Proposed Plan
Commodity Credit Corporation Former Grain Storage Facility
Montgomery City, Missouri

May 2025 (Final)

The Proposed Plan

This ***Proposed Plan*** has been prepared by the U.S. Army Corps of Engineers (USACE) for the U.S. Department of Agriculture (USDA) to present the preferred remedy for the Commodity Credit Corporation former grain storage facility in Montgomery City, Missouri. This document summarizes the preferred remedy, the basis for this recommendation, and solicits public input. USACE requests that input be provided in writing during the public comment period.

PUBLIC COMMENT PERIOD
June 9, 2025 – July 11, 2025

Written comments may be submitted during the public comment period to the address provided below.

Send written comments post-marked by

July 11, 2025, to:

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Administrative Record:
The Proposed Plan and other documents are available electronically by contacting:

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INTRODUCTION

This Proposed Plan (PP) presents the preferred remedy for the Commodity Credit Corporation (CCC) former grain storage facility in Montgomery City, Missouri (herein referred to as the Montgomery City site). This PP is presented by the U.S. Department of Agriculture (USDA) and was prepared by the U.S. Army Corps of Engineers (USACE) in accordance with the ***Comprehensive Environmental Response, Compensation, and Liability Act of 1980*** (CERCLA) and the ***National Oil and Hazardous Substances Pollution Contingency Plan*** (NCP). This PP for the Montgomery City site solicits public participation as required by CERCLA and the NCP.

This PP summarizes the Montgomery City site background and characteristics, human health risks, ***Remedial Action Objectives*** (RAOs), and remedial alternatives considered during the ***Feasibility Study*** (FS). This PP provides the basis for USDA's preferred alternative.

An acronym list and glossary are provided at the end of this document to define terms that may be unfamiliar to the general public. Terms that are included in the glossary are shown in ***bold and italicized*** text.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

USDA will consider comments submitted during the 30-day public comment period. After consideration, USDA will select the final remedy. USDA, in consultation with USACE and the Missouri Department of Natural Resources (MDNR), may modify the preferred alternative or select another alternative presented in this plan based on new information or public comment; therefore, the public is encouraged to review and comment on all alternatives presented in this PP. If requested, a public meeting may be held to present the alternatives and provide an opportunity for further discussion and public comment.

Responses to public comment will be provided in a "Responsiveness Summary" as an attachment to a ***Decision Document*** (DD) that presents the final selected remedy for the site.

More detailed information regarding the CCC former grain storage facility at the Montgomery City site, including the FS report (USACE 2024), can be found in the site ***Administrative Record*** file, available electronically by contacting Mr. Kale Horton, USDA. The public is encouraged to review the information.

SITE BACKGROUND

The Montgomery City site is located on Fairgrounds Road which intersects with Sturgeon Street/Missouri Highway 19 in Montgomery City, Missouri (Figure 1). The site is located on the Montgomery County Fairgrounds.

The Montgomery City site was one of many temporary facilities used by CCC for storing surplus grain from the 1940s through the 1970s. During storage, it was sometimes necessary to fumigate the grain to control destructive pests. The most common fumigant at that time was a mixture of 80% carbon tetrachloride (CTC) and 20% carbon disulfide. The mixture was applied directly onto the grain from the top of the storage bin which allowed it to disperse throughout the bin. At the Montgomery City site, the CCC leased the land from the Montgomery County Fair Society from 1949 to 1966. In 2001, a Preliminary Assessment/Site Inspection was conducted on-site that confirmed groundwater contamination of CTC and chloroform (CF), a degradation product of CTC. The former grain storage facility consisted of three Quonset huts and an array of 33 cylindrical grain bins on land that is currently used for the Montgomery County Fairgrounds (Figure 2). The grain bins and Quonset huts have been removed from the site, but the concrete foundations from the Quonset huts remain.

SITE CHARACTERISTICS

The topography of Montgomery City and the surrounding area is relatively level, with gently rolling hills. The city lies along the crest of a low topographic divide that drains to Elkhorn Creek to the northeast and Clear Fork to the southwest. Topographic relief in the immediate vicinity of the former grain facility is approximately 20-30 feet (ft).

Site characterization and pilot testing of a remediation technology have been completed for USDA at the Montgomery City site, including:

- Phase I Site Investigation (Argonne 2012)
- Pilot Test of In Situ Chemical Reduction (Argonne 2013)
- Phase II Site Investigation (Argonne 2016)

Based on sampling to date, the lateral and vertical extent of contamination in soil and groundwater which may be associated with the CCC former grain storage facility has been delineated. CTC and CF were detected in groundwater at concentrations above drinking water ***Maximum Contaminant Levels*** (MCLs) at the Montgomery City site. Soil samples collected at the site contained CTC and CF at concentrations exceeding the U.S. Environmental Protection Agency (USEPA) soil ***Regional Screening Levels*** (RSLs) for residential land use and protection of groundwater at depths of 16 ft below ground surface (bgs) and greater. In November-December 2012, ***in situ chemical reduction*** (ISCR) through injections of EHC® reagents was pilot tested at the site. A ***Remedial Investigation*** (RI) Report was prepared in 2023 (USACE 2023). The RI Report summarized groundwater monitoring data collected in 2016-2021 to evaluate the long-term effects of the ISCR pilot test, as well as perform a human health risk assessment (HHRA). Groundwater sampling from 2016-2021 showed an overall decrease in CTC and CF concentrations, but in some monitoring wells, the concentrations were still greater than the MCLs for these compounds.

Site Screening Levels

To see whether there are harmful effects to human health, chemical concentrations in soil, groundwater, and indoor air were compared to screening levels published by the USEPA. ***Screening levels*** are risk-based concentrations of chemicals, below which daily exposures in residential or industrial settings are acceptable.

Screening levels for soil were obtained from USEPA's soil RSLs. Screening levels for groundwater are USEPA MCLs when available and USEPA tap water RSLs when MCLs are unavailable. Screening levels for indoor air were obtained from USEPA Vapor Intrusion Screening Levels (VISLs). When contaminants are present in groundwater, vaporization into living air space could occur, and the groundwater-based VISL can be used to evaluate human health risks.

Screening levels for known and suspected carcinogens reflect an extra 1-in-1-million chance of developing cancer from site exposures. This is in addition to a person's background chance of developing cancer unrelated to the site (currently one in two for men and one in three for women [American Cancer Society 2024]). The extra chance of developing cancer is termed an ***Incremental Lifetime Cancer Risk*** (ILCR).

Non-cancer hazard is evaluated using ***Hazard Quotients***. The sum of the Hazard Quotient for each contaminant of potential concern (COPC) is the ***Hazard Index***. A Hazard Index of 1 corresponds to the lowest level of chemicals that may cause harmful noncancer health effects. Screening levels for non-carcinogens reflect a concentration that is 10 times lower than the level at which noncancer health effects are expected (termed a Hazard Index of 0.1).

Soil

Soil samples were collected from the Montgomery City site and analyzed for CTC and CF during Phase I and Phase II investigations (Argonne 2012, 2016). The data were screened against residential USEPA RSLs (see "Site Screening Levels" text box for more information).

In Phase I, 18 out of 424 soil samples collected at varying depths show exceedances of the CTC RSL of 650 micrograms per kilogram (µg/kg). Eight samples with RSL exceedances were collected at boring location SB01 (Figure 3). Sample depths from this soil boring with RSL exceedances ranged from 16-36 ft bgs, with the maximum concentration of 2,353 µg/kg detected at 16 ft bgs. Two RSL exceedances were detected in samples collected from SB32, with the greatest concentration of 2,412 µg/kg measured at 16 ft bgs. CTC concentrations in four samples from SB41 at sample depths of 20-28 ft bgs also exceeded the RSL. Two CTC RSL exceedances were in samples collected at the deepest sample intervals of SB46, 52 ft bgs and 54.4 ft bgs, at concentrations of 882 µg/kg and 1,068 µg/kg, respectively. At SB47, there were two CTC RSL exceedances, with the greatest CTC concentration of 952 µg/kg measured at 28 ft bgs. In Phase I, there were no CF exceedances.

In Phase II, 14 samples were collected from five soil boreholes that were completed as monitoring wells, SB55 through SB59, shown in Figure 4 (Argonne 2016). CTC was detected in two samples, one from SB58 at a depth of 61.2 ft bgs, and the other from SB59 at a depth of 65 ft bgs. CF was also detected in the SB59 sample collected at 61 ft bgs. Phase II soil sample detections did not exceed the RSL for CTC or CF.

Groundwater

Groundwater samples were collected and analyzed for CTC and CF from monitoring wells at the Montgomery City site during Phase I and Phase II investigations. The data were compared to USEPA Tap Water RSLs and MCLs (USEPA 2023).

In Phase I, which spanned from October 2010 to September 2011, sample concentrations exceeding the MCL for CTC (5 micrograms per liter [µg/L]) and/or CF (80 µg/L included: eight sampling locations in the upper aquifer interval (<20 ft bgs), 14 locations in the intermediate interval (20-30 ft bgs), and 13 locations in the lower interval (>40 ft bgs). Concentrations of CTC were generally the greatest in the intermediate sampling interval (20-30 ft bgs). CTC concentrations greater than 1,000 µg/L were found at the following locations: SB01/SB01S in the upper interval; SB01M, SB08, SB41, SB42, SB47, and SB48 in the intermediate interval; and SB08, SB17, and SB46 in the lower interval. The greatest levels of CTC and CF were detected in samples from SB01 (location shown in Figure 3).

