

**SIXTH FIVE-YEAR REVIEW REPORT FOR
DISTLER BRICKYARD SUPERFUND SITE
HARDIN COUNTY, KENTUCKY**



AUGUST 2023

Prepared by

**U.S. Environmental Protection Agency
Region 4
Atlanta, Georgia**

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LIST OF ABBREVIATIONS AND ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
ASC	Allowable Soil Concentration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DCE	Dichloroethylene
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
HQ	Hazard Quotient
IC	Institutional Control
KDEP	Kentucky Department for Environmental Protection
KNREPC	Kentucky Natural Resources and Environmental Protection Cabinet
LTRA	Long-Term Response Action
MCL	Maximum Contaminant Level
mg/kg	Milligrams Per Kilogram
µg/L	Micrograms Per Liter
MW	Monitoring Well
N/A	Not Applicable
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
ROD	Record of Decision
RPM	Remedial Project Manager
RSL	Regional Screening Level
TCA	Trichloroethane
TCE	Trichloroethylene
USGS	United States Geological Survey
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii) and considering EPA policy.

This is the sixth FYR for the Distler Brickyard Superfund site (the Site). The triggering action for this policy review is the completion date of the previous FYR. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of one operable unit (OU), which addresses soil and groundwater. This FYR Report addresses the OU.

EPA remedial project manager (RPM) Donna Seadler led the FYR. Participants included EPA community involvement coordinator Angela Miller, EPA staff James Ferreira (hydrogeologist) and Kevin Koporec (human health risk assessor), Christoph Uhlenbruch and Larry Tackett from the Kentucky Department for Environmental Protection (KDEP), and Johnny Zimmerman-Ward and Kelly MacDonald from EPA FYR support contractor Skeo. The review began on 8/30/2022.

Site Background

The 3-acre Site is in West Point, Kentucky, just north of mile marker 36 on Dixie Highway (Figure 1). Starting in the late 1800s, a brick manufacturing plant operated on site. In the 1970s, an individual leased the site property and began operating a waste recycling and storage facility, which involved storing and disposing of waste in drums on site. The drums leaked or spilled, resulting in contamination of groundwater, soil and underground air passages in kilns associated with the brick plant. Contaminants of concern (COCs) include volatile organic compounds (VOCs) and heavy metals. The facility operated concurrently with a similar operation at the nearby Distler Farm Superfund site; the operations were historically affiliated with the same individual, but they are separate Superfund sites with separate cleanups.

The Site is not in use. The Site is mostly forested, and current site features include the brick debris remains from the brick kilns, empty tanks, plastic piping, a dilapidated shed and hardware from earlier cleanup activities. Active monitoring wells are also on site. The Site includes an open field covered with grass and shrubs as well as forested areas around the field. An active Illinois Central Railroad track runs across the Site, parallel to the location of the former brick kilns. A fence with a gate at the dirt road entrance parallels the Dixie Highway.

The confluence of the Ohio River and the Salt River is about a mile northwest of the Site. An unnamed tributary of Bee Branch receives runoff from the Site. The Site lies on alluvium and glacial outwash deposits in the Ohio River Valley. Two hydrostatic units make up these deposits. The unconsolidated

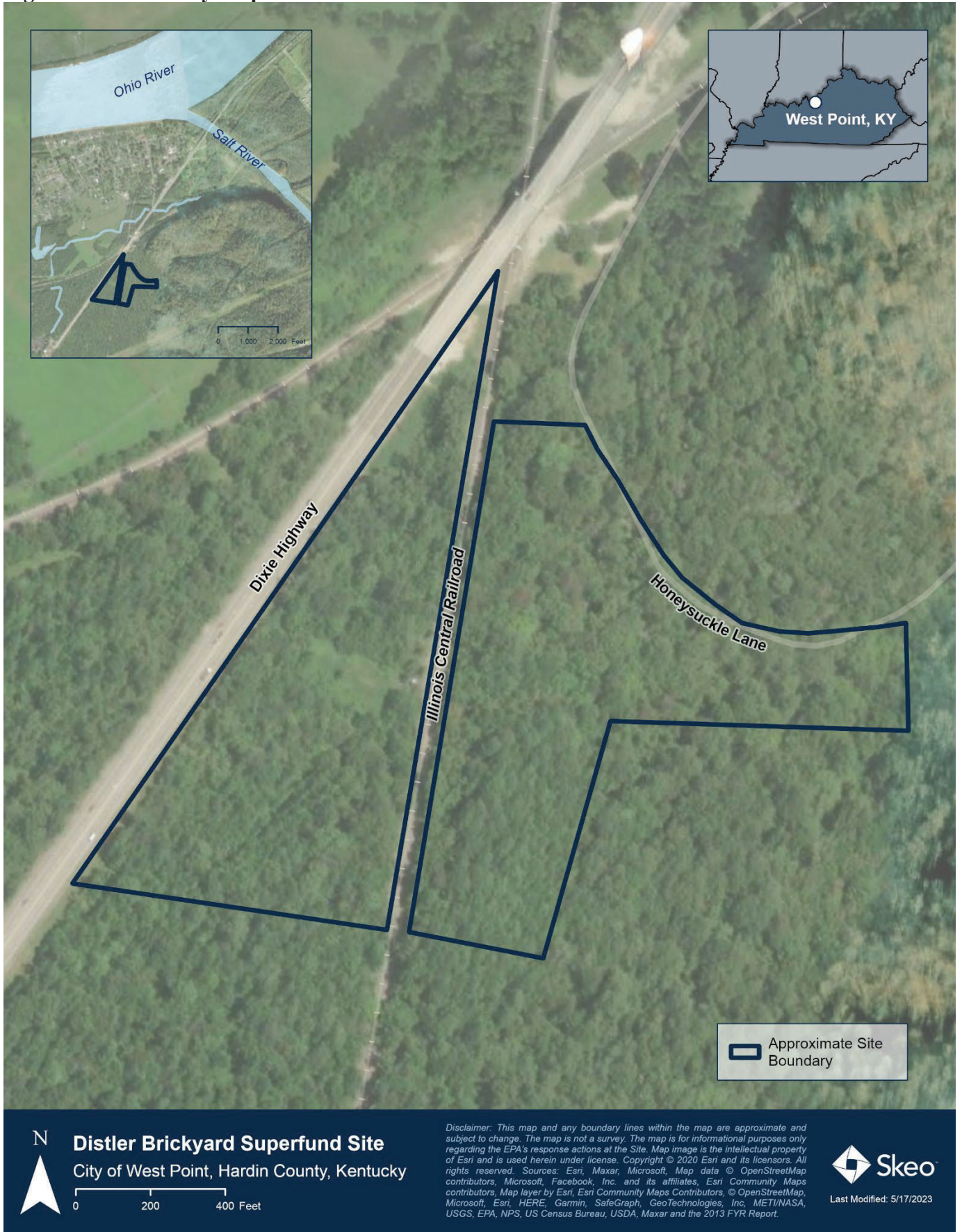
deposits can be characterized as fine-grained alluvium, with compositions that vary from a silty clay to a clayey fine sand. The coarse-grained alluvium directly underlying the fine-grained alluvium consists of sandy gravel and gravelly sand. Groundwater flow in the fine-grained alluvium is to the southeast, while flow in the coarse-grained alluvium is toward the northwest. Site groundwater is not currently used.

