RECORD OF DECISION

Operable Unit Two
Former Kil-Tone Company Superfund Site
Cumberland County, New Jersey

United States Environmental Protection Agency
Region 2
New York, New York
September 2019

DECLARATION STATEMENT
RECORD OF DECISION

SITE NAME AND LOCATION

Former Kil-Tone Company Superfund Site
Cumberland County, New Jersey.

Superfund Site Identification Number: NJN000200874
Operable Unit 2

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for Operable Unit 2 (OU2) at the Former Kil-Tone Company Superfund Site (Site) located in the City of Vineland, Cumberland County, New Jersey, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9601-9675 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. This decision document explains the factual and legal basis for selecting a remedy to address contamination at the Site. The attached index (see Appendix III) identifies the items that comprise the administrative record upon which the selected remedy is based.

The New Jersey Department of Environmental Protection (NJDEP) was consulted on the proposed remedy in accordance with CERCLA Section 121(f), 42 U.S.C. § 9621(f), and concurs with the selected remedy (see Appendix IV).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from OU2 of the Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy described in this document addresses a discrete portion of the Site involving contaminated soil at non-residential properties (commercial/industrial properties and public areas) in the vicinity of the former Kil-Tone Company property on East Chestnut Avenue in the City of Vineland, New Jersey, as well as the former Kil-Tone property itself. This is the second of at least four planned remedial phases, designated as Operable Units (OUs), for the Site. The first OU includes residential properties in the vicinity of the former Kil-Tone property, for which remedial work is currently underway. A third operable unit includes contaminated groundwater associated with the Site, and a fourth operable unit includes contaminated sediment and surface water as well as the associated floodplains. Soil and residential properties located in the impacted floodplain area may need to be addressed as a fifth operable unit.

The major components of the remedy selected for OU2 include the following:

- Excavation of an estimated 57,800 cubic yards of soil contaminated with arsenic and lead from the former Kil-tone Company property and approximately 40 non-residential properties in the vicinity of the former Kil-Tone Company property, not to exceed the depth of the groundwater table;
- Off-site disposal of excavated contaminated soil, and backfilling of excavated areas with clean fill;
- Restoration of the affected properties;
- Institutional controls;
- Engineering controls, if necessary; and
- Long-term monitoring.

Excavation activities associated with remediation may require the demolition and replacement of secondary structures, such as garages and sheds, as well as surfaces including asphalt and driveways. In cases where contamination extends below more permanent structures (buildings, offices, etc.), effort will be undertaken to avoid demolition (underpinning, etc). In cases where this is infeasible, other options will be considered, including engineering and institutional controls.

Additional properties nearby or adjacent to the known OU2 properties may be identified during the design and/or implementation of the selected remedy that require remediation because of contamination associated with the Site; these will be incorporated into the selected remedy.

The environmental benefits of the selected remedy may be enhanced by consideration, during the remedy design or implementation, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy.

The estimated present-worth cost of the selected remedy is $36,039,000.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in CERCLA Section 121, 42 U.S.C. § 9621, because it: 1) is protective of human health and the environment; 2) meets a level or standard of control of the hazardous substances, pollutants and contaminants which at least attains the legally applicable or relevant and appropriate requirements under federal and state laws; 3) is cost-effective; and 4) utilizes permanent solutions and alternative treatments (or resource recovery) technologies to the maximum extent practicable. In addition, Section 121 of CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity or mobility of hazardous substances as a principal element (or requires a justification for not satisfying the preference). Treatment is not a principal element of the remedy selected herein, as no effective means of treating arsenic and lead contamination in soil in place were identified. However, some of the contaminated soil may require treatment prior to land disposal at an off-site facility. Off-site treatment, if required, would reduce the toxicity of the contaminated soil prior to land disposal.

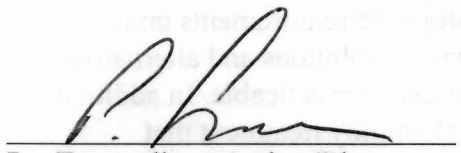
Five-year reviews will be required because the selected remedy may result in hazardous substances, pollutants, or contaminants remaining on affected properties above levels that allow for unlimited use and unrestricted exposure.

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the administrative record for the Site.

- Chemicals of concern and their respective concentrations may be found in the "Summary of Remedial Investigation" section.
- Baseline risk represented by the chemicals of concern may be found in the "Summary of Site Risks" section.
- A discussion of remediation goals may be found in the "Remedial Action Objectives" section.
- A discussion of principal threat waste may be found in the "Principal Threat Waste" section.
- Current and reasonably anticipated future land use assumptions are discussed in the "Current and Potential Future Site and Resource Uses" section.
- Estimated capital, annual operation and maintenance (O&M) and total present worth costs are discussed in the "Description of Remedial Alternatives" section.
- Key factors that led to selecting the remedy (i.e., how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting key decision criteria may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

AUTHORIZING SIGNATURE



Pat Evangelista, Acting Director
Superfund & Emergency Management Division
EPA – Region 2

Date 9/27/19

DECISION SUMMARY

Operable Unit 2
Former Kil-Tone Company Site
Cumberland County, New Jersey

United States Environmental Protection Agency
Region 2
New York, New York
September 2019

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SITE NAME AND LOCATION

The Former Kil-Tone Company Site (Site), U.S. Environmental Protection Agency (EPA) Superfund Site Identification Number NJN000200874, is located in the City of Vineland, Cumberland County, New Jersey. The selected remedy described herein addresses a discrete portion of the Site, referred to as Operable Unit 2 (OU2), involving contaminated soil at the former Kil-Tone Company property and non-residential properties in the vicinity of the former Kil-Tone Company property on East Chestnut Avenue (see Appendix I, Figure 1.) EPA is the lead agency and the New Jersey Department of Environmental Protection (NJDEP) is the support agency.

SITE DESCRIPTION

The former Kil-Tone Company property (Property) encompasses approximately 4.076 acres at 527 East Chestnut Avenue in a mixed residential and commercial area that has been identified as a community with environmental justice concerns. The Property is bordered to the north by East Chestnut Avenue; to the east by South Sixth Street; to the south by Paul Street; and to the west by South East Boulevard followed by railroad tracks used commercially for transporting freight. Both residential and non-residential properties are located throughout the area (see Appendix I, Figures 2 and 3).

Pesticides were manufactured at the Property from the late 1910s until the 1930s. Contaminated soil has been identified on the Property itself, at various residential and commercial properties surrounding the Property, and in soil, sediment, surface water and groundwater downgradient of the Property. This decision document focuses on Property and the non-residential properties located near the Property, including commercial, industrial and mixed-use properties, as well as public land. A previous decision document, signed in September 2016, focused on residential properties in the vicinity of the former Kil-Tone facility. Future decision documents will address contaminated groundwater, surface water and sediment and additional soil, if necessary.

Non-residential properties in the area range in lot size and date of construction. The smallest lots are less than 0.1 acres, the largest lots are over 4.7 acres, and the oldest structures were constructed around 1900. The Property itself is currently developed with a multi-section building on the western side, and the remainder of the Property, formerly unpaved, was paved with an asphalt cover in December 2016/January 2017 as part of a removal action performed by EPA to provide temporary protection from Site-related contamination. The paved area is used for vehicle parking, materials storage, and as a laydown area for unused equipment and larger steel fabrications. Adjacent and north of the Property is the Lerco Fuel Co. Inc. (Lerco) industrial facility that consists of two lots. The Lerco property was formerly used as a fuel storage and distribution site but is now vacant. Other commercial and industrial properties in the vicinity of the Property include a transmission service company, a salon, a restaurant, and a market, and are interspersed with residential properties in the area surrounding the Property. In addition, a few vacant lots and public properties are interspersed throughout the area.

A storm sewer catch basin located in the northwestern corner of the Property receives storm water from the entire four-acre Property and discharges into the head of the Tarkiln Branch

located across South East Boulevard about 400 feet west of the Property. The Tarkiln Branch is a tributary of the Parvin Branch which flows into the Maurice River located approximately 3.5 miles from the Site. The Maurice River eventually flows into Union Lake six miles downstream of the entrance of Parvin Branch.

The neighborhood to the northwest, north, and east of the Property consists of various residential properties with some commercial and industrial properties. Open spaces (neighborhood parks and vacant lots) are interspersed throughout this area as well. The non-residential properties to be addressed as part of OU2 may be adjacent to or near residential properties being addressed as part of OU1. Farther away, land use is primarily a mix of residential and commercial development. The urban core of Vineland is centered near the intersection of Landis Avenue and County Route 615 (South East Boulevard). This area includes suburban housing and light commercial development that radiates in all directions, with development becoming lighter away from the urban center.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The former Kil-Tone Company (Kil-Tone) began operations at the Property in or about 1917. Kil-Tone manufactured, among other things, the pesticide lead arsenate. In the mid-1920s, Kil-Tone was acquired by John Lucas & Company forming the Lucas Kil-Tone Company. The Lucas Kil-Tone Company continued manufacturing arsenic-based pesticides on the Property. Sanborn maps from 1919 and 1925 were used to identify the original buildings used by the former Kil-Tone Company to manufacture pesticides. Buildings identified on the Sanborn maps included an acid plant, tank room, engine room, and manufacturing building for grinding, mixing and pressing, and storage. A laboratory was constructed after 1919 on the southwest corner of the property.

Lead arsenate is a pentavalent form of inorganic arsenic, which exists normally as white crystals with no discernible odor, contains about 22 percent arsenic and is slightly soluble in cold water. Inorganic arsenicals are known to be acutely toxic. Lead arsenate was the most extensively used of the arsenical insecticides. Information obtained from the Vineland Chamber of Commerce and the New Jersey Experiment Stations that dates between 1917 and 1926 indicates that specific products manufactured by the former Kil-Tone Company included Green Cross Dry Powdered Arsenate of Lead, Green Cross Standard Arsenate of Lead (paste), Green Cross Sulpho-arsenate Powder, Green Cross Sulphur and Arsenate of Lead Mixture, Modified Kil-Tone, Improved Kil-Tone, Fruit Kil-Tone, Bordeaux Mixture, Dry Powdered Arsenite of Zinc, and Beetle Mort. Based on the timeframe during which the former Kil-Tone Company operated, these products were regulated under the Insecticide Act of 1910.

Lucas Kil-Tone continued to operate at the Property until about 1933, and the Property has undergone several property transfers since Lucas Kil-Tone ceased operations. The 1949 and 1968 Sanborn maps indicate that the Uddo Taormina Company Food Products occupied the Property and the configurations of the buildings had changed. Since that time, several other entities have operated on the Property. The Property is currently owned by Urban Manufacturing, LLC, which purchased the Property in 2008. Urban Sign & Crane, Inc. is the current tenant, and its operation includes the fabrication and installation of commercial signage.

The Lerco Company property is located directly across East Chestnut Avenue from the former Kil-Tone Company facility. A fuel distribution facility has operated on the Lerco property since the 1930s but is no longer in use. In 1989, a release of petroleum hydrocarbons was reported to NJDEP during the removal of a 20,000-gallon underground storage tank (UST) at the Lerco property. Since 1989, Lerco has performed remedial investigation activities under NJDEP authority on its property, which included removal of several USTs, aboveground storage tanks, light non-aqueous phase liquid remediation, and soil and groundwater sampling. Soil and groundwater sampling performed on the Lerco property identified high concentrations of benzene, toluene, ethylbenzene, and xylenes, as well as arsenic and lead. Arsenic was identified at concentrations up to 20,500 milligrams per kilogram (mg/kg) and lead up to 28,700 mg/kg. The exceedances of soil cleanup standards for arsenic and lead were mainly detected in the 1.5 to 2 feet and 4.5 to 5 feet below ground surface (bgs) along the western and southern property boundaries. Since the initial investigation, several soil sampling events have been conducted at the Lerco property by environmental consulting companies, including Aqua-tex and RT Environmental. RT Environmental indicated that the arsenic and lead identified were not associated with the Lerco operations. RT Environmental also stated that historical operations on the Lerco property support that it has always been operated as a fueling station, with no evidence that they would have generated arsenic or lead wastes. The presence of arsenic in conjunction with lead indicated that it is likely that some portion of the lead contamination may not be petroleum-related.

In August 2014, NJDEP initiated a Site investigation. The NJDEP investigation found arsenic on the Property at concentrations as high as 740 mg/kg in the top six inches of soil and at concentrations as high as 5,800 mg/kg at depth (3.5 to 4 feet bgs). Groundwater samples collected from temporary well points on the former Kil-Tone Company facility showed arsenic concentrations from 8.1 micrograms per liter (µg/L) to 14,000 µg/L. This discovery prompted NJDEP to refer the Site to EPA on November 14, 2014. The Site was proposed to the National Priorities List (NPL) on September 30, 2015 and was added to the NPL on April 5, 2016.

COMMUNITY PARTICIPATION

EPA has worked closely with local residents, public officials and other interested members of the community since sampling started at the Site in 2014. Work is occurring in a residential community and directly affects both residential and non-residential properties, so the level of interest is high, particularly by the owners/operators of impacted properties. This community in this section of Vineland is primarily Spanish-speaking. As such, translation and interpretation services are provided at public meetings and other events.

The Proposed Plan for OU2 of the Site was released for public comment on July 30, 2019. The Proposed Plan and other Site-related documents were made available to the public in the administrative record file maintained at the Vineland City Library, 1058 East Landis Avenue in Vineland, New Jersey and at the EPA Region 2 Superfund Records Center located at 290 Broadway, New York, New York (see Appendix III). The administrative record file is also available online at http://www.epa/gov/superfund/former-kil-tone.

A press release documenting the availability of these documents was released on July 30th, 2019. A notice of the Proposed Plan release and the public meeting was intended to be published in the *Daily Journal* newspaper, but due to a printing error the notice was never published. The public comment period was originally intended to close on August 28, 2019 but was extended to September 26 following the publication of the notice on August 27. Both English and Spanish versions of the Proposed Plan were made available.

A public meeting was held on August 13, 2019, at the Gloria M Sabater Elementary School, 301 Southeast Boulevard in Vineland, New Jersey to discuss the findings of the Remedial Investigation (RI) and the Focused Feasibility Study (FFS) and to present EPA's plan to the community. At this meeting, EPA representatives answered questions about the RI/FFS and the remedial alternatives. Due to the printing error mentioned above, a second public meeting was held on September 4, 2019, at the Vineland City Hall. Comments that were received by EPA at the public meetings and in writing during the public comment period are addressed in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF THIS OPERABLE UNIT

Due to the large area, the different media affected by contamination, the complexity of multiple properties and varying land uses, EPA is addressing the cleanup of the Site in several remedial actions, or operable units (OUs). A ROD for OU1 was signed on September 12, 2016. It selected a remedy for residential properties in the vicinity of the former Kil-Tone Company manufacturing facility and that remedial work is currently underway. This ROD addresses the second operable unit associated with the Site, which includes contaminated soils on the Property and non-residential properties in the vicinity of the Property. A third OU to address groundwater contamination and a fourth OU to address contaminated sediment and surface water will be needed. A fifth OU may be needed to address soil and residential properties located in the impacted floodplain area.

The approximately 40 properties referenced in this ROD requiring a CERCLA response action is an estimate used to calculate the approximate costs of the cleanup alternatives. The precise number of non-residential properties that will require soil remediation under the OU2 remedy will be determined upon completion of additional soil sampling activities to be conducted during the remedial design and possibly refined during implementation of the remedial action.

PRELIMINARY INVESTIGATIONS AND EARLY RESPONSE ACTIONS

From January 2015 through February 2016, EPA conducted several sampling events at the Site seeking to define the nature and extent of contamination in residential and non-residential soil, groundwater, surface water and sediment. Based on the results of EPA's 2015 and 2016 sampling events and the earlier sampling by NJDEP, EPA initiated a removal action in April 2016 to prevent exposure to lead and arsenic contaminated surface soil at residential properties located in the vicinity of the Property.

EPA's removal action consisted of the placement of topsoil to support the growth of sod on portions of 26 residential properties with arsenic and/or lead concentrations in surface soil in

excess of action levels. EPA also instructed property owners and/or residents of these residential properties to not disturb the new layer of clean topsoil and/or sod until a permanent remedy could be implemented. These preventative measures were completed in June 2016.

Later in 2016, an additional six residential properties located in the flood plain of the Tarkiln Branch were addressed to prevent exposure to and/or migration of contamination, and fencing was installed to restrict access to portions of two public housing developments along the Tarkiln. In addition, soil cover and paving were placed over a portion of the Property to prevent further migration of contamination from the Property until a permanent remedy can be implemented.

Operable Unit One

EPA selected a remedy for OU1 of the former Kil-Tone Site on September 12, 2016. The remedy addresses contaminated soil on approximately 57 residential properties in the vicinity of the Site and involves the excavation of an estimated 21,000 cubic yards of soil contaminated primarily with arsenic and lead. It also involves the off-site disposal of contaminated soil, the backfilling of excavated areas with clean fill, and the restoration of affected properties. Remedial activities are currently underway for OU1 residential properties. An initial 6 properties were completed in 2018, and 27 properties are currently undergoing remediation. Remedial design for remediation of the remaining properties is currently underway and is expected to start in 2020.

RESULTS OF THE REMEDIAL INVESTIGATION

Site Geology and Hydrogeology

The topography of the Site area is generally flat. The United States Department of Agriculture, Soil Conservation Service, Soil Survey of Cumberland County, New Jersey, states that the Site is located on Downer and Auro loamy sands. The Downer loamy sands are formed from fluviomarine deposits, located on river basins or hills. The Auro loamy sands occur with low hills and ancient stream terraces. The permeability is moderately slow to moderate for these soil associations. Parent material is described as loamy and gravelly alluvium. Much of the area is covered by houses, streets, driveways, buildings, parking lots, and urban construction. During sampling activities, the soil types observed at the background and the residential areas included coarse sands, coarse sandy loams, coarse loamy sands, coarse sandy clays, coarse loamy sand and sand. In addition, background and residential soil samples collected during the residential soil sampling events were analyzed for grain size. The grain size analysis indicated that the background and residential soil samples are primarily sand. The percentage of sand in the background soil samples ranged from 61.4 percent to 63.9. The percentage of sand in the residential soil samples ranged from 54.4 percent to 85 percent. The grain size analysis indicated that the background and residential soil samples also contained silt, clay, and colloids. During sampling activities, fill material was routinely encountered in some of the soil borings. The fill material included concrete, red brick, coarse sand, coarse black sand, coarse orange and orange black sand with asphalt, brick and rock shards, plastic, terra cotta, dark brown soil fill, various types of variegated dark brown soil and fill, coal fragments, coal ash, silt, small shards of coal, porcelain, slag and trash.

Site Characterization Summary and Results

The RI report for OU2 of the Site was finalized in July 2018 and amended in July 2019 to account for an update to the baseline human health risk assessment. The FFS was completed in July 2019. Together, the RI/FFS form the basis for this ROD. The focus of the OU2 RI was on soil contamination at non-residential properties. Additional information regarding the depth to groundwater was also obtained. The sampling associated with the RI was conducted in multiple stages, as described below.

Tier A Sampling

Soil sampling for OU2 began in August 2017, with the first round of sampling conducted at three properties: the former Kil-Tone Property itself, the Lerco property to the north, and 511 Paul Street, a vacant property to the south. The purpose of the initial sampling was to determine the full list of contaminants present in soil that are potentially related to the operations at the former Kil-Tone Property, and to determine the nature and extent of the contamination.

Soil samples were collected from at least eight borings per property using direct-push drilling equipment. Shallow soil (0-2 feet below ground surface (ft bgs)) from four discrete six-inch intervals and composite samples from three deeper intervals (2-4, 4-6 and 6-10 ft bgs) were collected from each boring for laboratory analysis. One additional sample was collected from each boring just above the water table, and all samples were analyzed for the full list of chemicals of potential concern (COPCs), including volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, pesticides and metals, including lead and arsenic.

The results were compared against New Jersey Residential Direct Contact Soil Remediation Standards (RDCSRS), New Jersey Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) and the New Jersey Impact to Groundwater Soil Screening Levels (IGWSSL). Arsenic and lead were found to be the only contaminants that regularly exceeded the RDCSRS and NRDCSRS for arsenic (19 mg/kg) and for lead (400 ppm and 800 ppm, respectively). The New Jersey default IGWSSL is 19 mg/kg for arsenic and 90 mg/kg for lead. Sporadic elevated concentrations of contaminants other than arsenic and lead were also found, particularly polycyclic aromatic hydrocarbons (PAHs), but the data did not suggest they are site-related.

Tier B Soil Sampling

Between September 2017 and March 2018, a second round of OU2 soil sampling (Tier B) was conducted at approximately 50 non-residential properties in the vicinity of the Property. The sampling approach was similar to the Tier A event; samples were collected from four discrete six-inch intervals at 0-2 ft bgs, and composite samples were collected from two intervals at 2-4 and 4-6 ft bgs. Based on the results of the Tier A sampling, the Tier B soil samples were analyzed for metals and two intervals, 0.5-1 and 2-4 ft bgs, were also analyzed for PAHs to supplement the Tier A sampling results.

Summary of Soil Investigation

The Tier B results verified that arsenic and lead are the primary chemicals of concern (COCs) at the Site. The highest concentrations of arsenic and lead found during OU2 sampling were on the Property itself. These concentrations range from 0.93 to 45,900 mg/kg for arsenic and 2.1 to 91,700 mg/kg for lead. Soil samples from adjacent and nearby properties to the north, south, and near the headwater of the Tarkiln Branch to the southwest also show elevated concentrations of arsenic (up to 15,900 mg/kg) and lead (up to 16,100 mg/kg). Arsenic and lead impacts on the OU2 properties decrease laterally with distance away from the Property (see Figure 2).

With some exceptions (mainly in Tier A properties), the arsenic and lead impacts were typically found in shallow soil above 4 ft bgs. This is consistent with the conceptual site model (CSM) for the Site, which suggests that overland flow (runoff) and air dispersion (dust) were the main contaminant transport mechanisms from the Property. Deeper soil impacts found on some nearby properties may be due to the use of fill material, storage or disposal of manufactured products and/or waste materials from the Property.

Groundwater

While the OU2 RI focused on soil contamination, the depth to the water table was recorded during installation of OU2 soil borings. The average depth to groundwater at the Property is approximately 6 ft bgs. Groundwater may be encountered at shallower depths in certain locations on the Property, specifically in the area where the Tarkiln Branch originates. The average depth to groundwater is approximately 7 ft bgs at properties directly north of the Property and is approximately 8 ft bgs at properties directly south of the Property. The depth to groundwater increases with distance away from the Property, and away from the Tarkiln Branch, and averages approximately 13.5 ft bgs north of Cherry Street. Elevated concentrations of lead and/or arsenic were encountered at some properties below the depth of the groundwater table, including at the Property and at the Lerco property.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

OU2 encompasses properties with a number of designated land uses, including commercial, industrial, public land, and vacant properties. Throughout the project study area, non-residential properties are interspersed with residential properties. Based on discussions with the City of Vineland, and as documented in the FFS for OU2, most of the impacted properties, while currently zoned non-residential, have a reasonably anticipated future use of residential. As such, with the exception of a few properties that are expected to remain industrial/commercial, most will be approached as having a potential future residential use.

The City of Vineland Water Utility provides municipal water to its residents. It is EPA's understanding that a relatively small number of properties may still obtain water through private wells, though EPA is not aware of any OU2 properties that are doing so. This concern is being explored more fully and, if necessary, EPA will take additional actions as appropriate.

SUMMARY OF SITE RISKS

As part of the RI/FFS, a baseline risk assessment was conducted to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for the Site.

Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario:

- *Hazard Identification* – uses the analytical data collected to identify the contaminants of potential concern at the site for each medium, with consideration of a number of factors explained below;
- *Exposure Assessment* - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed;
- *Toxicity Assessment* - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and
- *Risk Characterization* - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also identifies contamination with concentrations which exceed acceptable levels, defined by the National Contingency Plan (NCP) as an excess lifetime cancer risk greater than $1 \times 10^{-6} – 1 \times 10^{-4}$ or a Hazard Index greater than 1; contaminants at these concentrations are considered chemicals of concern (COCs) and are typically those that will require remediation at the site. Also included in this section is a discussion of the uncertainties associated with these risks.

Hazard Identification

In this step, the COPCs in soil were identified based on such factors as toxicity, frequency of detection, fate and transport of the contaminants in the environment, concentration, mobility, persistence and bioaccumulation. Analytical information that was collected to determine the nature and extent of contamination revealed the presence of arsenic and lead on non-residential properties at concentrations of potential concern. Surface (0-2 feet) and surface/subsurface (0-10 feet) soils were the only media quantitatively evaluated in the HHRA.

This ROD focuses on the former Kil-tone Property and the non-residential properties in the immediate vicinity of the Property. Consistent with the OU1 approach, three OU2 properties were selected for a streamlined risk assessment. These three properties are considered representative of the range of properties included in the OU2 RI. Two of the selected properties

are representative of properties with relatively deep (below the water table) contamination likely due to the use of fill material including manufactured products and/or waste material from the former Kil-Tone Company facility. The third property is representative of properties impacted by the operations of the former Kil-Tone facility through overland flow and/or air dispersion of contamination, and properties with relatively shallow (above the water table) impacts. In addition, two of the properties have a reasonably anticipated future use as residential while one (with deep contamination) is reasonably anticipated to remain non-residential. As such, the results of the risk assessment on these properties are applicable to all OU2 properties.

The contaminated media, concentrations detected, and concentrations utilized to estimate potential risks and hazards for the COCs at each property that was quantitatively assessed are presented in Table 1. A comprehensive list of all COPCs in surface soils can be found in the HHRA in the Administrative Record. Lead was also identified as a COC; the relevant subset of information on lead is summarized in Table 7.

Exposure Assessment

Consistent with Superfund policy and guidance, the HHRA is a baseline human health risk assessment and therefore assumes no remediation has been performed or institutional controls established to mitigate or remove hazardous substance releases. Cancer risks and noncancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.

Exposure pathways were identified for each potentially exposed population and each potential exposure scenario. Although the OU2 properties are zoned non-residential, many are adjacent to residential areas and, based on EPA's communications with the Township of Vineland planning committee, could be rezoned as such in the future. Potential exposures to COPCs in surface and combined surface and subsurface soil pathways were evaluated for each scenario. Exposure pathways assessed in the HHRA included incidental ingestion of and dermal contact with contaminated soil by future adult and child residents, utility workers, construction workers, and current/future industrial workers. A summary of the exposure pathways included in the human health risk assessment can be found in Table 2. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. A summary of the exposure point concentrations for the Site-related COCs in surface soil can be found in Table 1, while a comprehensive list of the exposure point concentrations for all COPCs can be found in the HHRA.

Toxicity Assessment

In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects were determined. Potential health effects are contaminant-specific and may include the risk of developing cancer over a lifetime or other noncancer health effects, such as changes in the

normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some contaminants are capable of causing both cancer and noncancer health effects.

Under current EPA guidelines, the likelihood of carcinogenic risks and noncancer hazards due to exposure to Site chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the human health risk assessment were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA's directive on toxicity values. This information for the Site-related COCs is presented in Table 3 (noncancer toxicity data summary) and Table 4 (cancer toxicity data summary). Additional toxicity information for all COPCs is presented in the HHRA.

Risk Characterization

This step summarized and combined outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures were evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. Exposure from lead was evaluated using blood lead modeling and is discussed in more detail later in this section.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (*e.g.*, the amount of a chemical ingested from contaminated soil) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur as a result of Site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals that are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for noncancer health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the noncarcinogenic risks associated with these chemicals for each exposure pathway is contained in Table 5.

As shown in Table 5, when separated by target organ, the HI for noncancer health effects exceeded EPA's threshold value of 1 for the child resident for all three non-residential properties, ranging from 2 to 67. The HI also exceeded 1 for the construction worker at both properties with deeper contamination. The noncancer hazard threshold was exceeded for all potential receptors at the Property. The noncancer hazards were mainly attributable to ingestion of arsenic-contaminated soils.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the *Exposure Assessment*. Again, as stated in the NCP, the acceptable risk range for Site-related exposure is 10^{-6} to 10^{-4}.

As shown in Table 6, an exceedance of the target cancer risk range was predicted at the Property for a future resident (3×10^{-3}), industrial worker (8×10^{-4}), and utility worker (3×10^{-4}). The estimated cancer risk for a future resident and utility worker at the other property with deeper contamination is at the limit of the acceptable risk range (1×10^{-4}). Cancer risks were primarily due to ingestion of and dermal contact with arsenic in surface soil. The estimated cancer risks for all receptors at the third property assessed were within or below the acceptable risk range.

Lead was detected on non-residential properties at elevated concentrations. Since there are no published quantitative toxicity values for lead, it is not possible to evaluate risks from lead exposure using the same methodology as other COCs. However, because the toxicokinetics (the absorption, distribution, metabolism, an excretion of toxins in the body) of lead are well understood, lead is regulated based on blood lead concentrations (BLL). In lieu of evaluating risk using typical intake calculations and toxicity criteria, EPA developed models which are used to predict blood lead concentration and the probability of BLL in a child exceeding specific target concentrations based on a given multimedia exposure scenario. EPA's risk reduction goal is to limit the probability of a typical child's (or that of a group of similarly exposed individuals) BLL exceeding 5 micrograms per deciliter (µg/dL) to 5 percent or less. For this HHRA, lead risks for were evaluated using EPA's Integrated Exposure Uptake Biokinetic (IEUBK) model for the child resident as the most conservative receptor. For adult receptors, fetal BLL is predicted using EPA's Adult Lead Methodology (ALM) model and evaluated with the same risk reduction goal.

The predicted probabilities of a child's BLL exceeding 5 µg/dL surpassed EPA's risk reduction goal of 5 percent at the former Kil-Tone Company facility for a resident, industrial worker, and construction worker. An exceedance of the risk reduction goal was also predicted for a construction worker at the other property with deeper contamination. Results of all lead modeling for the targeted properties are summarized in Table 7.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data.

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the COCs, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the COCs at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near a site and is highly unlikely to underestimate actual risks related to the Site.

More specific information concerning uncertainty in health risks is presented in the risk assessment report.

Ecological Risk Assessment

In 2017, a Screening-Level Ecological Risk Assessment (SLERA) for OU2 was conducted to evaluate the potential risk to ecological receptors at the Site. In general, the OU2 properties are developed and do not contain suitable ecological habitats. However, a few properties were identified as having potentially ecologically suitable habitat upland. Three distinct exposure units (EUs) were evaluated in the SLERA; the first two, EU-1 and EU-2, consisted of OU2 properties, while the third (EU-3) included the Tarkiln Branch and its floodplain, extending to its confluence with the Parvin Branch. The SLERA evaluated screening-level direct contact exposures and risks to community receptors (plants, invertebrates, and fish) and food chain exposures and risks to wildlife receptors (select birds and mammals). Exposures were calculated using maximum contaminant of potential ecological concern (COPEC) concentrations, and conservative literature-derived ecotoxicity benchmarks and dose levels.

Results of the SLERA indicated that the potential for adverse ecological effects exists for each EU due to metals (primarily arsenic) and PAHs. A Step 3A ERA was conducted for EUs 1 and 2 and evaluated exposures to ecological receptors under current and reasonably anticipated future land use conditions using more realistic (less conservative) assumptions and values for exposure and toxicity. Results indicated that for EU-1 and EU-2, there is a potential for adverse effects to terrestrial plant and soil invertebrate communities, with arsenic and lead as the primary chemicals of concern and found minimal potential for adverse effects to wildlife populations. A full Baseline Ecological Risk Assessment (BERA) for EU-3 will be conducted, most likely as part of OU4 for the Site.

Basis for Taking Action

Based on the results of the quantitative human health risk assessment, the SLERA and the Step 3A ERA, EPA has determined that actual or threatened releases of hazardous substances from the Site, if not addressed by the response action selected in this ROD, may present a current or potential threat to human health and the environment. It is EPA's judgment that the remedial action selected in this ROD is necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Soil contamination on non-residential properties is present in surface and/or subsurface soil. The following remedial action objectives (RAOs) for contaminated soil attain a degree of cleanup that ensures the protection of human health and the environment:

- Prevent current and potential future unacceptable risks to human receptors resulting from direct contact with contaminated soil;
- Prevent migration of chemicals of concern (COCs) from the OU2 properties to other areas via overland flow and air dispersion;

- Prevent or reduce the migration of COCs from soil to groundwater; and
- Prevent current and potential future unacceptable risks to ecological receptors resulting from direct contact with contaminated soil.

Remediation Goals

To achieve the RAOs, property-specific remediation goals (RGs) will be used based on the reasonably anticipated future use of the property (residential or non-residential), the depth of the contamination for impact to groundwater, and the potential for adverse ecological effects. With the exception of a few properties that are expected to remain industrial/commercial, most will be approached as having a potential future residential use. EPA has adopted the preliminary remediation goals identified in the Proposed Plan as the final RGs for OU2 of the Site with the exception of the Impact to Groundwater (IGW) goal for lead. Sampling is being completed to develop a Site-specific IGW concentration for lead, and, based on existing literature, it is anticipated that the Site-specific IGW concentration for lead will be greater than 400 mg/kg, which is the residential RG for lead. If this is the case, the result is not expected to significantly impact the remedial design or the scope, performance or cost of the remedy. The IGW RG will be memorialized in a publicly available technical memorandum to the Site file or other appropriate decision document.

The RGs for OU2 are as follows:

	Arsenic (mg/kg)	**Lead (mg/kg)**
Residential Soil	19	400
Non-Residential Soil	19	800
Impact to Groundwater	19	Under development
Ecological (Plants)	69	500
Ecological (Soil Invertebrates)	93.7	3,162

Note: mg/kg = milligrams per kilogram

The residential, non-residential and IGW RGs are based on New Jersey Remediation Standards and default IGWSSLs (N.J.A.C. 7:26d). As discussed above, and consistent with New Jersey Remediation Standards and guidance, EPA is developing a Site-specific IGW value for lead. The plant and soil invertebrate RGs listed above are based on the results of the ecological analyses conducted for OU2.

Additionally, the current NJDEP RDCSRS for lead is based on a child blood lead level of 10 micrograms per deciliter (µg/dL). However, recent toxicological evidence outlined in a December 2016 EPA memorandum "Updated Scientific Considerations for Lead in Soil Cleanups" suggests that adverse health effects are associated with lower blood lead levels. To achieve a lead risk reduction goal consistent with recent toxicological findings, the average lead concentration across the surface of the remediated area must be at or below 200 mg/kg, with no single point above 400 mg/kg, which corresponds to a child blood lead level of 5 µg/dL.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA Section 121(b)(1), 42 U.S.C. § 9621(b)(1), mandates that remedial actions be protective of human health and the environment, be cost-effective, and use permanent solutions, alternative treatment technologies, and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site permanently and significantly. CERCLA Section 121(d), 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants and contaminants, which at least attains applicable or relevant and appropriate requirements ("ARARs") under federal and state laws, unless a waiver can be justified.

Remedial alternatives for OU2 of the Site are summarized below. Capital costs are those expenditures that are required to construct a remedial alternative. Operation and maintenance (O&M) costs are those post-construction costs necessary to ensure or verify the continued effectiveness of a remedial alternative and are estimated on an annual basis. Present worth is the amount of money which, if invested in the current year, would be sufficient to cover all the costs associated with a project over time, calculated using a discount rate of seven percent and up to a 30-year time interval. Construction time is the time required to construct and implement the alternative and does not include the time required to design the remedy, negotiate performance of the remedy with responsible parties, or procure contracts for design and construction. Detailed information regarding the alternatives can be found in the 2019 *Focused Feasibility Study Report* (FFS Report).

Potential technologies applicable to soil remediation were identified and screened by effectiveness, implementability, and cost criteria, with an emphasis on effectiveness. Those technologies that passed the initial screening were then assembled into remedial alternatives.

Approximately 50 properties were sampled during the OU2 RI, and EPA estimates that approximately 40 will require remediation. Additional sampling will be conducted during the design of the OU2 remedy to refine the extent of contamination on each property, which may lead to the identification of additional properties.

Alternative 1 - No Action

The NCP requires that a "No Action" alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated soil at non-residential properties.

Total Capital Cost:	*$0*
Annual O&M:	*$0*
Present Worth Cost:	*$0*
Construction Timeframe:	*0 years*

Alternative 2 – Engineering Controls (Capping/Access Control) and Institutional Controls

Under this alternative, an estimated 8,650 cubic yards of contaminated soil would be excavated to accommodate caps on individual OU2 properties. Some properties contain existing paved areas that could act as engineered covers and would require only maintenance.

This alternative consists of the following major components:

- Installation and/or maintenance of engineered covers
- Off-site disposal of soil excavated prior to cap installation
- Institutional controls in the form of deed notices
- Long-term monitoring

The active components of this remedial action are anticipated to take approximately 15 months to implement. The estimated present-worth cost is $8.1 million. Under this remedial alternative, institutional controls in the form of deed notices would be required to prevent disturbance of engineered covers and identify use restrictions. In addition, long-term monitoring in the form of visual inspections of the affected properties would be required to ensure that the engineering controls remain effective.

This alternative would result in contaminants remaining on-site above levels that allow for unrestricted use and unlimited exposure; therefore, five-year reviews would be required under CERCLA.

Total Capital Cost:	*$7,961,000*
Annual O&M:	*$10,000*
Present Worth Cost:	*$8,091,000*
Construction Time Frame:	*15 months*

Alternative 3 – Excavation to Depth of Contamination (not to exceed depth of groundwater table), Engineering Controls and Institutional Controls.

Under this alternative, an estimated 57,800 cubic yards of soil would be excavated for off-site disposal. It is estimated that the active component of the remedial action would take about 35 months to implement, inclusive of mobilization/demobilization, sheeting/building, excavation and backfill/restoration.

This alternative consists of the following major components:

- Excavation of soil in exceedance of the appropriate property-specific soil RGs, not to exceed the depth of the groundwater table
- Off-site disposal of excavated soil
- Institutional controls
- Engineering controls, if necessary
- Long-term monitoring, if necessary

The estimated present-worth cost of this alternative is $36 million. The cost estimate assumes that for the Property itself and the Lerco property 75% of excavated material could be disposed of as non-hazardous waste and 25% would require disposal as hazardous waste at an appropriately permitted facility. For the remainder of the properties within OU2, disposal cost assumptions were split 90% non-hazardous and 10% hazardous based on the results of the RI and best professional judgement.

Institutional controls would be needed on properties not addressed to residential standards. While the goal would be full excavation of all impacted soil above the water table, due to engineering and/or access considerations, it may be necessary in some instances to use engineering controls to fully achieve RAOs. If this is the case, long-term monitoring in the form of visual inspections would be needed to assure the engineering controls remain effective. Because this alternative would result in contaminants remaining on-Site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the Site be reviewed at least once every five years.

Note that existing data indicate elevated concentrations of COCs are present in soil beneath the water table on at least 3 of the approximately 40 OU2 properties. Under Alternative 3, this contaminated soil would be left in place and addressed as part of OU3 of the Site, which relates to groundwater. However, by removing impacted soil above the water table, Alternative 3 would also reduce the migration of contamination below the water table. Sampling for the OU3 RI has recently been initiated and a more complete understanding of Site-related groundwater contamination obtained during the OU3 RI will be valuable in determining the appropriate remedy for soil below the water table. For this reason, under this alternative, remediation of any properties with contamination beneath or near the water table will be deferred until after EPA determines whether any active remediation is needed for OU3. Remedial activities on the properties with impacts below the water table could then be conducted concurrently with, or in accordance with, the remedial action selected for OU3 of the Site in order to avoid the potential need to return to a property previously cleaned up under OU2.

Total Capital Cost: $35,941,000
Annual O&M: $7,500
Present Worth Cost: $36,039,000
Construction Time Frame: 35 months

Alternative 4 – Excavation to Depth of Contamination, Engineering Controls and Institutional Controls

Under this alternative, an estimated 86,600 cubic yards of soil would be excavated for off-site disposal. The volume is higher than it is under Alternative 3 because Alternative 4 includes excavation of soil below the water table at the three properties where under Alternative 3, elevated concentrations of COCs above the RGs would remain in place. It is estimated that the active component of the remedial action would take about 50 months to implement including mobilization/demobilization, sheeting/building, excavation and backfill/restoration.

This alternative consists of the following major components:

- Excavation of all soil in exceedance of the appropriate parcel-specific soil remediation standard
- Off-site disposal of excavated soil
- Institutional controls
- Engineering controls, if necessary
- Long-term monitoring, if necessary

The estimated present-worth cost is $58.4 million. As noted in Alternative 3, the cost estimate assumes a 75% non-hazardous and 25% hazardous disposal cost split for material excavated from the Property and the Lerco property. For the remainder of the properties within OU2, disposal cost assumptions were split 90% non-hazardous and 10% hazardous.

Institutional controls would be needed on properties not remediated to residential standards. While the goal would be full excavation of all impacted soil, due to engineering and/or access considerations, it may be necessary in some instances to use engineering controls to fully achieve RAOs. If this is the case, long-term monitoring of the engineering controls would be needed to assure they remain effective. Because this alternative may result in contaminants remaining on-Site above levels that allow for unrestricted use and unlimited exposure, five-year reviews may be required, as per CERCLA.

Total Capital Cost:	*$58,311,000*
Annual O&M:	*$7,500*
Total Present Worth:	*$58,409,000*
Construction Time Frame:	*50 months*

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy for a site, EPA considers the factors set forth in Section 121 of CERCLA 42 U.S.C. § 9621, and conducts a detailed analysis of the viable remedial alternatives pursuant to Section 300.430(e)(9) of the NCP, 40 C.F.R § 300.430(e)(9), EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER Directive 9355.3-01, and EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, OSWER 9200.1-23.P. The detailed analysis consists of an assessment of the individual alternatives against each of the nine evaluation criteria at 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

A comparative analysis of these alternatives based upon the nine evaluation criteria noted below follows.

Threshold Criteria *– The first two criteria are known as "threshold criteria" because they are the minimum requirements that each response measure must meet in order to be eligible for selection as a remedy.*

1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

Alternative 1, the no action alternative, is not protective of human health and the environment because it does not eliminate, reduce, or control risk of exposure to contaminated soils through off-site disposal, engineering controls, or institutional controls.

Alternative 2 would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through containment, soil cover, or removal of contaminated soil. Engineering controls (i.e., soil covers) and deed notices would prevent exposure to risk-based levels of contaminants.

Alternative 3 would protect human health and the environment by removing the contaminated soil, thereby preventing exposure and reducing potential migration to groundwater.

Alternative 4 would protect human health and the environment by removing contamination, including below the water table, thereby preventing exposure and preventing or reducing the migration of COCs from soil to groundwater.

Alternatives 3 and 4 would also include institutional controls in the form of deed notices for properties where soil contamination remained in place above residential standards.

2. Compliance with applicable or relevant and appropriate requirements (ARARs)

Section 121 (d) of CERCLA, 42 U.S.C. § 9621(d), and Section 300.430(f)(1)(ii)(B) of the NCP, 40 C.F.R. §300.430(f)(1)(ii)(B), require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal and state requirements, standards, criteria and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under Section 121(d)(4) of CERCLA.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes or provides a basis for invoking a waiver.

A complete list of ARARs can be found in Table 8 in Appendix II.

Alternative 1: since ARARs apply to actions taken, they are not applicable to the no action alternative.

Alternative 2 would comply with chemical-specific ARARs because the soil cover and institutional controls would be effective in preventing exposure to the contaminants. Location-specific ARARs, such as the National Historic Preservation Act and action-specific ARARs such as waste handling requirements under the Resource Conservation and Recovery Act would be met by proper design and implementation of the remedial components. The action-specific ARARs for the disposal phase would be met with proper waste management on-Site and selection of appropriate disposal facilities.

Alternative 3 would comply with chemical-specific ARARs by removing arsenic-contaminated soil above either New Jersey RDCSRS or NRDCSRS, according to the reasonably anticipated future use of the property. The New Jersey soil remediation standards for lead are not ARARs, but the RGs developed for OU2 are consistent with those standards. Location- and action-specific ARARs would be met during the construction phase by proper design and implementation of the action. The action-specific ARARs for the disposal phase would be met with proper waste management on-Site and selection of appropriate disposal facilities.

Alternative 4 would comply with chemical-specific ARARs by removing contaminated soil above either New Jersey RDCSRS or NRDCSRS, according to the reasonably anticipated future use of the property. Location and action-specific ARARs would be met during the construction phase by proper design and implementation of the action such as general construction standards and waste handling requirements. The location-specific ARARs and action-specific ARARs for the disposal phase would be met with proper waste management on-Site and selection of appropriate disposal facilities.

Primary Balancing Criteria *– The next five criteria, criteria 3 through 7, are known as "primary balancing criteria". These criteria are factors by which tradeoffs between response measures are assessed so that the best options will be chosen, given site-specific data and conditions.*

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3. Long-Term Effectiveness and Permanence

Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

Alternative 1 provides no long-term effectiveness or permanence.

Alternative 2 provides long-term effectiveness and permanence through maintenance of the soil covers and the institutional controls. Periodic inspection and maintenance, as required by the institutional controls, would ensure the remedy remains effective in preventing exposure to contaminants. The continued effectiveness of the Alternative 2 containment system would depend on how well the soil covers are maintained. Alternative 2 would not be as permanent or as effective over the long term as Alternative 3 since contaminated soil would remain at the properties with concentrations above the RGs, and deed notices would not eliminate potential future health risks to property owners/occupants or workers associated with exposure to contaminated surface soils. Implementation of a deed notice requires that the property owners

consent to the recording of the deed notice on their property. Consent to place a deed notice on properties may be difficult to obtain partly because some property owners may perceive that such a deed notice may restrict their use of the property. In addition, monitoring and enforcing use restrictions imposed through deed notices requires dedicated resources.

Alternative 3 would provide long-term effectiveness and permanence by removing contaminants from the non-residential properties and providing secure disposal of excavated soil at appropriate permitted facilities. Off-site treatment, where necessary, and disposal at a secure, permitted hazardous waste facility for contaminated soil is reliable because the design of such facilities includes safeguards and would ensure the reliability of the technology and the security of the waste material. Long-term monitoring and maintenance of the affected properties and five-year reviews would be required, as contamination may remain below the water table on some properties. In addition, while the goal would be full remediation to the water table, engineering controls may be needed in some instances due to structural and/or access concerns.
Deed notices would be required for properties anticipated to remain in commercial use, which would be cleaned up to non-residential standards, but most properties are expected to be cleaned up to residential standards.

Alternative 4 would provide long-term effectiveness and permanence by removing contaminants above the RGs from the properties, including below the water table, and providing secure disposal of excavated soil at appropriate permitted facilities. Off-site treatment, where necessary, and disposal at a secure, permitted hazardous waste facility for contaminated soil is reliable because the design of such facilities includes safeguards and would ensure the reliability of the technology and the security of the waste material. Alternative 4 would provide the greatest long-term effectiveness and permanence since all, or most, Site-related soil contamination exceeding the RGs would be excavated and disposed of at an approved off-site facility. While the goal would be full excavation of all Site-related contamination, in some limited instances engineering controls may be needed due to structural and/or access concerns. Long-term monitoring in the form of visual inspections and maintenance, as well as CERCLA five-year reviews, would be required for any property for which remediation could not reach unlimited use and unrestricted exposure conditions. Deed notices would be required for properties anticipated to remain in commercial use, which would be cleaned up to non-residential standards, but most properties are expected to be cleaned up to residential standards.

