

TN & Associates, Inc.
& A EPA Region 4 START
in association with Shaw E&I and Aerostar

ATTACHMENT G

**LETTER FROM EPA REGION 4 TO MDEQ –AUTHORITY AND APPLICABILITY
OF MISSISSIPPI BROWNFIELDS PROGRAM AND EPA ENFORCEMENT BAR
UNDER CERCLA SECTION 128(b)1, 03/27/2008**



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

MAR 27 2008

RECEIVED
MAR 31 2008
Dept of Environmental Quality
Office of Pollution Control

Mr. Jerry Cain, Director
Office of Pollution Control
Mississippi Department of Environmental Quality
515 East Amite Street
Jackson, MS 39201

SUBJ: CERCLA Section 128(a) State Response Program

Dear Mr. Cain:

In response to the request from your Department, the U.S. Environmental Protection Agency (EPA), Region 4, has completed its review of documentation provided by the Mississippi Department of Environmental Quality (MDEQ) to demonstrate that the State's Brownfields Program meets the four requirements specified in Section 128(a)(2) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The requirements are:

- (1) Timely survey and inventory of brownfields sites in the State;
- (2) Oversight and enforcement authorities or other mechanisms, and resources, that are adequate to ensure that a response action will protect human health and the environment and be conducted in accordance with applicable Federal and State law;
- (3) Mechanisms and resources to provide meaningful opportunities for public participation; and
- (4) Mechanisms for approval of a cleanup plan and verification and certification that the response action is complete.

EPA has evaluated the statutory and regulatory authorities contained in the "Mississippi Brownfields Voluntary Cleanup and Redevelopment Act," (Sec. 49-35-1 et seq.), and its implementing regulations, and has concluded that the Mississippi Brownfields Program has sufficient authority and mechanisms to meet the four requirements identified in CERCLA Section 128(a)(2). In addition, Nicole Comick-Bates, the EPA, Region 4, Project Officer for MDEQ's Response Program Cooperative Agreement, has determined that the State has established and updates, at least annually, a

public record of sites where response actions are planned and have been completed pursuant to the public record requirement outlined in CERCLA Section 128(b)(1)(C). As long as the State maintains this public record, with the required annual updates, the enforcement bar provision in CERCLA Section 128(b)(1) will be applicable in the appropriate circumstances.

We commend MDEQ staff for their efforts to promote brownfields redevelopment opportunities in Mississippi and look forward to advancing our partnership to address the assessment, cleanup, and reuse of brownfields sites. Should you have any questions, please do not hesitate to contact me at (404) 562-8313.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Farmer", with a stylized flourish at the end.

G. Alan Farmer
Director
RCRA Division

cc: Trey Hess, MDEQ

ATTACHMENT H

**REMEDIAL SITE ASSESSMENT DECISION – EPA REGION IV, NO FURTHER
REMEDIAL ACTION PLANNED (NFRAP), GULF STATES CREOSOTING
COMPANY, 2008**

EPA ID: MSN000407423 Site Name: GULF STATES CREOSOTING COMPANY

State ID:

Alias Site Names:

City: FLOWOOD

Refer to Report Dated: 7/30/2008

County or Parrish: RANKIN

State: MS

Report Developed By:

Report Type: SITE REASSESSMENT 001

- ☒ 1. Further Remedial Site Assessment Under CERCLA (Superfund) is not required because:
NFRAP: No further Remedial Action planned
- ☐ 2. Further Assessment Needed Under CERCLA:

Discussion/Rationale:

The U.S. Environmental Protection Agency (EPA) has determined that no further remedial action by the Federal Superfund program is warranted at the referenced site, at this time. The basis for the no further remedial action planned (NFRAP) determination is provided in the attached document. A NFRAP designation means that no additional remedial steps under the Federal Superfund program will be taken at the site unless new information warranting further Superfund consideration or conditions not previously known to EPA regarding the site are disclosed. In accordance with EPA's decision regarding the tracking of NFRAP sites, the referenced site may be removed from the CERCLIS database and placed in a separate archival database as a historical record if no further Superfund interest is warranted. Archived sites may be returned to the CERCLIS site inventory if new information necessitating further Superfund consideration is discovered.

The Gulf States Creosoting Company Site is a large (141 acres) property in Jackson, Miss. upon which wood treating operations were conducted from the 1930s to the mid-1950s. Later operators of portions of the property included American Creosote Works (ACW) and W.G. Avery Body Company, which operated an auto body shop. Gulf States' operations included coal-tar creosote treatments of railroad cross-ties and transport on- and off-site via railroad boxcars. The site adjoins a levee on the west side, outside of which lies an area of riverine marshland along a slough (known as Creosote Slough) which drains, following heavy rain or flood events, to the Pearl River. Some parts of the property are in current use: one portion as a horse farm, and another by ConSteel Inc. (steel fabrication).