Appendix A includes documents reviewed as part of this FYR. Appendix B includes the EPA’s site status information. Appendix C provides the Site’s chronology of events.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Distler Brickyard		
EPA ID: KYD980602155		
Region: 4	State: Kentucky	City/County: West Point/Hardin
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the Site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Donna Seadler, EPA RPM		
Author affiliation: EPA with support provided by Skeo		
Review period: 8/30/2022 – 7/25/2023		
Date of site inspection: 10/26/2022		
Type of review: Policy		
Review number: 6		
Triggering action date: 9/25/2018		
Due date (five years after triggering action date): 9/25/2023		

Figure 1: Site Vicinity Map



II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The 1986 Remedial Investigation Report confirmed soil and groundwater contamination at the Site. The main contaminant transport pathway of concern at the Site was potential ecological and human exposure due to movement of contaminated groundwater. Two other minor contaminant transport pathways of concern included transport of contaminated sediment via surface water runoff of contaminated soil and transport of site contaminants during flooding conditions of the Ohio River. Table 1 lists the COCs found in groundwater and soil at the Site.

Based on the remedial investigation results, the EPA concluded that while COCs were confined to the Site, local hydrogeologic conditions suggested that the contaminants were likely to migrate off site over time. The EPA conducted a feasibility study in 1985 and 1986 to identify necessary remedial measures.

Response Actions

The Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) initiated enforcement action against the business operator in early 1977. The Federal Bureau of Investigation, the EPA and KNREPC found and sampled drums containing waste stored on the site property. A restraining order served to the business operator prohibited further use of the site property for storage or disposal of industrial waste. A follow-up visit found that the operator had not immediately heeded the order.

Initial field sampling by the EPA in August 1978 indicated site contamination. In January 1979, KNREPC served an Order to Abate and Alleviate Operations to the business operator, which prompted a partial removal of drummed wastes from the site property and prevented further storage activities. Between January 1979 and December 1981, the agencies issued several additional orders for further removal of waste from the facility. The business operator ignored the orders.

In December 1981, KNREPC requested that the EPA initiate an emergency removal at the site property. In March 1982, the EPA removed about 2,300 drums of hazardous waste from the Site and sampled and removed patches of soil contaminated by leaking drums. The EPA conducted air quality monitoring and geophysical surveys to explore for buried drums, which found no air quality problems, two possible areas of buried drums, and potential groundwater contamination from spills and leaking drums. Additional investigations in 1982 confirmed the soil contamination and delineated the extent of groundwater contamination. The EPA placed the Site on the Superfund program's National Priorities List (NPL) in September 1983.

The EPA selected the Site's long-term remedy in the 1986 Record of Decision (ROD). The ROD identified the following remedial action objectives (RAOs) for the Site:

Surface contamination

- Source control.
- Reduce concentrations of contaminants.
- Control potential migration of surface and subsurface contaminants resulting from contaminated soils.
- Prevent or minimize surface erosion and consequent contaminant runoff, including environmental hazards associated with potential flooding of the Salt River and/or Ohio River.

- Prevent, minimize or eliminate the on-site potential for exposure by direct contact, the on-site potential for airborne releases and the potential for contaminant migration by surface water pathways.

Groundwater contamination

- Management of migration.
- Prevent increase of contaminant concentrations.
- Reduce concentrations of contaminants.
- Prevent or minimize further migration of contaminants (plume control).

The 1986 ROD identified the following remedial components for the Site:

- *Excavation of contaminated soils to a depth where contaminant concentrations are at background levels in areas A & B.*
- *Backfill with “clean” natural granular soils.*
- *Grade surface to existing grade and revegetate.*
- *Offsite landfill disposal.*
- *Extraction and off-site treatment of contaminated groundwater to background levels and reinject into the aquifer.*
- *Mowing and maintenance of vegetation and repair of any erosion for a period of one year.*

As described above, the ROD required remediation of soil and groundwater levels to background levels. After determining the difficulty of attaining the required background levels, the EPA established alternate cleanup levels that would be protective of human health for groundwater consumption. Groundwater was to be remediated to drinking water standards and soil was to be remediated based on leaching to groundwater (so that drinking water standards would not be exceeded).

In 1988, the EPA issued an Explanation of Significant Differences (ESD) that changed the remedy from the 1986 ROD to include the alternate cleanup levels as follows:

Based on Drinking Water Standards and the Soil Remediation Studies, EPA, with the concurrence of the Commonwealth of Kentucky..., is changing the implementation of the remedies from what was originally outlined in the Records of Decision to require excavation of soil and remediation of groundwater to levels set by the following health based methods:

Soils will be excavated to insure (sic) that no water leaching into the aquifer underlying the sites will exceed the health based values given below.

Groundwater will be remediated to the Drinking Water Standards and the health based Maximum Concentration Limits given below.

Table 1 lists site cleanup goals.

Table 1: Site Cleanup Goals

COC	1988 ESD Groundwater Cleanup Goal (µg/L)	1988 ESD Allowable Soil Concentrations (ASCs) * (mg/kg)
Arsenic	50	208
Chromium	50	25,000
Lead	50	21,000
Benzene	5	0.485
2-Butanone	170	1.178
1,1-DCE	7	1.471
Trans-1,2-DCE	70	11.966
Toluene	2,000	803.880
1,1,1-TCA	200	13.398
TCE	5	0.716
<i>Notes:</i> Source: 1988 ESD (PDF pages 5-6 for groundwater cleanup goals and PDF pages 53 and 60 for soil ASCs) µg/L = micrograms per liter mg/kg = milligrams per kilogram DCE = dichloroethylene TCA = trichloroethane TCE = trichloroethylene *Groundwater cleanup goals were based on drinking water standards. Soil cleanup goals were based on protection of groundwater (which is a potential source of drinking water).		

