



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270

**MEMORANDUM**

**SUBJECT:** Withdrawal of Previous Proposal to Add the Highway 71/72 Refinery Site, Bossier City, LA to the NPL

**FROM:** Wren Stenger  
Director, Superfund and Emergency Management Division

**WREN  
STENGER**

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**TO:** Brigid Lowery  
Director, Assessment and Remediation Division, Office of Superfund  
Remediation and Technology Innovation

**DATE:** July 15, 2021

**I. Introduction**

- Region is requesting to withdraw the previous proposal to add the Highway 71/72 Refinery Site (the “Site”) to the National Priorities List (NPL) (Site ID - LAD981054075)
- The Site is located in the City of Bossier City, Louisiana.
- Proposal was published in the Federal Register (FR) on February 13, 1995 (60 FR 8211).
- This request is supported by the Louisiana Department of Environmental Quality (LDEQ). The LDEQ coordinates with EPA for conduct of oversight of the Site operation and maintenance response.
- EPA has reviewed all of the relevant documentation supporting this action and is confident that the potentially responsible party (PRP) has implemented all appropriate response actions and that only continued monitoring as a component of operation and maintenance is required.
- Federal natural resource trustees determined on January 5, 2000: 1) that the Site is located in a highly developed urban area of Bossier City that has largely been paved over and which is transected by an Interstate and several multi-lane State highways; 2) for all practical purposes, the site provides no wildlife habitat, supports no service trust resources, and potential pathways of exposure to off-site fish and wildlife resources appear to be non-existent; and 3) therefore, the possibility of facility-related impacts occurring to off-site natural resources within trusteeship is deemed to be minimal.
- The site has an active CERCLA enforcement instrument (a Consent Decree (CD) entered on June 17, 2005 by the U.S. District Court for the Western District of Louisiana, Shreveport Division):
  - Cleanup goals have been met and the response actions required by the enforcement instrument are complete with only continued monitoring as a component of operation and maintenance is required.

## II. Site Background

- Location and Size of Site: The 215-acre Highway 71/72 Refinery Site is located near the intersections of Louisiana State Highways 71 and 72 in Bossier City, Louisiana. Old Minden Road runs through the center of the Site, dividing it into northern and southern halves.
- Operational History: The 215-acre former refinery site once included crude oil and product storage areas, a refinery and processing area, railroad tank car loading, unloading and cleaning areas, and numerous support buildings including maintenance shop, warehouse, and laboratory buildings. These operations were conducted from approximately 1929 to 1948. In addition to former refinery operations, oil/gas drilling and production and refined product transportation and distribution activities were conducted by others on and around the Site until approximately 1967, when the Site was cleared for redevelopment.
- NPL Proposal: In August 1986, the Site was evaluated for EPA by its Field Investigation Team. Using the Hazard Ranking System (HRS) model in effect at the time, the Site scored below the 28.50 HRS score necessary to qualify for submittal as a National Priorities List (NPL) candidate. Therefore, in February 1988, the Site was referred to the LDEQ for action under state authority. In September 1992, EPA conducted an Expanded Site Investigation (ESI) to re-evaluate the Site using the revised HRS model. Under the revised HRS, the Site received a score of 50. On February 13, 1995, EPA proposed that the Site be placed on the NPL. Through signing the CD, the PRP demonstrated that it would pay for and conduct Site cleanup; therefore, EPA did not pursue listing the Site on the NPL.
- EJ Screen: The EJ Index for Particulate Matter 2.5 (PM2.5), Ozone, National-Scale Air Toxics Assessment (NATA) Diesel PM, Traffic Proximity and Volume, Lead Paint Indicator, Superfund Proximity, Risk Management Plan (RMP) Proximity, Hazardous Waste Proximity, and Wastewater Discharge Indicator are above the 80<sup>th</sup> state percentile. The buffer distance for the EJ Screen was a 1 mile ring centered at 32.516667,-93.711667 near the intersection of Old Minden Rd. and Gould Dr. in Bossier City, Louisiana. The input area is approximately 3.14 square miles and the approximate population is 9,063.

## III. Cleanup History

- Investigations - Site investigations began in 1985 and were conducted primarily under the direction of Cities Service Company (CSC) and later OXY USA, Inc. (OXY). The LDEQ provided oversight of Site investigations prior to EPA's proposed listing of the Site on the NPL in 1995. Section 2 of EPA's 2000 Record of Decision details the ownership history of the Site.