In 2012, as part of the Phase II investigation, a series of groundwater samples were collected prior to the pilot ISCR injections to serve as a baseline for site conditions (Argonne 2016). Results for this sampling, as well as monitoring sampling completed after injections, are found in Table 1 through Table 3. Table 1 contains results for the upper interval (<20 ft bgs), Table 2 contains results for the intermediate interval (20-30 ft bgs), and Table 3 contains results for the lower interval (>40 ft bgs). CTC and CF concentration trends were similar to Phase I with the largest concentrations in the intermediate interval. After ISCR injections in November-December 2012, samples were collected approximately monthly for four months, then quarterly for a year, then annually for four years through 2016. A round of groundwater samples was also collected in September 2021. In general, CTC concentrations decreased, while CF concentrations increased in samples collected post-ISCR pilot test (USACE 2023). However, CTC and CF concentrations in the shallow wells decreased to non-detections, with the exception of one detection of 1.6 µg/L in SB50S in 2016 (Table 1). Samples from SB01M/D, SB08S/D, SB17S/D, SB27S, SB39S/D, SB46D, SB50M/D, SB58 (Table 2 and Table 3) continued to show CTC and CF concentrations exceeding their MCLs. Figure 4 shows the locations where CTC and CF exceeded their MCLs in September 2021.

Indoor Air

Results of the Phase I investigation (Argonne 2012) led to a recommendation of indoor air and soil vapor sampling at two structures on-site: the 4-H Building and Merchant's Building (Figure 4). These buildings are large, open steel structures constructed with at-grade concrete slab floors. Both structures are used for activities sanctioned by the Montgomery County Fair Society and are occupied intermittently (Argonne 2012).

Eight samples were collected during the Phase II investigation (Argonne 2016), four indoor air samples and four sub-slab vapor samples. Two indoor air samples were collected from each building; samples were collected from approximately 3 ft above floor level. Sub-slab samples were collected by drilling through the concrete foundation of each building to install temporary sampling points (Argonne 2016).

Various ***volatile organic compounds*** (VOCs) were detected in the samples but were thought to be unrelated to the historical activities at the CCC former grain storage facility. CTC was not detected in the samples. CF was detected in one sample collected from beneath the Merchant's Building foundation at a concentration of 3,000 micrograms per cubic meter (µg/m^3), greater than the VISL of 0.12 µg/m^3. Data from Phase I and Phase II show that in general, it was rare for CF to be detected without the presence of CTC in the soil and groundwater. Thus, this isolated CF detection is not consistent with the rest of the findings.

SCOPE AND ROLE OF RESPONSE ACTIONS

The FS identified viable remedial alternatives for the Montgomery City site and evaluated them to select the preferred alternative. The preferred alternative consists of ***Monitored Natural Attenuation*** (MNA) with Institutional

Control, vapor intrusion monitoring, and installation of a vapor mitigation system (if required).

Implementation of remedies also will comply with ***applicable or relevant and appropriate requirements*** (ARARs) and achieve the RAOs for the site (see the Remedial Action Objectives section on page 4). The proposed action will be the final action for the site.

SUMMARY OF SITE RISKS

USEPA identifies risk thresholds to provide a framework for determining whether a site, or a specific chemical or individual exposure pathway at a site, poses unacceptable risk to human health in the ***baseline risk assessment*** or HHRA. USEPA's acceptable range for total receptor cancer risk (from all chemicals and exposure pathways) is 1 in 10,000 (denoted as 10^{-4}) to 1 in 1,000,000 (denoted as 10^{-6}). Acceptable levels of noncancer risk are defined by USEPA as a Hazard Index of 1 or less. The HHRA included an analysis of cancer risks and non-cancer hazards from exposure to CTC and CF in soil, groundwater, and indoor air for hypothetical future residents, commercial workers, and utility/excavation workers.

The first step of the HHRA was identification of ***maximum detected concentrations*** (MDCs) in soil, groundwater (for the upper interval, intermediate interval, lower interval, and bedrock units), indoor air, and sub-slab soil vapor.

For soil, the data from soil samples collected at depths greater than 12 ft bgs were not included in the screening since direct contact with soil at these depths is considered unlikely. For groundwater, only data collected in 2016 and later were considered for the HHRA, with the exception of monitoring wells that were plugged and abandoned in 2011. Screening of groundwater data for the abandoned wells was necessary because some detected concentrations of CTC and CF in those wells exceeded RSLs.

The comparison against screening levels showed that CTC and CF are not chemicals of potential concern (COPCs) for soil or indoor air because MDCs were less than applicable screening levels. COPCs are defined as chemicals where the MDC exceeds the applicable screening levels. There was one elevated CF detection above the screening level in sub-slab soil gas, in a sample collected from the west side of the fairgrounds Merchant's Building (Figure 4). However, this detection does not appear to result in vapor intrusion since there were no CF detections in indoor air in the Merchant's Building.

For groundwater, the risk was assessed for the upper interval (<20 ft bgs), intermediate interval (20-30 ft bgs), lower interval (>40 ft bgs), and bedrock units. Each monitoring well location was assessed as a hypothetical tap water source, and an ***exposure point concentration*** was selected for each monitoring well. Cancer risks greater than 10^{-4} and non-cancer hazards greater than 1 are associated with the following monitoring wells (assuming groundwater is used as a tap water source):

- Upper interval: SB33 and SB41S (both plugged and abandoned in 2011)
- Intermediate interval: active monitoring wells SB01M, SB08S, SB17S, and SB39S; and plugged/abandoned wells SB09S, SB11, SB16M, SB42S, SB41M, SB46M, SB47S, and SB48S
- Lower interval: active monitoring wells SB01D, SB08D, SB17D, SB46D, SB50D; and plugged/abandoned wells SB41D, SB47D, and SB48D
- Bedrock: active monitoring well SB58

Including data from abandoned and plugged wells resulted in conservative risk estimates. It is possible that groundwater CTC and CF concentrations decreased at these locations post-abandonment in 2011. In remaining monitoring wells screened in the upper interval, CTC and CF were either not detected or detected at concentrations less than MCLs in samples collected from 2016 through 2021.

REMEDIAL ACTION OBJECTIVES

RAOs specify the COPCs, media of interest, and exposure pathways. Typically, RAOs are developed based on the exposure pathways found to pose potentially unacceptable risks according to the results of the HHRA and to satisfy ARARs. The following RAOs have been developed for the Montgomery City site to ensure long-term protection of human health and environment:

- Mitigate the potential for exposure to contamination from potable use of groundwater containing CTC and CF above the groundwater ***Preliminary Remediation Goals*** (PRGs). Groundwater PRGs for this site are set at the primary MCLs as ARARs, as follows:
  - CTC 5 µg/L
  - CF 80 µg/L
- Mitigate the potential for exposure to indoor air containing CTC and CF at concentrations that would pose unacceptable risks or hazards to human health. Indoor air sampling completed in 2012 did not indicate risks to building occupants, but potential for vapor intrusion exists as long as contaminated groundwater is present near the existing buildings. Indoor air PRGs for the commercial buildings on-site are set to the commercial VISLs (target risk of 10^{-5}) as follows:
  - CTC 20.4 µg/m^3
  - CF 5.33 µg/m^3

SUMMARY OF ALTERNATIVES

Remedial alternatives were developed using the RAOs. Three alternatives were retained for detailed evaluation in the FS (USACE 2024). The alternatives, including major components and total cost, are described in the following subsections.

Alternative 1: No Action

The NCP requires Alternative 1, the No Action alternative, to establish a baseline set of conditions that other remedial actions may be compared. This alternative allows the Montgomery City site to remain in its current state with no monitoring or remedial actions implemented. Alternative 1 will not meet threshold criteria. The total cost of this alternative is $0.

Alternative 2: Monitored Natural Attenuation with Institutional Control, vapor intrusion monitoring and installation of vapor mitigation systems (if required)

This alternative includes monitoring the migration and attenuation of the CTC and CF plume via MNA, Institutional Controls, vapor intrusion monitoring at the 4-H Building and the Merchant's Building, and installation of vapor mitigation systems, if required.

MNA involves regular VOC sampling of monitoring wells at the Montgomery City site. Chemical analyses of CTC and CF and other parameters (such as dissolved oxygen, oxidation-reduction potential, methane, anions, nitrate, nitrite, sulfate, sulfide, and total and ferrous iron, etc.), data processing, and reporting would be conducted to demonstrate that geochemical conditions are favorable for natural degradation of CTC and CF. The existing monitoring well network would be used, and two additional monitoring wells would be installed near the locations of the abandoned monitoring wells, SB33 and SB41, where elevated CTC and CF detections were observed before abandonment in 2011. Five-Year Reviews of the remedial action would be conducted.

Because the properties at the Montgomery City site and surrounding areas are privately owned, Institutional Controls would consist of the following:

1) A notice to the property owner regarding the contaminated groundwater and a recommendation to implement a groundwater use restriction as well as conduct vapor intrusion investigations for future buildings within 100 feet laterally and vertically from delineated contamination. If the landowner agrees to the use of groundwater restrictions, it would prevent the installation of drinking wells within the contaminated area.
2) Periodic monitoring of the site and surrounding area using visual inspection and a search of the MDNR well database to verify that no new wells have been installed within or near the contaminated groundwater.