Status of Implementation

The EPA conducted the Site’s remedial design from April 1987 to September 1988. Remedial action began in September 1988. A total of 42 tractor trailer loads of contaminated soil were excavated and transported off site for incineration. After each round of excavation, samples from the excavation pits and trenches were analyzed to determine levels of residual contamination. This process continued until about 6 inches of native soil had been removed from affected areas and results indicated that contaminants were either at or below the allowable soil concentrations (ASCs). The Site was backfilled with clean soil and then graded and seeded with grass.

Installation of a pilot groundwater treatment facility finished in 1989, followed by a series of field sampling and hydrogeologic studies that lasted until mid-1993. The Site’s permanent water treatment system started operating in September 1994. The groundwater pump-and-treat system used wells to extract contaminated water. The system used on-site carbon filters to clean contaminated groundwater. The system then pumped the treated water back into the ground through a set of on-site disposal wells.

Since implementation of the groundwater treatment system, there were challenges related to fluctuating groundwater levels and low contaminant extraction rates that prompted additional study. Although O&M was transferred to KDEP in 1996, the EPA requested the United States Geological Survey (USGS) conduct groundwater sampling and analysis at the Site from 1995 to 1997 as part of an EPA-commissioned study to determine the effectiveness of the Long-Term Response Action (LTRA) Plan. The Idaho National Engineering and Environmental Laboratory and North Wind Environmental also led further site characterization activities. In 2005, North Wind Environmental completed a pilot study that confirmed enhanced bioremediation could remediate chloroethanes; no additional work was conducted

after the initial study. The groundwater extraction system has not been operational since 2005 and is not in good enough condition to resume operation.

Based on a recommendation in the 2013 FYR Report and in agreement with the EPA, the KDEP abandoned 40 groundwater wells due to their old age and poor condition. To determine the final status of groundwater contamination (per a 2013 FYR Report recommendation), the KDEP installed three pairs of groundwater wells and took soil samples at depth in 2014. Groundwater sampling occurred in April 2015, October 2015, and January 2017. As of the January 2017 groundwater sampling event, all cleanup goals had not been met. Trichloroethylene (TCE) concentrations remained above the ESD cleanup goal and arsenic detection limits were greater than the current MCL. Additionally, only one shallow well yielded water during the sampling events. There is currently no active groundwater remediation. The EPA conducted sampling in April and June 2023 and additional sampling events are planned. The results will be used to evaluate the extent of remaining groundwater contamination.

Institutional Control (IC) Review

The Site’s decision documents did not call for institutional controls. However, institutional controls are needed. The most recent groundwater sampling from 2017 indicated that not all groundwater COCs have met MCLs. Thus, groundwater institutional controls are necessary until MCLs are achieved. Additionally, as seen in Appendix I, the soil cleanup goals for arsenic and lead exceed current residential screening levels. While maximum concentrations of lead and arsenic from the most recent subsurface soil sampling in during well installation in 2014 were less than leaching to groundwater-based numbers, additional surface soil sampling is needed to confirm whether soil institutional controls may be needed based on human health risk from direct contact.

There is no current use on site, so there is no current exposure risk despite the lack of institutional controls. Table 2 lists the needed institutional controls associated with areas of interest at the Site.

Table 2: Summary of Planned and/or Implemented Institutional Controls (ICs)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	No	136-00-00-027 ^a	Prevent exposure to contaminated groundwater.	None in place
Soil	To be determined	No	136-00-00-027 ^a	Prevent exposure to contaminated soil.	None in place

Notes:

- a. Parcel 136-00-00-027 extends across Dixie Highway to the west, but institutional controls are only needed on the on-site portions of the parcel, shown in Figure 2.

Figure 2: Institutional Control Map



Systems Operations/Operation and Maintenance (O&M)

There is no current O&M plan. The KDEP is responsible for O&M activities. These activities consist of mowing and general maintenance of site features, including fencing, signage and a locked gate. As seen during the site inspection, site fencing and signage are in good condition, and paths to the wells are maintained and mowed.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determination and statement from the 2018 FYR Report as well as the recommendations from the 2018 FYR Report and the status of those recommendations.

Table 3: Protectiveness Determination/Statement from the 2018 FYR Report

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Short-term Protective	The remedy at the Site currently protects human health and the environment because there are currently no completed exposure pathways. However, in order for the remedy to be protective in the long term, the following actions need to be taken: determine the amount and extent of remaining groundwater contamination at the Site using appropriate detection limits; sample for 1,4-dioxane using appropriate detection limits; evaluate and implement options for addressing remaining groundwater contamination; and require institutional controls for groundwater and soil in a decision document and implement the institutional controls.

Table 4: Status of Recommendations from the 2018 FYR Report

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	Only one shallow groundwater monitoring well has yielded water so the current status and extent of remaining groundwater contamination at the Site is unclear. Detection limits are not below current MCLs for all contaminants sampled.	Determine the amount and extent of remaining groundwater contamination at the Site using appropriate detection limits.	Ongoing	Sampling was conducted in April 2023. Future sampling will evaluate the extent of remaining groundwater contamination using appropriate detection limits.	N/A
1	The chemical 1,4-dioxane has not been analyzed recently in site groundwater samples.	Sample for 1,4-dioxane using appropriate detection limits.	Completed	Sampling was conducted in April 2023. Awaiting data validation for interpretation.	2023
1	There is no functioning remedy in place to address remaining groundwater contamination.	Evaluate and implement options for addressing remaining groundwater contamination.	Ongoing	Additional groundwater sampling was conducted in April 2023.	N/A

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	Groundwater and soil institutional controls are not required by decision documents and have not been implemented.	Require institutional controls for groundwater and soil in a decision document and implement the institutional controls.	Ongoing	Institutional controls (ICs) have not been required or implemented since the 2018 FYR. EPA conducted groundwater sampling in April and June 2023 and additional groundwater and soil sampling is planned. Results will be used to determine the status of the remedy and IC requirements.	N/A

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

The EPA issued an online news release on October 19, 2022, to announce that the FYR was underway. A copy of the news release is available online at <https://www.epa.gov/newsreleases/epa-review-cleanups-45-southeast-superfund-sites> and is included in Appendix D. The results of the review and the completed FYR Report will be made available on EPA’s site profile page: <https://www.epa.gov/superfund/distler-brickyard>.