4. Reduction of Toxicity, Mobility, or Volume through Treatment
Reduction in Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment and the amount of contamination present.

Alternative 1 would not reduce the toxicity, mobility or volume of contaminated soil, since the soil would remain in place.

Alternative 2 would not provide reduction of toxicity, mobility, or volume of contamination through treatment.

Alternative 3 would not provide reduction of toxicity, mobility, or volume of contamination at the properties through treatment.

Alternative 4 would not provide reduction of toxicity, mobility, or volume of contamination at the properties through treatment.

The use of treatment was evaluated as a part of the FFS process, but no effective means of treating arsenic and lead contamination in soil in place were identified. Excavated soil for off-site disposal may require treatment prior to disposal.

Alternative 2 would reduce the mobility of contamination somewhat through the placement of caps over impacted areas, however, not through treatment. Alternative 3 would provide better reduction of mobility through the excavation and removal of COC-contaminated soil from the Site. At a select group of properties contamination would remain below the water table, but this remaining contamination would be addressed as part of OU3, if necessary. Alternative 4 would provide the highest reduction of mobility and volume of contaminants through the excavation and off-site disposal of contaminated soil from all identified properties with COCs above the RGs. It would also prevent the potential migration of COCs from soil to groundwater.

5. Short-Term Effectiveness

Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents and the environment during implementation.

Alternative 1 poses no short-term adverse impacts to the community.

Alternative 2 would be effective in the short term since contaminated soil would not be significantly disturbed during construction activities. Under this alternative, any potential environmental impacts associated with the excavation of soil would be minimized with the proper installation and implementation of dust and erosion control measures, by performing excavation with appropriate health and safety measures, and by using a lined temporary staging area. Appropriate transportation safety measures would be required during the shipping of the contaminated soil to approved off-site disposal facilities. Construction of the required containment system and establishment of the deed notices could be accomplished in approximately 15 months.

Alternative 3 involves excavation of contaminated soil and would present a potential for short-term exposure. As with Alternative 2, under this alternative any potential environmental impacts associated with the excavation of soil would be minimized with the proper installation and implementation of dust and erosion control measures, by performing excavation with appropriate health and safety measures, and by using a lined temporary staging area. Appropriate transportation safety measures would be required during the shipping of the contaminated soil to approved off-site disposal facilities. Completion of the required construction for most properties can be accomplished in approximately 35 months.

Alternative 4 involves excavation of contaminated soil and would present a potential for short-term exposure. As with Alternatives 2 and 3, under this alternative any potential environmental

impacts associated with the excavation of soil would be minimized with the proper installation and implementation of dust and erosion control measures, by performing excavation with appropriate health and safety measures, and by using a lined temporary staging area. Appropriate transportation safety measures would be required during the shipping of the contaminated soil to approved off-site disposal facilities. Completion of the required construction for most properties can be accomplished in approximately 50 months.

Alternatives 2, 3 and 4 would all result in some short-term impacts to the community, in the form of vehicular (truck) traffic and noise and dust from construction/excavation activities, although Alternative 2 (limited removal of soil and bringing soil in to construct a soil cover) would generate less truck traffic than Alternatives 3 and 4 (removing contaminated soil from properties and bringing soil in to fill excavated areas). Traffic, noise, and dust impacts could be mitigated to some extent by limiting the construction schedule to daytime hours on weekdays or other timing as specified by local ordinance. Perimeter air monitoring and dust control measures would be required to address concerns over exposure to dust during activities.

6. Implementability
Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Alternative 1 requires no implementation.

Alternative 2 can be implemented; however, the development of protective institutional controls that would be both enforceable and acceptable to the property owners is highly uncertain. Administrative implementation of Alternative 2 may be significantly impacted by the need to impose deed notices on properties to prevent human exposure by restricting future use of contaminated areas within the properties. Consent to place a deed notice on properties may be difficult to obtain because these notices would restrict the owners' use of their property and would not likely be viewed favorably by the owners. Implementation of Alternative 2 is also complicated to some extent by the need to perform soil cover construction on properties.

Alternative 3 is implementable, although it will require performing excavation and backfilling on individual properties, the majority of which are developed with primary structures (stores or buildings) and secondary structures (garages and sheds). It is less administratively complex than Alternative 2 as it relies less heavily on the need to place deed notices on properties.

Alternative 4 is implementable, although it will require performing excavation and backfilling on individual properties, the majority of which are developed with primary structures (stores or buildings) and secondary structures (garages and sheds). It is less administratively complex than Alternative 2 as fewer deed notices would need to be recorded on properties. Alternative 4 would be significantly more complex than Alternative 3, as it is more difficult to implement on properties where contamination extends below the water table. In some cases, the depth of contamination extends greater than 12 feet below ground surface, which would require either braced or sloped excavation and would likely require dewatering.

All alternatives would result in some short-term impacts to the community, in the form of truck traffic and noise and dust from construction/excavation activities, although Alternative 2 (bringing soil in to construct a soil cover) would generate less truck traffic than Alternatives 3 and Alternative 4 (both would involve removing contaminated soil from properties and bringing soil in to fill excavated areas). Traffic, noise, and dust impacts would be mitigated by limiting the construction schedule to daytime hours on weekdays or other timing as specified by local ordinance. Perimeter air monitoring and dust control measures would be required to address concerns over potential exposure to dust during activities. Administrative implementation of Alternative 2 may be significantly impacted by the need to impose deed notices on properties not cleaned up to meet residential standards to limit human exposure by restricting the future use of contaminated areas within the properties. These notices would restrict the owners' use of the properties and may not be acceptable to some of the property owners. Since Alternatives 3 and 4 result in the removal of contaminated soil but may not address all contamination above residential standards, which is necessary to achieve unlimited use conditions, institutional controls on a limited number of properties would be required.

7. Cost

Cost includes estimated capital and annual operation and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent (This is a standard assumption in accordance with EPA guidance).

The estimated capital cost, O&M, and present worth costs are discussed in detail in EPA's FFS. The cost estimates are based on the best available information. The estimated capital, O&M present-worth cost over a thirty-year period, and total present-worth costs for each of the alternatives are as follows:

Alternative	Capital Cost	O&M	Present Worth Cost
1	$0	$0	$0
2	$7,961,000	$10,000	$8,091,000
3	$35,941,000	$7,500	$36,039,000
4	$58,311,000	$7,500	$58,409,000

Modifying Criteria *– The final two evaluation criteria, criteria 8 and 9, are called "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may modify the preferred response measure or cause another response measure to be considered.*

8. State/Support Agency Acceptance

State Agency acceptance considers whether the state and/or support agency agrees with EPA's analyses and recommendations.

NJDEP concurs with the selected remedy. A letter of concurrence is attached in Appendix IV.

9. Community Acceptance

Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

On August 13th, 2019, EPA held a formal public meeting on the proposed plan for this OU. All written and oral comments are addressed in detail in Appendix V, which is the Responsiveness Summary for this ROD. Due to an unforeseen error at the newspaper, the advertisement for the meeting was not published, so a second public meeting was held on September 4th, and the public comment period was extended to September 26th. No comments received during the comment period for the proposed plan expressed disagreement with EPA's preferred alternative for this OU at the Site.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (40 C.F.R. §300.430(a)(1)(iii)(A)). Identifying principal threat wastes combines concepts of both hazard and risk. In general, principal threat wastes are those source materials considered to be highly toxic or highly mobile which generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. Non-principal threat wastes are those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure.

The Property itself has acted as a source of lead and arsenic contamination to other properties and to groundwater and surface water. The cancer risks associated with contamination at this Property exceed 10^{-3}. Therefore, the soil contamination at the Property is considered Principal Threat Waste (PTW). Although PTW cannot be treated in place, some of the contaminated soil may require treatment prior to land disposal at an off-site facility.

SELECTED REMEDY

Based upon the requirements of CERCLA, the results of the Site investigations, the detailed analysis of the alternatives, and public comments, EPA's selected remedy to address contaminated soil at the OU2 properties is Alternative 3. This alternative includes the following components:

- Excavation of an estimated 57,800 cubic yards of soil contaminated primarily with arsenic and lead from the Property and approximately 40 non-residential properties in the vicinity of the Property, not to exceed depth of groundwater table;
- Off-site disposal of contaminated soil, and backfilling of excavated areas with clean fill;
- Restoration of the affected properties;
- Institutional controls;

- Engineering controls, if necessary; and
- Long-term monitoring.

Excavation activities associated with remediation may require the demolition and replacement of structures such as sheds and garages and the removal and replacement of asphalt and driveways.

Additional properties nearby or adjacent to the OU2 properties already known to require remediation may be identified during the design and/or implementation of the selected remedy that require remediation; these will be incorporated into the selected remedy.

The total estimated present-worth cost for the selected remedy is $36,039,000. A more detailed, itemized list of costs for the selected remedy may be found in Table 3b of the FFS. The cost estimates, which are based on available information, are order-of magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost of the project.

It is estimated that the active component of the remedial action would take about 35 months to implement. This would be inclusive of mobilization/demobilization, sheeting/building, excavation and backfill/restoration. Institutional controls would be required on properties not addressed to residential standards and long-term monitoring in the form of visual inspection of these properties would be needed. In addition, inspection and maintenance of any necessary engineering controls may be needed.

Expected Outcomes of the Selected Remedy

Implementation of Alternative 3 will eliminate potential pathways of human exposure to contaminated soil present at the non-residential properties and will prevent migration of Site contaminants from the OU2 properties to other areas.

Summary of the Rationale for the Selected Remedy

The selection of Alternative 3 provides the best balance of trade-offs among the alternatives with respect to the evaluation criteria. The selected alternative will be protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, is cost-effective, and will utilize permanent solutions and treatment technologies to the maximum extent practicable. NJDEP concurs with the selected remedy.

Alternative 2 relies heavily on the ability to ensure that the institutional controls, in the form of deed notices and restrictions, remain in place and are complied with. Alternative 3 relies less heavily on institutional controls and Alternative 4 may not require the use of institutional controls at all, and as such both are more effective in the long-term than Alternative 2. Alternative 3 would achieve the RAOs, is more easily implementable, has greater effectiveness in the short term and is less costly than Alternative 4. While Alternative 2 is approximately $28 million less costly than Alternative 3, there would be significant resource requirements over time associated with long-term inspection and maintenance of the caps. For these reasons, EPA prefers Alternative 3 over Alternatives 2 and 4.

EPA anticipates that a more complete understanding of groundwater contamination, obtained during the OU3 RI, will be valuable in determining the best remedy for soil below the water table. Existing data indicate soil contamination beneath the water table is present at 3 of 40 OU2 properties. For this reason, EPA will address contamination in below-water-table soil after the OU3 RI/FS is further along, at least until it is determined whether any active remediation is needed for OU3. Remedial activities on the properties with impacts below the water table could then be conducted concurrently with, or in accordance with, the OU3 remedy, to avoid the potential need to return to a property post-action.

The implementation of Alternative 3 may require excavation work adjacent to and/or underneath structures. In general, reasonable efforts will be made to remove all soil contamination above residential standards so that deed restrictions are not necessary. All impacted properties will be restored.

Based on the information available at this time, EPA has concluded and NJDEP concurs that Alternative 3 meets the threshold criteria and provides the best balance of tradeoffs among the alternatives with respect to the balancing criteria. The Alternative satisfies the threshold criteria and achieves the best combination of the five balancing criteria of the comparative analysis. This alternative is preferred because it will achieve the RAOs and remediation goals in the shortest amount of time and is a permanent remedy. EPA expects the selected remedy to satisfy the following statutory requirements of CERCLA Section 121: 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element or explain why the preference for treatment will not be met.

Although treatment is not a principal element of the remedy, based on sampling performed to date, some of the contaminated soil may require treatment prior to land disposal at an off-site facility.

The environmental benefits of the selected remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy. This will include consideration of green remediation technologies and practices.

STATUTORY DETERMINATIONS

EPA has determined that the selected remedy complies with the CERCLA and NCP provisions for remedy selection, meets the threshold criteria, and provides the best balance of tradeoffs among the alternatives with respect to the balancing and modifying criteria. These provisions require the selection of remedies that are protective of human health and the environment, comply with ARARs (or justify a waiver from such requirements), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous substances as a principal element (or justify not satisfying the preference). For the

Former Kil-Tone Company Site, EPA does not believe that on-site treatment of the soils at the non-residential properties is practicable or cost-effective. The selected remedy will be more protective and cost-effective in the long-term than capping since soil excavation is a permanent solution which will allow the non-residential properties to be returned to their beneficial re-use and does not require periodic maintenance. The following sections discuss how the selected remedy meets these statutory requirements.

Protection of Human Health and the Environment

The selected remedy, Alternative 3, will protect human health and the environment through removal, off-site treatment, if necessary, and disposal. The selected remedy will eliminate all significant direct-contact risks to human health and the environment associated with contaminated soil on the OU2 properties. This action will result in the reduction of exposure levels to acceptable risk levels within EPA's generally acceptable risk range of 1×10^{-4} to 1×10^{-6} for carcinogens and below a HI of 1.0 for noncarcinogens. Implementation of the selected remedy will not pose unacceptable short-term risks.

Compliance with ARARs

The selected remedy complies with chemical-specific, location-specific and action-specific ARARs. A complete list of the ARARs and TBCs for the selected remedy is presented in Appendix II, Table 8.

Cost-Effectiveness

EPA has determined that the selected remedy is cost-effective and represents reasonable value for the money to be spent. A cost-effective remedy is one whose costs are proportional to its overall effectiveness (NCP § 300.430(f)(1)(ii)(D)). EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e. were both protective of human health and ARAR-compliant). Overall effectiveness is based on the evaluations of long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness. Overall effectiveness was then compared to costs to determine cost-effectiveness.

Each of the alternatives was subjected to a detailed cost analysis. In that analysis, capital and annual O&M costs were estimated and used to develop present-worth costs. The estimated present worth cost of the selected remedy for OU2 is $36,039,000. Although Alternative 2 is less expensive than the selected remedy, EPA concluded that the long-term effectiveness of excavation is superior to capping when considering permanent solutions that allow the OU2 properties to be available for future use. The selected remedy's additional cost for excavation is protective of human health, and its overall effectiveness is proportional to its present-worth cost.

Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery) Technologies to Maximum Extent Practicable

EPA has determined that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner for this OU. Of those alternatives that are protective of human health and the environment and comply with ARARs (or provide a basis for invoking an ARAR waiver), EPA has determined that the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element, the bias against off-site disposal without treatment, and state/support agency and community acceptance. Implementation of the selected remedy will eliminate current exposures to contaminants at the non-residential properties and will remove contaminated soil from the non-residential properties thereby eliminating the risk to human and ecological receptors in the future.

Preference for Treatment as a Principal Element

The selected soil remedy results in the removal of approximately 57,800 cubic yards of contaminated soil from the Property and the non-residential properties in the vicinity of the Property. The soil excavation will provide for an immediate reduction in the mobility of contaminated soil from the OU2 properties. Although Treatment is not a principal element of the remedy selected herein, as no effective means of treating arsenic and lead contamination in soil in place were identified. However, some of the contaminated soil may require treatment prior to land disposal at an off-site facility. Off-site treatment, if required, would reduce the toxicity of the contaminated soil prior to land disposal. This remedy only addresses a portion of the Site, and subsequent actions to address the remaining threats posed by the Site may include treatment.

Five-Year Review Requirements

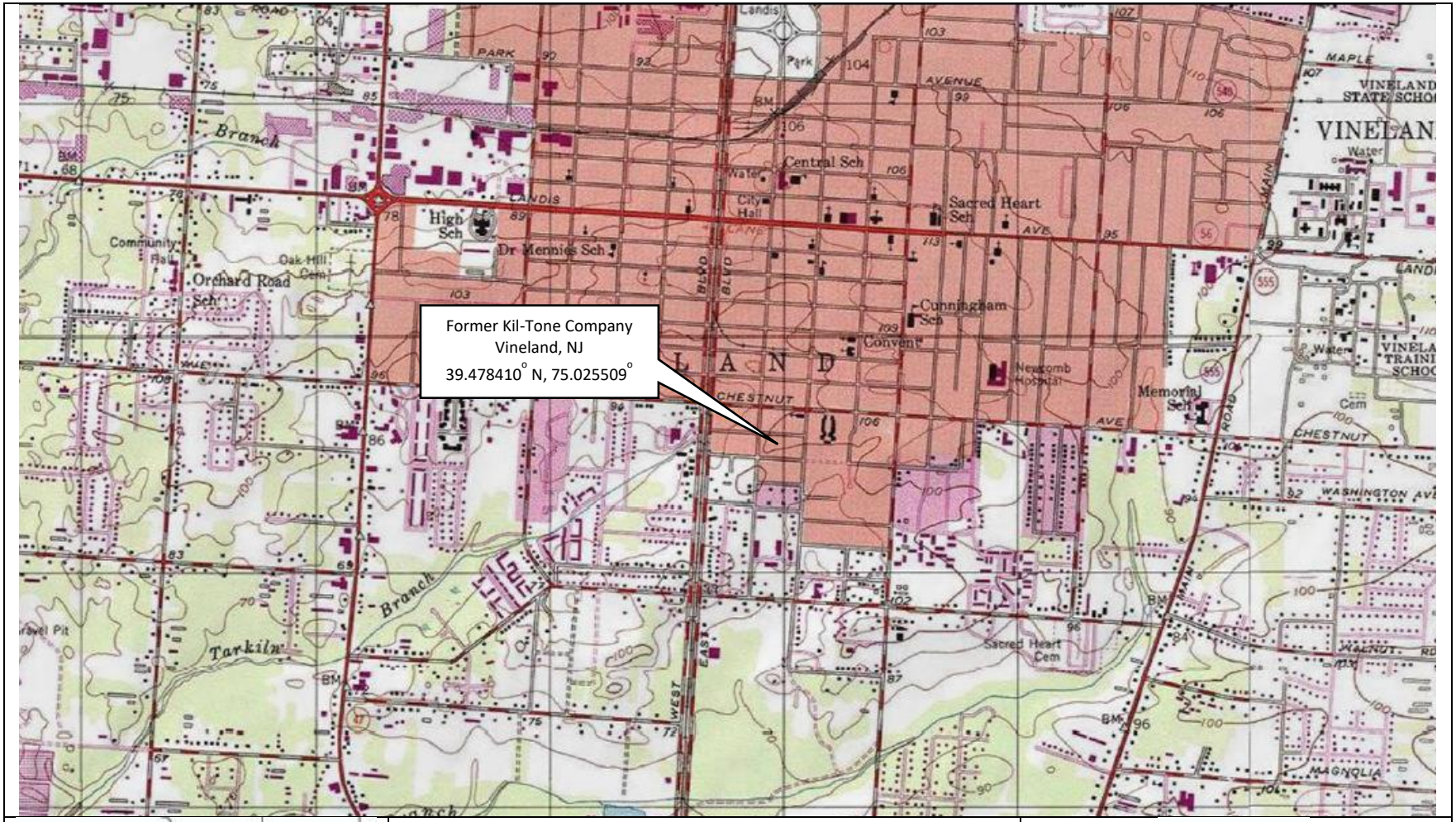
Because this remedy may result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unrestricted use and unlimited exposure, the statutory requirement for five-year reviews is triggered by the implementation of this action to ensure that the remedy is, or will remain, protective of human health and the environment.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for OU2 of the Former Kil-Tone Company Site was released for a public comment period on July 30, 2019. The public comment period was intended to run until August 28, 2019. However, an unforeseen error with the advertisement for the public meeting led to an extended public comment period, running until September 26, 2019. The Proposed Plan identified Alternative 3 (Excavation and Off-site Disposal) as the preferred alternative for OU2 of the Site. EPA reviewed all written (including electronic formats such as e-mail) and verbal comments submitted during the public comment period and has determined that no significant changes to the remedy, as it was originally identified in the Proposed Plan, are necessary or appropriate.

APPENDIX I

Figures



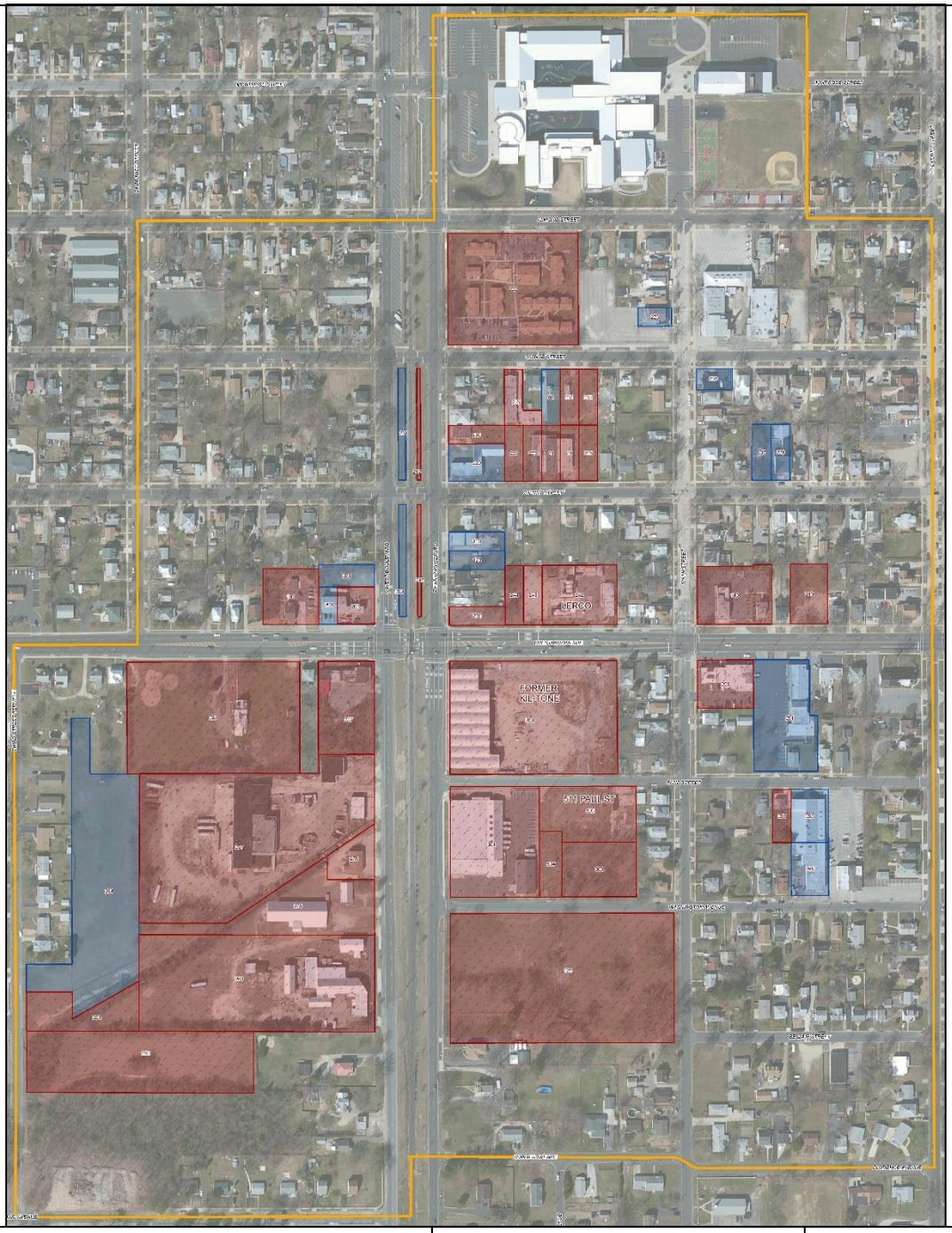
Former Kil-Tone Company
Superfund Site

N

Figure 1: Site Location

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

	Former Kil-Tone Company Superfund Site	N
	Figure 2: Site Overview	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



LEGEND

- OU2 PROPERTY - NO ACTION REQUIRED
- OU2 PROPERTY - ACTION REQUIRED (NJDEP NON-RESIDENTIAL SRS)
- OU2 PROPERTY - ACTION REQUIRED (NJDEP RESIDENTIAL SRS)
- OU1 PROPERTY
- APPROXIMATE OU1/OU2 STUDY AREA

*The extent of the General Study Area may expand or contract based on results of sampling during design and/or implementation of the remedy, and remediation goals applied may change based on intended property use

Former Kil-Tone Company Superfund Site

N

Figure 3: Operable Unit 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPENDIX II

Tables

TABLE 1
Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 feet)

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Former Kil-tone Property	Arsenic	1.2	32,500	mg/kg	87/87	2,360	mg/kg	95% H-UCL
	Lead	3.8 J	91,700	mg/kg	87/87	2,373	mg/kg	Arithmetic mean
Lerco	Arsenic	1.1	479	mg/kg	40/40	126	mg/kg	95% Chebyshev (Mean, Sd) UCL
	Lead	6.9	948	mg/kg	40/40	119	mg/kg	Arithmetic mean
511 Paul St	Arsenic	2.6	343	mg/kg	44/44	65.8	mg/kg	95% Adjusted Gamma UCL
	Lead	2.5	593	mg/kg	44/44	107	mg/kg	Arithmetic mean

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface and Subsurface Soil (0-10 feet)

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Former Kil-tone Property	Arsenic	0.66 J	45,900	mg/kg	131/132	2,390	mg/kg	97.5% KM (Chebyshev) UCL
	Lead	2.1	91,700	mg/kg	132/132	2,184	mg/kg	Arithmetic mean
Lerco	Arsenic	0.21	15,900	mg/kg	72/72	1,880	mg/kg	95% Chebyshev (Mean, Sd) UCL
	Lead	2.8	16,100	mg/kg	72/72	592	mg/kg	Arithmetic mean
511 Paul St	Arsenic	1.6	343	mg/kg	79/79	45.1	mg/kg	95% Approximate Gamma UCL
	Lead	2.4	593	mg/kg	79/79	64.4	mg/kg	Arithmetic mean

UCL –upper confidence limit

J – estimated value

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

This table presents the chemicals of concern (COCs) and exposure point concentrations (EPCs) for the COCs in soil. The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the Site), the EPC and how it was derived.