From 1985 through 1987, five episodes of limited investigations/excavations were conducted on or adjacent to the Site. These investigations/excavations included limited sampling of hydrocarbon residue, coke material, and stained soil in the areas of the Bossier Crossroads Shopping Center, the old refinery process areas, the petroleum waste disposal area located in the southwest corner of the Site, one Carriage Square residence, and the Alexis Park Apartment Complex. In August 1986 the Site was evaluated for EPA by its Field Investigation Team. Approximately 15 soil samples were collected from a maximum depth of 4 feet bgs. These samples were analyzed for both organic (hydrocarbon) and inorganic (metal) compounds. The highest observed lead concentration at that time was 6,980 parts per million (ppm) lead in soil. Using the Hazardous Ranking System (HRS) model in effect at the time, the Site scored below the 28.5 HRS score necessary to qualify for submittal as an NPL candidate. Therefore, in February 1988 the Site was referred to LDEQ for action under state authority.

In 1990, a Site Investigation of the Alexis Park Apartment Complex was conducted by the OXY contractor ERM-Southwest Inc to determine the source, and the lateral and vertical extent of the hydrocarbon vapors detected at the Site, and to better define the shallow stratigraphy. This investigation included the installation of 18 soil borings and the implementation of a shallow soil-gas survey. ERM-Southwest also conducted indoor air monitoring of apartment buildings in the complex because of odor complaints and because the Louisiana Office of Public Health (LOPH) ordered certain apartments on the Site to be evacuated due to the presence of vapors which could potentially become explosive. ERM-Southwest also conducted vapor sampling and a deep soil-gas survey at the Alexis Park Apartment complex to determine the generating source or sources of methane and other hydrocarbon vapors detected during previous investigations. Under an Investigative Agreement between OXY and LDEQ, signed in August 1991, OXY had ERM-Southwest prepare a work plan for a Site investigation intended to determine the nature and extent of contamination. OXY's objective was to obtain sufficient, quality data to assess potential risks to human health and the environment attributable to previous refinery activities at the Site. The work was conducted from 1991 through 1994 and included investigations of subsurface soil, ground water, surface soil, and surface water.

In 1992, OXY contracted Exploration Technologies Inc, to conduct a soil vapor investigation throughout the former refinery area. Based on the results of the soil vapor investigation OXY contracted Law Environmental Inc., to conduct indoor air screening in those areas where elevated soil vapor readings were found. In 1994, Law Environmental Inc., followed this investigation with indoor air monitoring in 36 on-site locations where indoor airborne hydrocarbons had been documented. In September 1992, EPA conducted an Expanded Site Investigation (ESI) to reevaluate the Site using the revised HRS model. Under the revised HRS, the Site received a score of 50. On February 13, 1995 EPA proposed that the Site be placed on the NPL

In 1994, Texas Eastern Petroleum Products Company completed an analysis of light nonaqueous phase liquids (LNAPL) in six wells located within the former refinery process area. In 1995, Mission Research Corporation collected two surface soil samples consisting predominately of tar and coke material. The sampling objective was to analyze the tarry and coke material for metals, volatile organic compounds (VOCs) semi-volatile organic compounds (SVOCs), and full suite toxicity characteristic leaching procedure testing. One sample showed a lead concentration above 500 ppm.

- Removal Actions: Both OXY and Glenn Springs Holding, Inc. (GSHI) have performed removal actions under EPA orders at the Site on behalf of the PRP, CanadianOxy Offshore Production Co. (COPCO). In accordance with a July 1996 Unilateral Administrative Order (UAO), OXY, and later GSHI, conducted a removal action between 1996 and 1998 to address lead-contaminated surface soil at several Site locations. The Soil Removal Action included an investigation of 13 areas to determine the extent of lead contamination in surface soil at those areas. For the removal action, EPA selected a lead action level and cleanup level of 500 mg/kg. In addition to the areas selected for investigation and cleanup, the soil removal action addressed lead-contaminated surface soil at three, primarily residential areas known to exceed the established lead cleanup level. Cleanup involved the excavation and off-site disposal of 7,858 cubic yards of soil contaminated with lead concentrations above the cleanup level. The soil removal action addressed the top two feet of soil (defined as surface soil) in the areas targeted for cleanup.