During the FYR process, an interview was conducted to document any perceived problems or successes with the remedy that has been implemented to date. The interview is summarized below; the complete interview form is in Appendix E.

Larry Tackett from the KDEP indicated that the Site is fenced with locked gates. He also noted that there is graffiti on remedy components at the Site; a fence along the railroad might be warranted to curb vandalism. Mr. Tackett said groundwater contamination remains on site and that more evaluative work is needed. He also noted that the remedy has been complete for a while and that no future remedial actions are currently planned. The only inquiry that the KDEP received regarding the Site was from the new property owner who inherited the property, with whom the KDEP is in correspondence. Mr. Tackett noted that the Site still requires institutional controls and that there are no expected changes in land use.

Data Review

The EPA conducted sampling in April and June 2023. Multiple sampling events are planned to determine the next steps. Results of the April and June 2023 are not available as of the development of this FYR report. The 2018 FYR Report includes sampling results for subsurface soil and groundwater.

Site Inspection

The FYR site inspection took place on 10/26/2022. Participants included Donna Seadler, James Ferreira and Kevin Koporec (EPA), Christoph Uhlenbruch and Larry Tackett (KDEP), and Johnny Zimmerman-Ward (Skeo). The purpose of the inspection was to assess the protectiveness of the remedy. Appendix F includes the site inspection checklist. Appendix G includes site inspection photographs.

Site inspection participants accessed the Site from Dixie Highway. A locked gate restricts access to the Site. Fencing is only along part of the Dixie Highway side of the Site; it does not enclose all sides of the Site. Participants observed the former location of the old brickyard. Brick debris remains from the brick kilns and is overgrown with vegetation. Empty tanks, plastic piping, fenced wells, a dilapidated shed and

other hardware remain on site from previous cleanup activities. The tanks had been graffitied since the previous FYR. Active monitoring wells are accessible for monitoring purposes, and the central area of the Site and paths to the wells are maintained and mowed.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

The remedy is partially functioning as intended by decision documents. Contaminated soil was excavated until contaminant concentrations were at or below leach-based ASCs; excavated soil was taken off site for disposal. Additional soil sampling is needed to confirm surface soil meets human health direct contact risk standards. A groundwater pump-and-treat system extracted and treated contaminated groundwater. The system has not been operational since 2005 and cannot be restarted without extensive overhaul. No groundwater remedy operates at the Site and an operational remedy may be needed.

No sampling results are available in the last five years, but sampling from the previous FYR period indicated the presence of groundwater contamination above site cleanup goals (though the sampling event was limited spatially and temporally). More sampling is needed to identify the amount and extent of remaining groundwater contamination at the Site. The EPA conducted groundwater sampling in April and June 2023. The results of these and additional rounds of sampling will inform next steps for the site remedy.

Institutional controls were not called for in decision documents. Groundwater contamination persists above cleanup goals, therefore warranting institutional controls. Soil cleanup goals are above residential standards, which warrants additional evaluation for land use institutional controls. There do not appear to be any issues regarding current protectiveness. The Site is not currently in use and site groundwater is not being used.

As seen during the FYR site inspection, site fencing and signage are in good condition, and paths to the wells are maintained and mowed. However, graffiti was observed on site; more fencing or trespassing deterrent measures should be considered. There is no O&M plan for the Site.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of the remedy selection still valid?

Question B Summary:

The exposure assumptions used at the time of remedy selection are still valid (health protective). Groundwater cleanup goals were established primarily based on federal MCLs under the Safe Drinking Water Act. Appendix H compares cleanup goals to current MCLs; the current MCLs for arsenic, lead and toluene are more stringent than site cleanup goals. When groundwater data are available, groundwater conditions should be evaluated with current MCLs. MCLs have not been established for all groundwater COCs at the Site; the EPA selected a health-based level as the cleanup goal for 2-butanone. Appendix I compares the health-based cleanup goal against the EPA's current residential tap water regional screening level (RSL). The evaluation indicates that the groundwater cleanup goal for 2-butanone remains valid.

This FYR also evaluated the validity of the Site’s soil cleanup goals. Appendix I compares the soil cleanup goals to the EPA’s current RSLs for residential soil. All cleanup goals correspond to risk levels or HQs within the EPA’s acceptable risk range, except for lead and arsenic. An additional screening-level risk assessment cannot be performed until additional surface soil sampling is conducted.

The 2018 FYR Report recommended that groundwater should be analyzed for 1,4-dioxane because of the presence of 1,1,1-trichloroethane (TCA) at the Site historically. Analytical results for 1,4-dioxane from the April 2023 sampling event is awaiting validation and interpretation.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No more information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations	
OU(s) without Issues/Recommendations Identified in the FYR:	
None.	

Issues and Recommendations Identified in the FYR:

OU(s): OU-1 (Sitewide)	Issue Category: Monitoring			
	Issue: Groundwater sampling was conducted for the Site in April and June 2023. There is currently no operational groundwater remedy. Current MCLs for arsenic, lead and toluene are more stringent than site groundwater cleanup goals.			
	Recommendation: Sample groundwater to determine the extent and magnitude of remaining groundwater contamination using current MCLs. Implement a groundwater remedy and update cleanup goals as needed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	EPA	EPA/State	9/25/2028

OU(s): OU-1 (Sitewide)	Issue Category: Monitoring			
	Issue: There is insufficient data to determine if institutional controls for soil are needed.			
	Recommendation: Conduct soil sampling to determine if soil institutional controls are needed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	EPA	EPA/State	9/25/2025

OU(s): OU-1 (Sitewide)	Issue Category: Institutional Controls			
	Issue: Groundwater and soil institutional controls are not required by decision documents and have not been implemented.			
	Recommendation: Require institutional controls for groundwater in a decision document. Evaluate the need for institutional controls for soil. Implement institutional controls, as needed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	EPA	EPA/State	9/25/2028

OTHER FINDINGS

One additional recommendation was identified during the FYR. The recommendation does not affect current and/or future protectiveness.