TABLE 2. Selection of Exposure Scenarios

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis
Future	Soil	Surface soil	FKTC Property	Resident	Adult and Child (birth to <6 years)	Ing/Der	Quantitative
			Lerco Property				
			511 Paul St				
Current/Future	Soil	Surface soil	FKTC Property	Industrial worker	Adult	Ing/Der	Quantitative
			Lerco Property				
			511 Paul St				
Future	Soil	Surface/subsurface soil	FKTC Property	Utility worker	Adult	Ing/Der	Quantitative
			Lerco Property				
			511 Paul St				
Future	Soil	Surface/subsurface soil	FKTC Property	Construction worker	Adult	Ing/Der	Quantitative
			Lerco Property				
			511 Paul St				

Ing – Ingestion

Der – Dermal

Summary of Selection of Exposure Pathways

This table describes the exposure pathways that were evaluated for the risk assessment. Exposure media, exposure points, and characteristics of receptor populations are included.

TABLE 3

Noncancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Arsenic	Chronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin	3	IRIS	9/1/1991
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Key

IRIS: Integrated Risk Information System

Summary of Toxicity Assessment

This table provides noncarcinogenic risk information which is relevant to the chemicals of concern. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs).

TABLE 4

Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Arsenic	1.5E+00	mg/kg-day	1.5E+00	mg/kg-day	A	IRIS	06/01/95
Lead	NA	NA	NA	NA	NA	NA	NA

Key:

A: Known Human Carcinogen
IRIS: Integrated Risk Information System

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the chemicals of concern. Toxicity data are provided for both the oral and dermal routes of exposure.

TABLE 5

Risk Characterization Summary – Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface Soil	FKTC Property	Arsenic	Skin	**6**	**1**	**7**
		Lerco Property			0.3	0.1	0.4
		511 Paul St			0.2	0.03	0.2

Scenario Timeframe: Future
Receptor Population: Site Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface soil	FKTC Property	Arsenic	Skin	**60**	**7**	**67**
		Lerco Property			**3**	0.4	**3.4**
		511 Paul St			**2**	0.2	**2.2**

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface	FKTC Property	Arsenic	Skin	**4**	0.9	**5**
		Lerco Property			0.2	0.05	0.3
		511 Paul St			0.1	0.001	0.1

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface/ Subsurface Soil	FKTC Property	Arsenic	Skin	1	0.5	**2**
		Lerco Property			0.5	0.2	0.7
		511 Paul St			0.01	0.006	0.02

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk		
					Ingestion	Dermal	Exposure

							Routes Total
Soil	Surface/ Subsurface Soil	FKTC Property	Arsenic	Skin	**10**	**2**	**12**
		Lerco Property			**5**	0.8	**6**
		511 Paul St			0.1	0.02	0.1

Summary of Risk Characterization - Noncarcinogens

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for exposure to soils containing site-related chemicals. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse noncancer effects.

TABLE 6

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Site Resident
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Carcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface soil	FKTC Property	Arsenic	Skin	**2E-03**	**3E-04**	**3E-03**
		Lerco Property			**1E-04**	1E-05	**1E-04**
		511 Paul St			6E-05	8E-06	7E-05

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Carcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface	FKTC Property	Arsenic	Skin	**6E-04**	**1E-04**	**8E-04**
		Lerco Property			3E-05	7E-06	4E-05
		511 Paul St			2E-05	9E-07	2E-05

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Carcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface/ Subsurface Soil	FKTC Property	Arsenic	Skin	**2E-04**	8E-05	**3E-04**
		Lerco Property			8E-05	4E-05	**1E-04**
		511 Paul St			2E-06	9E-07	3E-06

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Carcinogenic Risk		
					Ingestion	Dermal	Exposure Routes Total
Soil	Surface/ Subsurface Soil	FKTC Property	Arsenic	Skin	7E-05	1E-05	8E-05
		Lerco Property			3E-05	5E-06	4E-05
		511 Paul St			8E-07	1E-07	9E-07

Summary of Risk Characterization – Carcinogens

The table presents site-related cancer risks for groundwater exposure. As stated in the National Contingency Plan, the point of departure is 10^{-6} and the acceptable risk range for site-related exposure is 10^{-6} to 10^{-4}.

TABLE 7

Risk Characterization Summary – Lead
Medium-Specific Exposure Point Concentration

Scenario Timeframe: Future
Receptor Population: Site Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Exposure Point Concentration (EPC)[1]	Units	Geometric Mean Blood Lead Level (µg/dL)[2]	Lead Risk[3]
Soil	Surface Soil	FKTC Property	Lead	2,373	mg/kg	16.7	**99.5%**
		Lerco Property		119		1.9	2.0%
		511 Paul St		107		1.8	1.4%

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Exposure Point Concentration (EPC)[1]	Units	Geometric Mean Blood Lead Level (µg/dL)[2]	Lead Risk[3]
Soil	Surface Soil	FKTC Property	Lead	2,373	mg/kg	8.4	**75.9%**
		Lerco Property		119		1.0	0.2%
		511 Paul St		107		1.0	0.1%

Scenario Timeframe: Future
Receptor Population: Utility Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Exposure Point Concentration (EPC)[1]	Units	Geometric Mean Blood Lead Level (µg/dL)[2]	Lead Risk[3]
Soil	Surface/ Subsurface Soil	FKTC Property	Lead	2,184	mg/kg	1.7	2.4%
		Lerco Property		592		0.9	0.1%
		511 Paul St		64.4		0.6	0.01%

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Exposure Point Concentration (EPC)[1]	Units	Geometric Mean Blood Lead Level (µg/dL)[2]	Lead Risk[3]
Soil	Surface/ Subsurface Soil	FKTC Property	Lead	2,184	mg/kg	28.3	**90.4%**
		Lerco Property		592		3.7	**24.2%**
		511 Paul St		64.4		0.9	0.1%

[1] – The lead EPC was the arithmetic mean of all samples collected from the target soil interval

[2] – Consistent with the EPA Superfund Lead-Contaminated Residential Site Handbook, lead risks were evaluated for the child using the Integrated Exposure and Uptake Biokinetic Model. Adult receptor risks were evaluated using the Adult Lead Methodology.

[3] – Lead risks are expressed as the probability of having a blood lead level greater than 5 µg/dL; EPA's risk reduction goal is to limit the probability of a child's blood lead concentration exceeding 5 µg/dL to 5% or less. For adult receptors, fetal blood lead levels are targeted for this risk reduction goal.

TABLE 8 Applicable or Relevant and Appropriate Requirements (ARARs) & Requirements To-Be-Considered (TBC)			
Chemical-Specific ARARs & TBCs			
Action/Media	**Requirement**	**ARAR or TBC**	**Citation**
Removal of contaminated soil for residential use	Residential Direct Contact Soil Remediation Standards. N.J.A.C. 7:26D Appendix 1 Table 1A lists the cleanup levels. • Arsenic – 19 mg/kg • Lead – 400 mg/kg	Arsenic standard is ARAR. Lead standard is not ARAR, but the RGs developed for OU2 are consistent with the standard Applicable to properties for which residential use is reasonably anticipated	N.J.A.C. 7:26D, Appendix 1, Table 1A Residential Direct Contact Soil Remediation Standards
Removal of contaminated soil for non-residential use	Non-Residential Direct Contact Soil Remediation Standards. N.J.A.C. 7:26D Appendix 1 Table 1B lists the cleanup levels. • Arsenic – 19 mg.kg • Lead – 800 mg/kg	Arsenic standard is ARAR. Lead standard is not ARAR, but the RGs developed for OU2 are consistent with the standard Applicable to properties anticipated to remain in non-residential use.	N.J.A.C. 7:26D, Appendix 1, Table 1B Non-Residential Direct Contact Soil Remediation Standards
Air quality standards for lead	National Ambient Air Quality Standards (NAAQS). National primary and secondary ambient are quality standards for lead: 0.15 $\mu g/m^3$, arithmetic mean concentration over a 3-month period	ARAR Applicable	40 C.F.R. § 50.16

Action-Specific ARARs & TBCs			
Action/Media	**General Description**	**ARAR or TBC**	**Citation**
Erosion control during soil disturbing activities	Regulations incorporate New Jersey Department of Agriculture's "The Standards for Soil Erosion and Sediment Control in New Jersey," as revised on December 14, 2015.	ARAR	N.J.A.C. 2:90-1.1 et seq. N.J.S.A. 4:24-39 et seq. Soil Erosion and Sediment Control Act Rules
Control of storm water runoff from soil disturbing activities	Design and performance standards for stormwater management measures.	ARAR	N.J.A.C. 7:8 Stormwater Management Rule
Site Remediation	NJ Technical Requirements for Site Remediation establishes the minimum technical requirements for the remediation of contaminated sites.	ARAR Substantive technical requirements potentially relevant and appropriate	N.J.A.C. 7:26E
Air Pollution Control	Remedy will comply with substantive requirements of NJ air pollution rules that apply to air emissions from excavation activities	ARAR	N.J.A.C. 7:27
Noise Control	NJ Noise Control Rules prohibits the generation of certain types of noise at specific times and establishes methods to determine compliance.	ARAR	N.J.A.C. 7:29

Action-Specific ARARs & TBCs			
Action/Media	**General Description**	**ARAR or TBC**	**Citation**
Characterization of solid waste (all primary and secondary wastes)	40 C.F.R. § 262.11 provides requirements for determining if a solid waste is excluded from regulation under 40 C.F.R. § 261.4 and if not, whether waste is a listed as a hazardous waste, or characteristic under 40 C.F.R. Part 261, Subpart C. Refer to Parts 261, 262, 264, 265, 266, 268 and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste. Refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.	ARAR	Resource Conservation and Recovery Act, 42 U.S.C. § 9621, *et seq*., 40 C.F.R. Parts 261, 262, 264-266, 268, 273
Characterization of hazardous waste (all primary and secondary wastes)	Requires a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 CFR 264 and 268.	ARAR	40 C.F.R. § 264.13(a)(1)
Hazardous waste generators	Requirements for generators of hazardous waste including registration, manifesting, packaging, recordkeeping and accumulation time. Manifesting and pre-transportation requirements for hazardous waste generators are respectively at 40 C.F.R. Part 262, Subparts B and C.	ARAR	40 C.F.R. Part 262
Hazardous waste treatment, storage and disposal	Requirements for hazardous waste treatment, storage and disposal facilities, including storage and management of hazardous waste in containers (40 C.F.R. Part 264, Subpart I), closure performance standards for hazardous waste management facilities (40 C.F.R. § 264.111), and staging piles (40 C.F.R. § 264.554).	ARAR	40 C.F.R. Parts 264 and 265

Action-Specific ARARs & TBCs			
Action/Media	**General Description**	**ARAR or TBC**	**Citation**
Hazardous waste management and transportation	NJ requirements for management and transportation of hazardous wastes. NJ hazardous waste management rules incorporate RCRA regulations by reference, with few significant differences.	ARAR for off-site disposal of hazardous wastes; for on-site treatment and storage activities.	NJAC 7:26G
Disposal of RCRA hazardous waste in a land-based unit	Land disposal restrictions. Land disposal treatment standards are at 40 C.F.R. Part 268, Subpart D. Generators must determine the applicable waste code for a waste in order to determine the applicable treatment standards. (40 C.F.R. § 268.9). A "prohibited waste" (including waste that exhibits or is expected to exhibit the characteristic of toxicity for lead based on TCLP analysis) may only be land disposed if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at 40 C.F.R. 268.40.	ARAR	40 CFR Part 268
Transportation of hazardous waste	Applicable to the transportation of material on-site and off-site that is being managed as hazardous wastes, and include the procedures for the packaging, labeling, manifesting and transporting of hazardous materials to a licensed off- site disposal facility.	ARAR	Hazardous Material Transportation Act, 49 U.S.C. §§ 1801-1819, 49 C.F.R. § 171 - 177

Location-Specific ARARs			
Action/Media	**Requirement**	**ARAR or TBC**	**Citation**
Historic landmarks, property, or projects owned or controlled by federal agencies	The NHPA requires federal agencies to take into account the effects of any federally assisted undertaking on any district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places. If the undertaking results in adverse effects, the agency must consult with the New Jersey Historic Preservation Office and other parties to develop ways to avoid, reduce, minimize, or mitigate any adverse impacts to those identified properties.	Potential ARAR for historic resources, if present	National Historic Preservation Act, 16 U.S.C. § 470, *et seq*. 36 C.F.R. Part 800
Institutional controls	Administrative Requirements for the Remediation of Contaminated Sites	ARAR	N.J.A.C. 7:26C
Sediment and soil erosion control	NJ Department of Transportation (NJDOT) standards are typically used to develop the appropriate plans for sediment and soil erosion control required under the NJ Soil Conservation Act	TBC	NJDOT Standard Specifications – Soil Erosion and Sediment Control Measures (1996)

Notes:
ARAR Applicable *or* relevant and appropriate requirement
C.F.R. Code of Federal Regulations
mg/kg Milligrams per kilogram
N.J.A.C. New Jersey Administrative Code, Chapters as specified
CMBST High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces
CWA Clean Water Act
EPA U.S. Environmental Protection Agency
HMTA Hazardous Materials Transportation Act
HMR Hazardous Materials Regulations
N.J.A.C. New Jersey Administrative Code, Chapters as specified
N.J.S.A. New Jersey Statutes
RCRA Resource Conservation and Recovery Act
TCLP Toxicity characteristic leaching procedure
UHCs Underlying hazardous constituents
UTS Universal Treatment Standards

APPENDIX III

Administrative Record Index

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/29/2019

REGION ID: 02

Site Name: FORMER KIL-TONE COMPANY
CERCLIS ID: NJN000200874
OUID: 02
SSID: A24N
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
568947	07/29/2019	ADMINISTRATIVE RECORD INDEX FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	2	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
472945	03/01/2017	UNIFORM FEDERAL POLICY FOR QUALITY ASSURANCE PROJECT PLAN FOR REMEDIAL INVESTIGATION FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	1103	Report	(US ARMY CORPS OF ENGINEERS)	(HDR / O'BRIEN & GERE JOINT VENTURE)
472946	03/01/2017	WORK PLAN FOR REMEDIAL INVESTIGATION FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	130	Report	(U.S. ARMY CORPS OF ENGINEERS)	(HDR / O'BRIEN & GERE JOINT VENTURE)
472947	04/01/2017	PATHWAY ANALYSIS REPORT FOR REMEDIAL INVESTIGATION FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	39	Report	(US ARMY CORPS OF ENGINEERS)	(HDR / O'BRIEN & GERE JOINT VENTURE)
544786	07/01/2018	FINAL TRIP REPORT, TARKLIN BRANCH SURFACE WATER AND SEDIMENT SAMPLING EVENT OU2 FOR THE FORMER KIL-TONE COMPANY SITE	826	Report	(US ARMY CORPS OF ENGINEERS)|(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR / O'BRIEN & GERE JOINT VENTURE)
565462	07/26/2019	BASELINE HUMAN HEALTH RISK ASSESSMENT FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	350	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
565463	07/26/2019	REMEDIAL INVESTIGATION HUMAN HEALTH RISK ASSESSMENT ADDENDUM FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	2	Memorandum	(US ENVIRONMENTAL PROTECTION AGENCY)|VAUGHN,STEPHANIE (US ENVIRONMENTAL PROTECTION AGENCY)	(HDR / O'BRIEN & GERE JOINT VENTURE)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/29/2019

REGION ID: 02

Site Name: FORMER KIL-TONE COMPANY
CERCLIS ID: NJN000200874
OUID: 02
SSID: A24N
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
565464	07/26/2019	FINAL REVISED REMEDIAL INVESTIGATION REPORT FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	180	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
568921	07/26/2019	FINAL REVISED REMEDIAL INVESTIGATION REPORT FOR OU2 - APPENDICES A THROUGH E FOR THE FORMER KIL-TONE COMPANY SITE	2738	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
568902	07/26/2019	FINAL REVISED REMEDIAL INVESTIGATION REPORT FOR OU2 - APPENDIX F FOR THE FORMER KIL-TONE COMPANY SITE	860	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
565465	07/26/2019	FINAL REVISED REMEDIAL INVESTIGATION REPORT FOR OU2 - APPENDICES G THROUGH J FOR THE FORMER KIL-TONE COMPANY SITE	5883	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
568910	07/29/2019	FOCUSED FEASIBILITY STUDY REPORT FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE	102	Report		(HDR / O'BRIEN & GERE JOINT VENTURE)
568905	07/29/2019	PROPOSED PLAN FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE (ENGLISH VERSION)	16	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
568904	07/29/2019	PROPOSED PLAN FOR OU2 FOR THE FORMER KIL-TONE COMPANY SITE (SPANISH VERSION)	18	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)

APPENDIX IV

State Letter

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Remediation and Waste Management Program
401 E. State Street
PO Box 420, Mail Code 401-06
Trenton, New Jersey 08625
Tel: (609) 292-1250
Fax: (609) 777-1914

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

September 27, 2019

Mr. Pat Evangelista, Acting Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

Re: Former Kil-Tone Company Superfund Site
Record of Decision Operable Unit 2
EPA ID# NJN000200874
DEP PI# 648249

Dear Mr. Evangelista:

The New Jersey Department of Environmental Protection (DEP) has completed its review of the "Record of Decision, Operable Unit Two, Former Kil-Tone Company Superfund Site, Cumberland County, New Jersey" prepared by the U.S. Environmental Protection Agency (EPA), Region II in September 2019. The DEP concurs with the selected remedy to addresses arsenic and lead soil contamination at non-residential properties.

The selected remedy addresses contaminated soil at commercial/industrial properties and public areas in the vicinity of the former Kil-Tone Company property on East Chestnut Avenue in the City of Vineland, as well as the former Kil-Tone property itself. This is the second of at least four planned remedial phases, designated as Operable Units (OUs), for the site. Residential soil removal work is underway at residential properties as part of OU1 in the same vicinity of the former Kil-Tone property. A third operable unit includes contaminated groundwater associated with the site, and a fourth operable unit includes contaminated sediment and surface water as well as the associated floodplains. Soil and residential properties located in the impacted floodplain area may need to be addressed as a fifth operable unit.

The major components of the OU2 selected remedy, which has a total cost of $36 million, include:

- Excavation of an estimated 57,800 cubic yards of soil contaminated with arsenic and lead from the former Kil-tone Company property and approximately 40 non-residential properties in the vicinity of the former Kil-Tone Company property;

- Off-site disposal of excavated contaminated soil, and backfilling of excavated areas with clean fill;
- Restoration of the affected properties;
- Institutional controls;
- Engineering controls, if necessary; and,
- Long-term monitoring.

Except for a few properties that are anticipated to remain industrial/commercial, most will be approached as having a potential future residential use. It is important to note that the overall remediation goal for lead on properties with a reasonably anticipated future use as residential will be a property-wide average surficial lead concentration of less than 200 mg/kg.

Excavation activities associated with remediation may require the demolition and replacement of secondary structures, such as garages and sheds, as well as surfaces including asphalt and driveways. In cases where contamination extends below more permanent structures (buildings, offices, etc.), efforts will be made to avoid demolition. When this is infeasible, other options will be considered, including engineering and institutional controls. Please note, institutional controls (e.g. Deed Notices) require property owner consent. In addition, while the goal is full excavation of all impacted soil above the water table, due to engineering and/or access considerations, it may be necessary in some instances to use engineering controls to fully achieve Remedial Action Objectives.

DEP appreciates the opportunity to participate in the decision-making process to select an appropriate remedy for this site. Further, DEP looks forward to future cooperation with EPA during remedial actions for OU2 to ensure protection of residents and business owners from contaminated soil found stemming from the former pesticide plant's operations and completion of OU1 activities.

If you have any questions, please call me at (609) 292-1250.

Sincerely,

Mark J. Pedersen, Assistant Commissioner
Site Remediation & Waste Management Program

C: Kenneth J. Kloo, Director, Division of Remediation Management, DEP
Edward Putnam, Assistant Director, Publicly Funded Response Element, DEP
Frederick A. Mumford, Section Chief, Publicly Funded Response Element, DEP
Angela Carpenter, Chief, Special Projects Branch, EPA Region II
Stephanie Vaughn, Section Chief, Special Projects Branch, EPA Region II
Sharon Hartzell, Remedial Project Manager, Special Projects Branch, EPA Region II

APPENDIX V

Responsiveness Summary

RESPONSIVENESS SUMMARY

FOR THE

RECORD OF DECISION

FORMER KIL-TONE COMPANY SITE, OPERABLE UNIT 2

CITY OF VINELAND, CUMBERLAND COUNTY, NEW JERSEY

INTRODUCTION

This Responsiveness Summary provides a summary of significant comments and concerns provided during the public comment period related to the Proposed Plan for Operable Unit 2 (OU2) of the Former Kil-Tone Company Superfund Site (Attachment A) and provides the U.S. Environmental Protection Agency's (EPA's) responses to those comments. All comments summarized in this document have been considered in EPA's final decision in the selection of a remedy for OU2.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

All documentation which the EPA used to develop the Proposed Plan and select the remedy in this Record of Decision (ROD), including EPA's Focused Feasibility Study dated July 2019, are in the administrative record for OU2 which was made available to the public beginning July 30, 2019 in the information repositories maintained in the EPA Docket Room at the EPA Region 2 offices at 290 Broadway, New York, New York, at the Vineland Public Library, 1058 East Landis Avenue, Vineland, New Jersey and on EPA's website for the Site, www.epa.gov/superfund/former-kil-tone.