Under a December 1996 UAO, GSHI completed an Indoor Air Removal Action in 1997 to address indoor air contamination at eight private residences and motel rooms to mitigate confirmed indoor air hazards. Numerous Site-wide investigations completed prior to issuance of, and in conjunction with, the UAO and community-requested sampling events have evaluated indoor air benzene concentrations across the Site. EPA selected 10 parts per billion by volume (ppbv) as the benzene action level and cleanup level based on site-specific data available at the time. Corrective action included engineering controls such as sealing cracks in foundations, where accessible; sealing penetrations in walls and foundations, where accessible; and/or installing or modifying ventilation systems for the dwelling units where concentrations of benzene in indoor air exceeded the benzene action level. These engineering controls were designed to reduce indoor air concentrations of benzene to concentrations that were below the cleanup level. The engineering controls did not address the source of the benzene but only prevented the benzene from entering the dwelling units or from accumulating in the dwelling units above the action/cleanup level. Based on the results presented in the Post-Corrective Measures Inspection Report the corrective action successfully reduced benzene concentrations in indoor air in the dwelling units addressed to below 10 ppbv. COPCO complied with the UAO and continued monitoring under the UAO until the monitoring was captured in the CD. Post-Corrective Measures Inspections continue currently.

In addition to the Removal Actions conducted at the Site, an LNAPL recovery program was initiated voluntarily by GSHI on behalf of COPCO in early 1997. The purpose of the LNAPL recovery program was to reduce the volume of LNAPL which is a primary source of the indoor air contamination documented at the Site. At the time the Record of Decision (ROD) was written, 4,721 gallons of LNAPL had been voluntarily recovered from the Site.

- Memoranda of Agreement (MOAs)/Memoranda of Understanding (MOUs) with other Federal, State or Tribal agencies: Since the Site was fully developed with residential and commercial properties, the Bossier City community leaders played a heightened role in decisions regarding Site investigation. From the time the Site was proposed to the NPL, EPA considered the advice of the Mayor of Bossier City and his staff, the members of the City Council, the Bossier City Chamber of Commerce, and the U.S. Congressional delegation which represents the area that included the Site.

Throughout the Site Remedial Investigation (RI), community leaders at the Site requested that EPA take a nonintrusive approach to Site investigation and remediation. To that end, EPA, Bossier City, LDEQ, and OXY who acted on behalf of the identified PRP, COPCO, entered into an "Agreement in Principle" (AIP) on September 10, 1995. The Agreement in Principle provided a framework within which to implement cleanup.

- Record of Decision: The EPA ROD was finalized on September 28, 2000 and provides a full description of Site contamination, risk assessment, remedial alternatives, and the selected remedy. The ROD identified the following remedial action objectives (RAOs):

#### Soil RAOs

1. Prevent human (especially child) ingestion of lead contaminated surface and subsurface soil with lead concentrations that exceed 510 ppm.

2. Prevent human ingestion of, and prevent human dermal contact with, and prevent human inhalation of surface and subsurface soils containing carcinogenic PAHs at concentrations greater than 1 ppm benzo(a)pyrene (BaP) equivalents, or benzene at concentrations greater than 1 ppm.
3. Prevent human ingestion of and prevent human dermal contact with soils containing other site related compounds that present a carcinogenic risk greater than  $1 \times 10^{-6}$  or a hazard index (HI) greater than 1.
4. Reduce and/or eliminate the potential for soils to be impacted by contaminants of concern (COCs) present in refinery waste materials located in the subsurface by removing LNAPL from ground water until the performance standard (a threshold thickness of 0.1 foot of LNAPL measured using an interface probe in monitoring or extraction wells) is attained.

#### Groundwater RAOs

1. Prevent human ingestion or inhalation of groundwater containing site related COCs at concentrations which exceed the corresponding Maximum Contaminant Level Goals (MCLGs) established under the Clean Water Act (CWA) that are set above zero for these COCs Alternatively prevent human ingestion or inhalation of ground water containing CWA Maximum Contaminant Levels (MCLs) of these COCs when the corresponding MCLGs are set at zero.
2. Reduce and/or eliminate the potential for ground water to be impacted by COCs present in refinery waste materials located in the subsurface by removing LNAPL from groundwater until the performance standard (a threshold thickness of 0.1 foot of LNAPL, measured using an interface probe in monitoring or extraction wells) is attained, and by removing hydrocarbon-contaminated surface and subsurface soils, containing carcinogenic PAHs at concentrations greater than 1 ppm benzo(a) pyrene (BaP) equivalents, or benzene at concentrations greater than 1 ppm, should they become uncovered.
3. Prevent human ingestion or inhalation of groundwater containing Site-related COCs at concentrations which exceed the corresponding non-zero MCLGs (or MCLs where the corresponding MCLGs equal zero) by monitoring to ensure that concentrations of site related COCs do not exceed remediation goals in Site groundwater that may migrate to an area that is not within the area under the jurisdiction of the City's ban on groundwater use.