- Graffiti was observed on site; more fencing or trespassing deterrent measures may be needed.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement
<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at the Site currently protects human health and the environment because the Site is not currently in use and Site groundwater is not being used. There are no completed exposure pathways. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: <ul style="list-style-type: none"> • Sample groundwater to determine the extent and magnitude of remaining groundwater contamination using current MCLs for comparison. Implement a groundwater remedy and update cleanup goals, as needed. • Conduct soil sampling to determine if soil institutional controls are needed. • Require institutional controls for groundwater in a decision document. Evaluate the need for institutional controls for soil. Implement institutional controls, as needed.

VIII. NEXT REVIEW

The next FYR Report for the Distler Brickyard Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Explanation of Significant Differences, Distler Brickyard Superfund Site, Atlanta, Georgia. EPA Region 4. October 1988.

Fifth Five-Year Review Report, Distler Brickyard Superfund Site, Atlanta, Georgia. EPA Region 4. September 2018.

Record of Decision, Distler Brickyard Superfund Site, Atlanta, Georgia. EPA Region 4. August 1986.

Soil Assessment and Monitoring Well Installation Report, Distler Brickyard Superfund Site, West Point, Kentucky. Micah Group. June 2014.

APPENDIX B – CURRENT SITE STATUS

Environmental Indicators

- Current human exposures at the Site are under control.
- Current groundwater migration is under control.

Are Necessary Institutional Controls in Place?

All Some None

Has the EPA Designated the Site as Sitewide Ready for Anticipated Use?

Yes No

Has the Site Been Put into Reuse?

Yes No

APPENDIX C – SITE CHRONOLOGY

Table C-1: Site Chronology

Event	Date
State officials discovered and inspected the Site	December 1976
The EPA conducted the Site’s preliminary assessment	February 1, 1980
The EPA conducted a site inspection	April 1, 1980
The EPA began an emergency removal action	March 1, 1982
The EPA completed the emergency removal action	April 27, 1982
The EPA proposed listing the Site on the NPL	December 30, 1982
The EPA finalized the Site’s listing on the NPL	September 8, 1983
The EPA began the Site’s remedial investigation/feasibility study	September 30, 1983
The EPA began enforcement activities	December 1985
The EPA completed the remedial investigation/feasibility study	August 19, 1986
The EPA signed the ROD	
The EPA began the remedial design	April 18, 1987
The EPA completed the remedial design	September 14, 1988
Superfund-State Contract signed	September 28, 1988
The EPA began the remedial action	
The EPA began the soil removal action	September 30, 1988
The EPA issued the Site’s ESD	October 26, 1988
Groundwater remedial action started	July 1989
The KDEP began O&M activities	September 30, 1990
The EPA completed soil removal action	December 31, 1991
Remedial action construction completed	September 15, 1994
The KDEP began the LTRA	
Interim Site Close-Out Report signed	January 11, 1995
USGS started special monitoring services	August 1995
Consent Decree issued	October 12, 1995
Consent Decree issued	November 15, 1995
State-Lead-Fund-Financed Cooperative Agreement for LTRA signed	April 1, 1996
USGS monitoring services completed	1997
The EPA signed the Site’s first FYR Report	September 28, 1998
The EPA signed the Site’s second FYR Report	September 29, 2003
North Wind Environmental issued bioremediation report	April 2005
Groundwater extraction system no longer operational	2005
The KDEP conducted groundwater sampling	May 2007
Brick kilns and warehouse demolished	Summer 2007
The EPA signed the Site’s third FYR Report	September 26, 2008
The KDEP conducted a sampling event	December 2009
The EPA signed the Site’s fourth FYR Report	September 20, 2013
The KDEP installed new groundwater wells	June 6, 2014
The KDEP conducted groundwater sampling event	April 2015
The KDEP conducted groundwater sampling event	October 2015
The KDEP conducted groundwater sampling event	January 2017
The EPA signed the Site’s fifth FYR Report	September 25, 2018

APPENDIX D – PRESS NOTICE



EPA to Review Cleanups at 45 Southeast Superfund Sites

Contact Information: region4press@epa.gov, 404-562-8400

ATLANTA (Oct. 19, 2022) – Today, the U.S. Environmental Protection Agency (EPA) announced that comprehensive reviews will be conducted of completed cleanup work at 45 National Priority List (NPL) Superfund sites in the Southeast.

The sites, located in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, will undergo a legally required Five-Year Review to ensure that previous remediation efforts at the sites continue to protect public health and the environment.

"The Southeast Region will benefit tremendously from the full restoration of Superfund sites, which can become valuable parts of the community landscape," **said EPA Region 4 Administrator Daniel Blackmon**. "The Five-Year Review evaluations ensure that remedies put in place to protect public health remain effective over time."

The Superfund Sites where EPA will conduct Five-Year Reviews in 2022 are listed below. The web links provide detailed information on site status as well as past assessment and cleanup activity. Once the Five-Year Review is complete, its findings will be posted in a final report at

<https://www.epa.gov/superfund/search-superfund-five-year-reviews>.

Alabama

Alabama Army Ammunition Plant <https://www.epa.gov/superfund/alabama-army-ammunition-plant>

Alabama Plating Company, Inc. <https://www.epa.gov/superfund/alabama-plating-co>

Mowbray Engineering Co. <https://www.epa.gov/superfund/mowbray-engineering>

US NASA Marshall Space Flight Center

US Army/NASA Redstone Arsenal <https://www.epa.gov/superfund/redstone-arsenal>

Florida

ALARIC Area GW Plume <https://www.epa.gov/superfund/alaric-area-groundwater-plume>

Beulah Landfill <https://www.epa.gov/superfund/beulah-landfill>

Chevron Chemical Co. (Ortho Division) <https://www.epa.gov/superfund/chevron-chemical-company>

Florida Petroleum Reprocessors <https://www.epa.gov/superfund/florida-petroleum-reprocessors>

Miami Drum Services <https://www.epa.gov/superfund/miami-drum-services>

Pensacola Naval Air Station <https://www.epa.gov/superfund/naval-air-station-pensacola>

Raleigh Street Dump <https://www.epa.gov/superfund/raleigh-street-dump>

Taylor Road Landfill <https://www.epa.gov/superfund/taylor-road-landfill>

Tower Chemical Co. <https://www.epa.gov/superfund/tower-chemical-company>

Georgia

Alternate Energy Resources Inc. <https://www.epa.gov/superfund/alternate-energy-resources>

Peach Orchard & Nutrition Co. Rd PCE Groundwater Plume Site <https://www.epa.gov/superfund/peach-orchard-road-pce-plume>

Powersville Site <https://www.epa.gov/superfund/powersville-site>

T.H. Agriculture & Nutrition Co (Albany Plant) <https://www.epa.gov/superfund/t-h-agriculture>