Past work (summarized for the 5-16-2007 CERCLIS decision (see records) indicated the need for a Removal Assessment to investigate a possible area of buried creosote waste materials, as well as drainage pipes and pipelines whose entrance points and possible exit points had been discovered during field work and extensive site reconnaissance efforts. These lines were believed to lead from the site, under the levee, out onto the marshland; and significant amounts of creosoting waste were thought to be present in an area of contaminated soil on one part of the site, discovered by a consultant working for ConSteel. Concurrent with the Removal Assessment, an Integrated Expanded Site Inspection (ESI) was planned that would allow coordination of sampling and supporting lab analysis, use of data by both remedial and removal programs, and a faster overall response.

Between August and October, 2007, EPA Region 4's Emergency Response and Removals Branch (ERRB) performed a Removal Assessment while ESI sample planning proceeded. Unexpectedly, no waste materials were found in any of the suspect areas, nor in the drain lines and drain-entrance culverts. In view of this, the assigned word under START3 was changed in January 2008 to initiate a Site Reassessment using all available information gathered for the site to date.

Results from the Site Reassessment indicate that the main contribution to the site profile under the HRS is the potential for groundwater contamination. Potable water supply in the area, however, is supplied from surface sources. The 2003 PA/SI did record shallow groundwater contamination of several metals at >3x background, but recorded only one organic compound, MEK (a possible laboratory contaminant) at a single-parts-per-billion level. The metals detections onsite may, or may not, be attributable to known operations onsite.

On the surface water pathway, past sediment samples along the Pearl River have not shown releases; detections were on Creosote Slough. The slough drains to the river but has no normal flow-through, and is not in the river flow path. Contrary to past conclusions, while there is clearly fishing along the river, the evidence for fishing in Creosote Slough is equivocal. The possibility of exposure of nearby residents to site contaminants via fishing in the slough (Creosote Slough) was investigated in the 2006 EPA Region 4 SEDS fish tissue study; site contaminants capable of posing risk

Site: GULF STATES
Brook: L8
Other: YLR



10642416

EPA ID: MSN000407423 Site Name: GULF STATES CREOSOTING COMPANY

State ID:

were not found in fish. In any event, the target values associated with the river are very low (no intakes or wetlands), and this would cause a very low contribution for the surface water pathway.

In view of the absence of the large waste quantities foreseen, and the lack of clear threats to the river and/or nearby residents, the site will be designated NFRAP.

Site Decision Made by: RALPH O. HOWARD, JR.

Signature: _____

Date: 10/20/2008

ATTACHMENT I

**FIGURE 1 – AREAS TO BE EXCAVATED, CONSOLIDATED, AND CAPPED,
GALLATIN STREET DUMP, PPM CONSULTANTS, INC., 12/13/2023**



PPM PPM CONSULTANTS, INC. www.ppmco.com	
DRAWN BY: BWH	DRAWN DATE: 12/13/23
PROJECT NUMBER: 30062014	PHASE: -

**RANKIN-HINDS PEARL RIVER
FLOOD AND DRAINAGE
CONTROL DISTRICT
GALLATIN STREET DUMP (FORMER)**
SOUTH GALLATIN STREET
JACKSON, MISSISSIPPI

**AREAS TO BE EXCAVATED,
CONSOLIDATED,
AND CAPPED**

FIGURE
NUMBER

1

ATTACHMENT J

**FIGURE 2 – AREAS TO BE CAPPED, LEFLEUR'S LANDING SITE, PPM
CONSULTANTS, INC., 12/13/2023**



PPM PPM CONSULTANTS, INC. www.ppmco.com	
DRAWN BY: BWH	DRAWN DATE: 12/13/23
PROJECT NUMBER: 30062014	PHASE: -

**RANKIN-HINDS PEARL RIVER
FLOOD AND DRAINAGE
CONTROL DISTRICT
JEFFERSON STREET DUMP
(LEFLEUR'S LANDING SITE)**
 658 SOUTH JEFFERSON STREET
 JACKSON, MISSISSIPPI