#### Indoor Air RAOs

1. Prevent human inhalation of concentrations of benzene in indoor air that exceed 10 ppbv benzene.
2. Reduce and/or eliminate the potential for indoor air to be impacted by COCs present in refinery waste materials located in the subsurface by removing LNAPL from groundwater until the performance standard (a threshold thickness of 0.1 foot of LNAPL, measured using an interface probe in monitoring or extraction wells) is attained.

The selected remedy included the following components:

1. Implementation of groundwater use restrictions.
2. Sampling for lead in surface soil (0 to 2 feet bgs) and sampling for hydrocarbons in surface and subsurface soils at the request of on-site community members.

3. Cleanup of lead-contaminated surface soil and hydrocarbons in surface and subsurface soil discovered during requested sampling or uncovered during earthmoving activities.
4. Quarterly notification of the on-site community of potential contamination, available environmental services and of groundwater use restrictions. (Changed to twice yearly)
5. Enhanced LNAPL recovery by dual-phase extraction (DPE) from LNAPL plumes (A, B, C and D), LNAPL recycling/reuse or disposal, and treatment of co-extracted groundwater and vapors using granular activated carbon.<sup>1</sup>
6. Monitoring of groundwater, LNAPL and indoor air.
7. Sampling for benzene in indoor air at the request of on-site community members.
8. Mitigation of indoor air contamination discovered through requested sampling.

The 2000 ROD states that the remedy will not meet applicable or relevant and appropriate requirements (ARARs) for groundwater because compliance with these ARARs is technically impracticable from an engineering perspective. The ROD attributed the basis for the January 10, 2000 Technical Impracticability (TI) Waiver (Appendix B of the ROD) to the following factors:

1. The presence of a potentially large source area that will remain at the Site beneath existing structures.
  2. The nature and extent of the contaminated groundwater plume.
  3. The community request that EPA take an approach to remediation that does not disturb the development on the Site.
- Remedial Actions: COPCO, the EPA, and the State of Louisiana entered into a Consent Decree (CD) on June 17, 2005. The CD, and the associated statement of work, set forth the conditions under which the PRP, COPCO, would conduct remediation of the Site in accordance with the selected remedy of the ROD. The Site has been managed by Region 6 using the Superfund Alternative Approach (SAA). The SAA can be used in certain circumstances where: site contamination is significant enough for listing on the NPL; remedial action is anticipated; and there is a PRP willing to enter into an agreement with EPA to perform the necessary work. Regions using the SAA act in accordance with the practices followed at sites listed on the NPL, using the same response techniques, standards and guidance and achieving the same cleanup levels that would be set if the site were listed on the NPL. GSHI is performing the work on behalf of COPCO. GSHI, on behalf of the Settling Defendant, COPCO, prepared the Remedial Design (RD) to fulfill the requirements of Section VI. (Performance of the Work by Settling Defendant) of the CD signed and agreed to by the EPA, LDEQ, and the Settling Defendant.

GSHI completed the RD in September 2006. EPA approved the Remedial Action (RA) Work Plan (RAWP) in February 2008 and the PRP mobilized to the Site to begin remedy construction in May 2008.

The PRP installed the dual-phase extraction, recovery, and treatment system (DPE-RTS) between 2008 and 2010.<sup>2</sup> The PRP expanded the existing well network by installing three additional wells along the southern boundary of the Site in November 2008.

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<sup>1</sup> The ROD identified four potential LNAPL areas, defined as LNAPL Plume Areas A, B, C and D to be addressed by the LNAPL recovery program. By the start of the Remedial Design only Plume Area A was found to have LNAPL. LNAPL was not present in Plume Areas B, C, or D and has not been found during 15 years of groundwater monitoring.

<sup>2</sup> DPE is a technology that applies a strong vacuum to extraction wells to simultaneously remove LNAPL floating on the water table and residual LNAPL trapped in the soil above the water table. DPE can also remove ground water and vapor. Once above ground, this co-extracted groundwater and vapor are separated from the LNAPL and treated.