Kentucky

A.L. Taylor (Valley of the Drums) <https://www.epa.gov/superfund/al-taylor-valley-of-drums>

Brantley Landfill <https://www.epa.gov/superfund/brantley-landfill>

Distler Brickyard <https://www.epa.gov/superfund/distler-brickyard>
Distler Farm <https://www.epa.gov/superfund> <https://www.epa.gov/superfund/lee-lane-landfill/distler-farm>
Lee's Lane Landfill <https://www.epa.gov/superfund/lee-lane-landfill>
National Electric Coil Co./Cooper Industries <https://www.epa.gov/superfund/national-electric-coil-cooper-industries>
Tri City Disposal Co. <https://www.epa.gov/superfund/tri-city-disposal>

North Carolina

ABC One Hour Cleaners <https://www.epa.gov/superfund/abc-one-hour-cleaners>
Aberdeen Pesticide Dumps <https://www.epa.gov/superfund/aberdien-contaminated-groundwater>
Benfield Industries, Inc. <https://www.epa.gov/superfund/benfield-industries>
Cherry Point Marine Corps Air Station <https://www.epa.gov/superfund/cherry-point-marine-corps>
CTS of Ashville, Inc. <https://www.epa.gov/superfund/cts-millsgap>
GEIGY Chemical Corp (Aberdeen Plant) <https://www.epa.gov/superfund/ciba-geigy-corporation>
Gurley Pesticide Burial <https://www.epa.gov/superfund/gurley-pesticide-burial>
North Carolina State University (Lot 86, Farm Unit #1) <https://www.epa.gov/superfund/north-carolina-state-university>
Sigmon's Septic Tank Service <https://www.epa.gov/superfund/sigmon-septic-tank>

South Carolina

Admiral Home Appliances <https://www.epa.gov/superfund/admiral-home-appliances>
Beaunit Corp (Circular Knit & Dyeing Plant) <https://www.epa.gov/superfund/beaunit>
Carolawn Inc. <https://www.epa.gov/superfund/carolawn>
Elmore Waste Disposal <https://www.epa.gov/superfund/elmore-waste-disposal>
International Minerals and Chemicals (IMC) <https://www.epa.gov/superfund/imc>
Kalama Specialty Chemicals <https://www.epa.gov/superfund/kalama-specialty-chemicals>
Koppers Company, Inc. (Charleston Plant) <https://www.epa.gov/superfund/koppers-charleston-plant>
Savannah River Site (USDOE) <https://www.epa.gov/superfund/savannah-river-site>
SCRDI Bluff Road <https://www.epa.gov/superfund/scrdi-dixiana>

Tennessee

Mallory Capacitor Co. <https://www.epa.gov/superfund/mallory-capacitor>
Memphis Defense Depot (DLA) <https://www.epa.gov/superfund/memphis-defense-depot>

Background

Throughout the process of designing and constructing a cleanup at a hazardous waste site, EPA's primary goal is to make sure the remedy will be protective of public health and the environment. At many sites, where the remedy has been constructed, EPA continues to ensure it remains protective by requiring reviews of cleanups every five years. It is important for EPA to regularly check on these sites to ensure the remedy is working properly. These reviews identify issues (if any) that may affect the protectiveness of the completed remedy and, if necessary, recommend action(s) necessary to address them.

There are many phases of the Superfund cleanup process including considering future use and redevelopment at sites and conducting post cleanup monitoring of sites. EPA must ensure the remedy is protective of public health and the environment and any redevelopment will uphold the protectiveness of the remedy into the future.

The Superfund program, a federal program established by Congress in 1980, investigates and cleans up the most complex, uncontrolled or abandoned hazardous waste sites in the country and endeavors to facilitate activities to return them to productive use. In total, there are more than 280 Superfund sites across the Southeast.

More information:

EPA's Superfund program: <https://www.epa.gov/superfund>

EPA.GOV

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APPENDIX E – INTERVIEW FORM

DISTLER BRICKYARD SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Names: <i>Distler Brickyard</i>	
EPA ID: KYD980602155	
Interviewer name: Johnny Zimmerman-Ward	Interviewer affiliation: Skeo
Subject name: Larry Tackett	Subject affiliation: KDEP
Subject contact information: larryp.tackett@ky.gov	
Interview date: 11/9/2022	Interview time: 8:24 am
Interview location: Electronic via email	
Interview format (circle one): In Person Phone Mail Email Other:	
Interview category: State Agency	

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

The Site is in good shape, the fence and wells are properly locked and in good condition. The only issue is that vandals have started to paint graffiti on a few of the remaining remedy components on the back portion of the Site near the railroad. Reuse of this Site may be possible but nothing is planned.

2. What is your assessment of the current performance of the remedy in place at the Site?

Groundwater contamination is still present. Additional evaluative work needs to be performed. In addition, soil samples were collected in 2014 during well installation. One soil sample, (DBMW2S35), indicated trichloroethene above the residential RSL (557 µg/kg).

3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?

The only inquiry that KDEP received in the past five years is from the new property owner who inherited the property. The EPA and KDEP spoke with the new owner.

4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.

EPA and KDEP spoke with the new owner who inherited the property. Normal O&M activities were performed during the last five years. The last sampling event took place in 2017.

5. Are you aware of any changes to state laws that might affect the protectiveness of the Site’s remedy?

No.

6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

The Site does not currently have any ICs in place. The Site needs ICs for both groundwater and soil due to contaminated media being present.

7. Are you aware of any changes in projected land use(s) at the Site?

No expected land use changes are known.