It is assumed that groundwater sampling frequency would begin quarterly for the first two years, then semiannually for six years, followed by annual sampling for five years. After that, groundwater samples would be collected every five years. This schedule allows for a more accurate initial site characterization. Changes to any sampling frequency would require MDNR concurrence prior to being implemented.

This alternative would also include vapor intrusion monitoring. Indoor air samples would be collected from the 4-H Building and the Merchant's Building located near the CTC and CF groundwater plume (Figure 4). Indoor air samples would be collected twice in the first year to assess seasonal variation, then annually after that. If indoor air PRGs were exceeded in two or more periods, then a vapor mitigation system may be installed.

Monitoring will continue until PRGs are reached. The remediation timeframe for Alternative 2 is assumed to be 30 years. The estimated cost of Alternative 2 is $1,232,950 (USACE 2024). This alternative:

1) Prevents groundwater use within and near the CTC and CF plume, if the landowner agrees to implement a groundwater use restriction.
2) Relies on gradual natural attenuation of contaminants.

Alternative 3: In situ treatment via ISCR with MNA and Institutional Control, vapor intrusion monitoring, and installation of a vapor mitigation system (if required)

This alternative would involve ISCR implementation to treat the residual CTC and CF detected in groundwater, and subsequent performance monitoring activities. ISCR would be implemented in areas where monitoring showed CTC and CF concentrations in groundwater above MCLs after the 2012 pilot test injections. There are areas where wells with MCL exceedances have only been sampled once; if sampling shows that MCL exceedances persist, these could be included for ISCR treatment. ISCR would also be implemented around the concrete foundations of the former Quonset huts to address potential source area contamination. This alternative includes an initial ISCR injection event in Year 1, and an additional/contingency injection in Year 6.

Performance monitoring to evaluate the effectiveness of the remedy would be conducted at 30, 60, and 90-days post injection. Quarterly sampling and analysis would be conducted in Year 2 and 3 to provide treatment performance data, including seasonal trends. Semi-annual monitoring in Year 4 and 5 would provide data on potential rebound in contaminant concentrations after Year 1 ISCR injection. If rebound in contaminant concentrations occurs, additional injections would be performed in Year 6. Annual sampling in Year 6 through Year 10 would continue to monitor the long-term MNA trends. The ISCR pilot test implemented in 2012 resulted in a significant decrease in CTC concentrations within 1 year; the 10-year period allows continued monitoring after active treatment to determine whether contaminant rebound occurs. Based on the results of the monitoring well sampling, a request to reduce the number of monitoring wells and/or terminate the MNA program may be submitted to MDNR for review and approval.

NCP Evaluation Criteria

1. Overall Protection of Human Health and the Environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled.
2. Compliance with ARARs addresses whether or not a remedy will meet all applicable federal and state environmental laws and/or provide grounds for a waiver.
3. Short-Term Effectiveness addresses the period of time needed to complete the remedy and any adverse effects to human health and the environment that may be caused during the construction and implementation of the remedy.
4. Long-Term Effectiveness and Permanence refers to the ability of a remedy to provide reliable protection of human health and the environment over time.
5. Reduction of Mobility, Volume, or Toxicity Through Treatment refers to the preference for a remedy that reduces health hazards, the movement of contaminants, or the quantity of contaminants at the site through treatment.
6. Implementability refers to the technical and administrative feasibility of the remedy, including the availability of materials; services needed to carry out the remedy; and coordination of federal, state, and local governments to work together to clean up the site.
7. Cost evaluates the estimated ***capital costs*** and ***operation and maintenance costs*** of each alternative in comparison to other equally protective measures.
8. State agency acceptance indicates whether the state agrees with, opposes, or has no comment on the preferred alternative. Final acceptance by MDNR of the preferred alternative will be evaluated after the public comment period ends and will be described in the DD for this action.
9. Community acceptance includes determining which components of the alternatives interested persons in the community support, have reservations about, or oppose. Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the DD for this action.

Reports would be submitted annually documenting monitoring activities, including groundwater sampling and land use inspection. The results of quarterly and semiannual sampling events would be documented in a memorandum form and summarized in the annual reports.

This alternative also includes Institutional Controls and vapor intrusion monitoring and installation of vapor mitigation systems (if required) at the 4-H Building and the Merchant's Building described in Alternative 2.

The total estimated cost to complete Alternative 3 is $1,786,865 (USACE 2024), assuming a 10-year period to reach PRGs. This alternative:

1) Prevents groundwater use within and near the CTC and CF plume, if the landowner agrees to implement a groundwater use restriction.
2) Reduces the concentration of CTC and CF at the locations where they were the most elevated.
3) Reduces rebound of CTC and CF in groundwater wells by repeating ISCR treatment.

EVALUATION OF ALTERNATIVES

Alternatives were evaluated using NCP evaluation criteria (see "NCP Evaluation Criteria" text box). The first two criteria are the minimum requirements that must be met. The remaining balancing criteria provide additional means of evaluating alternatives.

Discussion in the following subsections summarizes the comparison of alternatives using seven of the nine criteria. The last two criteria, state agency acceptance and community acceptance, are best evaluated after comments are received from community members on this PP. Additional information about the detailed analysis of alternatives is provided in the FS report (USACE 2024).

1) Overall Protection of Human Health and the Environment
   a) Alternative 1 does not meet this criterion and is not considered further.
   b) Alternative 2 meets this criterion. The MNA monitoring well network would be effective in monitoring remedy performance and groundwater contaminant levels to ensure protection of human health. The vapor intrusion monitoring would assess whether a vapor mitigation system is required to protect human health.
   c) Alternative 3 meets this criterion. The in-situ treatment of the contaminated groundwater will potentially result in mass removal of contamination from the groundwater using ISCR. The performance monitoring well network will be effective in monitoring remedy performance and groundwater contaminant levels to ensure protection of human health. The vapor intrusion monitoring would assess

whether a vapor mitigation system is required to protect human health.

2) Compliance with ARARs as detailed in the FS report (USACE 2024)
   a) Alternative 2 will comply with ARARs. Groundwater monitoring will continue to determine if ARARs (MCLs) are being met.
   b) Alternative 3 will comply with ARARs. Groundwater treatment followed by monitoring will continue to determine if ARARs (MCLs) are being met.

3) Short-Term Effectiveness
   a) Alternative 2 meets this criterion. A notice to the landowner will be made regarding the contaminated groundwater and potential vapor intrusion in future buildings. The area will also be periodically monitored both visually and by reviewing the MDNR's well database to verify that no new water supply wells have been installed near the CTC and CF plume. Indoor air sampling and installation of vapor mitigation systems (if required) in the 4-H Building and the Merchant's Building would protect building occupants. Adverse effects and risk to human health during the remedial phase are low.
   b) Alternative 3 meets this criterion. This alternative will have short-term effectiveness in protecting the community, worker health, and environment during the implementation of in situ treatment and groundwater sampling. A notice to the landowners will be made regarding the contaminated groundwater. The area will also be periodically monitored both visually and by reviewing the MDNR well database to verify that no new wells have been installed near the plume. Indoor air sampling and installation of vapor mitigation systems (if required) in the 4-H Building and the Merchant's Building would protect building occupants.

4) Long-Term Effectiveness and Permanence
   a) Alternative 2 meets this criterion by monitoring natural attenuation of contamination to ensure potential receptors are not being affected. The sample collection and chemical analyses, data processing, and reporting associated with MNA will provide a better understanding of fate and transport of contaminants and a more accurate prediction of when contaminant levels will reach PRGs.
   b) Alternative 3 meets this criterion by using active treatment. The in-situ remediation technology can result in contaminant degradation and mass reduction, and the continued monitoring activities would ensure that potential receptors are not being affected. The additional natural attenuation data collection, analysis, and reporting will provide a better understanding of contaminant fate and transport and a more accurate prediction of when contaminant levels will reach PRGs. However, there are potential negative effects from injection of ISCR chemicals including higher dissolved metal concentrations in groundwater as well as undesirable aesthetic impacts from anaerobic conditions induced by treatment that can persist for an extended period of time (USACE 2023).

5) Reduction of Mobility, Volume, or Toxicity Through Treatment
   a) Alternative 2 meets this criterion. This alternative involves the dispersion, dilution, biodegradation, sorption, volatilization, and chemical or biological stabilization, transformation, or destruction of contaminants. Although this alternative does not actively treat groundwater to reduce the toxicity, mobility, or volume of contamination, it includes testing to demonstrate whether conditions are favorable for natural degradation to be active in reducing toxicity, mobility, or volume of contamination in groundwater.
   b) Alternative 3 meets this criterion by reducing the mass of contamination through in-situ treatment. Alternative 3 includes performance monitoring to demonstrate that favorable conditions are enhanced for natural attenuation that further reduces toxicity and mobility of contaminants, and/or volume of groundwater contamination. The MNA data reporting would also show whether geochemical conditions are favorable for contaminant degradation after active remediation is completed.