### Remedial Action Progress

*Preliminary Closeout Report* – In September 2010 EPA completed the Preliminary Close Out Report (PCOR) to document that all construction activities for the Highway 71/72 Refinery Site were completed in accordance with Close Out Procedures for National Priorities List Sites (OSWER Directive 9320.2 09A P, January 2000). See SEMS #645866

*Financial Assurance* – On March 4, 2011, EPA approved an 80 percent reduction in financial assurance requirements provided by COPCO/OXY as a result of the actions taken to address remedy components and estimated costs for completion of the remedial action objectives. See SEMS #9190379

*RA Completion Report* – In September 2011, GSHI submitted the Remedial Action Completion Report for Lead in Soil and LNAPL Recovery Operational and Functional Report. EPA determined the Remedial Action for lead in soil has been adequately performed, and the remedial action objectives, remediation goals, and performance standards have been achieved for lead in soil. EPA also concluded that the LNAPL dual phase extraction (DPE) system was Operational and Functional. See SEMS #648179. Data to make this determination were generated during the RI, two lead removal actions, and from samples collected during the RD and RA, including the soil cleanup work described under the “Public Notification Obligations and Community Response Obligations” heading below.

*RA Completion Report* – In September 2018, GSHI submitted the Remedial Action Completion Report for benzene and polynuclear aromatic hydrocarbon (PAH) in soil. EPA determined the Remedial Action for benzene and PAH in soil has been adequately performed, and the remedial action objectives, remediation goals, and performance standards have been achieved. With the approval of this document, all performance standards for soil have been achieved. See SEMS #100013632. Data to make this determination were generated during the RI and from samples collected during the RD and RA, including the soil cleanup work described under the “Public Notification Obligations and Community Response Obligations” heading below.

GSHI will continue to implement the EPA and LDEQ approved RAWP including: Public Notification Obligations; Community Response Obligations; LNAPL Recovery Obligations; Groundwater Monitoring Obligations; and Groundwater Use Restrictions Obligations.

*Public Notification Obligations and Community Response Obligations* - Since February 2007, GSHI has mailed Community Notices to property owners within the former refinery Site boundary. The notices provide information on the following: (1) potential environmental issues that may exist at the Site; (2) environmental services available if community members encounter impacted soils or have indoor air complaints, (3) existing groundwater use restrictions, and (4) various methods to contact EPA, LDEQ, and a dedicated Community Hotline Number to obtain information or request sampling. In response to community requests, between January 2007 and June 2021, the PRP has performed 13 indoor air sampling events and 12 soil sampling events. If sampling indicates soil contamination or benzene in indoor air above cleanup goals, the PRP will initiate soil removal or indoor air mitigation at no cost to the property owner.

Only one of the requested soil sampling events exceeded cleanup goals. In May 2011, in preparation for construction of a new hotel complex, the developer requested soil sampling be conducted at the former Holiday Inn property, at 2015 Old Minden Road. The sampling, conducted after the former hotel was demolished, identified soil contamination concentrations above cleanup levels. In 2011 and 2012, the PRP remediated soil and refinery waste material found at the property during construction. The developer completed construction of the new Hilton Garden Inn and Homewood Suites hotel complex in 2013. This collaboration of cleanup and redevelopment efforts is an example of how the Site's alternative, non-intrusive cleanup approach allowed the PRP to address previously inaccessible waste during development, and also provided a better environment for redevelopment. This scenario was highlighted on EPA's Superfund Redevelopment Program page.

<https://www.epa.gov/superfund-redevelopment/superfund-sites-reuse-louisiana#highway>  
<https://semspub.epa.gov/work/06/100000020.pdf>

#### *LNAPL Recovery Obligations*

GSHI has operated the DPE extraction system since 2008. LNAPL Recovery Obligation require removal of LNAPL in groundwater until a cleanup goal of 0.1-foot of LNAPL in monitoring or recovery wells is achieved. Measurements are made with an electronic water/phase-separated interface probe capable of accuracy to 0.01 feet, as specified in the Remedial Design and Remedial Action Sampling and Analysis Plans (SAP), approved for the Site.

LNAPL monitoring and recovery is ongoing, and GSHI reports details to EPA in quarterly progress reports which are and summarized in annual reports. GSHI has measured the thickness of LNAPL, where present at the Site since 1997, and will continue on a quarterly basis until the LNAPL recovery plan has been certified complete by EPA/LDEQ.