On July 30, 2019, EPA intended to publish notices in both English and Spanish in the local Vineland newspaper, *The Daily Journal,* informing the public of the start of the public comment period for the Proposed Plan, the upcoming public meeting on August 13, 2019, the preferred remedy for OU2, contact information for EPA personnel, and the availability of Site-related documents in the administrative record. However, due to a printing error, the notices were not published on July 30, as planned. Instead, revised notices were published on August 28, 2019 and the comment period was extended by another 30 days to September 26th. In addition, the extension notices stated that another public meeting would be held on September 4, 2019. Copies of both the original notices that were to be published and the extension notices are found in Attachment B.

In addition to the use of public notices, EPA uses a variety of means to let potentially interested parties know about the details of a public comment period. For example, on July 30, the original start of the public comment period, EPA issued a press release which was forwarded to more

than 250 parties, including congressional representatives and newspaper affiliates. In addition, EPA notified the City of Vineland and the owners of the impacted OU2 properties. Also, both The Daily Journal and the Press of Atlantic City published articles regarding the Site and the public comment period. As such, the community was notified of the public comment period and was made aware of the public meeting, even prior to the publication of the revised public notice.

The first public meeting was held on August 13th at 7:00 P.M. at the Gloria M Sabater Elementary School at 301 Southeast Boulevard, Vineland, New Jersey, to present the findings of the Proposed Plan, and to answer questions from the public about the Plan, the remedial alternatives evaluated, and EPA's preferred alternative. The second public meeting was held on September 4 at 6:30 PM at the Vineland City Council Chambers, 640 East Wood Street, Vineland, New Jersey.

SUMMARY OF COMMENTS AND RESPONSES

A summary of the comments provided at the public meeting and all written comments submitted during the public comment period, as well as the EPA's responses to them, is provided below. The transcripts from the public meetings and the comments submitted during the public comment period can be found in Attachments C and D, respectively, of this appendix.

Comment 1: An interested party asked which properties have soil contamination below the groundwater table.

Response: EPA is still refining the list of properties at which soil contamination extends below the water table. Existing data indicate contamination below the water table is present at 3 of the estimated 40 OU2 properties, including the former Kil-Tone Property and the Lerco facility. Additional investigations conducted during the design of the remedial action will determine if additional properties have soil contamination below the depth of the water table. In addition, the ongoing remedial investigation and feasibility study (RI/FS) for OU3 will determine the full nature and extent of Site-related groundwater contamination. EPA intends to defer conducting remedial activities on OU2 properties with contamination below the water table until such a time as the OU3 RI/FS is further along and there is a better idea of what remedial activities, if any, may be needed to address groundwater contamination. EPA is deferring this work so as to avoid having to go back to a property more than once, if at all possible. That said, after issuance of the OU2 ROD, it will take time to conduct the remedial design and start remedial activities, during which time the OU3 RI/FS will continue. Therefore, EPA may have a better understanding of the potential OU3 remedial activities needed by the time the OU2 remedial activities are starting, and no deferral of activity may be needed.

Comment 2: An interested party inquired about the three non-residential properties listed on the figures (the properties which were used to conduct the risk assessment). The party was interested in the third property, aside from the former Kil-Tone Property itself and the Lerco property, and what the extent of the remediation would be.

Response: The property in question has been tested under the OU2 Remedial Investigation. Results indicate that the property will require clean-up; however, the extent of clean-up will be determined in the design phase. Once the ROD is signed, EPA will start contacting the property

owners to obtain access to conduct additional sampling to refine the extent of contamination on the property. These data will help EPA complete the design of the remedial action.

Comment 3: A property owner inquired as to the results of the investigation on his property, which the property owner has not yet received.

Response: The property owner was informed that the results would be provided once final. The property owner has since been provided with the results, which indicate that the property does not require remediation.

Comment 4: An interested party inquired as to whether post-remediation notifications would be given to residents to document the results of the cleanup, and whether the plan for remediation on particular properties was available.

Response: For properties that have been cleaned up to an unrestricted use standard, property owners are typically given a letter stating that there is no known contamination remaining related to the property, and that there will be no need to restrict property use as a result of Site-related contamination. EPA typically gives property owners a file with results that document, the work done on the property and the outcome. If the property in question does require restrictions as a result of Site-related contamination, EPA will contact the property owner in writing to explain the restrictions required based on the post-cleanup conditions. EPA anticipates that very few of the properties addressed as part of the OU2 cleanup will require restrictions.

In response to the second part of the question, EPA will define specifics of the remediation during the design phase and will then contact the property owners will to review the details of the work before it starts.

Comment 5: An interested party inquired as to the paving at 527 East Chestnut Avenue, where a large section of the property was not paved.

Response: A portion of the property at 527 East Chestnut Avenue was paved to prevent exposures; however, a portion was left unpaved as a staging area for work done as part of the first operable unit of the Site, in which EPA is addressing contamination on residential properties. When the first stage (OU1) of the work has been completed, EPA may pave the unpaved staging area in the interim until the OU2 remedial action activities are conducted at that property.

Comment 6: An interested party inquired about the course of action when landlords refuse to allow testing or remediation.

Response: EPA encourages property owners to provide access for testing and cleanup. It is EPA's practice to speak with property owners first to gain permission to access the properties, and then with tenants. Under the Superfund Law, EPA is authorized to enter any property where any hazardous substance, pollutant or contaminant may have been released to collect samples or take a response action.

Comment 7: An interested party inquired about institutional controls and whether they will get in the way of business operations.

Response: EPA will attempt to clean up the majority of properties to an unrestricted use standard including residential use, which is a reasonably anticipated use at the majority of the OU2 properties, so that no institutional controls are needed. However, institutional controls may be needed for some properties to restrict future use if we are not able to address all of the Site-related contamination. For example, there could be extensive utilities on a property that would prevent the safe full excavation of all contaminated material. In this case, a deed notice on the property may be necessary. These controls should not interfere with normal business operations.

Comment 8: An interested party inquired whether there are still residential properties that need to be brought into the remediation program.

Response: Based on current information**,** EPA currently thinks that the extent of the contamination on residential properties has been delineated. However, additional properties may be identified that will need to be addressed.

Comment 9: An interested party inquired whether the highest contamination levels were found at the Kil-Tone Property or at the Lerco property.

Response: The former Kil-Tone facility has the highest levels found of arsenic and lead. High levels of arsenic and lead have also been identified at the Lerco property.

Comment 10: An interested party asked how the neighborhood encompassed by OU2 could be described in terms of property use.

Response: The neighborhood is a mix of residential and non-residential properties. Work is currently being done to address residential properties and OU2 will addresses non-residential properties. Based on conversations with the City of Vineland, and consistent with the City's master plan, EPA understands that the majority of properties in the affected neighborhood have the potential to be zoned as residential in the future and that it is reasonable to anticipate they will be used for residential purposes.

Comment 11: An interested party inquired whether its property was safe for vegetable gardening.

Response: The party's property will not require remediation under the OU2 ROD. There are several vegetable gardens at residential properties being addressed as part of the first operable unit. In general, studies have found that risk from consuming vegetables grown in heavy-metal contaminated soil is less than the risk from incidental ingestion of the soil itself. To minimize incidental ingestion of soil residents should wash hands after outdoor activities to help reduce the potential for exposure. If residents choose to garden, to minimize potential exposure, they should consider growing crops in raised bed gardens and containers with clean soil imported from a non-contaminated area or bagged soil bought commercially instead of the existing soil. Other recommendations for home vegetable gardening include: discarding outer leaves of leafy vegetables, washing produce to remove soil and peeling root crops.

Comment 12: An interested party inquired as to the duration of the remediation investigations and activities at its property. The party also asked to be provided with analytical data for its property.

Response: EPA anticipates that the OU2 remediation work will take about 35 months, however, this does not specify duration for any specific properties. EPA will have a better estimate of the time needed once the remedial design is completed. Some remedial investigation activities related to the OU3 investigation may also be required. EPA will compile results for the property and send them to the inquirer.

Comment 13: A property owner of one of the impacted properties asked that EPA not conduct work on its property, and indicated that the owner would accept the presence of asphalt as an engineering control/in-place cap.

Response: EPA has determined the property will need remediation due to elevated contaminant levels and potential groundwater impacts. However, EPA will evaluate the potential use of engineering and institutional controls during the remedial design process.

Comment 14: An interested party inquired about how close testing was conducted to his property, which is to the north of the former facility, and how contamination may have spread to the north, given groundwater flow is to the south.

Response: EPA conducted testing in the vicinity of the former Kil-Tone Property as far north as the Gloria M. Sabater Elementary School. The closest properties sampled to 633 Almond Street were Property IDs 223 and 233 and the Elementary School, and at each of which no remediation was determined to be necessary. According to the conceptual site model for the Site, contamination spread primarily through overland flow and air dispersion, which could result in contamination north of the former facility.

Comment 15: An interested party inquired whether demolition of buildings would be required during the non-residential remediation.

Response: EPA will attempt, whenever possible, to avoid the demolition of structures. Where contamination is present under a structure and cannot be addressed through underpinning or another method of gaining access to soil below the structure, demolition may be considered. This will be further evaluated and addressed during the design process.

Comment 16: An interested party inquired whether any other areas of high contamination were found beyond the former Kil-Tone and Lerco properties.

Response: EPA has identified the former Kil-Tone and Lerco properties as having particularly high levels of arsenic and lead contamination in soil. However, the investigation is still ongoing and further areas of high contamination cannot be ruled out.

Comment 17: An interested party inquired when the work might start, and how long it is expected to last.

Response: The start date and length of work is dependent on a number of factors. Once the Record of Decision is signed, the remedial design process may take in the range of two years, after which remedial work will begin. Current estimates predict that the remediation process will take 35 months, but timelines are uncertain until we are further along in the design process.

Comment 18: An interested party inquired about the Tarkiln branch, and the potential impacts of the Kil-Tone property on aquatic life.

Response: EPA will more thoroughly evaluate impacts to aquatic life in the Tarkiln during the investigation process for Operable Unit 4. Based on investigations so far, ecological risks to receptors in the vicinity of the former Kil-Tone Property may exist.

Comment 19: An interested party inquired about the existence of caps at certain properties in the vicinity, and whether these would need to be removed during the remedial action.

Response: EPA, under the Removal Program, placed caps on several properties to prevent exposure of receptors to contamination until a permanent remedy could be put in place. The permanent remedy for the site may require the removal of some of these interim caps, but this will be determined during the design process.

ATTACHED TO THIS RESPONSIVENESS SUMMARY ARE THE FOLLOWING:

Attachment A - Proposed Plan (English and Spanish versions)
Attachment B - Public Notices (English and Spanish) – The Daily Journal
Attachment C - August 13, 2019 Public Meeting Transcript and September 4, 2019 Public Meeting Transcript
Attachment D - Comments Submitted During Public Comment Period

Attachment A

Proposed Plan

Former Kil-Tone Company Superfund Site
Operable Unit Two, Non-Residential Soil
Vineland, New Jersey

Superfund Proposed Plan July 2019

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the Preferred Alternative to remediate non-residential properties with contaminated soil related to the former Kil-Tone Company pesticide manufacturing plant located in Vineland, New Jersey. The Preferred Alternative calls for the excavation and off-site disposal of contaminated soil on non-residential properties and would be the final remedy for soil on non-residential properties.

The Environmental Protection Agency (EPA) has performed soil sampling at approximately 50 non-residential properties located in the vicinity of the former Kil-Tone Company pesticide manufacturing facility located at 527 East Chestnut Avenue, City of Vineland, Cumberland County, New Jersey ("Property"), as well as at the Property itself. The results of the soil sampling program identified approximately 40 of the approximately 50 non-residential properties where a remedial action is required. Additional sampling may be needed to further refine the extent of contamination at these properties.

This Proposed Plan includes a summary of the cleanup alternatives evaluated for use at the affected non-residential properties. This Proposed Plan was developed by EPA, the lead agency for the Former Kil-Tone Company Superfund Site (Site), in consultation with the New Jersey Department of Environmental Protection (NJDEP), the support agency. EPA, in consultation with NJDEP, will select a final remedy for contaminated soil at affected non-residential properties after reviewing and considering all information submitted during the 30-day public comment period. EPA, in consultation with NJDEP, may modify the Preferred Alternative or select another response action presented in this Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on the alternatives presented in this Proposed Plan.

EPA is issuing this Proposed Plan as part of its community relations program under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. 9617(a), and Section 300.435(c) (2) (ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed Plan summarizes information that can be found in greater detail in the Remedial Investigation (RI) and Focused Feasibility Study (FFS) reports for non-residential soil, as well as other related documents, which can be found in the Administrative Record file for this action. The location of the Administrative Record file is provided below.

MARK YOUR CALENDARS

Public Comment Period:
July 30 – August 28, 2019
EPA will accept written comments on the Proposed Plan during the public comment period. Written comments should be addressed to:

Sharon Hartzell, Project Manager
U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, NY 10007
Email: hartzell.sharon@epa.gov

Written comments must be postmarked no later than August 28, 2019.

Public Meeting
August 13, 2019 at 7:00 P.M.
EPA will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Study. Oral and written comments will also be accepted at the meeting. The meeting will be held at:

Gloria M Sabater Elementary School.
301 So. East Blvd, Vineland, NJ 08360

In addition, select documents from the administrative record are available on-line at:
https://www.epa.gov/superfund/former-kil-tone

EPA and NJDEP encourage the public to review these documents to gain a more comprehensive understanding of activities for the Site.

COMMUNITY ROLE IN SELECTION PROCESS

This Proposed Plan is being issued to inform the public of EPA's proposed alternative for non-residential properties and to solicit public comments pertaining to all of the remedial alternatives evaluated, including the Preferred Alternative. Changes to the proposed alternative, or a change to another alternative, may be made if public comments or additional data indicate that such a change would result in a more appropriate remedial action. The final decision regarding the selected remedy will be made after EPA, in consultation with NJDEP, has taken into consideration all public comments. EPA is soliciting public comments on all of the alternatives considered in the Proposed Plan, because EPA may select a remedy other than the proposed alternative. This Proposed Plan has been made available to the public for a public comment period that concludes on August 28, 2019.

A public meeting will be held during the public comment period to present the conclusions of the RI/FFS, to elaborate further on the reasons for proposing the Preferred Alternative, and to receive public comments. The public meeting will include a presentation by EPA of the Preferred Alternative and other cleanup options.

Information concerning the public meeting and on submitting written comments can be found in the "Mark Your Calendars" text box on Page 1. Comments received at the public meeting, as well as written comments received during the public comment period, will be documented in the Responsiveness Summary section of the Record of Decision (ROD). The ROD is the document that explains which alternative has been selected and the basis for the selection of the remedy.

SCOPE AND ROLE OF THE ACTION

Due to the large area, the different media affected by contamination, and varying land uses, EPA is addressing the cleanup of the Site in several phases, or operable units (OUs). A ROD for the first operable unit (OU1) was signed on September 12, 2016. It selected a remedy for residential properties in the vicinity of the former Kil-Tone Company manufacturing facility. This Proposed Plan is for the second operable unit associated with the Site and addresses contaminated soil at non-residential properties impacted by the former Kil-Tone Company operations, including at the former Kil-Tone property itself. Additional operable units for the Site include OU3, which addresses contaminated groundwater, and OU4, which addresses contaminated sediment and surface water. Additional OUs may be required.

The approximately 40 properties referenced in this Proposed Plan as requiring a remedial action is an estimate used to calculate the approximate costs of the cleanup alternatives. EPA thinks that the estimate is not likely to change significantly. The precise number of non-residential properties to be remediated will be determined upon completion of additional soil sampling during the remedial design and possibly refined during implementation of the remedial action.

SITE BACKGROUND

Site Description

The Site is located in a mixed-use area that has been identified as a community with environmental justice concerns. The Site consists of the location of the former Kil-Tone Company pesticide manufacturing facility, and the areal extent of contamination. Pesticides were manufactured at the Property from 1917 to on or about 1933. Lead and arsenic releases from the pesticide manufacturing operations contaminated the Property itself, and areas in the vicinity of the Property. Sampling has detected lead and arsenic contaminated soil in at least 57 residential and an estimated 40 non-residential properties in the vicinity of the former Kil-Tone Company pesticide manufacturing facility.

The former Kil-Tone Company facility is bordered to the north by East Chestnut Avenue; to the east by South Sixth Street; to the south by Paul Street; and to the west by South East Boulevard. Residential and non-residential properties are located throughout the area. The focus of this Proposed Plan is the non-residential properties impacted by the lead and arsenic releases from the Property.

The Property comprises approximately four acres and is currently occupied by a commercial enterprise involved in making and installing signs for businesses. The Property is developed and has a multi-section building on its western side. The remainder of the Property, formerly unpaved, was paved (asphalt cover) by EPA in

December 2016/January 2017 as part of a removal action performed by EPA on the Property. The paved area is used for vehicle parking, materials storage, and as a laydown area for unused equipment and larger steel fabrications.

Adjacent and north of the Property is the Lerco Fuel Co. Inc. (Lerco) industrial facility that consists of two lots. The Lerco property was formerly used as a fuel storage and distribution site but is now vacant.

A storm sewer catch basin located in the northwestern corner of the Property receives storm water from the entire Property and discharges into the head of the Tarkiln Branch, which is located across South East Boulevard and approximately 400 feet from the Property. Tarkiln Branch is a tributary to the Parvin Branch which flows into the Maurice River that is located approximately 3.5 miles from the Property.

The neighborhood to the northwest, north, and east of the Property consist of various residential properties with some commercial and industrial properties, as shown on Figure 1. Open spaces (neighborhood parks and vacant lots) are interspersed throughout this area as well. The non-residential properties to be addressed as part of OU2 may be adjacent to or near residential properties being addressed as part of OU1.

Farther away from the Property, land use is primarily a mix of residential and commercial development. The urban core of Vineland is centered near the intersection of Landis Avenue and County Route 615 (South East Boulevard). This area includes suburban housing and light commercial development that radiates in all directions, with development becoming lighter away from the urban center.

Site History

The former Kil-Tone Company began pesticide manufacturing operations at the Property in or about 1917. The company manufactured arsenic-based pesticides. Specific compounds manufactured by the company included lead arsenate, London purple, and Paris green.

In 1926, the Kil-Tone Company sold the Property to Lucas Kil-Tone Co., a New Jersey company, which continued to manufacture pesticides on the Property until on or about 1933 when pesticide manufacturing operations ceased at the Property. The Property is currently owned by Urban Manufacturing, LLC, which purchased the property in 2008, and leases the Property to Urban Sign & Crane, Inc., which operates a commercial sign fabrication and installation business at the Property.

There have been several investigations at the Site, including a site investigation by NJDEP which was initiated in August 2014. Site assessments have also been conducted by EPA's removal program. Samples collected during the NJDEP investigation found arsenic on the Property at concentrations as high as 740 milligrams per kilogram (mg/kg) in the top 6 inches of soil and at concentrations as high as 5,800 mg/kg in soil at depth of 3.5 to 4 feet below ground surface. Groundwater samples collected by NJDEP from temporary well points on the Property found arsenic concentrations as high as 8.1 micrograms per liter (µg/L) to 14,000 µg/L. This discovery prompted NJDEP to refer the Site to EPA on November 14, 2014. Note that this groundwater is not the source of drinking for the community; the City of Vineland Water Utility provides water to the community and this supply is tested regularly to assure it meets state and federal drinking water standards.

The Site was proposed to the National Priorities List (NPL) on September 30, 2015 and was added to the NPL on April 5, 2016.

Lead and arsenic associated with operations at the former Kil-Tone Company facility have been found in soil at residential and non-residential properties in the vicinity of the Property. These contaminants have also been found in sediment along the entire stretch of the Tarkiln Branch to the confluence with the Parvin Branch, as well as in associated floodplains. Lead and arsenic have also been identified in groundwater at or near the Property.

Site Geology and Hydrogeology

The Site is located in the Coastal Plain Province of unconsolidated fluvial and marine deposits. Soil at the Site typically includes coarse sands, coarse sandy loams, coarse loamy sands, course sandy clays and sand. Fill material was routinely encountered in soil borings. The hydrogeologic unit at the Site is Kirkwood-Cohansey aquifer. The depth to water at the Property is approximately 6 feet below ground surface, but ranges to at least 15 feet below ground surface across OU2.

The topography of the Site area is generally flat. Much of the area surrounding the Property is covered by impervious surfaces such as houses, streets, driveways, buildings, parking lots and urban construction.

EARLY RESPONSE ACTIONS AND OPERABLE UNIT ONE

Early Response Actions

From January 2015 through February 2016, EPA conducted several sampling events at the Site seeking to define the nature and extent of contamination in residential and non-residential soil, groundwater, surface water and sediment. Based on the results of EPA's 2015 and 2016 sampling events and the earlier sampling by NJDEP, EPA initiated a removal action in April 2016 to prevent exposure to lead and arsenic-contaminated surface soil at residential properties located in the vicinity of the Property.

EPA's removal action consisted of the placement of topsoil to support the growth of sod on portions of 26 residential properties with arsenic and/or lead concentrations in surface soil in excess of action levels. EPA also instructed property owners and/or residents of these residential properties to not disturb the new layer of clean topsoil and/or sod until a permanent remedy could be implemented. These preventative measures were completed in June 2016.

Later in 2016, an additional six residential properties located in the flood plain of the Tarkiln Branch were addressed to prevent exposure to and/or migration of contamination, and fencing was installed to restrict access to portions of two public housing developments along the Tarkiln. In addition, soil cover and paving were placed over a portion of the Property itself to prevent further migration of contamination from the Property until a permanent remedy can be implemented.

Operable Unit One

On September 12, 2016, EPA selected a remedy for OU1 of the Site, which addresses contaminated soil on residential properties in the vicinity of the Property. The OU1 remedy includes excavation of an estimated 21,000 cubic yards of soil contaminated primarily with arsenic and lead from approximately 57 residential properties; off-site disposal of contaminated soil; backfilling of excavated areas with clean fill; and restoration of the affected properties.

Remedial activities have been underway for OU1 residential properties since 2017. Remediation of an initial 6 properties was completed in 2018, and remediation of an additional 27 properties is ongoing. The design of a third phase of remedial activities for OU1 is currently being completed and remediation of those properties is expected to start in 2020.

SUMMARY OF OPERABLE UNIT TWO REMEDIAL INVESTIGATION

The RI report for OU2 was finalized in August 2018, and the Final FFS was completed in July 2019. Together, the RI/FFS form the basis for this Proposed Plan. The focus of the OU2 RI was on soil contamination on non-residential properties. Additional information regarding the depth to groundwater was also obtained and is described below.

Soil

Tier A Soil Sampling

An initial round of OU2 soil sampling (Tier A) was conducted in August 2017 at three properties, namely, the Property itself and two adjacent properties, the Lerco property to the north and a vacant property to the south. The purpose of conducting this initial round of sampling on the former Kil-Tone manufacturing facility and two other adjacent properties was to determine the nature and extent of contamination on those properties, as well as to determine the full list of contaminants present in soil that may be related to the operations of the former Kil-Tone Company, in addition to arsenic and lead.

Soil samples were collected from at least eight borings per property using direct-push drilling equipment. Shallow soil (0-2 feet below ground surface (ft bgs)) from four discrete six-inch intervals and composite samples from three deeper intervals (2-4, 4-6, and 6-10 ft bgs) were collected from each boring for laboratory analysis. One additional soil sample was collected from each boring just above the water table. Samples were analyzed for the full list of contaminants of potential concern (COPCs), including volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, pesticides and metals, including lead and arsenic.