6) Implementability
   a) Alternative 2 meets this criterion and is easily implemented since there is already an existing monitoring well network. Indoor air monitoring and a vapor mitigation system (if required) is also easily implemented using available technology.
   b) Alternative 3 meets this criterion. Alternative 3 will be readily implemented after the remedial design is developed and approved by stakeholders and all appropriate coordination with local, state, and federal agencies is completed. It can have some challenges depending on site characteristics. However, an ISCR pilot study has been implemented at the site resulting in significant reduction in CTC and CF concentrations. Indoor air monitoring and a vapor mitigation system (if required) are also easily implemented.

7) Cost
    a) Alternative 2 has a total estimated cost of $1,232,950 for VOC sampling and MNA analysis of the groundwater for 30 years, along with vapor intrusion monitoring. The present cost for Alternative 2 was calculated at $1,036,836, using a 2.5% discount factor (OMB 2023).
    b) Alternative 3 has a total estimated cost of $1,786,865, assuming a 10-year period to reach PRGs. The present cost for Alternative 3 was calculated at $1,723,686, using a 2.3% discount factor (OMB 2023).

PREFERRED ALTERNATIVE

Based on the site characteristics, remediation activities, the FS (USACE 2024), and a review of available data, USDA recommends Alternative 2 as the preferred alternative. This involves regular VOC sampling of monitoring wells at the Montgomery City site, as well as additional sampling and chemical analyses, data processing, and reporting to demonstrate that geochemical conditions are favorable for natural degradation. Field and laboratory water quality parameters such as dissolved oxygen, oxidation-reduction potential, methane, anions (nitrate, nitrite, sulfate, and sulfide), and total and ferrous iron would be obtained. The existing monitoring well network would be used, and two additional wells would be installed. Additionally, vapor intrusion monitoring at the 4-H Building and Merchant's Building would be completed twice in the first year, then annually after that until groundwater PRGs are met and the potential for vapor intrusion no longer exists. If indoor air PRGs are exceeded in two or more sampling events, then vapor mitigation systems may be installed. For cost estimating purposes, it is assumed that groundwater sampling frequency would begin quarterly for the first two years, then semiannually for six years, followed by annual sampling for five years. After that, samples would be collected every five years. This schedule allows for a more accurate initial site characterization. Changes to any sampling frequency will require MDNR concurrence prior to being implemented. Five-Year Reviews of the remedial action will be conducted.

This alternative will include an Institutional Control, i.e., a notice to the property owner at the beginning of the remedial alternative implementation regarding the contaminated groundwater and potential for vapor intrusion in future buildings, and a recommendation to implement a groundwater use restriction as part of their property management plan and vapor intrusion investigations for future buildings.

Alternative 2 is protective of human health and the environment, is effective both short- and long-term, is a permanent solution, and is easily implementable. This alternative does not include injection of chemicals that may cause long-term negative impacts on groundwater. Alternative 2 is also more cost effective compared to Alternative 3, which has a present value cost approximately 1.66 times that of Alternative 2. An ISCR pilot test was completed at the site in 2012. The pilot test was successful in reducing CTC and CF concentrations to levels that can be addressed by Alternative 2.

USDA is the lead federal agency, and MDNR is the lead regulatory agency. MDNR concurs with the assessment and USDA's recommendation for MNA with Institutional Controls. Based on the information currently available, Alternative 2 meets the threshold criteria and provides the best balance or tradeoffs of all alternatives with respect to the balancing and modifying criteria without potentially detrimental impacts on the environment. USACE and USDA expect the preferred alternative to satisfy the statutory requirements of CERCLA S 121 (b):

1) Be protective of human health and the environment.
2) Comply with ARARs (or justify a waiver).
3) Be cost-effective.
4) Use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.
5) Satisfy the preference for treatment as a principle element or explain why the preference for treatment will not be met.

COMMUNITY PARTICIPATION

Written comments on this PP may be sent to Mr. Jacob Allen no later than 30 days from the PP announcement. After public comments are received, USACE and USDA, in consultation with MDNR, will develop a responsiveness summary and make its final remedy selection. The responsiveness summary and decision will be published in a DD.

The dates for the public comment period and the locations of the Administrative Record files are provided on the front page of this PP.

For further information, please contact:

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KEY SUPPORTING DOCUMENTS

American Cancer Society 2024. Lifetime Risk of Developing or Dying from Cancer. Accessed June 13, 2024, at https://www.cancer.org/cancer/risk-prevention/understanding-cancer-risk/lifetime-probability-of-developing-or-dying-from-cancer.html.

Argonne (Argonne National Laboratory) 2012. *Phase I Investigations at the Former CCC/USDA Grain Storage Facility in Montgomery City, Missouri in 2010-2011,* November.

Argonne (Argonne National Laboratory) 2013. *Progress Report on the ISCR Pilot Test Conducted at the Former CCC/USDA Grain Storage Facility in Montgomery City, Missouri*, June.

Argonne (Argonne National Laboratory) 2016. *Phase II Investigation at the Former CCC/USDA Grain Storage Facility in Montgomery City, Missouri,* March.

OMB (Office of Management and Budget) 2023. *Discount Rates for Cost-Effectiveness, Lease Purchase, and Related Analyses.* OMB Circular No. A-94, Appendix C, December.

USACE (U.S. Army Corps of Engineers) 2023. *Remedial Investigation Report, Former CCC/USDA Grain Storage Facility, Montgomery City, Missouri,* November.

USACE (U.S. Army Corps of Engineers) 2024. *Final Feasibility Study Report, Former CCC/USDA Grain Storage Facility, Montgomery City, Missouri,* September.

USEPA (U.S. Environmental Protection Agency) 2024. Regional Screening Levels (RSLs) – Tables as of November 2024.

ACRONYMS

ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
CCC	Commodity Credit Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CF	chloroform
COPC	chemical of potential concern
CTC	carbon tetrachloride
DD	Decision Document
FS	Feasibility Study
ft	feet
HHRA	human health risk assessment
ILCR	Incremental Lifetime Cancer Risk
ISCR	in situ chemical reduction
MCL	Maximum Contaminant Level
MDC	Maximum Detected Concentrations
MDNR	Missouri Department of Natural Resources
MNA	Monitored Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PP	Proposed Plan
PRG	Preliminary Remediation Goal
RAO	remedial action objective
RI	Remedial Investigation
RSL	Regional Screening Level
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
VISL	Vapor Intrusion Screening Level
VOC	volatile organic compound

GLOSSARY

Administrative Record: The body of documents the Army uses to form the basis for selection of a response.

applicable or relevant and appropriate requirements (ARARs): Federal and state requirements for cleanup, control, and environmental protection that a selected remedy for a site will meet.

baseline risk assessment: A baseline risk assessment is conducted to determine the current and future effects of contaminants on human health and the environment.

capital costs: Expenses related to the labor, equipment, and material costs of construction.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA): CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites and established a trust fund to provide for cleanup when no responsible party can be identified.

Decision Document (DD): The Decision Document presents the remedy selection decision and remedial action plan. It describes the technical parameters of the remedy, methods selected to protect human health and the environment, institutional controls, and cleanup levels.

exposure point concentration: A conservative estimate of the average chemical concentration in an environmental medium.

Feasibility Study (FS): Identifies and evaluates the most appropriate technical approaches to address contamination problems at a CERCLA site.

Hazard Index: The sum of hazard quotients for chemicals that affect the same target organ or organ system. Because different chemicals can cause similar adverse health effects, combining hazard quotients from different chemicals is often appropriate. A Hazard Index of 1 or lower means chemicals are unlikely to cause adverse noncancer health effects over a lifetime of exposure. However, a Hazard Index greater than 1 does not necessarily mean adverse effects will occur from exposure; it merely indicates that site-related exposures may present a hazard to human health.

Hazard Quotient: The ratio of the potential exposure to a substance and the level at which no adverse effects are expected (calculated as the exposure divided by the appropriate chronic or acute value). A hazard quotient of 1 or lower means adverse noncancer effects are unlikely and thus can be considered to have negligible hazard.

In Situ Chemical Reduction (ISCR): Injection of a chemical reductant into the subsurface to contact and chemically convert contamination to nonhazardous or less toxic compounds that are more stable, less mobile, or inert.

Incremental Lifetime Cancer Risk (ILCR): The incremental probability of an individual developing cancer over a lifetime as a result of site-related exposure to potential carcinogens.

Maximum Contaminant Levels (MCLs): The highest level of a contaminant that is allowed in drinking water.

Maximum Detected Concentration (MDC): MDC is the highest concentration of a contaminant that can be reliably measured and quantified by a specific analytical method.

Monitored Natural Attenuation (MNA): Natural attenuation processes are expected to reduce contaminant concentrations over time due to dispersion, diffusion, dilution, volatilization, sorption, and degradation by microorganisms. MNA is the practice of observing concentrations of contaminants and geochemical parameters indicating conditions that lead to reduction of contaminants over an extended period of time.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): USEPA's regulations governing all cleanups under the Superfund program.

operation and maintenance cost: The cost and timeframe of operating labor, maintenance, materials, energy, disposal, and administrative components of the remedy.

Preliminary Remediation Goal (PRG): Preliminary Remediation Goals are endpoint concentrations that are selected to provide adequate protection of human health and the environment.

Proposed Plan (PP): A document that summarizes cleanup alternatives studied in the Feasibility Study and highlights the recommended cleanup method.

Regional Screening Level (RSL): The RSL tables provide comparison values for residential and commercial or industrial exposures to soil, air and tap water (drinking water).

Remedial Action Objectives (RAO): Specific goals to be achieved by the selected remedy.