The 0.1-foot cleanup goal for LNAPL was met January 2021 as documented in the First Quarter 2021 Remedial Action Status Update submitted April 9, 2021. While all DPE system recovery and monitoring wells are below the cleanup goal of 0.1-foot LNAPL, GSHI has continued to operate the DPE system to recover residual LNAPL. EPA has noted that one well, monitoring well MW-101-97, remained above the light non-aqueous phase liquid (LNAPL) cleanup goal of less than one-tenth of one foot (<0.1-foot) for 2020 as reported in the 2020 Annual Remedial Action Report. In correspondence dated June 21, 2021, EPA requested consideration of more aggressive management of this well. While MW-101-97 LNAPL levels are at or below the <0.1-foot cleanup goal as described in the First Quarter 2021 Remedial Action Status Update, EPA requested that MW-101-97 be managed as a dual-phase extraction (DPE) system recovery well and be permanently connected to the DPE system. EPA indicated that if MW-101-97 remains below the <0.1-foot cleanup goal for four quarters, EPA and LDEQ may consider a GSHI request per Section 7.1.1 of the "Operation and Maintenance Plan Revision 4" to evaluate the effectiveness of the DPE system with a planned shutdown.

In electronic mail correspondence dated June 23, 2021, GSHI indicated that it was taking all steps necessary to convert MW-101-97 to a recovery well and expected the work to be completed with a short turn-around.

#### *Groundwater Monitoring Obligations*

Semi-annual groundwater sampling has been conducted since 2008. As approved by EPA and LDEQ in July 2014, semi-annual groundwater sampling is conducted during the first and third



calendar year quarters during even number years and during the second and fourth calendar year quarters during odd number years to evaluate potential seasonal fluctuation. The CD requires that this monitoring will continue through 2035. Groundwater will continue to be evaluated as part of the Five-Year Review process.

#### *Groundwater Use Restrictions Obligations*

Groundwater use restrictions have been satisfied by the institutional controls adopted by Bossier City. The Bossier City Administrative Council approved a groundwater ordinance covering the former refinery boundary on October 17, 2000 (Ordinance 109 of 2000). The ordinance states that in addition to a ban on new groundwater well installation within the Highway 71/72 Refinery Site, existing wells on-Site shall not be used for any purpose. Potable water supplies, when required, must be sourced from the Bossier City water distribution system. All residences and businesses within the Site boundaries are connected to the Bossier City water distribution system. No known active water wells exist onsite. If it is determined that any refinery-related groundwater plume or LNAPL has migrated into areas that are not covered by Bossier City's groundwater use restrictions, GSHI will conduct additional investigation to further define the groundwater or LNAPL plume and alert the EPA, LDEQ, and the City of Bossier City so that the boundaries of the groundwater use restrictions can be revised.

- Five Year Reviews: EPA conducted its second statutory Five-Year Review (FYR) of the Site Remedy during 2017 and 2018 and issued its Second FYR Report for Highway 71/72 Refinery Site in May 2018. The EPA assessment found no issues and determined that the remedy at the Site is protective of human health and the environment. The triggering action for the statutory review was the completion date of the previous FYR. FYRs are required because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure. The next FYR for the Site is scheduled for completion in 2023. Five-Year Reviews will continue for the Site to ensure remedy effectiveness and to ensure that the groundwater ordinance remains in place and protective.
- Description of Community Engagement, including the status of any CAGs, TAGs or TAPs if/as applicable: EPA has remained in communication with Bossier City throughout the RD/RA process. EPA sent an introduction letter and EPA, LDEQ, and GSHI held a briefing with Bossier City on August 24, 2006. Since then, periodic project status briefings have been provided periodically for Bossier City. Community Availability Sessions were held for the public on November 28, 2006 and March 18, 2008 and an EPA Open House for the community was held on December 7, 2010. Community participation in these events was low (five or fewer attendees) indicating low community concern. The small number of sampling requests by the community also implies low community concern with the Site status. With the second FYR, EPA published a public notice in the Shreveport Times newspaper on 8/25/2017. It stated that the FYR was underway and invited the public to submit any comments to the EPA. The results of the review and the report are available at the Site's information repository, Bossier City Library, located at 2206 Beckett Street in Bossier City, Louisiana.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy implemented to date. All parties interviewed have a positive impression of the project and indicated that the remedy is functioning as designed. None of the parties interviewed were aware of complaints or inquiries regarding Site-related environmental issues or remedial activities from residents in the past five years.

The Bossier City Administrative Officer (AO) participated the FYR meeting and Site inspection. Community and local government officials interviewed were aware of the Site and cleanup and feel well informed of Site activities. The manager of the Alexis Park apartment complex indicated that it would be helpful if EPA could provide copies of the Site-related information to the property management office for current and prospective tenants. In response to that suggestion, the PRP provided additional Community Notices to the property manager to be made available from the apartment management office to tenants with the November 2017 mail out and has continued with subsequent mailouts. The AO was interviewed for the FYR, she suggested that it would be helpful to add a graphic of the Site area and boundary to the Community Notices. A site resident interviewed also indicated that a graphic of the Site added to the Community Notice would be helpful. A graphic has been included in the mailouts.