The results were compared against New Jersey Residential Direct Contact Soil Remediation Standards (RDCSRS), New Jersey Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) and the New Jersey Impact to Groundwater Soil Screening Levels (IGWSSL). Arsenic and lead were found to be the only contaminants that regularly exceeded the RDCSRS and/or NRDCSRS of 19 mg/kg for arsenic and 400 ppm or 800 ppm for lead, depending on future use. The New Jersey default IGWSSL is 19 mg/kg for arsenic and 90 mg/kg for lead. Sporadic elevated concentrations of contaminants other than arsenic and lead were also found, particularly polycyclic aromatic hydrocarbons (PAHs), but the data did not suggest any other site-related COPCs exist.

Tier B Soil Sampling

Between September 2017 and March 2018, a second round of OU2 soil sampling (Tier B) was conducted at approximately 50 non-residential properties in the vicinity of the Property. The sampling approach was similar to the Tier A event; samples were collected from four discrete six-inch intervals at 0-2 ft bgs, and composite samples were collected from two intervals at 2-4 and 4-6 ft bgs. Based on the results of the Tier A sampling, the Tier B soil samples were analyzed for metals and two intervals, 0.5-1 and 2-4 ft bgs, were also analyzed for PAHs to supplement the Tier A sampling results.

Summary of Soil Investigation

The Tier B results verified that arsenic and lead are the primary COPCs at the Site. The highest concentrations of arsenic and lead found during OU2 sampling were on the Property itself. These concentrations range from 0.93 to 45,900 mg/kg for arsenic and 2.1 to 91,700 mg/kg for lead. Soil samples from adjacent and nearby properties to the north, south, and near the headwater of the Tarkiln Branch to the southwest also show elevated concentrations of arsenic (up to 15,900 mg/kg) and lead (up to 16,100 mg/kg). Arsenic and lead impacts on the OU2 properties decrease laterally with distance away from the Property (see Figure 2).

With some exceptions (mainly in Tier A properties), the arsenic and lead impacts were typically found in shallow soil above 4 ft bgs. This is consistent with the conceptual site model (CSM) for the Site, which suggests that overland flow (runoff) and air dispersion (dust) were the main contaminant transport mechanisms from the Property. Deeper soil impacts found on some nearby properties may be due to the use of fill material, storage or disposal of manufactured products and/or waste materials from the Property.

Groundwater

While the OU2 RI focused on soil contamination, the depth to the water table was recorded during installation of OU2 soil borings. The average depth to groundwater at the Property is approximately 6 ft bgs. The depth to groundwater may be encountered at shallower locations on the Property, specifically in the area where the Tarkiln Branch originates. The average depth to groundwater is approximately 7 ft bgs at properties directly north of the Property and is approximately 8 ft bgs at properties directly south of the Property. The depth to groundwater increases with distance away from the Property, and away from the Tarkiln Branch, and averages approximately 13.5 ft bgs north of Cherry Street.

Elevated concentrations of lead and/or arsenic were encountered at some properties below the depth of the groundwater table, including at the Property and at Lerco.

PRINCIPAL THREATS

The Kil-Tone property itself has acted as a source of lead and arsenic contamination to other properties, groundwater and surface water, and the cancer risks associated with contamination at this property exceed 10^{-3}. Therefore, the soil contamination at this property would be considered PTW.

SUMMARY OF SITE RISKS

As part of the RI/FFS, a human health risk assessment (HHRA) was conducted to estimate current and potential future effects of contaminants on human health. A HHRA is an analysis of the potential adverse human health effects caused by hazardous-substance exposure in the absence of any actions to control or mitigate these exposures under current and future site uses.

The cancer risk and noncancer health hazard estimates in the HHRA are based on current and potential future reasonable maximum exposure scenarios and were developed by taking into account various health protective estimates about the concentrations,

WHAT IS A "PRINCIPAL THREAT?"

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a Site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in groundwater may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

frequency and duration of an individual's exposure to chemicals selected as COPCs, as well as the toxicity of these contaminants.

A Screening Level Ecological Risk Assessment (SLERA) for OU2 was also conducted.

Human Health Risk Assessment

A four-step human health risk assessment process was used for assessing site-related cancer risks and noncancer health hazards. The four-step process is comprised of: Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization (see adjoining box "What is Risk and How is it Calculated" for more details on the risk assessment process).

Consistent with the OU1 approach, three OU2 properties were selected for a streamlined risk assessment. These three properties are considered representative of the range of properties included in the OU2 RI. Two of the selected properties are representative of properties with relatively deep (below the water table) contamination likely due to the use of fill material including manufactured products and/or waste material from the former Kil- Tone Company facility. The third property is representative of properties impacted by the operations of the former Kil-Tone facility through overland flow and/or air dispersion of contamination, and properties with relatively shallow (above the water table) impacts. In addition, two of the properties have a reasonably anticipated future use as residential while one (with deep contamination) is reasonably anticipated to remain non-residential. As such, the results of the risk assessment on these properties are applicable to all OU2 properties.

Based on current and reasonably anticipated future land use, the receptors assessed in the HHRA included a future child and adult resident, industrial worker, utility worker, and construction worker. Although the properties are zoned non-residential, many are adjacent to residential areas and, based on conversations with the Township of Vineland planning committee, could be rezoned as such in the future. Potential exposures to COPCs in surface and combined surface and subsurface soil pathways were evaluated for each scenario.

For COPCs other than lead, two types of toxic health effects were evaluated in the risk assessment: cancer risk and noncancer hazard. Calculated cancer risk estimates for each receptor were compared to EPA's target risk range of $1x10^{-6}$ (one-in-one million) to $1 x 10^{-4}$ (one-in-ten thousand). The calculated noncancer hazard index (HI) estimates were compared to EPA's target threshold value of 1.

The result of the risk assessment indicated that, out of the three properties evaluated, the former Kil-tone Company facility had cancer risks of $3x10^{-3}$ for future residents, $8x10^{-4}$ for industrial workers, and $2x10^{-4}$ for utility workers, all exceeding EPA's target cancer risk range. The second property was within the cancer risk range for all receptors, though at the upper bounds of the range for utility workers and child residents at $1x10^{-4}$. The third property was within the cancer risk range for all receptors. Elevated cancer risks were primarily driven by exposure to arsenic in surface soil.

Total noncancer hazards for future child residents at all three properties exceeded EPA's target threshold of one, with values ranging from 3 to 69. The total noncancer hazard index (HI) also exceeded EPA's target threshold for construction workers at both properties with deeper contamination. The noncancer hazard threshold was exceeded for all potential

receptors at the former Kil-tone Company facility. The HI exceedances at these properties were driven by exposure to arsenic in soil.

Blood lead modeling was also performed utilizing soil lead concentrations at the three properties. The Adult Lead Methodology (ALM) model was used for adult receptors, and the Integrated Exposure Uptake Biokinetic Model (IEUBK) predicted blood lead levels in children in a future residential scenario. Soil lead concentrations at the former Kil-tone Company facility resulted in blood lead levels exceeding EPA's regional target (no more than 5% exceeding 5 µg/dl) for industrial workers, construction workers, and future residents. Target blood lead levels were not exceeded for any receptors using soil lead concentrations from the second or third property.

Contamination levels found at the three properties are generally similar to those found at other non-residential properties in the vicinity of the Former Kil-tone Company facility and are above background concentrations. The results of the risk assessment are considered to be representative of all affected non-residential properties in the vicinity of the former Kil-tone Company facility and are therefore applicable to OU2 as a whole.

Screening Level Ecological Risk Assessment

A SLERA for OU2 was conducted in 2017 to evaluate the potential for risk to ecological receptors at the Site. Properties in OU2 are primarily developed, and do not contain suitable ecological habitat, but a few properties were identified as having potentially ecologically suitable upland habitat. Three distinct exposure units (EUs) were evaluated in the SLERA, two of which (EU-1 and EU-2) consisted of OU2 properties and the third of which (EU-3) included the Tarkiln Branch and its floodplain down its confluence with the Parvin Branch.

The SLERA concluded that the potential for adverse ecological effects exists for each EU due to metals, primarily arsenic, and some PAHs. Given the results of the SLERA, a full Baseline Ecological Risk Assessment for EU-3 will be conducted as part of OU4 of the Site.

For EU-1 and EU-2, additional ecological risk analysis was conducted to further refine the findings of the SLERA. This additional analysis also found that arsenic

WHAT IS RISK AND HOW IS IT CALCULATED?

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the contaminants of concern (COPCs) at the site in various media (*i.e.*, soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health hazards, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one in ten thousand excess cancer risk;" or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk.

For non-cancer health effects, a "hazard index" (HI) is calculated. The key concept for a non-cancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which non-cancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a non-cancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at the site.

and lead are the primary contaminants of concern for ecological receptors. It indicated that arsenic presents a potential for adverse effects to terrestrial plant and soil invertebrate communities and lead presents a potential for adverse effects to terrestrial plants. It also found that there is minimal potential for adverse effects to wildlife receptor populations.

Summary

It is EPA's judgment that the Preferred Alternative summarized in this Proposed Plan or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Soil contamination on non-residential properties is present in surface and/or subsurface soil. The following remedial action objectives (RAOs) for contaminated soil attain a degree of cleanup that ensures the protection of human health and the environment:

- Prevent current and potential future unacceptable risks to human receptors resulting from direct contact with contaminated soil;
- Prevent migration of contaminants of concern (COCs) from the OU2 properties to other areas via overland flow and air dispersion;
- Prevent or reduce the migration of COCs from soil to groundwater; and
- Prevent current and potential future unacceptable risks to ecological receptors resulting from direct contact with contaminated soil.

To achieve the RAOs, property-specific Preliminary Remediation Goals (PRGs) will be used based on the reasonably anticipated future use of the property (residential or non-residential[1]), the depth of contamination for impact to groundwater, and the potential for adverse ecological effects. Based on the results of the RI, the BHHRA and the ecological analyses, the COCs for OU2 of the Site are arsenic and lead. The following PRGs are proposed:

	Arsenic (mg/kg)	Lead (mg/kg)
Residential Soil	19	400
Non-Residential Soil	19	800
Impact to Groundwater	19	90
Ecological (Plants)	69	500
Ecological (Soil Invertebrates)	93.7	3,162

The residential, non-residential and impact to groundwater PRGs are based on New Jersey Remediation Standards (N.J.A.C. 7:26d). Consistent with New Jersey Remediation Standards, EPA is developing a site-specific impact to groundwater value for lead that will be incorporated into the Record of Decision for OU2. The plant and soil invertebrate PRGs listed above are based on the results of the ecological analyses conducted for OU2. In addition to the numerical values above, the overall remediation goal for lead on properties with a reasonably anticipated future use as residential will be a property-wide average surficial lead concentration of less than 200 mg/kg. That cleanup level is based on recently updated blood lead level guidance from USEPA's Office of Land and Emergency Management (Directive 9200.2-167).

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected remedy be protective of human health and the environment, be cost effective, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practical. In addition, if any hazardous substance, pollutant or contaminant will remain on-site, any federal and promulgated state standard, requirement, criteria, or limitation that is legally applicable or relevant and appropriate must be attained. CERCLA also includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

Potential technologies applicable to soil remediation were identified and screened by effectiveness, implementability, and cost criteria, with emphasis on effectiveness. Those technologies that passed the initial

[1] Note that while OU2 addresses non-residential properties, based on discussions with the City of Vineland, the reasonably anticipated future use of majority of the OU2 properties is residential.

screening were then assembled into remedial alternatives.

Of the approximately 50 non-residential properties sampled as part of the OU2 RI, EPA estimates that approximately 40 require remediation. Additional sampling will be needed during the design of the OU2 remedy to refine the extent of contamination on each property, and additional properties could be identified during this process.

The time frames below for construction do not include the time for designing a remedy, reaching agreement with responsible parties if they are identified, or the time to procure necessary contracts. All costs were calculated using the seven percent discount factor.

Alternative 1 - No Action

The NCP requires that a "No Action" alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated soil at non-residential properties.

Total Capital Cost:	*$0*
Annual O&M:	*$0*
Total Present Net Worth:	*$0*
Timeframe:	*0 years*

Alternative 2 – Engineering Controls (Capping/Access Control) and Institutional Controls

This alternative consists of the following major components:

- Installation and/or maintenance of engineered covers
- Off-site disposal of soil excavated prior to cap installation
- Institutional controls in the form of deed notices
- Long-term monitoring

Under this alternative, an estimated 8,650 cubic yards of contaminated soil would need to be excavated to accommodate caps on individual OU2 properties. Some properties have existing paved areas that could already act as engineered covers and thus would require only maintenance. It is estimated that the active components of this remedial action would take approximately 15 months to implement. The estimated present-worth cost is $8.1 million. Institutional controls in the form of deed notices would be needed to prevent disturbance of the engineered covers. In addition, long-term monitoring in the form of visual inspections of the affected properties would be needed to assure the engineering controls remain effective.

Because this alternative would result in contaminants remaining on-site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the Site be reviewed at least once every five years.

Total Capital Cost:	*$7,961,000*
Annual O&M:	*$10,000*
Total Present Worth:	*$8,091,000*
Construction Time Frame:	*15 months*

Alternative 3 – Excavation to Depth of Contamination (not to exceed depth of groundwater table), Engineering Controls and Institutional Controls

This alternative consists of the following major components:

- Excavation of soil in exceedance of the appropriate property-specific soil remediation standard, not to exceed the depth of the groundwater table
- Off-site disposal of excavated soil
- Institutional controls
- Engineering controls, if necessary
- Long-term monitoring, if necessary

Under this alternative, an estimated 57,800 cubic yards of soil would be excavated for off-site disposal. It is estimated that the active component of the remedial action would take about 35 months to implement. This would be inclusive of mobilization/demobilization, sheeting/building, excavation and backfill/restoration.

The estimated present-worth cost of this alternative is $36 million. The cost estimate assumes that for the Kil-Tone and Lerco properties 75% of excavated material could be disposed of as non-hazardous waste and 25% would require disposal as hazardous waste at an appropriately permitted facility. For the remainder of the properties within OU2, disposal cost assumptions were split 90% non-hazardous and 10% hazardous.

Institutional controls would be needed on properties not addressed to residential standards. While the goal would be full excavation of all impacted soil above the water table, due to engineering and/or access considerations, it may be necessary in some instances to use engineering controls to fully achieve RAOs. If this is the case, long-term monitoring in the form of visual inspections would be needed to assure the engineering controls remain effective.

Because this alternative would result in contaminants remaining on-site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the Site be reviewed at least once every five years.

Note that existing data indicate elevated concentrations of COCs are present in soil beneath the water table at 3 of the approximately 40 OU2 properties. Under Alternative 3, this contaminated soil would be left in place and addressed as part of OU3 of the Site, which relates to groundwater. Sampling for the OU3 RI has recently been initiated and a more complete understanding of site-related groundwater contamination obtained during the OU3 RI will be valuable in determining the best remedy for soil below the water table. In any case, by removing impacted soil above the water table, Alternative 3 would reduce the migration of contamination below the water table.

For this reason, under this alternative, remediation of any properties with contamination beneath or near the water table will be deferred at least until after the OU3 RI/FS is further along, and it is determined whether any active remediation is needed for OU3. Remedial activities on the properties with impacts below the water table could then be conducted concurrently with, or in accordance with, the remedial action selected for OU3 of the Site in order to avoid the potential need to return to a property previously cleaned up under OU2.

Total Capital Cost:	*$35,941,000*
Annual O&M:	*$7,500*
Present Worth Cost:	*$36,039,000*
Construction Time Frame:	*35 months*

Alternative 4 – Excavation to Depth of Contamination, Engineering Controls and Institutional Controls

This alternative consists of the following major components:

- Excavation of all soil in exceedance of the appropriate parcel-specific soil remediation standard
- Off-site disposal of excavated soil
- Institutional controls
- Engineering controls, if necessary
- Long-term monitoring, if necessary

Under this alternative, an estimated 86,600 cubic yards of soil would be excavated for off-site disposal. The volume is higher than it is under Alternative 3 because Alternative 4 includes excavation of soil below the water table. It is estimated that the active component of the remedial action would take about 50 months to implement including mobilization/demobilization, sheeting/building, excavation and backfill/restoration.

The estimated present-worth cost is $58.4 million. As noted in Alternative 3, the cost estimate assumes a 75% non-hazardous and 25% hazardous disposal cost split for the Former Kil-Tone and Lerco properties. For the remainder of the properties within OU2, disposal cost assumptions were split 90% non-hazardous and 10% hazardous.

Institutional controls would be needed on properties not addressed to residential standards. While the goal would be full excavation of all impacted soil, due to engineering and/or access considerations, it may be necessary in some instances to use engineering controls to fully achieve RAOs. If this is the case, long-term monitoring of the engineering controls would be needed to assure they remain effective.

Because this alternative may result in contaminants remaining on-site above levels that allow for unrestricted use and unlimited exposure, five-year reviews may be required, as per CERCLA.

Total Capital Cost:	*$58,311,000*
Annual O&M:	*$7,500*
Total Present Worth:	*$58,409,000*
Construction Time Frame:	*50 months*

EVALUATION OF ALTERNATIVES

EPA uses nine criteria to evaluate the remedial alternatives individually and against each other to select a remedy. This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria and notes how it compares to the other

options under consideration. The nine evaluation criteria are discussed below. A detailed analysis of each of the alternatives is in the FFS.

Overall Protection of Human Health and the Environment

Since Alternative 1 would not address the risks posed by soil contaminants, it would not be protective of human health and the environment. Therefore, it was eliminated from further consideration under the remaining eight criteria.

Alternative 2 would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through containment, soil cover, or removal of contaminated soil. Engineering controls (i.e., soil covers) and deed notices would prevent exposure to risk-based levels of contaminants.

Alternatives 3 and 4 would provide protection of human health and the environment by removing the contaminated soil, thereby preventing exposure. Alternative 4 would provide protection by removing contamination below the water table, thereby more fully addressing the RAO to prevent or reduce the migration of COCs from soil to groundwater.

Compliance with ARARs

Alternatives 2, 3 and 4 would address potential chemical-specific ARARs. Placement of engineered soil cover/targeted soil removal, and soil removal included in Alternative 2, would address potential chemical-specific ARARs for soil. The soil removal prescribed in Alternatives 3 and 4 would meet soil chemical-specific ARARs for residential or non-residential use. Each active alternative would also achieve potential location-specific and action-specific ARARs.

Long-Term Effectiveness and Permanence

Alternative 2 provides long-term effectiveness and permanence through maintenance of the soil covers and the institutional controls. Periodic inspection and maintenance, as required by the institutional controls, would ensure the remedy remains effective in preventing exposure to contaminants. However, the continued effectiveness of the Alternative 2 containment system would depend on how well the soil cover is maintained.

THE NINE SUPERFUND EVALUATION CRITERIA

1. Overall Protectiveness of Human Health and the Environment evaluates whether and how an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

3. Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

4. Reduction of Toxicity, Mobility, or Volume (TMV) of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5. Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

6. Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

7. Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

8. State/Support Agency Acceptance considers whether the State agrees with the EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

***9*. Community Acceptance** considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Alternative 3 would provide long-term effectiveness and permanence by removing contaminants from the OU2 non-residential properties and providing secure disposal of excavated soil at appropriate permitted facilities. Long-term monitoring and maintenance of the affected properties and five-year reviews would be required since contaminated soil could remain below the water table on some properties.

Alternative 4 would provide the greatest long-term effectiveness and permanence since all site-related soil

contamination exceeding the PRGs would be excavated and disposed of at an approved off-site facility. If necessary, long-term monitoring in the form of visual inspections and maintenance, as well as CERCLA five-year reviews, would be required for any property that could not be remediated to unlimited use and unrestricted exposure conditions.

Reduction of Toxicity, Mobility, or Volume through Treatment

None of the alternatives would provide reduction of toxicity, mobility, or volume of contamination through treatment, since treatment is not included as an option. The use of treatment was evaluated as part of the FFS process, but no effective means of treating arsenic and lead contamination, including PTW, in soil were identified. Excavated soil for off-site disposition may require treatment prior to disposal.

Alternative 2 would reduce the mobility of contamination somewhat through the placement of caps over some impacted areas. Alternative 3 would provide better reduction of mobility through the excavation and removal of COC-contaminated soil from the Site. At a select group of properties contamination would remain below the water table, but this remaining contamination would be addressed as part of OU3 of the Site.

Alternative 4 would provide the highest reduction of mobility and volume through the excavation and off-site disposal of all identified properties with COCs above the PRGs. It would also prevent the potential migration of COCs from soil to groundwater.

Short-Term Effectiveness

Alternative 2 would be effective in the short term since contaminated soil would not be significantly disturbed during construction activities. It is estimated that caps could be placed and deed notices established in approximately 15 months.

Alternatives 3 and 4 involve excavation of contaminated soil and would present a potential for short-term exposure. Under these alternatives, any potential environmental impacts associated with the excavation of soil would be minimized with the proper installation and implementation of dust and erosion control measures, by performing excavation with appropriate health and safety measures, and by using a lined temporary staging area. Appropriate transportation safety measures would be required during the shipping of the contaminated soil to approved off-site disposal facilities. Completion of the remediation for most individual properties could be conducted in approximately 1 year or less, though it is expected that Alternative 3 would take 35 months to implement fully and Alternative 4 would take 50 months.

Implementability

Alternative 2 can be implemented; however, the development of protective engineering and institutional controls that would be both enforceable and acceptable to all property owners is uncertain.

Alternatives 3 and 4 are also implementable, although implementation of those alternatives is complicated to some extent by the need to perform excavation and backfilling on individual properties, the majority of which are developed with primary structures (such as stores or buildings) as well as secondary structures such as garages and sheds. Alternative 4 would be significantly more difficult to implement on properties where contamination extends below the water table. In some cases, the depth of contamination extends greater than 12 feet below ground surface, which would require the use of either braced or sloped excavation and would likely require at least some dewatering to occur.

All alternatives would result in some short-term impacts to the community, in the form of truck traffic and noise and dust from construction/excavation activities, although Alternative 2 (bringing soil in to construct a soil cover) would generate less truck traffic than Alternatives 3 and Alternative 4 (both would involve removing contaminated soil from properties and bringing soil in to fill excavated areas). Traffic, noise, and dust impacts would be mitigated by limiting the construction schedule to daytime hours on weekdays or other timing as specified by local ordinance. Perimeter air monitoring and dust control measures would be required to address concerns over potential exposure to dust during activities.

Administrative implementation of Alternative 2 may be significantly impacted by the need to impose deed notices on non-residential properties to limit human exposure by restricting the future use of contaminated areas within the properties. These notices would restrict the owner's use of the property and may not be acceptable to some of the property owners. Since

Alternatives 3 and 4 result in the removal of contaminated soil but may not address all contamination to achieve unlimited use conditions, institutional controls on a limited number of properties would be required.

Cost

The total estimated cost for Alternative 2 is $8,091,000. Capital costs include the cost for placement of the caps, the excavation of soil needed to accommodate the caps, and administrative cost for establishment of the deed notices. Annual O&M costs include maintenance of the containment systems.

The total estimated cost for Alternative 3 is $36,039,000. Capital costs include the cost for the excavation and disposal of soil and site restoration. No annual maintenance is anticipated, though limited monitoring in the form of visual inspections will be required for those properties not addressed to the residential standards, or if any engineering controls are needed.

The total estimated cost for Alternative 4 is $58,409,000. Like Alternative 3, capital costs include the cost for the excavation and disposal of soil and Site restoration. Costs are higher due to the greater depth of excavation needed, and the associated additional engineering efforts that requires. As with Alternative 3, no annual maintenance is anticipated, though limited monitoring in the form of visual inspections will be required for those properties not addressed to the residential standards, or if any engineering controls are needed.