Remedial Investigation (RI): An in-depth study conducted to gather data needed to determine the nature and extent of contamination at a site. It helps establish site cleanup criteria, identify preliminary alternatives for remedial action, and support technical and cost analyses of alternatives.

screening level: A concentration of a chemical of potential concern, at which potential human health risks could occur if exposed.

volatile organic compound (VOC): A carbon-based compound with sufficiently low vapor pressure that it can be easily transferred from soil and/or water to air. It is most likely to be transferred to humans by inhalation.

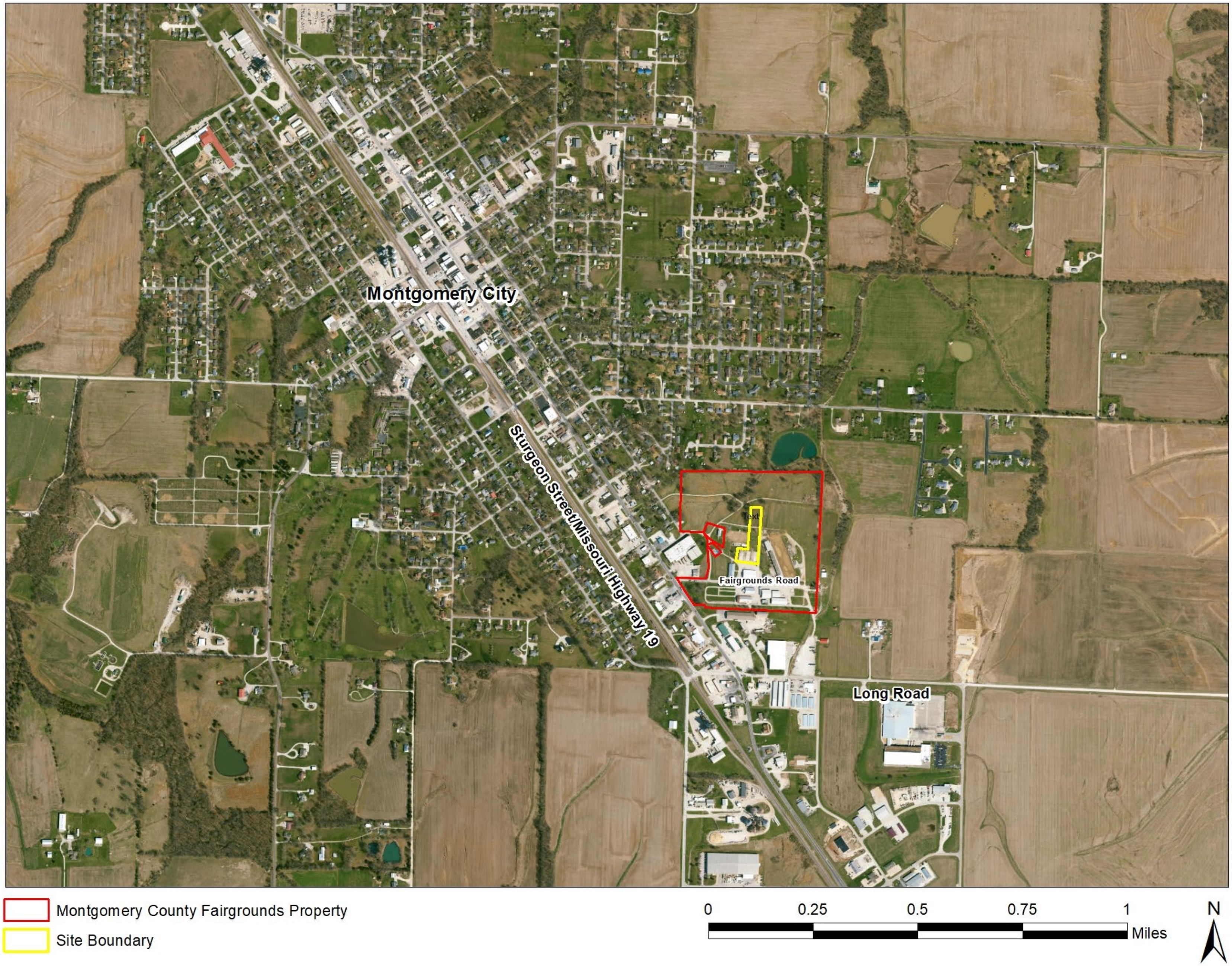
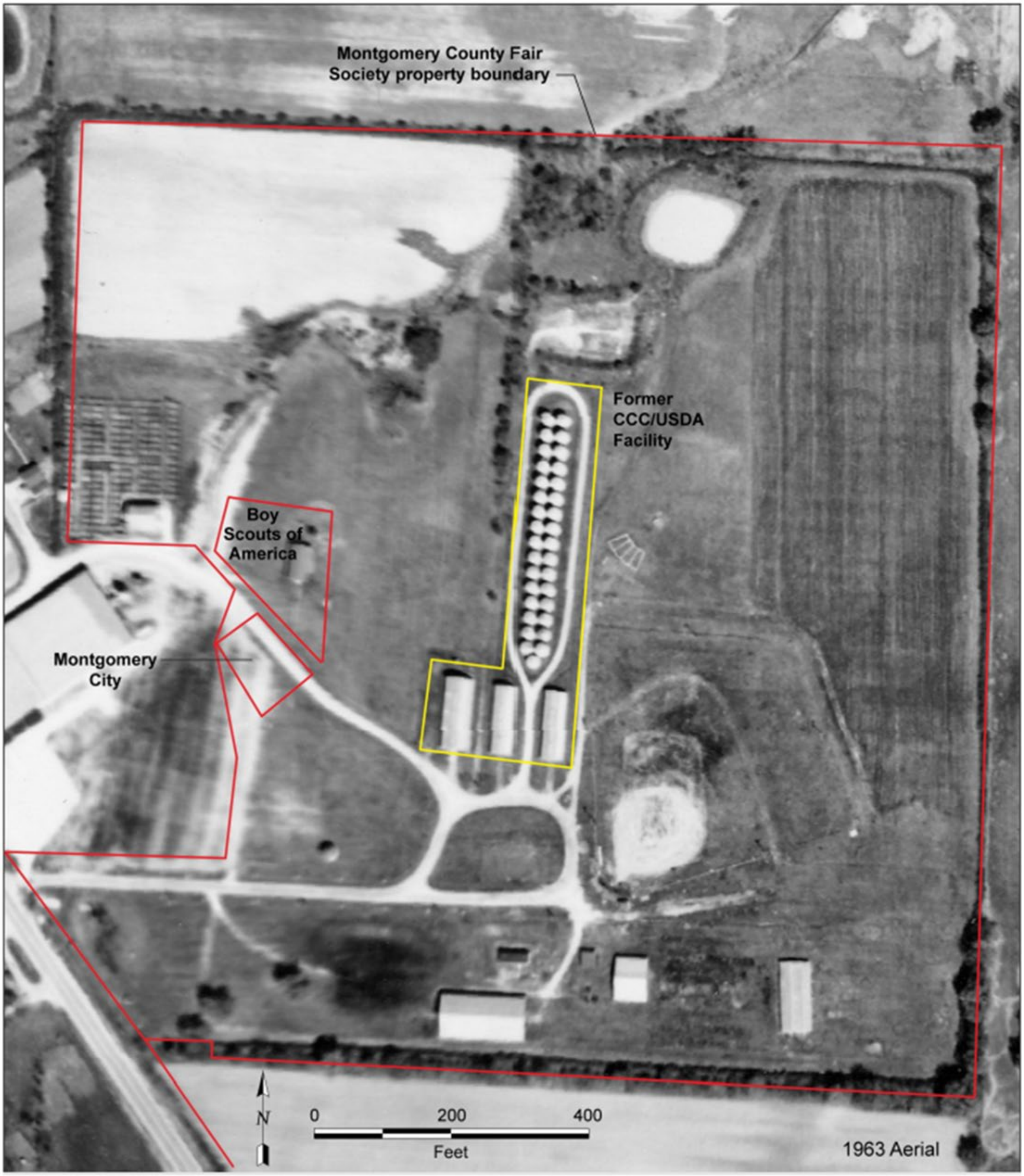