EPA, LDEQ and GSHI work together to encourage Reuse and Redevelopment of the Site. As new businesses express interest in development opportunities on the Site, or as current business owners pursue refinancing options, EPA, LDEQ and the PRP work together to address liability concerns by issuing comfort letters to banks and potential developers. Today, as operation and maintenance continue, the Site supports continued residential use and a wide range of commercial uses, which bolster the local economy. As of November 2017, onsite businesses employ over 500 people, contribute an estimated \$12.6 million in annual employment income, and generate \$51.4 million in annual sales revenues.

As described above under the “Public Notification Obligations” heading, periodic mail-outs (every 6 months) notify residents and business owners of the availability of these services (citizens may request soil and indoor air sampling) and the number to call to request these services. While this twice yearly mail out is a part of RA requirements, it also serves to keep the community informed and aware of site activities.

#### IV. Enforcement/Compliance History and Status of Enforcement Instruments:

- Consent Decrees (CDs): As described above, COPCO, the EPA, and the State of Louisiana entered a Consent Decree (CD) on June 17, 2005. The CD, and the associated statement of work, set forth the conditions under which the PRP, COPCO, would conduct remediation of the Site in accordance with the selected remedy of the ROD. GSHI is performing the work on behalf of COPCO. COPCO, OXY, and GSHI participated in the Site investigations. GSHI is a subsidiary of OXY.
- UAOs: Two UAOs were issued for Removal Action work. These are described above under the Removal Action heading. All work required by these UAOs was completed.
- Status of any unaddressed past or future costs: There are no unaddressed past or future costs. The PRP is billed annually. Timely payments go into the Site Special Account.
- Demonstrated cooperativeness of PRPs: The PRP has been very cooperative. There have been no unresolved issues at the site. For example, other findings not affecting the current or future protectiveness of the remedy were identified in the 2<sup>nd</sup> FYR Site inspection. These “other findings” were addressed prior to completion of the FYR.

#### V. Current Status of Response

- What is the current clean up status? – The Site meets the ROD-required cleanup goals, RAOs, and performance standards.

- What's left to clean up? - In November 2013, GSHI submitted the Remedial Action Completion Report for Benzene in Indoor Air to EPA and LDEQ. In response to EPA comments where additional evaluation was requested, GSHI submitted the Proposed Statistical Methodology for Indoor Air Evaluation and Supplemental Indoor Air Sampling on March 18, 2014 based on requirements in the June 2005 CD SOW. However, the use of Soils and Soil Media Methods as required in June 2005 SOW paragraph 58(a), was determined not suitable for evaluation of Remedial Action Objectives (RAOs) compliance with the indoor air performance standard considering the Site knowledge EPA and LDEQ have obtained from sampling and considering two new EPA Technical Guidance documents described in the following paragraphs below.

In addition to extensive indoor air sampling conducted during the RI and Indoor Air Removal Action, GSHI has conducted indoor air sampling at the request of the on-Site community since the CD was entered in 2005. Of the indoor air sampling conducted per the CD, no results have shown benzene to be above the ROD performance standard. The indoor air sampling conducted meets the cleanup goal for benzene in indoor air.

With the extensive data gathered at the Site since the September 2000 ROD, and the increased understanding of petroleum vapor intrusion in indoor air, EPA coordinated with the LDEQ and GSHI to require a protocol for providing an additional line of evidence that the Site indoor air RAO is met. The project team proposed evaluating protection of human health using the June 2015 EPA vapor intrusion guidance (OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, OSWER Publication 9200.2-154 and Technical Guide For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites, EPA 510-R-15-001). EPA proposed modification of the SOW per paragraph 109 of the CD. On May 31, 2016 and June 14, 2016, LDEQ and GSHI, respectively approved modification of the SOW.