State Acceptance

The State of New Jersey concurs with the Preferred Alternative as presented in this Proposed Plan.

Community Acceptance

Community acceptance of the Preferred Alternative will be evaluated after the public comment period ends and will be described in the ROD. Based on public comment, the Preferred Alternative could be modified from the version presented in this proposed plan. The Record of Decision is the document that formalizes the selection of the remedy for a site.

PREFERRED ALTERNATIVE

The Preferred Alternative for achieving remedial action objectives for the non-residential properties with soil impacted by site-related contamination is Alternative 3, excavation to depth of contamination (not to exceed depth of groundwater table), engineering controls and institutional controls.

Alternative 3 consists of excavation of an estimated 57,800 cubic yards of soil for off-site disposal that exceeds the appropriate property-specific soil remediation standard, not to exceed the depth of the groundwater table.

It is estimated that the active component of the remedial action would take about 35 months to implement. This would be inclusive of mobilization/demobilization, sheeting/building, excavation and backfill/restoration. Institutional controls would be required on properties not addressed to residential standards and long-term monitoring in the form of visual inspection of these properties would be needed. In addition, inspection and maintenance of any necessary engineering controls may be needed.

Alternative 2 relies heavily on the ability to ensure that the institutional controls, in the form of deed notices and restrictions, remain in place and are complied with. Alternative 3 relies less heavily on institutional controls and Alternative 4 may not require the use of institutional controls at all, and as such both are more effective in the long-term than Alternative 2. Alternative 3 would achieve the RAOs, is more easily implementable, has greater effectiveness in the short-term and is less costly than Alternative 4. While Alternative 2 is approximately $28 million less costly than Alternative 3, there would be significant resource requirements over time associated with long-term inspection and maintenance of the caps. For these reasons, EPA prefers Alternative 3 over Alternatives 2 and 4.

EPA anticipates that a more complete understanding of groundwater contamination, obtained during the OU3 RI, will be valuable in determining the best remedy for soil below the water table. Existing data indicates soil contamination beneath the water table to be a concern at 3 of 40 OU2 properties. For this reason, EPA will address contamination in below-water-table soil after the OU3 RI/FS is further along. However, under Alternative 3, excavation at properties where soil

contamination is present below the water table will be deferred at least until it is determined whether any active remediation is needed for OU3. Remedial activities on the properties with impacts below the water table could then be conducted concurrently with, or in accordance with, the OU3 remedy, to avoid the potential need to return to a property post-action.

The implementation of Alternative 3 may require excavation work adjacent to and/or underneath structures. In general, every attempt will be made to remove all soil contamination so that deed restrictions are not determined to be necessary. All impacted properties will be restored to their original condition.

Based on the information available at this time, EPA has concluded and NJDEP concurs that the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing criteria.

The Preferred Alternative satisfies the threshold criteria and achieves the best combination of the five balancing criteria of the comparative analysis. This alternative is preferred because it will achieve the RAOs and cleanup goals in the shortest amount of time and is a permanent remedy. EPA expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA Section 121: 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element or explain why the preference for treatment will not be met. EPA will assess the modifying criteria of community acceptance in the ROD following the close of the public comment period.

FOR FURTHER INFORMATION

The administrative record file, which contains copies of the Proposed Plan and supporting documentation is available at the following locations:

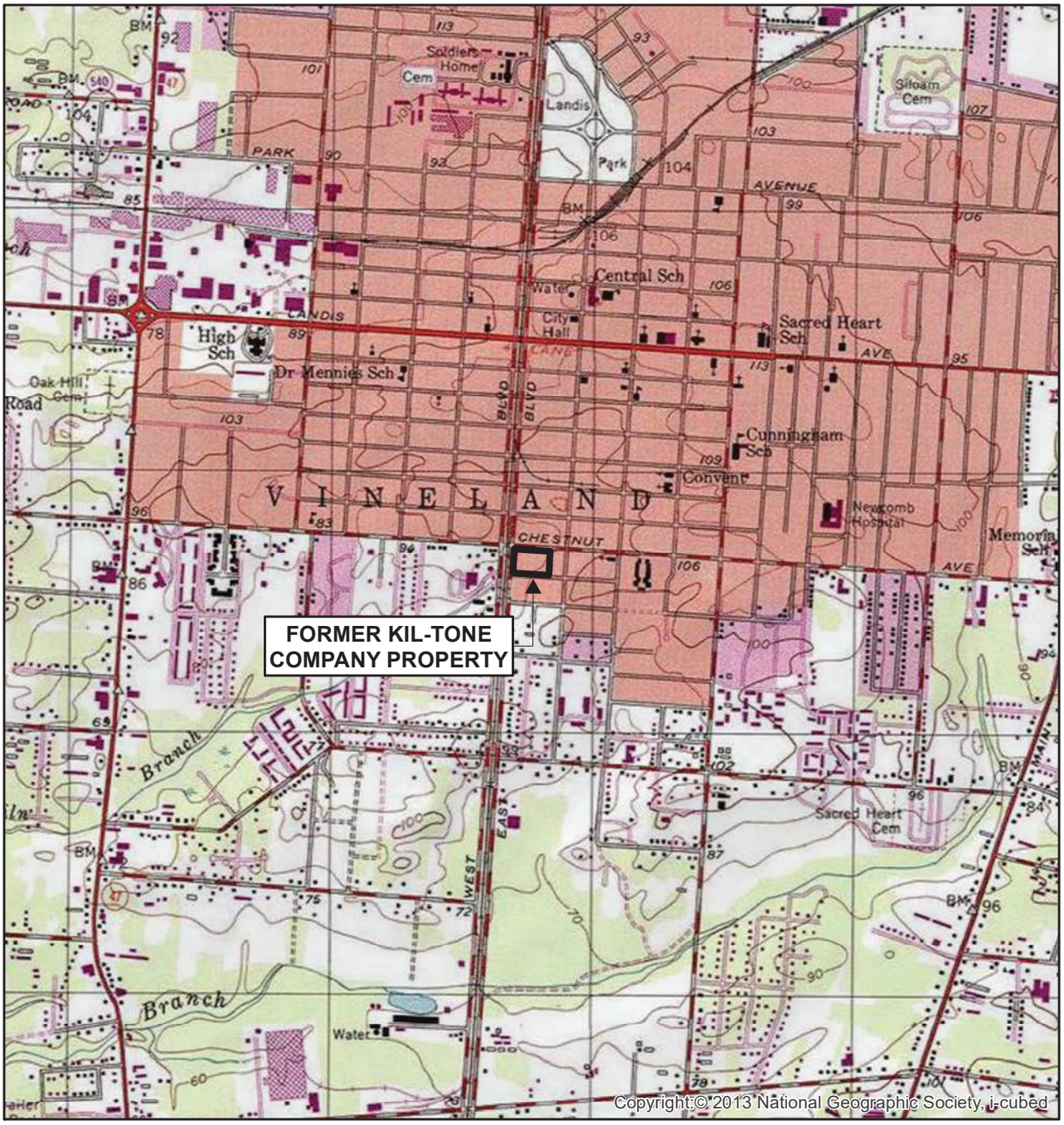
EPA Region 2 Superfund Records Center
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-4308
Hours: Monday-Friday – 9 A.M. to 5 P.M.

Vineland City Library
1058 East Landis Ave.
Vineland, New Jersey 08360
For Library Hours:
http://www.vinelandlibrary.org/

In addition, select documents from the administrative record are available on-line at:

www.epa.gov/superfund/former-kil-tone

FIGURE 1



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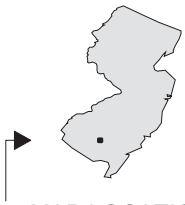

MAP LOCATION

FORMER KIL-TONE COMPANY
SUPERFUND SITE
OU2 RI REPORT
VINELAND, NEW JERSEY

SITE LOCATION

N

0 1,000 2,000 4,000
Feet

1:24,000

14426/66305
JULY 2018

HDR OBG a joint venture

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GRAPE STREET
MONTROSE STREET
MONTROSE STREET
LA FRANCE STREET
S SEVENTH STREET
ALMOND STREET
222
223
QUINCE STREET
227
69
231
232
233
230
228
226
81
81
225
237
236
229
211
212
CHERRY STREET
123
123
206
148
208
207
209
210
S WEST BOULEVARD
S EAST BOULEVARD
244
243
242
LERCO
305
SIXTH STREET
143
240
CHESTNUT AVENUE
THIRD STREET TERRACE
286
287
277
278
284
279
280
283
282
FORMER KIL-TONE
289
290
291
PAUL STREET
511 PAUL ST
302
301
304
303
296
297
295
WASHINGTON AVENUE
124
BELLAIR STREET
SUMMER AVENUE
FLORENCE AVENUE
LUCIANO AVENUE
DIFALCO AVENUE

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- OU2 PROPERTY - NO ACTION REQUIRED
- OU2 PROPERTY - ACTION REQUIRED (NJDEP NON-RESIDENTIAL SRS)
- OU2 PROPERTY - ACTION REQUIRED (NJDEP RESIDENTIAL SRS)
- OU1 PROPERTY
- APPROXIMATE OU1/OU2 STUDY AREA

PROPERTY BOUNDARY: STATE OF NEW JERSEY COMPOSITE OF PARCELS DATA, NEW JERSEY OFFICE OF INFORMATION TECHNOLOGY (NJOIT), OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (OGIS).

0 60 120 240 360 480
Feet

N

FORMER KIL-TONE COMPANY SUPERFUND SITE
OU2 FFS REPORT
VINELAND, NEW JERSEY

OU2 AREAS REQUIRING REMEDIATION

14426/66305
JULY 2019

HDR OBG a joint venture

I:\Hdr-Obg.14426\STDS\GIS\KilTone\MXD\Feasibility Study\Rev Final Submittal July 2019\Kil_tone_Figure3_OU2AreasRequiringRemediation2.mxd

Sitio Superfund ex Kil-Tone Company
Unidad Dos operable, suelos no residenciales
Vineland, Nueva Jersey

Plan propuesto de Superfund Julio de 2019

LA EPA ANUNCIA EL PLAN PROPUESTO

Este Plan propuesto identifica la Alternativa preferida para remediar las propiedades no residenciales con suelos contaminados relacionados con la antigua fábrica de pesticidas Kil-Tone Company, situada en Vineland, Nueva Jersey. La Alternativa preferida requiere la excavación en las propiedades no residenciales y la eliminación de suelos contaminados fuera de ellas, y sería el remedio definitivo para los suelos en las propiedades no residenciales.

La Agencia de Protección Ambiental (EPA, por sus siglas en inglés) ha realizado muestreos de suelos en aproximadamente 50 propiedades no residenciales en la cercanía de la antigua fábrica de pesticidas Kil-Tone Company situada en 527 East Chestnut Avenue, Ciudad de Vineland, Condado de Cumberland, Nueva Jersey ("Propiedad"), así como en la propiedad misma. Los resultados del programa de muestreo de suelos identificaron aproximadamente 40 de las aproximadamente 50 propiedades no residenciales donde se requiere una medida de remediación. Puede que sea necesario realizar un muestreo adicional para definir mejor el grado de contaminación en estas propiedades.

Este Plan propuesto incluye un resumen de las alternativas de limpieza evaluadas para utilizar en las propiedades residenciales afectadas. Este Plan propuesto fue elaborado por la EPA, la agencia principal para el Sitio Superfund ex Kil-Tone Company (Sitio), con el asesoramiento del Departamento de Protección Ambiental de Nueva Jersey (NJDEP), la agencia de apoyo. La EPA, con el asesoramiento del NJDEP, seleccionará un remedio definitivo para el suelo contaminado en las propiedades no residenciales afectadas después de revisar y considerar toda la información presentada durante el período de 30 días para recibir comentarios del público. La EPA, con el asesoramiento del NJDEP, puede modificar la Alternativa preferida o seleccionar otra medida de recuperación presentada en este Plan dependiendo de la información nueva o los comentarios del público. Por lo tanto, se invita al público a revisar las alternativas presentadas en este Plan propuesto y a enviar sus comentarios al respecto.

La EPA publica este Plan propuesto como parte de su programa de relaciones comunitarias conforme a la Sección 117(a) de la Ley Integral de Responsabilidad, Compensación y Recuperación Ambiental (CERCLA) 42 U.S.C. 9617(a) y la Sección 300.435(c) (2) (ii) del Plan Nacional de Contingencia (NCP) de Petróleo y Sustancias Peligrosas. Este Plan propuesto resume información que se puede encontrar de forma más

MARQUE SU CALENDARIO

Período de comentarios del público:
del 30 de julio al 28 de agosto de 2019
La EPA aceptará comentarios escritos sobre el Plan propuesto durante el período de comentarios del público. Los comentarios escritos se deben dirigir a:

Sharon Hartzell, gerente de proyectos
Agencia de Protección Ambiental de los EE. UU.
290 Broadway, 18th Floor
New York, NY 10007
Correo electrónico: hartzell.sharon@epa.gov

La fecha en el matasellos de los comentarios escritos no debe ser posterior al 28 de agosto de 2019.

Reunión pública:
13 de agosto de 2019 a las 7:00 P.M:
La EPA llevará a cabo una reunión pública para explicar el Plan propuesto y todas las alternativas presentadas en el Estudio de factibilidad. También se aceptarán comentarios verbales y escritos en la reunión. La sede de la reunión será:
Escuela Primaria Gloria M Sabater.
301 So. East Blvd, Vineland, NJ 08360

Además, encontrará en línea ciertos documentos del expediente administrativo, en:
https://www.epa.gov/superfund/former-kil-tone

541228

detallada en los informes de la Investigación de Remediación (RI) y del Estudio de Factibilidad Orientado al suelo no residencial, así como otros documentos relacionados, que se pueden encontrar en el Expediente administrativo de esta acción. A continuación, se indica la ubicación del Expediente administrativo. La EPA y el NJDEP invitan al público a revisar estos documentos para comprender las actividades para el sitio de forma más integral.

LA FUNCIÓN DE LA COMUNIDAD EN EL PROCESO DE SELECCIÓN

Este Plan propuesto se publica a fin de informar al público sobre la alternativa propuesta de la EPA para las propiedades no residenciales y para solicitarle al público comentarios referentes a todas las alternativas de remediación evaluadas, incluida la Alternativa preferida. Es posible incorporar cambios a la alternativa propuesta o a otra alternativa si los comentarios del público o los datos adicionales indican que dicho cambio produciría una acción de remediación a largo plazo más apropiada. La decisión final respecto del remedio seleccionado se tomará después de que la EPA haya considerado todos los comentarios del público con el asesoramiento del NJDEP. La EPA le solicita al público comentarios sobre todas las alternativas consideradas en el Plan Propuesto, debido a que la EPA puede seleccionar un remedio distinto a la alternativa propuesta. Este Plan propuesto está a disposición del público durante un periodo de comentarios del público que concluye el 28 de agosto de 2019.

Se organizará una reunión pública durante el periodo de comentarios del público para presentar las conclusiones de la RI y el FFS, explicar mejor las razones por las que se propone la Alternativa preferida, y recibir comentarios del público. La reunión pública incluirá una presentación a cargo de la EPA sobre la Alternativa preferida y otras opciones de limpieza.

Encontrará la información acerca de la reunión pública y el envío de los comentarios escritos en el cuadro de texto "Marque su calendario" de la página 1. Los comentarios recibidos en la reunión pública, así como los comentarios escritos recibidos durante el período de comentarios del público, se documentarán en la sección "Resumen de la respuesta" del Registro de Decisión (ROD). El ROD es el documento que explica qué alternativa se seleccionó y el fundamento de la selección del remedio.

ALCANCE Y FUNCIÓN DE LA ACCIÓN

Debido a la gran extensión del área, los diferentes medios afectados por la contaminación y los diversos usos de la tierra, la EPA está abordando la limpieza del Sitio en varias fases o unidades operables (OU). Se firmó un ROD para la primera unidad operable (OU1) el 12 de septiembre de 2016. Seleccionaba un remedio para las propiedades residenciales cercanas a la antigua fábrica de Kil-Tone Company. Este Plan propuesto es para la segunda unidad operable asociada con el Sitio y se centra en el suelo contaminado en las propiedades no residenciales afectadas por las operaciones de la ex Kil-Tone Company, incluyendo la propiedad misma de la ex Kil-Tone. Las unidades operables adicionales para el Sitio incluyen la OU3, que aborda el agua subterránea contaminada, y la OU4, que se enfoca en sedimento y agua superficial contaminados. Puede que se requieran OU adicionales.

Unas 40 propiedades mencionadas en este Plan propuesto que requieren una medida de remediación constituyen una estimación que se utiliza para calcular los costos aproximados de las alternativas de limpieza. Según la EPA, es improbable que cambie la estimación significativamente. La cantidad exacta de propiedades no residenciales que se deben remediar se determinará al finalizar el muestreo de suelo adicional durante el diseño de la remediación, y se definirá mejor durante la implementación de la medida de remediación.

INFORMACIÓN GENERAL SOBRE EL SITIO

Descripción del Sitio

El Sitio se encuentra en una zona de uso mixto, que se ha identificado como una comunidad con preocupaciones acerca de la justicia ambiental. El Sitio consta de la sede de la antigua fábrica de pesticidas Kil-Tone Company, y la extensión del área de la contaminación. Se fabricaron pesticidas en la Propiedad desde 1917 hasta alrededor de 1933. Las emisiones de plomo y arsénico de las operaciones de fabricación de pesticidas contaminaron la propiedad misma, y las áreas cercanas a la Propiedad. Los muestreos han detectado suelos contaminados con plomo y arsénico en al menos 57 propiedades residenciales y unas 40 no residenciales cercanas a la antigua fábrica de pesticidas Kil-Tone Company.

La antigua fábrica de Kil-Tone Company está delimitada al norte por East Chestnut Avenue, al este

por South Sixth Street, al sur por Paul Street y al oeste por South East Boulevard. Hay propiedades residenciales y comerciales ubicadas en toda el área. El enfoque de este Plan propuesto se centra en las propiedades no residenciales afectadas por las emisiones de plomo y arsénico provenientes de la Propiedad.

La Propiedad comprende aproximadamente cuatro acres y actualmente se halla ocupada por una empresa comercial que se dedica a fabricar e instalar letreros para negocios. La Propiedad está desarrollada y tiene un inmueble de múltiples secciones en su costado oeste. El resto de la Propiedad, antiguamente sin pavimentar, fue pavimentada (asfaltada) por la EPA en diciembre de 2016/enero 2017 como parte de una medida de eliminación efectuada por la EPA en la Propiedad. El área pavimentada se utiliza para estacionar vehículos, almacenar materiales y como área donde dejar equipo sin usar y piezas de acero de gran tamaño.

Al norte y adyacente a la Propiedad se encuentra la planta industrial de Lerco Fuel Co. Inc. (Lerco) que consta de dos lotes. La propiedad de Lerco se usaba antiguamente para almacenar combustible y como centro de distribución pero ahora está desocupada.

Un sumidero de alcantarillado ubicado en la esquina noroeste de la Propiedad recibe aguas pluviales de toda la Propiedad y descarga en la cabeza del canal Tarkiln, situada frente a South East Boulevard y aproximadamente a 400 pies de la Propiedad. El canal Tarkiln es un afluente del canal Parvin, que fluye hacia el río Maurice, ubicado aproximadamente a 3.5 millas de la Propiedad.

El vecindario situado al noroeste, norte y este de la Propiedad consta de diversas propiedades residenciales con algunas propiedades comerciales e industriales, como se muestra en la Figura 1. Hay también espacios abiertos (parques del vecindario y lotes desocupados) intercalados en toda esta área. Las propiedades no residenciales que se abordarán como parte de la OU2 pueden estar adyacentes o cerca de propiedades residenciales que se tratan como parte de la OU1.

Más lejos de la Propiedad, el uso de terrenos consiste principalmente en una mezcla de desarrollo residencial y comercial. El núcleo urbano de Vineland se centra cerca de la intersección de Landis Avenue y County Route 615 (South East Boulevard). Esta área incluye viviendas suburbanas y desarrollo comercial ligero que se observa en todas direcciones, haciéndose más escaso el desarrollo al alejarse del centro urbano.

Historia del Sitio

La ex Kil-Tone Company inició sus operaciones de fabricación de pesticidas en la Propiedad en 1917 o aproximadamente en dicha fecha. La empresa fabricaba pesticidas a base de arsénico. Los compuestos específicos fabricados por la empresa incluían arseniato de plomo, púrpura de Londres y verde de París.

En 1926, la Kil-Tone Company vendió la Propiedad a Lucas Kil-Tone Co., una empresa de Nueva Jersey, la cual continuó fabricando pesticidas en la Propiedad hasta 1933 o alrededor de dicha fecha, cuando cesaron las operaciones de fabricación de pesticidas en la Propiedad. La empresa actualmente dueña de la Propiedad es Urban Manufacturing, LLC, que compró la propiedad en 2008, y arrienda la Propiedad a Urban Sign & Crane, Inc., la cual opera en la Propiedad un negocio comercial de fabricación e instalación de letreros.

Ha habido varias investigaciones en el Sitio, incluida una investigación a cargo del NJDEP, que se inició en agosto de 2014. El programa de eliminación de la EPA también ha realizado evaluaciones del Sitio. Las muestras recolectadas durante la investigación del NJDEP encontraron arsénico en la Propiedad en concentraciones hasta de 740 miligramos por kilogramo (mg/kg) en las 6 pulgadas superiores del suelo y hasta de 5,800 mg/kg a profundidad (de 3.5 a 4 pies debajo de la superficie del suelo). En las muestras de aguas subterráneas recolectadas por el NJDEP de pozos temporarios en la Propiedad se hallaron altas concentraciones de arsénico de 8.1 microgramos por litro (µg/L) a 14,000 µg/L. Este descubrimiento impulsó al NJDEP a remitir el caso de este Sitio a la EPA el 14 de noviembre de 2014. Nótese que esta agua subterránea no es la fuente de agua potable de la comunidad; la City of Vineland Water Utility suministra agua municipal a la comunidad y este suministro se somete a pruebas regularmente para asegurar que cumpla con las normas estatales y federales del agua potable.

Se propuso el Sitio para la Lista de Prioridades Nacionales (NPL) el 30 de septiembre de 2015 y se agregó a la NPL el 5 de abril de 2016.

Se ha encontrado plomo y el arsénico relacionados con las operaciones de la antigua fábrica de Kil-Tone Company en los suelos de propiedades residenciales y no residenciales cerca de la Propiedad. También se han encontrado estos contaminantes en el sedimento a lo largo de toda la extensión del canal Tarkiln a la confluencia con el canal Parvin, así como en terrenos inundables relacionados. También se detectó la presencia de plomo y arsénico en las aguas subterráneas en la Propiedad o en su cercanía.

Geología e hidrogeología del sitio

El Sitio se encuentra en la Provincia de planicie costera de depósitos fluviales y marinos no consolidados. El suelo en el Sitio comúnmente incluye arenas gruesas, limos arenosos gruesos, arenas limosas gruesas, arcillas arenosas gruesas y arena. El material de relleno se encontraba rutinariamente en las perforaciones de suelos. La unidad hidrogeológica en el Sitio es el acuífero Kirkwood-Cohansey. La profundidad del agua en la Propiedad es de aproximadamente 6 pies bajo la superficie de la tierra, pero fluctúa hasta al menos 15 pies bajo la superficie de la tierra en toda la OU2.
La topografía del área del Sitio, por lo general, es plana. Gran parte del área que rodea la Propiedad está cubierta por superficies impenetrables como casas, calles, entradas de vehículos, edificios, estacionamientos y construcciones urbanas.