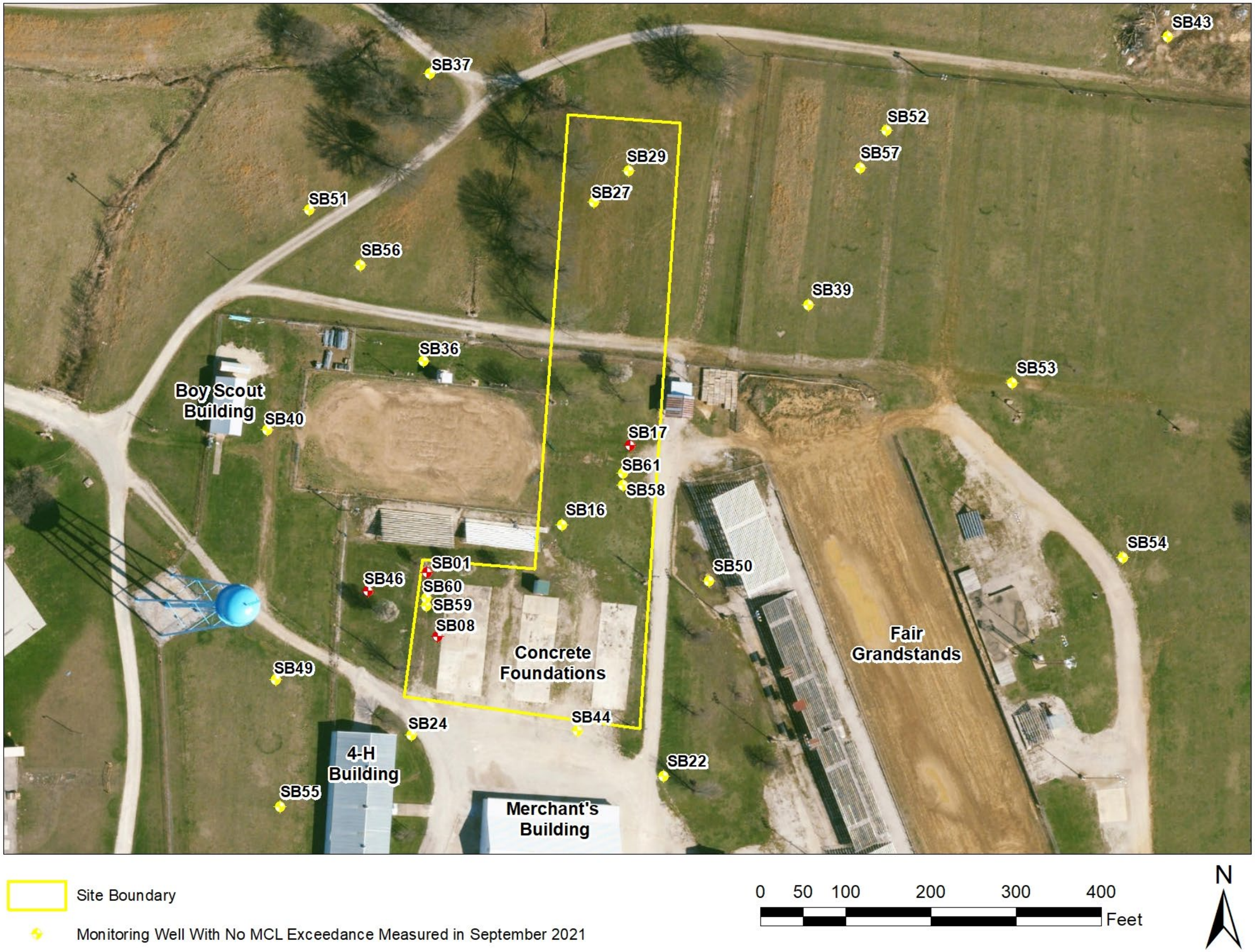
Figure 1. Site Location Map



Yellow line indicates the site boundary; red lines indicate parcel boundaries

Figure 2. 1963 Site Aerial, Adapted from Argonne (2010)

Figure 3. Soil RSL Exceedance Locations, Phase I (2010-2011)



MCL: Maximum Contaminant Level. Note: shallow, intermediate, and deep wells (ex. SB01S, SB01M, SB01D) are collocated and labeled as a single location for clarity.

Figure 4. Groundwater MCL Exceedance Locations, September 2021

Table 1. Groundwater Results, Upper Interval (<20 ft bgs), 2012-2021

					Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Concentration (µg/L)	
SB01S	MCSB01S-W-33421	10/23/12	8	18	**597**	**153**
SB01S	MCSB01S-W-33442	1/24/13	8	18	ND	**475**
SB01S	MCSB01S-W-34926	2/27/13	8	18	**4.4**	**1,776**
SB01S	MCSB01S-W-34967	3/28/13	8	18	**1.4**	**2,524**
SB01S	MCSB01S-W-34983	4/24/13	8	18	**1.9**	**3,202**
SB01S	MCSB01S-W-34997	6/25/13	8	18	ND	**2,342**
SB01S	MCSB01S-W-35014	9/22/13	8	18	ND	**1,665**
SB01S	MCSB01S-W-35027	2/11/14	8	18	ND	**15**
SB01S	MCSB01S-W-37107	1/21/15	8	18	**0.6 J**	ND
SB01S	MCSB01S-W-37120	4/19/16	8	18	ND	**2.6**
SB01S	MCSB01S-W-39042	5/10/17	8	18	ND	ND
SB01S	MCSB01S-W-39777	4/10/18	8	18	ND	ND
SB01S	MCSB01S-W-41184	9/13/21	8	18	ND	ND
SB16S	MCSB16S-W-33428	10/24/12	8	18	**44**	**7.6**
SB16S	MCSB16S-W-33445	1/24/13	8	18	**1.4**	**35**
SB16S	MCSB16S-W-34932	2/27/13	8	18	0.3 J	**35**
SB16S	MCSB16S-W-34969	3/28/13	8	18	**1.1**	**36**
SB16S	MCSB16S-W-34986	4/25/13	8	18	**1.8**	**41**
SB16S	MCSB16S-W-35001	6/25/13	8	18	0.3 J	**30**
SB16S	MCSB16S-W-35017	9/22/13	8	18	ND	**0.5 J**
SB16S	MCSB16S-W-35030	2/11/14	8	18	ND	ND
SB16S	MCSB16S-W-37111	1/21/15	8	18	ND	ND
SB16S	MCSB16S-W-38724	4/19/16	8	18	ND	ND
SB16S	MCSB16S-W-39048	5/10/17	8	18	ND	ND
SB16S	MCSB16S-W-41143	4/10/18	8	18	ND	ND
SB24	MCSB24-W-38981	4/21/16	8	18	ND	ND
SB29	MCSB29-W-38984	4/21/16	12	22	**1.7**	ND
SB38S	MCSB38S-W-38989	4/21/16	10	15	ND	ND
SB40S	MCSB40S-W-38994	4/23/16	8	18	ND	ND
SB43S	MCSB43S-W-38996	4/22/16	8	18	ND	ND

Table 1. Groundwater Results, Upper Interval (<20 ft bgs), 2012-2021

Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
					Concentration (µg/L)	
SB46S	MCSB46S-W-33429	10/24/12	8	18	**1.1**	**17**
SB46S	MCSB46S-W-33449	1/24/13	8	18	ND	**3.4**
SB46S	MCSB46S-W-34933	2/28/13	8	18	ND	**4.5**
SB46S	MCSB46S-W-34975	3/28/13	8	18	**1.3**	**4**
SB46S	MCSB46S-W-34992	4/25/13	8	18	ND	ND
SB46S	MCSB46S-W-35005	6/25/13	8	18	**5.9**	**6.8**
SB46S	MCSB46S-W-35022	9/22/13	8	18	ND	**1.0**
SB46S	MCSB46S-W-35035	2/11/14	8	18	ND	ND
SB46S	MCSB46S-W-37115	1/21/15	8	18	ND	ND
SB46S	MCSB46S-W-38728	4/19/16	8	18	ND	ND
SB46S	MCSB46S-W-39052	5/10/17	8	18	ND	ND
SB46S	MCSB46S-W-41147	4/10/18	8	18	ND	ND
SB46S	MCSB46S-W-41414	9/14/21	8	18	ND	ND
SB49S	MCSB49S-W-39004	4/23/16	8	18	ND	ND
SB50S	MCSB50S-W-39007	4/23/16	8	18	**1.6**	**1.6**
SB51S	MCSB51S-W-39010	4/22/16	8	18	ND	ND
SB52S	MCSB52S-W-39013	4/22/16	8	18	ND	ND
SB53S	MCSB53S-W-39016	4/23/16	8	18	ND	ND
SB54S	MCSB54S-W-39019	4/23/16	8	18	ND	ND

bgs: below ground surface; J: estimated concentration; MCL: Maximum Contaminant Level; ND: not detected at instrument detection limit of 1 µg/L; RSL: Regional Screening Level; µg/L: micrograms per liter.

[1] USEPA Regional Screening Level tables, tap water, target risk = 10^{-6} and target hazard index = 0.1 (USEPA 2024)

[2] USEPA Maximum Contaminant Level (USEPA 2024)

Bolded concentrations exceed RSLs. Bolded and highlighted concentrations exceed RSLs and MCLs.

*80 µg/L is the MCL for total trihalomethanes.