GSHI submitted a draft RAWP Amendment on June 10, 2016, for monitoring of the petroleum vapor intrusion (PVI) pathway in accordance with Paragraph 14 (Modification of the SOW or Related Work Plans) of the CD to implement near slab soil gas sampling to determine vapor intrusion potential. As agreed by EPA, GSHI, and LDEQ, Paragraph 58 of the SOW was modified to utilize evaluation of the PVI pathway to demonstrate that the required RAO for Indoor Air at the Site have been met in order to fulfill the requirements of Section XIV (Certification of Completion) of the CD and Paragraph 57.a. of Appendix B SOW of the CD. In a letter dated May 26, 2017, EPA conditionally approved the RAWP Amendment with modifications to address additional sampling locations for near slab soil gas sampling requested by the LDEQ and the Louisiana Department of Health and Hospitals. Monitoring using near slab soil gas sampling will also allow units that have continued with Post-Corrective Measures Inspections to be cleared.

Contaminated groundwater and LNAPL occur at limited areas across the Site. Of the areas with contaminated groundwater and LNAPL, only one location at a local hotel was determined to have the potential for indoor air vapor intrusion based on EPA guidance. The additional sampling locations requested in the EPA letter included a building collocated with former areas of high LNAPL presence encountered at the startup of Phase II operation of the dual phase extraction system and areas at each of the buildings closest to groundwater monitoring wells associated with higher levels of benzene, toluene, ethylbenzene, and xylene (BTEX). The building collocated with former areas of high LNAPL, an unoccupied hotel, caught fire in

February 2021 and burned completely. The fire debris, building slab and pool were removed in May 2021. No Site contamination was found under the slab or pool. EPA also requested a Site monitoring well be added to the semi-annual groundwater sampling network for two events.

A revised RAWP Amendment was submitted on June 26, 2017, and subsequently approved by EPA on July 25, 2017. Implementation of the RAWP Amendment commenced on November 28, 2017, with the addition of monitoring well MW-2 to the semi-annual groundwater sampling events for two sampling events. During the November 28, 2017, and March 21, 2018, groundwater sampling events, the analytical sample results from MW-2 indicated concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected above laboratory reporting limits.

In February 2018, soil vapor implants (SVI) were installed at five- and ten-foot depths at ten locations near buildings of interest, as specified in the RAWP Amendment. During the subsequent near slab soil/gas sampling event conducted in February 2018, several SVI locations encountered water in the tubing and/or summa canisters due to historically high levels of rainfall. The near slab soil gas concentrations will be input into the EPA Vapor Intrusion Screening Level – Sub-slab or Exterior Soil/Gas Concentration to Indoor Air Concentration Calculator to determine the calculated indoor air concentration. If the calculated indoor air concentration exceeds the established indoor air remedial action goal, additional indoor air and ambient air monitoring will be conducted. To address the water in tubing issue, temporary ports will be drilled and sampled within a 2-day period. The ports installed in February 2018 could not reliably be cleared of water.

- If cleanup is still ongoing, who is doing it and under what type of enforcement instrument? – Cleanup goals, RAOs, and performance standards have been met. EPA, LDEQ, and the PRP are operating per the CD.
- For sites with PRP-lead cleanups continuing under other authorities, what financial assurance mechanisms are in place for any remaining work, including post-construction obligations? – The CD requires that the PRP submit annual financial assurance documentation.
- If there is a special account, what is the status and anticipated disposition of any remaining funds? – Most of the Special Account funding is in the “Transfer to Trust Fund” category. Payments from the PRP in response to EPA billing also go the Trust Fund.
- What are the community’s current/anticipated needs (if any) for independent technical assistance? As indicated above there has been minimal community interested and no requests for a Technical Assistance Grant.
- Briefly summarize any Natural Resource Damage assessments and/or projects. As indicated above, Federal natural resource trustees determined on January 5, 2000: 1) that the Site is located in a highly developed urban area of Bossier City that has largely been paved over, and which is transected by an Interstate and several multi-lane State highways; 2) for all practical purposes, the site provides no wildlife habitat, supports no Service trust resources, and potential pathways of exposure to off-site fish and wildlife resources appear to be non-existent; and 3) therefore, the possibility of facility-related impacts occurring to off-site natural resources within trusteeship is deemed to be minimal.

## VI. Conclusion

- The PRP has implemented all response actions required by the UAOs and CD, and only continued monitoring as a component of operation and maintenance is required.

- Any remaining requirements created by initiation of RA following EPA’s issuance of a Record of Decision (ROD) at this site will remain in force (e.g., operation and maintenance and Five-Year Reviews)
- Withdrawal of the proposal to place the site on the NPL is consistent with the November 12, 2002 EPA Office of Solid Waste and Emergency Response policy memorandum “Guidelines for Withdrawing a Proposal to List a Site on the NPL” and the current Superfund Program Implementation Manual.
- The state indicated its support for de-proposing the site by letter dated July 7, 2021.