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

The remedy has been completed for some time and no future remedial actions are planned at this time. In the future, the site may need a back fence installed to limit access from the railroad as vandals have started to paint graffiti on a few of the remaining remedy components. Before deletion activities can take place, the wells and remaining remedy components need to be removed.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST																																																	
I. SITE INFORMATION																																																	
Site Name: <u>Distler Brickyard</u>	Date of Inspection: <u>10/26/2022</u>																																																
Location and Region: <u>West Point, Kentucky; Region 4</u>	EPA ID: <u>KYD980602155</u>																																																
Agency, Office or Company Leading the Five-Year Review: <u>EPA Region 4</u>	Weather/Temperature: <u>50s and overcast with some sprinkles</u>																																																
Remedy Includes: (check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other: <u>Soil excavation and off-site disposal. There is no groundwater remedy in place.</u> </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input checked="" type="checkbox"/> Other: <u>Soil excavation and off-site disposal. There is no groundwater remedy in place.</u>	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls																																														
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Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached																																																	
II. INTERVIEWS (check all that apply)																																																	
1. O&M Site Manager <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 40%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> </tr> <tr> <td colspan="3">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____</td> </tr> <tr> <td colspan="3">Problems, suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table>		_____	_____	_____	Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____			Problems, suggestions <input type="checkbox"/> Report attached: _____																																						
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Problems, suggestions <input type="checkbox"/> Report attached: _____																																																	
2. O&M Staff <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 40%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> </tr> <tr> <td colspan="3">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____</td> </tr> <tr> <td colspan="3">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table>		_____	_____	_____	Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____			Problems/suggestions <input type="checkbox"/> Report attached: _____																																						
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Problems/suggestions <input type="checkbox"/> Report attached: _____																																																	
3. Local Regulatory Authorities and Response Agencies (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply. Agency <u>KDEP</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Contact <u>Larry Tackett</u></td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone</td> </tr> <tr> <td colspan="4">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> Agency _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Contact _____</td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone</td> </tr> <tr> <td colspan="4">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> Agency _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Contact _____</td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone</td> </tr> <tr> <td colspan="4">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> Agency _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Contact _____</td> <td style="width: 30%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> <td style="width: 20%; text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">Name</td> <td style="text-align: center;">Title</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Phone</td> </tr> <tr> <td colspan="4">Problems/suggestions <input type="checkbox"/> Report attached: _____</td> </tr> </table> Agency _____		Contact <u>Larry Tackett</u>	_____	_____	_____	Name	Title	Date	Phone	Problems/suggestions <input type="checkbox"/> Report attached: _____				Contact _____	_____	_____	_____	Name	Title	Date	Phone	Problems/suggestions <input type="checkbox"/> Report attached: _____				Contact _____	_____	_____	_____	Name	Title	Date	Phone	Problems/suggestions <input type="checkbox"/> Report attached: _____				Contact _____	_____	_____	_____	Name	Title	Date	Phone	Problems/suggestions <input type="checkbox"/> Report attached: _____			
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Contact	_____	_____	_____	_____
Name	_____	Title	_____	Phone
Problems/suggestions	<input type="checkbox"/> Report attached: _____			
4.	Other Interviews (optional) <input type="checkbox"/> Report attached: _____			
III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)				
1.	O&M Documents			
	<input type="checkbox"/> O&M manual	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> As-built drawings	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks: _____			
2.	Site-Specific Health and Safety Plan			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks: _____			
3.	O&M and OSHA Training Records			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	Remarks: _____			
4.	Permits and Service Agreements			
	<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Other permits: _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks: _____			
5.	Gas Generation Records			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	Remarks: _____			
6.	Settlement Monument Records			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	Remarks: _____			
7.	Groundwater Monitoring Records			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	Remarks: <u>Groundwater monitoring has not been completed since before the previous FYR.</u>			
8.	Leachate Extraction Records			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	
	Remarks: _____			
9.	Discharge Compliance Records			
	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	Remarks: _____			
10.	Daily Access/Security Logs			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A	

Remarks: _____			
IV. O&M COSTS			
1.	O&M Organization		
	<input type="checkbox"/> State in-house	<input type="checkbox"/> Contractor for state	
	<input type="checkbox"/> PRP in-house	<input type="checkbox"/> Contractor for PRP	
	<input type="checkbox"/> Federal facility in-house	<input type="checkbox"/> Contractor for federal facility	
	<input checked="" type="checkbox"/> PRP via state		
2.	O&M Cost Records		
	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	
	<input type="checkbox"/> Funding mechanism/agreement in place	<input type="checkbox"/> Unavailable	
	Original O&M cost estimate: _____ <input type="checkbox"/> Breakdown attached		
	Total annual cost by year for review period if available		
	From: <u>1/1/2018</u>	To: <u>12/31/2018</u>	<u>\$0</u> <input type="checkbox"/> Breakdown attached
	Date	Date	Total cost
	From: <u>1/1/2019</u>	To: <u>12/31/2019</u>	<u>\$0</u> <input type="checkbox"/> Breakdown attached
	Date	Date	Total cost
	From: <u>1/1/2020</u>	To: <u>12/31/2020</u>	<u>\$0</u> <input type="checkbox"/> Breakdown attached
	Date	Date	Total cost
	From: <u>1/1/2021</u>	To: <u>12/31/2021</u>	<u>\$0</u> <input type="checkbox"/> Breakdown attached
	Date	Date	Total cost
	From: <u>1/1/2022</u>	To: <u>12/31/2022</u>	<u>\$2,460</u> <input type="checkbox"/> Breakdown attached
	Date	Date	Total cost
3.	Unanticipated or Unusually High O&M Costs during Review Period		
	Describe costs and reasons: <u>2022 costs were for mowing and gate improvement and repairs.</u>		
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Fencing			
1.	Fencing Damaged	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A
	Remarks: _____		
B. Other Access Restrictions			
1.	Signs and Other Security Measures	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A
	Remarks: _____		
C. Institutional Controls (ICs)			

1.	Implementation and Enforcement	
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by): _____	
	Frequency: _____	
	Responsible party/agency: _____	
	Contact: _____	
	Name	Title
		Date
		Phone no.
	Reporting is up to date	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Reports are verified by the lead agency	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Violations have been reported	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached	
2.	Adequacy <input type="checkbox"/> ICs are adequate <input checked="" type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A	
	Remarks: <u>Institutional controls were not called for in decision documents but because contamination remains on site, they should be implemented.</u>	
D. General		
1.	Vandalism/Trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident	
	Remarks: _____	
2.	Land Use Changes On Site <input checked="" type="checkbox"/> N/A	
	Remarks: _____	
3.	Land Use Changes Off Site <input checked="" type="checkbox"/> N/A	
	Remarks: _____	
VI. GENERAL SITE CONDITIONS		
A. Roads	<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Roads Damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A	
	Remarks: _____	
B. Other Site Conditions		
	Remarks: _____	
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
A. Groundwater Extraction Wells, Pumps and Pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Pumps, Wellhead Plumbing and Electrical	
	<input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A	
	Remarks: <u>The groundwater extraction system has been shut off and is no longer functional.</u>	
2.	Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances	