Table 2. Groundwater Results, Intermediate Interval (20-30 ft bgs), 2012-2021

					Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Concentration (µg/L)	
SB01M	MCSB01M-W-33433	10/25/12	20	30	**5,697**	**535**
SB01M	MCSB01M-W-33441	1/23/13	20	30	**3,335**	**1,473**
SB01M	MCSB01M-W-34925	2/28/13	20	30	**3,480**	**1,342**
SB01M	MCSB01M-W-34965	3/28/13	20	30	**5,006**	**1,620**
SB01M	MCSB01M-W-34981	4/24/13	20	30	**6,267**	**1,176**
SB01M	MCSB01M-W-34995	6/25/13	20	30	**3,618**	**1,261**
SB01M	MCSB01M-W-35013	9/22/13	20	30	**4,601**	**1,366**
SB01M	MCSB01M-W-35025	2/11/14	20	30	**3,030**	**1,984**
SB01M	MCSB01M-W-37105	1/21/15	20	30	**1,802**	**1,416**
SB01M	MCSB01M-W-37118	4/19/16	20	30	**1,169 D**	**1,077 D**
SB01M	MCSB01M-W-39043	5/10/17	20	30	**833 D**	**733 D**
SB01M	MCSB01M-W-39778	4/10/18	20	30	**649 D**	**763 D**
SB01M	MCSB01M-W-41185	9/13/21	20	30	**363**	**333**
SB08S	MCSB08S-W-33426	10/24/12	20	30	**1,004**	**152**
SB08S	MCSB08S-W-33444	1/23/13	20	30	**1,195**	**175**
SB08S	MCSB08S-W-34930	2/28/13	20	30	**1,496**	**169**
SB08S	MCSB08S-W-34970	3/28/13	20	30	**1,153**	**137**
SB08S	MCSB08S-W-34985	4/24/13	20	30	**941**	**55**
SB08S	MCSB08S-W-35000	6/25/13	20	30	**1,109**	**206**
SB08S	MCSB08S-W-35016	9/22/13	20	30	**1,238**	**222**
SB08S	MCSB08S-W-35029	2/11/14	20	30	**1,533**	**134**
SB08S	MCSB08S-W-37110	1/21/15	20	30	**112**	**9.1**
SB08S	MCSB08S-W-37123	4/19/16	20	30	**1,323 D**	**125**
SB08S	MCSB08S-W-39046	5/10/17	20	30	**2,252 D**	**103**
SB08S	MCSB08S-W-41141	4/10/18	20	30	**1,203 D**	**153 D**
SB08S	MCSB08S-W-41188	9/13/21	20	30	**1,200**	**122**
SB17S	MCSB17S-W-33425	10/23/12	18	28	**53**	**15**
SB17S	MCSB17S-W-33434	10/25/12	18	28	**126**	**21**
SB17S	MCSB17S-W-33447	1/24/13	18	28	**122**	**23**
SB17S	MCSB17S-W-34931	2/27/13	18	28	**112**	**30**
SB17S	MCSB17S-W-34972	3/28/13	18	28	**156**	**36**
SB17S	MCSB17S-W-34989	4/25/13	18	28	**194**	**45**
SB17S	MCSB17S-W-35003	6/25/13	18	28	**65**	**47**
SB17S	MCSB17S-W-35020	9/22/13	18	28	**87**	**58**
SB17S	MCSB17S-W-35033	2/11/14	18	28	**151**	**47**
SB17S	MCSB17S-W-37113	1/21/15	18	28	**95**	**22**
SB17S	MCSB17S-W-38726	4/19/16	18	28	**147 D**	**25**
SB17S	MCSB17S-W-39049	5/10/17	18	28	**112 D**	**21 D**
SB17S	MCSB17S-W-41144	4/10/18	18	28	**96**	**17**
SB17S	MCSB17S-W-41411	9/14/21	18	28	**140**	**22**
SB22S	MCSB22S-W-38980	4/21/16	18	28	ND	ND
SB27S	MCSB27S-W-38982	4/21/16	20	30	**12**	**2.2**
SB36S	MCSB36S-W-38985	4/21/16	15	25	ND	ND

Table 2. Groundwater Results, Intermediate Interval (20-30 ft bgs), 2012-2021

Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
					Concentration (µg/L)	
SB37S	MCSB37S-W-38987	4/21/16	15	25	ND	ND
SB37S	MCSB37S-W-39055	5/11/17	15	25	ND	ND
SB37S	MCSB37S-W-41150	4/10/18	15	25	ND	ND
SB37S	MCSB37S-W-41418	9/12/21	15	25	ND	ND
SB38M	MCSB38M-W-39057	5/11/17	15	25	ND	ND
SB38M	MCSB38M-W-41152	4/10/18	15	25	ND	ND
SB38M	MCSB38M-W-41450	9/15/21	15	25	ND	ND
SB39S	MCSB39S-W-38992	4/22/16	23	33	**108**	**22**
SB40M	MCSB40M-W-39037	4/23/16	20	30	ND	ND
SB40M	MCSB40M-W-39059	5/12/17	20	30	ND	ND
SB40M	MCSB40M-W-41154	4/11/18	20	30	ND	ND
SB40M	MCSB40M-W-41422	9/15/21	20	30	ND	ND
SB43M	MCSB43M-W-38997	4/22/16	20	30	ND	ND
SB44M	MCSB44M-W-38999	4/23/16	20	30	ND	ND
SB45S	MCSB45S-W-39002	4/23/16	18	28	ND	ND
SB49M	MCSB49M-W-39005	4/23/16	20	30	ND	ND
SB50M	MCSB50M-W-39008	4/23/16	20	30	**5.6**	**2.9**
SB51M	MCSB51M-W-39011	4/22/16	20	30	ND	ND
SB51M	MCSB51M-W-39061	5/11/17	20	30	ND	ND
SB51M	MCSB51M-W-41156	4/10/18	20	30	ND	ND
SB51M	MCSB51M-W-41424	9/12/21	20	30	ND	ND
SB52M	MCSB52M-W-39014	4/22/16	20	30	ND	ND
SB52M	MCSB52M-W-39063	5/11/17	20	30	ND	ND
SB52M	MCSB52M-W-41158	4/12/18	20	30	**1.8**	ND
SB52M	MCSB52M-W-41426	9/12/21	20	30	**3**	ND
SB53M	MCSB53M-W-39017	4/23/16	20	30	ND	ND
SB53M	MCSB53M-W-39065	5/11/17	20	30	ND	ND
SB53M	MCSB53M-W-41160	4/12/18	20	30	ND	ND
SB53M	MCSB53M-W-41428	9/15/21	20	30	ND	ND
SB54M	MCSB54M-W-39038	4/23/16	20	30	ND	ND
SB54M	MCSB54M-W-39067	5/11/17	20	30	ND	ND
SB54M	MCSB54M-W-41162	4/12/18	20	30	ND	ND
SB54M	MCSB54M-W-41430	9/15/21	20	30	ND	ND

bgs: below ground surface; D: diluted; 1,2-DCA: 1,2-dichloroethane; 1,1-DCE: 1,1-dichlorethene; ft: foot/feet; J: estimated concentration; MCL: Maximum Contaminant Level; ND: not detected at instrument detection limit of 1 µg/L; PCE: tetrachloroethene; RSL: Regional Screening Level; µg/L: micrograms per liter.

[1] USEPA Regional Screening Level tables, tap water, target risk = 10^{-6} and target hazard index = 0.1 (USEPA 2024)

[2] USEPA Maximum Contaminant Level (USEPA 2024)

Bolded concentrations exceed RSLs. Bolded and highlighted concentrations exceed RSLs and MCLs.

*80 µg/L is the MCL for total trihalomethanes.

Table 3. Groundwater Results, Lower Interval (>40 ft bgs), 2012-2021

					Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Concentration (µg/L)	
SB01D	MCSB01D-W-33420	10/23/12	47	57	**35**	**74**
SB01D	MCSB01D-W-33440	1/24/13	47	57	ND	**108**
SB01D	MCSB01D-W-34924	2/28/13	47	57	**113**	**197**
SB01D	MCSB01D-W-34964	3/28/13	47	57	**20**	**203**
SB01D	MCSB01D-W-34980	4/24/13	47	57	**3.3**	**305**
SB01D	MCSB01D-W-34994	6/25/13	47	57	ND	**256**
SB01D	MCSB01D-W-35011	9/22/13	47	57	ND	**10**
SB01D	MCSB01D-W-35024	2/11/14	47	57	ND	**4.4**
SB01D	MCSB01D-W-37104	1/21/15	47	57	**3.1**	**1.6**
SB01D	MCSB01D-W-37117	4/19/16	47	57	**365 D**	**189 D**
SB01D	MCSB01D-W-39045	5/10/17	47	57	**994 D**	**565 D**
SB01D	MCSB01D-W-41140	4/10/18	47	57	**339 D**	**157 D**
SB01D	MCSB01D-W-41187	9/13/21	47	57	**476**	**308**
SB08D	MCSB08D-W-33422	10/23/12	47	57	**983**	ND
SB08D	MCSB08D-W-33443	1/23/13	47	57	**872**	**121**
SB08D	MCSB08D-W-34927	2/28/13	47	57	**1,201**	**127**
SB08D	MCSB08D-W-34968	3/28/13	47	57	**926**	**67**
SB08D	MCSB08D-W-34984	4/24/13	47	57	**1,077**	**54**
SB08D	MCSB08D-W-34998	6/25/13	47	57	**1,286**	**51**
SB08D	MCSB08D-W-35015	9/22/13	47	57	**1,241**	**47**
SB08D	MCSB08D-W-35028	2/11/14	47	57	**1,249**	**44**
SB08D	MCSB08D-W-37108	1/21/15	47	57	**624**	**26**
SB08D	MCSB08D-W-37121	4/19/16	47	57	**833 D**	**38**
SB08D	MCSB08D-W-39047	5/10/17	47	57	**1,559 D**	**31**
SB08D	MCSB08D-W-41142	4/10/18	47	57	**1,101 D**	**32**
SB08D	MCSB08D-W-41189	9/13/21	47	57	**1,190**	**39**
SB17D	MCSB17D-W-33427	10/24/12	51.3	61.3	**664**	**31**
SB17D	MCSB17D-W-33435	10/25/12	51.3	61.3	**516**	**23**
SB17D	MCSB17D-W-33446	1/24/13	51.3	61.3	**988**	**40**
SB17D	MCSB17D-W-34928	2/27/13	51.3	61.3	**832**	**40**
SB17D	MCSB17D-W-34973	3/28/13	51.3	61.3	**1,017**	**56**
SB17D	MCSB17D-W-34987	4/25/13	51.3	61.3	**975**	**52**
SB17D	MCSB17D-W-35002	6/25/13	51.3	61.3	**806**	**39**
SB17D	MCSB17D-W-35018	9/22/13	51.3	61.3	**1,387**	**33**
SB17D	MCSB17D-W-35031	2/11/14	51.3	61.3	**1,294**	**41**
SB17D	MCSB17D-W-37112	1/21/15	51.3	61.3	**1,065**	**31**
SB17D	MCSB17D-W-38725	4/19/16	51.3	61.3	**449 D**	**9**
SB17D	MCSB17D-W-39050	5/10/17	51.3	61.3	**999 D**	**20**
SB17D	MCSB17D-W-41145	4/10/18	51.3	61.3	**918 D**	**18**
SB17D	MCSB17D-W-41412	9/14/21	51.3	61.3	**439**	**12**
SB27D	MCSB27D-W-38983	4/21/16	41	51	**1.5**	ND
SB36D	MCSB36D-W-38986	4/21/16	42.2	52.2	ND	ND
SB37D	MCSB37D-W-38988	4/21/16	35.8	45.8	ND	ND
SB37D	MCSB37D-W-39056	5/11/17	35.8	45.8	ND	ND