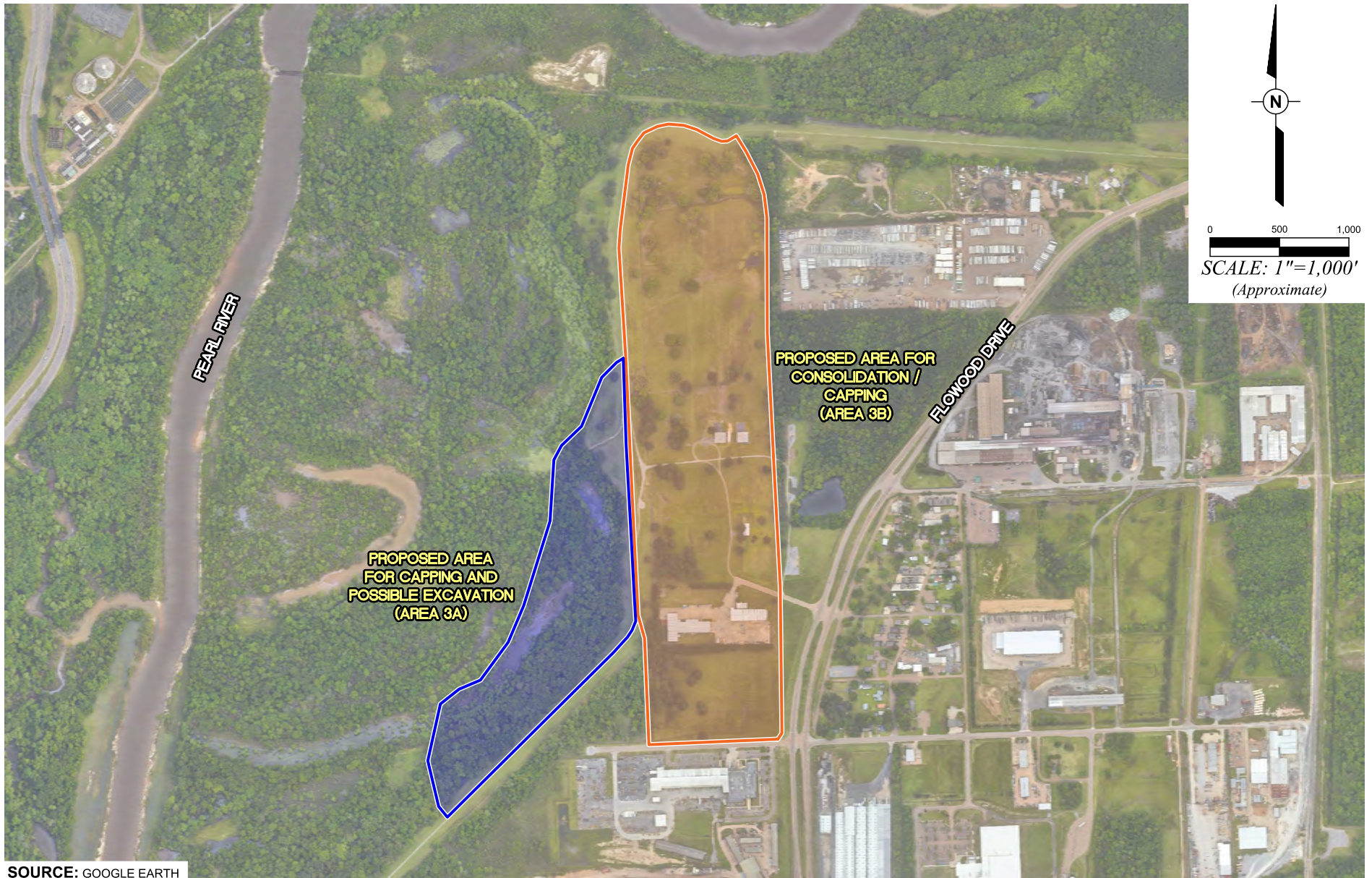
AREA TO BE CAPPED

FIGURE
NUMBER

2

ATTACHMENT K

**FIGURE 3 – AREAS TO BE CAPPED, GULF STATE CREOSOTE SITE, PPM
CONSULTANTS, INC., 12/13/2023**



PPM PPM CONSULTANTS, INC. www.ppmco.com	
DRAWN BY: BWH	DRAWN DATE: 12/13/23
PROJECT NUMBER: 30062014	PHASE: -

**RANKIN-HINDS PEARL RIVER
FLOOD AND DRAINAGE
CONTROL DISTRICT
GULF STATES CREOSOTE SITE**
FLOWOOD DRIVE
FLOWOOD, MISSISSIPPI

**AREAS TO BE CAPPED AND CONSOLIDATE
WITH POSSIBLE EXCAVATION**

FIGURE
NUMBER

3