<input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3. Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks: _____
B. Surface Water Collection Structures, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A
D. Monitoring Data
1. Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality Remarks: <u>The EPA will perform more groundwater sampling.</u>
2. Monitoring Data Suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining
E. Monitored Natural Attenuation
1. Monitoring Wells (natural attenuation remedy) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____
X. OTHER REMEDIES
If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.
XI. OVERALL OBSERVATIONS
A. Implementation of the Remedy Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions). <u>The remedy included soil removal and groundwater extraction. Groundwater extraction is no longer occurring. The EPA plans on doing more groundwater monitoring. Contamination remains on site. The KDEP and the EPA are working on next steps for the Site.</u>
B. Adequacy of O&M Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>There are no O&M issues. Additional sampling is needed to inform next steps for the site remedy.</u>
C. Early Indicators of Potential Remedy Problems Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. <u>No early indicators of potential remedy problems.</u>
D. Opportunities for Optimization Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>The KDEP and the EPA are working on next steps for the Site.</u>

APPENDIX G – SITE INSPECTION PHOTOS



Sign near site entrance



Secured gate along road



MW-3 wells



Site from road entrance



Old storage tanks with graffiti, near the train tracks



Deteriorating brick formations from former operations



Vegetation-covered former brick areas



Mowed area



Train tracks on site



MW-1 wells

APPENDIX H – DETAILED APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) REVIEW

Groundwater cleanup goals were established for the Site in the Site’s 1988 ESD. Federal MCLs under the Safe Drinking Water Act were identified as ARARs for the Site. Table H-1 below compares cleanup goals to current MCLs. The current MCLs for arsenic, lead and toluene are more stringent than the cleanup goals established in the 1988 ESD.

Table H-1: Groundwater Cleanup Goal Comparison

COC	1988 ESD Groundwater Cleanup Goal (µg/L)	Current MCL (µg/L)	Change
Arsenic	50	10	More stringent
Chromium	50	100	Less stringent
Lead	50	15	More stringent
Benzene	5	5	No change
2-Butanone	170	N/A	N/A
1,1-DCE	7	7	No change
Trans-1,2-DCE	70	100	Less stringent
Toluene	2,000	1,000	More stringent
1,1,1-TCA	200	200	No change
TCE	5	5	No change

Notes:

Sources: Cleanup goals are from the 1988 ESD (PDF pages 5-6). Current MCLs are from <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations> (accessed 12/19/2022).

µg/L = micrograms per liter

DCE = dichloroethylene

TCA = trichloroethane

TCE = trichloroethylene

N/A = not applicable. An MCL has not been established for 2-butanone.

APPENDIX I – SCREENING-LEVEL RISK REVIEWS

Groundwater

MCLs were not established for all groundwater COCs at the Site; the EPA selected a health-based level as the cleanup goal for 2-butanone. Table I-1 compares the health-based cleanup goal against the EPA’s current resident tap water RSLs. RSLs incorporate current toxicity values and standard default exposure factors. The evaluation indicates that the groundwater cleanup goal for 2-butanone is still protective because its corresponding noncancer HQ is below the EPA’s threshold of 1.

Table I-1: Screening-Level Risk Evaluation for Groundwater Cleanup Goals

COC	1988 ESD Groundwater Cleanup Goal (µg/L)	Tap Water RSL (µg/L)		Cancer Risk	Noncancer HQ ^a
		1 x 10 ⁻⁶ Risk	HQ = 1.0		
2-Butanone	170	N/A	5,600	N/A	0.03

Notes:
 Sources: The cleanup goal is from the 1988 ESD (pdf pages 5-6). Current RSLs are from <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables> (accessed 12/19/2022).
 a. HQ calculated using the following equation: HQ = cleanup level / noncancer-based RSL.
 µg/L = micrograms per liter
 N/A = not applicable

Soil

Per the 1988 ESD, soil cleanup goals were selected based on the protection of groundwater. Table I-2 compares the soil cleanup goals to the EPA’s current residential RSLs to evaluate what type of future land use may be appropriate at the Site. All cleanup goals correspond to risk levels or HQs within the EPA’s acceptable risk levels, except for lead and arsenic. For lead, the EPA has no consensus on carcinogenic or noncarcinogenic toxicity values, so the EPA established an RSL of 400 milligrams per kilogram (mg/kg) based on blood-lead modeling. The site cleanup goal for lead and arsenic are above the RSL.

Table I-2: Screening-Level Risk Evaluation for Soil Cleanup Goals

COC	1988 ESD Soil ASCs (mg/kg)	Residential Soil RSL (mg/kg)		Cancer Risk ^a	Noncancer HQ ^b
		1 x 10 ⁻⁶ Risk	HQ = 1.0		
Arsenic	208	0.68	35	3 x 10 ⁻⁴	6
Chromium ^c	25,000	N/A	120,000	N/A	0.2
Lead	21,000	400 ^d		N/A	
Benzene	0.485	1.2	82	4 x 10 ⁻⁷	0.01
2-Butanone	1.178	N/A	27,000	N/A	0.00004
1,1-DCE	1.471	N/A	230	N/A	0.01
Trans-1,2-DCE	11.966	N/A	70	N/A	0.2
Toluene	803.880	N/A	4,900	N/A	0.2
1,1,1-TCA	13.398	N/A	8,100	N/A	0.002
TCE	0.716	0.94	4.1	8 x 10 ⁻⁷	0.2

Notes:
 Sources: Cleanup goals from 1988 ESD (pdf pages 53 and 60). Current RSLs are from <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables> (accessed 12/19/2022).
 a. The cancer risks were calculated using the following equation, based on the fact that RSLs are derived based on a 1 x 10⁻⁶ risk: cancer risk = (cleanup level / cancer-based RSL) x 10⁻⁶.

b. The noncancer HQs were calculated using the following equation: $HQ = \text{cleanup level} / \text{noncancer-based RSL}$.
c. Chromium (III) RSL used for comparison.
d. RSL based on the EPA's blood lead model.
Bold = exceedance of EPA's risk range or noncancer HQ threshold, or exceedance of the RSL for lead.
DCE = dichloroethylene
N/A = not applicable
mg/kg = milligrams per kilogram

To further evaluate the risk presented by lead and arsenic, the most recent soil sampling data from the Site were reviewed (Table I-3). Maximum concentrations of lead and arsenic from the 2014 soil sampling, taken at 35 feet depth, are less than the ASCs which were derived for the protection of groundwater. Surface soil data are needed to evaluate protection of human health.