Table 3. Groundwater Results, Lower Interval (>40 ft bgs), 2012-2021

Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
					Concentration (µg/L)	
SB37D	MCSB37D-W-41151	4/10/18	35.8	45.8	ND	ND
SB37D	MCSB37D-W-41419	9/12/21	35.8	45.8	ND	ND
SB38D	MCSB38D-W-41153	4/10/18	41.2	51.2	ND	ND
SB38D	MCSB38D-W-41421	9/12/21	41.2	51.2	ND	ND
SB39D	MCSB39D-W-38993	4/22/16	45.8	55.8	**42 D**	ND
SB40D	MCSB40D-W-38995	4/23/16	43.3	53.3	ND	ND
SB40D	MCSB40D-W-39060	5/12/17	43.3	53.3	ND	ND
SB40D	MCSB40D-W-41155	4/11/18	43.3	53.3	ND	ND
SB40D	MCSB40D-W-41423	9/15/21	43.3	53.3	ND	ND
SB43D	MCSB43D-W-38998	4/22/16	37.4	47.4	ND	ND
SB44D	MCSB44D-W-39001	4/23/16	50	60	**3.5**	ND
SB45D	MCSB45D-W-39003	4/23/16	56	66	ND	ND
SB46D	MCSB46D-W-33423	10/23/12	44.5	54.5	**1,330**	**97**
SB46D	MCSB46D-W-33448	1/23/13	44.5	54.5	ND	**47**
SB46D	MCSB46D-W-34929	2/28/13	44.5	54.5	**240**	**494**
SB46D	MCSB46D-W-34974	3/28/13	44.5	54.5	**294**	**424**
SB46D	MCSB46D-W-34990	4/25/13	44.5	54.5	**148**	**280**
SB46D	MCSB46D-W-35004	6/25/13	44.5	54.5	**118**	**288**
SB46D	MCSB46D-W-35021	9/22/13	44.5	54.5	**129**	**275**
SB46D	MCSB46D-W-35034	2/11/14	44.5	54.5	**81**	**259**
SB46D	MCSB46D-W-37114	1/21/15	44.5	54.5	**84**	**98**
SB46D	MCSB46D-W-38727	4/19/16	44.5	54.5	**106**	**122**
SB46D	MCSB46D-W-39053	5/10/17	44.5	54.5	**113**	**60**
SB46D	MCSB46D-W-41148	4/10/18	44.5	54.5	**114**	**102**
SB46D	MCSB46D-W-41415	9/14/21	44.5	54.5	**27**	**39**
SB49D	MCSB49D-W-39006	4/23/16	49.5	59.5	ND	ND
SB50D	MCSB50D-W-39009	4/23/16	47	57	**790 D**	**22 D**
SB51D	MCSB51D-W-39012	4/22/16	41	51	ND	ND
SB51D	MCSB51D-W-39062	5/11/17	41	51	ND	ND
SB51D	MCSB51D-W-41157	4/10/18	41	51	ND	ND
SB51D	MCSB51D-W-41425	9/12/21	41	51	ND	ND
SB52D	MCSB52D-W-39015	4/22/16	40	50	ND	ND
SB52D	MCSB52D-W-39064	5/11/17	40	50	ND	ND
SB52D	MCSB52D-W-41159	4/12/18	40	50	ND	ND
SB52D	MCSB52D-W-41427	9/12/21	40	50	ND	ND

Table 3. Groundwater Results, Lower Interval (>40 ft bgs), 2012-2021

					Carbon Tetrachloride	Chloroform
				RSL (µg/L)[1]	**0.46**	**0.22**
				MCL (µg/L)[2]	**5**	**80***
Location	Sample ID	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Concentration (µg/L)	
SB53D	MCSB53D-W-39018	4/23/16	43	53	ND	ND
SB53D	MCSB53D-W-39066	5/11/17	43	53	ND	ND
SB53D	MCSB53D-W-41161	4/12/18	43	53	ND	ND
SB53D	MCSB53D-W-41429	9/15/21	43	53	ND	ND
SB54D	MCSB54D-W-39020	4/23/16	42	52	ND	ND
SB54D	MCSB54D-W-36068	5/11/17	42	52	ND	ND
SB54D	MCSB54D-W-41163	4/12/18	42	52	ND	ND
SB54D	MCSB54D-W-41431	9/15/21	42	52	ND	ND
SB55	MCSB55-W-33398	5/19/12	94	114	ND	ND
SB55	MCSB55-W-39021	4/24/16	94	114	ND	ND
SB56	MCSB56-W-33399	5/19/12	55	65	ND	ND
SB56	MCSB56-W-39022	4/25/16	55	65	ND	ND
SB56	MCSB56-W-39069	5/12/17	55	65	ND	ND
SB56	MCSB56-W-41164	4/11/18	55	65	ND	ND
SB56	MCSB56-W-41432	9/10/21	55	65	ND	ND
SB57	MCSB57-W-33387	5/17/12	75	85	ND	ND
SB57	MCSB57-W-39023	4/24/16	75	85	ND	ND
SB57	MCSB57-W-39070	5/12/17	75	85	ND	ND
SB57	MCSB57-W-41165	4/11/18	75	85	ND	ND
SB57	MCSB57-W-41433	9/10/21	75	85	ND	ND
SB58	MCSB58-W-33381	5/16/12	79	89	**480**	**40**
SB58	MCSB58-W-39024	4/24/16	79	89	**2,398 D**	**143 D**
SB59	MCSB59-W-33400	5/19/12	75	85	**43**	**1.2**
SB59	MCSB59-W-39025	4/24/16	75	85	**4.8**	**1.9**
SB60	MCSB60LF-W-33406	5/21/12	134	144	ND	ND
SB60	MCSB60-W-39026	4/24/16	134	144	ND	ND
SB60	MCSB60-W-39071	5/12/17	134	144	ND	ND
SB60	MCSB60-W-41166	4/11/18	134	144	ND	ND
SB60	MCSB60-W-41434	9/10/21	134	144	ND	ND
SB61	MCSB61-W-33421	5/23/12	134	144	ND	ND
SB61	MCSB61-W-39027	4/24/16	134	144	ND	ND
SB61	MCSB61-W-39072	5/12/17	134	144	ND	ND
SB61	MCSB61-W-41167	4/11/18	134	144	ND	ND
SB61	MCSB61-W-41435	9/10/21	134	144	ND	ND

bgs: below ground surface; D: sample analyzed at secondary dilution factor; J: estimated concentration; MCL: Maximum Contaminant Level; ND: not detected at instrument detection limit of 1 µg/L; RSL: Regional Screening Level; µg/L: micrograms per liter.

[1] USEPA Regional Screening Level tables, tap water, target risk = 10^{-6} and target hazard index = 0.1 (USEPA 2024)

[2] USEPA Maximum Contaminant Level (USEPA 2024)

Bolded concentrations exceed RSLs. Bolded and highlighted concentrations exceed RSLs and MCLs.

*80 µg/L is the MCL for total trihalomethanes.

COMMENT SHEET – Proposed Plan for Montgomery City
(CCC Former Grain Storage Facility)

Use this space to write your comments, or to be added to the mailing list.

The Army encourages your written comments on the Proposed Plan for Montgomery City (CCC Former Grain Storage Facility). You can use the form below to send written comments. If you have any questions about how to comment, please contact Mr. Jacob Allen at (816) 389-3654 or by E-mail at Jacob.T.Allen@usace.army.mil.

This form is provided for your convenience. Please mail this form or additional sheets of written comments, **postmarked no later than July 11, 2025**, to the following address:

Mr. Jacob Allen
U. S. Army Corps of Engineers
601 E. 12th Street
Kansas City, Missouri 64106

Comment submitted by:

Address:

____
____
____

Affix
Postage

Mr. Jacob Allen
U. S. Army Corps of Engineers
601 E. 12th Street
Kansas City, Missouri 64106

(Fold on dotted line, staple, stamp, and mail)