LAS MEDIDAS INICIALES DE RESPUESTA Y LA UNIDAD OPERATIVA UNO

Medidas iniciales de respuesta

Desde enero de 2015 hasta febrero de 2016, la EPA efectuó varios muestreos en el Sitio procurando definir la naturaleza y la extensión de la contaminación en suelos residenciales y no residenciales, agua subterránea, agua superficial y sedimento. Conforme a los resultados de los muestreos de la EPA en 2015 y 2016 y el muestreo anterior efectuado por el NJDEP, la EPA inició una medida de eliminación en abril de 2016 a fin de prevenir la exposición al suelo superficial contaminado con plomo y arsénico en las propiedades residenciales situadas en las cercanías de la Propiedad.

La medida de eliminación de la EPA consistió en colocar una capa superficial de tierra vegetal para promover el crecimiento de pasto en partes de las 26 propiedades residenciales con concentraciones de arsénico y/o plomo en suelos superficiales que superan los niveles de la medida. La EPA también dio instrucciones a los propietarios y/o residentes de estas propiedades residenciales de que no perturbaran la nueva capa limpia de tierra vegetal y/o el pasto hasta que se pudiera implementar un remedio permanente. Estas medidas preventivas culminaron en junio de 2016.

Más adelante en 2016, se abordó a unas seis propiedades residenciales adicionales situadas en terrenos inundables del canal Tarkiln para prevenir la exposición y/o la migración de la contaminación, y se instalaron cercas para restringir el acceso a partes de dos conjuntos de viviendas fiscales a lo largo del Tarkiln. Además, se colocó una cubierta de tierra y pavimento en una parte de la Propiedad misma para prevenir una mayor migración de la contaminación desde la Propiedad hasta que se pueda implementar un remedio permanente.

Unidad Operable Uno

El 12 de septiembre de 2016, la EPA seleccionó un remedio para la OU1 del Sitio, el cual abarca el suelo contaminado en las propiedades residenciales situadas en la cercanía de la Propiedad. El remedio de la he OU1 incluye excavar una cantidad que se estima en unas 21,000 yardas cúbicas de tierra contaminada principalmente con arsénico y plomo de aproximadamente 57 propiedades residenciales; desechar fuera del sitio la tierra contaminada; rellenar las áreas excavadas con relleno limpio y restaurar las propiedades afectadas.

Las actividades de remediación para las propiedades residenciales incluidas en la OU1 se han desarrollado desde 2017. La remediación de 6 propiedades iniciales se terminó en 2018, y se encuentra en curso la remediación de 27 propiedades adicionales. Se está terminando actualmente el diseño de una tercera fase de actividades de remediación en la OU1 y se prevé que la remediación de dichas propiedades comience en 2020.

RESUMEN DE LA INVESTIGACIÓN DE REMEDIACIÓN DE LA UNIDAD OPERABLE

El informe de la RI de la OU2 finalizó en agosto de 2018, y se concluyó el FFS Final en julio de 2019. La RI y el FFS en conjunto forman la base de este Plan propuesto. El enfoque de la RI de la OU2 estuvo en la contaminación de suelos de las propiedades no residenciales. También se obtuvo información adicional

sobre la profundidad hasta el agua subterránea, como se describe a continuación.

Suelos

Muestreo de suelos del Nivel A

En agosto de 2017 se efectuó una ronda inicial de muestreos de suelos de la OU2 (Nivel A) en tres propiedades, a saber, la Propiedad misma y dos propiedades adyacentes, la propiedad de Lerco al norte y una propiedad desocupada situada al sur. El propósito de realizar esta ronda inicial de muestreos en la antigua fábrica Kil-Tone y en otras dos propiedades adyacentes era determinar la naturaleza y extensión de la contaminación existente en dichas propiedades, así como determinar la lista completa de contaminantes presentes en los suelos que puedan relacionarse con las operaciones de la ex Kil-Tone Company, además de arsénico y plomo.

Se recolectaron muestras de suelos mediante al menos ocho perforaciones por propiedad utilizando equipo perforador de empuje directo. Se recolectó tierra a poca profundidad (0-2 pies bajo la superficie de la tierra) de cuatro intervalos de seis pulgadas y muestras compuestas de tres intervalos a mayor profundidad (2-4, 4-6 y 6-10 pies bajo la superficie de la tierra) de cada perforación para análisis de laboratorio. Se recolectó una muestra adicional de tierra de cada perforación justo sobre la napa freática. Se analizaron las muestras para determinar la lista completa de contaminantes potencialmente preocupantes (COPC, por sus siglas en inglés), como compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, bifenilos policlorados, pesticidas y metales, incluidos el plomo y el arsénico.
Se compararon los resultados contra las Normas de Remediación de Suelos de Contacto Directo Residencial de Nueva Jersey (RDCSRS), las Normas de Remediación de Suelos de Contacto Directo No Residencial de Nueva Jersey (NRDCSRS) y los Niveles de Análisis de Impacto en Suelos de Agua Subterránea de Nueva Jersey (IGWSSL). Se encontró que el arsénico y el plomo eran los únicos contaminantes que superaban regularmente las RDCSRS y/o las NRDCSRS de 19 mg/kg para el arsénico y 400 ppm u 800 ppm para el plomo, dependiendo del uso futuro. Los IGWSSL predeterminados de Nueva Jersey son de 19 mg/kg para el arsénico y de 90 mg/kg para el plomo. También se hallaron concentraciones elevadas esporádicas de contaminantes aparte de arsénico y plomo, particularmente hidrocarburos aromáticos policíclicos (PAH, por sus siglas en inglés), pero los datos no sugirieron la existencia de ningún otro COPC relacionado con el sitio.

Muestreo de suelos del Nivel B

Entre septiembre de 2017 y marzo de 2018, se realizó una segunda ronda de muestreo de suelos de la OU2 (Nivel B) aproximadamente en 50 propiedades residenciales cerca de la Propiedad. La estrategia de muestreo fue similar al evento de Nivel A; se recolectaron las muestras de cuatro intervalos discretos de seis pulgadas a una profundidad de 0-2 pies bajo la superficie de la tierra, y se recolectaron muestras compuestas de dos intervalos a 2-4 y 4-6 pies bajo la superficie de la tierra. Conforme a los resultados del muestreo de Nivel A, se analizaron las muestras de suelos del Nivel B en busca de metales y se analizaron también dos intervalos, de 0.5-1 y 2-4 pies bajo la superficie de la tierra, en busca de PAH para complementar los resultados del muestreo de Nivel A.

Resumen de la investigación de suelos

Los resultados del Nivel B confirmaron que el arsénico y el plomo eran los principales COPC en el Sitio. Las concentraciones más altas de arsénico y plomo halladas durante el muestreo de la OU2 estaban en la Propiedad misma. Estas concentraciones presentan gamas de 0.93 a 45,900 mg/kg para el arsénico de 2.1 a 91,700 mg/kg para el plomo. Las muestras de suelos provenientes de propiedades adyacentes y cercanas situadas al norte, sur y cerca de la cabeza del canal Tarkiln al suroeste también presentan concentraciones elevadas de arsénico (hasta 15,900 mg/kg) y plomo (hasta 16,100 mg/kg). El impacto del arsénico y del plomo en las propiedades de la OU2 va disminuyendo lateralmente al alejarse de la Propiedad (veáse la Figura 2).

¿QUÉ ES UNA "AMENAZA PRINCIPAL"?

El NCP establece la expectativa de que la EPA utilice un tratamiento para abordar las amenazas principales que presenta un Sitio, siempre que se pueda poner en práctica [NCP Sección 300.430(a)(1)(iii)(A)]. El concepto de "amenaza principal" se aplica a la caracterización de "materiales fuente" en un Sitio Superfund. Un material fuente es material que incluye o contiene sustancias peligrosas o contaminantes que actúan como un reservorio para la migración de la contaminación hacia las aguas subterráneas, las aguas superficiales o el aire, o bien, actúan como un fuente de exposición directa. Las aguas subterráneas contaminadas, por lo general, no se consideran un material fuente; no obstante, los líquidos de fase no acuosa (NAPL) en las aguas subterráneas pueden considerarse como un material fuente. Los desechos que son una amenaza principal son aquellos materiales fuente considerados altamente tóxicos o móviles que, generalmente, no se pueden contener de un modo confiable o que podrían presentar un riesgo importante para la salud humana o el medioambiente en caso de exposición. La decisión de tratar estos desechos se toma según el sitio específico mediante un análisis detallado de las alternativas usando los nueve criterios para seleccionar remedios. Este análisis aporta la base para determinar un hallazgo respaldado por la ley de que el remedio emplea tratamiento como elemento principal.

Con algunas excepciones (principalmente en propiedades del Nivel A), el impacto del arsénico y del plomo se encontró comúnmente en suelos de poca profundidad, sobre 4 pies bajo la superficie de la tierra. Esto concuerda con el modelo conceptual del sitio (CSM, por sus siglas en inglés) correspondiente al Sitio, el cual sugiere que el flujo superficial (escorrentía) y la dispersión en el aire (polvo) eran los principales mecanismos de transporte de contaminantes desde la Propiedad. El impacto en suelos a mayor profundidad encontrado en algunas propiedades cercanas puede deberse al uso de material de relleno, almacenamiento o desecho de productos manufacturados y/o materiales de desecho de la Propiedad.

Agua subterránea

Aunque la RI de la OU2 se enfocó en la contaminación de suelos, se registró la profundidad de la napa freática durante la instalación de perforaciones de suelos en la OU2. La profundidad promedio hasta el agua subterránea en la Propiedad es de aproximadamente 6 pies bajo la superficie de la tierra. La profundidad hasta el agua subterránea puede encontrarse en puntos de menor profundidad en la Propiedad, específicamente en el área donde se origina el canal Tarkiln. La profundidad promedio hasta el agua subterránea es de aproximadamente 7 pies bajo la superficie de la tierra en las propiedades situadas directamente al norte de la Propiedad y es de aproximadamente 8 pies bajo la superficie de la tierra en las propiedades directamente al sur de la Propiedad. La profundidad hasta el agua subterránea aumenta al alejarse de la Propiedad, y lejos del canal Tarkiln y promedia aproximadamente 13.5 pies bajo la superficie de la tierra al norte de Cherry Street.

Se hallaron concentraciones elevadas de plomo y/o arsénico en algunas propiedades bajo la profundidad de la napa freática del agua subterránea, incluso en la Propiedad y en Lerco.

AMENAZAS PRINCIPALES

La propiedad de Kil-Tone misma ha actuado como fuente de contaminación de plomo y arsénico en otras propiedades, en el agua subterránea y en el agua superficial, y los riesgos de cáncer relacionados con la contaminación en esta propiedad superan 10^{-3}. Por lo tanto, la contaminación del suelo en esta propiedad sería considerada PTW.

RESUMEN DE LOS RIESGOS DEL SITIO

Como parte de la RI y el FFS, se realizó una evaluación de riesgos para la salud humana (HHRA) para estimar los efectos actuales y potenciales a futuro de los contaminantes en la salud humana. Una HHRA es un análisis de los posibles efectos adversos en la salud humana, causados por la exposición a sustancias peligrosas cuando no existen medidas para controlar o mitigar dichas exposiciones en el uso actual y futuro del sitio.

Las estimaciones de riesgos de cáncer y peligros no cancerígenos para la salud en la HHRA se basan en situaciones actuales o potenciales a futuro en situaciones de exposición máxima razonable y se desarrollaron teniendo en cuenta diversas estimaciones de protección de la salud respecto de las concentraciones, frecuencia y duración de la exposición de una persona a las sustancias químicas identificadas como COPC, además de la toxicidad de estos contaminantes.

También se realizó una Evaluación de Riesgo Ecológico por Análisis de Nivel (SLERA) para la OU2.

Evaluación de riesgos para la salud humana

Se empleó un proceso de evaluación de riesgos para la salud humana de cuatro pasos para examinar los riesgos de cáncer y peligros no cancerígenos para la salud relacionados con el sitio. El proceso está conformado por los siguientes cuatro pasos: identificación de peligros, evaluación de la exposición, evaluación de la toxicidad y caracterización de riesgos (para obtener más detalles sobre el proceso de evaluación de riesgos, consulte el recuadro: "¿Qué es un riesgo y cómo se calcula?").

Conforme a la estrategia de la OU1, se seleccionaron tres propiedades de la OU2 para realizar una evaluación simplificada del riesgo. Estas tres propiedades se consideran representativas de la gama de propiedades incluida en la RI de la OU2. Dos de las propiedades seleccionadas son representativas de las propiedades con una contaminación relativamente profunda (bajo la napa freática) probablemente debido al uso de material de relleno, incluyendo productos manufacturados y/o material de desecho de la antigua fábrica de Kil- Tone Company. La tercera propiedad es representativa de las propiedades afectadas por las operaciones de la antigua fábrica de Kil-Tone a través de flujo superficial y/o dispersión aérea de la contaminación, y las propiedades con efectos relativamente a poca profundidad (sobre la napa freática). Además, dos de las propiedades tienen un uso futuro razonablemente previsto como residencial mientras una (con contaminación profunda) se prevé que siga siendo no residencial. Por lo tanto, los resultados de la evaluación de riesgo de estas propiedades son aplicables a todas las propiedades de la OU2.

Sobre la base del uso actual y el uso futuro previsto de los terrenos, los receptores evaluados en la HHRA incluyeron a futuro un niño residente y un adulto residente, un trabajador industrial, un trabajador de servicios públicos y un obrero de la construcción. Aunque las propiedades están en zonas definidas como no residenciales, muchas están adyacentes a áreas residenciales y, basándonos en conversaciones con el comité de planificación del Distrito de Vineland, podrían redefinirse como distintas zonas en el futuro. Para cada situación, se evaluaron exposiciones potenciales a los COPC en la superficie y en vías combinadas de suelos superficiales y subsuelos.

En cuanto a los COPC aparte del plomo, se evaluaron dos tipos de efectos tóxicos para la salud en la evaluación de riesgos: riesgo de cáncer y peligro no cancerígeno. Las estimaciones de riesgos de cáncer calculadas para cada receptor se compararon con la gama de riesgo objetivo de la EPA de $1x10^{-6}$ (uno en un millón) a 1×10^{-4} (uno en diez mil). Las estimaciones del índice de peligro (HI) no cancerígeno se compararon con el valor de umbral objetivo de la EPA de 1.

El resultado de la evaluación de riesgo indicó que, de las tres propiedades evaluadas, la antigua fábrica de Kil-tone Company tenía riesgos de cáncer de $3x10^{-3}$ para los residentes futuros, $8x10^{-4}$ para trabajadores industriales y $2x10^{-4}$ para trabajadores de servicios de servicios públicos, superando todos estos la gama de riesgo objetivo de cáncer de la EPA. La segunda propiedad estuvo dentro de la gama de riesgo de cáncer para todos los receptores, aunque en los límites superiores de la gama para trabajadores de servicios públicos y niños residentes de $1x10^{-4}$. La tercera propiedad estuvo dentro de la gama de riesgo de cáncer en cuanto a todos los receptores. Los riesgos elevados de cáncer se debieron principalmente a la exposición al arsénico en el suelo superficial.

Los riesgos no cancerígenos totales para niños residentes futuros en las tres propiedades superó el umbral objetivo de la EPA de uno, con valores que oscilaban entre 3 y 69. El índice de riesgo no cancerígeno total (HI) también superó el umbral objetivo de la EPA para los obreros de la construcción en las dos propiedades con contaminación a mayor profundidad. El umbral de riesgo no cancerígeno fue superado para todos los receptores potenciales en la antigua fábrica de Kil-tone Company. La superación de los límites del HI en estas propiedades se basó en la exposición al arsénico en el suelo.

También se modeló el plomo en la sangre utilizando concentraciones de plomo en los suelos de las tres propiedades. Se utilizaron el modelo de Metodología de Plomo en Adultos (ALM) para los receptores adultos, y los niveles de plomo en la sangre previstos en el Modelo Integrado Biocinético de Absorción de la Exposición (IEUBK) en los niños residentes futuros. Las concentraciones de plomo en el suelo presente en la

antigua fábrica de Kil-Tone Company dieron como resultado niveles de plomo en la sangre que superaban el objetivo regional de la EPA (no más de 5% sobre 5 µg/dl) para trabajadores industriales, obreros de la construcción y residentes futuros. Ninguno de los receptores superó los niveles objetivo de plomo en la sangre utilizando concentraciones de plomo en el suelo de la segunda o la tercera propiedad.

Los niveles de contaminación hallados en las tres propiedades generalmente son similares a aquellos encontrados en otras propiedades residenciales en las inmediaciones de la propiedad de la antigua fábrica de Kil-Tone Company y superan las concentraciones de referencia. Los resultados de la evaluación de riesgos se consideran representativos de todas las propiedades residenciales afectadas en las inmediaciones de la propiedad de la antigua fábrica de Kil-Tone Company y, por lo tanto, son aplicables a la OU2 en su totalidad.

Evaluación de Riesgo Ecológico por Nivel de Análisis

Se realizó una SLERA para OU2 en 2017 a fin de evaluar el potencial de riesgo para los receptores ecológicos presentes en el Sitio. Las propiedades en la OU2 están desarrolladas en su mayor parte, y no contienen hábitat ecológico apto, pero se determinó que unas pocas propiedades tienen hábitat potencialmente apto ecológicamente colina arriba. Se evaluaron tres unidades de exposición (EU) distintivas en la SLERA, dos de las cuales (EU-1 y EU-2) consistieron en propiedades de la OU2 y la tercera (EU-3) incluyó el canal Tarkiln y sus terrenos inundables hacia su confluencia con el canal Parvin.

La SLERA concluyó que existe el potencial para efectos ecológicos adversos en cada EU debido a metales, principalmente arsénico, y algunos PAH. En vista de los resultados de la SLERA, se realizará una Evaluación de Riesgo Ecológico de Referencia para la EU-3 como parte de la OU4 del Sitio.

En cuanto a la EU-1 y la EU-2, se efectuó un análisis adicional de riesgo ecológico para definir mejor los hallazgos de la SLERA. En este análisis adicional también se encontró que el arsénico y el plomo eran los principales contaminantes preocupantes para los receptores ecológicos. Indicó que el arsénico presenta un potencial de efectos adversos para las comunidades terrestres de plantas e invertebrados de la tierra, y el

¿QUÉ ES UN RIESGO Y CÓMO SE CALCULA?

Una evaluación de riesgos para la salud humana de referencia de Superfund es un análisis de los posibles efectos adversos para la salud, causados por las emisiones de sustancias peligrosas de un sitio cuando no existen medidas para controlar o mitigar dichas emisiones en los usos actuales y futuros de la tierra. Se utiliza un proceso de cuatro pasos para evaluar los riesgos para la salud humana relacionados con el sitio en situaciones de exposición máxima razonable.

Identificación de peligros: En este paso, se identifican los contaminantes de posible peligro (COPC) en el sitio, en diversos medios (es decir, suelo, aguas subterráneas, aguas superficiales y aire) sobre la base de factores como toxicidad, frecuencia de presencia, destino y transporte de los contaminantes en el medioambiente, concentraciones de los contaminantes en medios específicos, movilidad, persistencia y bioacumulación.

Evaluación de la exposición: En este paso, se evalúan las diferentes vías de exposición a través de las cuales las personas podrían estar expuestas a los contaminantes identificados en el paso anterior. Algunos ejemplos de rutas de exposición incluyen la ingestión accidental de suelo contaminado y aguas subterráneas contaminadas y el contacto dérmico con dichos medios contaminados. Los factores relacionados con la evaluación de la exposición incluyen, entre otros, las concentraciones en los medios específicos a los que las personas podrían estar expuestas, y la frecuencia y duración de tal exposición. Utilizando estos factores, se calcula una situación de "exposición máxima razonable", que representa el nivel más alto de exposición humana que podría preverse razonablemente que ocurriera.

Evaluación de la toxicidad: En este paso, se determinan los tipos de efectos adversos para la salud asociados con la exposición a las sustancias químicas, y la relación entre la magnitud de la exposición y la gravedad de los efectos adversos. Los posibles efectos para la salud son específicos de cada sustancia química y pueden incluir el riesgo de desarrollar cáncer en algún momento de la vida u otros peligros no cancerígenos para la salud, tales como cambios en las funciones normales de los órganos del cuerpo (*por ejemplo*, cambios en la eficacia del sistema inmunitario). Algunas sustancias químicas tienen la capacidad de provocar cáncer y peligros no cancerígenos para la salud.

Caracterización de riesgos: Este paso resume y combina los resultados de la exposición y los exámenes de la toxicidad para brindar una evaluación cuantitativa de los riesgos del sitio para todos los COPC. Las exposiciones se evalúan según el riesgo posible de desarrollar cáncer y de los peligros para la salud no cancerígenos. La posibilidad de que una persona desarrolle cáncer se expresa como una probabilidad. Por ejemplo, un riesgo de cáncer de 10^{-4} significa un "riesgo de cáncer sobre uno en diez mil" o que se puede ver un caso de cáncer adicional en una población de 10,000 personas, como resultado de la exposición a los contaminantes del sitio, en las condiciones identificadas en la evaluación de la exposición. Las reglamentaciones actuales de Superfund acerca de las exposiciones identifican la gama para determinar si se necesita una medida de remediación como un riesgo de cáncer excesivo para una persona de por vida de 10^{-4} a 10^{-6}, que corresponde a un riesgo de cáncer sobre uno en diez mil a uno en un millón.

En cuanto a los efectos para la salud no cancerígenos, se calcula un "índice de peligro" (HI). El concepto clave para un HI no cancerígeno es que existe un "umbral" (medido como un HI inferior o igual a 1) por debajo del cual no se prevén que ocurran peligros para la salud no cancerígenos. La meta de protección es de 10^{-6} para el riesgo de cáncer y un HI de 1 en el caso del peligro no cancerígeno para la salud. Las sustancias químicas que superan el riesgo de cáncer de 10^{-4} o un HI de 1, por lo general, son aquellas que requieren una medida de remediación en el sitio.

plomo presenta un potencial de efectos adversos para las plantas terrestres. También se encontró que hay un mínimo potencial de efectos adversos para las poblaciones de receptores de fauna salvaje.

Resumen

La EPA considera que es necesaria la Alternativa preferida resumida en este Plan propuesto o una de las otras medidas activas contempladas en el Plan propuesto, a fin de proteger la salud pública o el bienestar y el medioambiente de emisiones concretas o amenazadas de sustancias peligrosas en el medioambiente.

OBJETIVOS DE LA MEDIDA DE REMEDIACIÓN

La contaminación del suelo en propiedades no residenciales está presente en el suelo superficial y/o en el subsuelo. Los siguientes objetivos de la medida de remediación (RAO) para el suelo contaminado logran un grado de limpieza que asegura la protección de la salud humana y del medioambiente:

- Prevenir riesgos actuales y potenciales futuros inaceptables para receptores humanos debido al contacto directo con el suelo contaminado.
- Prevenir la migración de los contaminantes preocupantes (COC) de las propiedades de la OU2 a otras áreas a través del flujo superficial y la dispersión aérea.
- Prevenir o reducir la migración de los COC del suelo al agua subterránea; y
- Prevenir riesgos actuales y potenciales futuros inaceptables para receptores ecológicos debido al contacto directo con el suelo contaminado.

Para lograr los RAO, se utilizarán Metas de Remediación Preliminar (PRG) basadas en el uso previsto razonablemente de la propiedad (residencial o no residencial[1]), la profundidad de la contaminación para el impacto en el agua subterránea, y el potencial de efectos ecológicos adversos. Conforme a los resultados del RI, la BHHRA y los análisis ecológicos, los contaminantes preocupantes para la OU2 del Sitio son arsénico y plomo. Se proponen las siguientes Metas de Remediación Preliminar:

	Arsénico (mg/kg)	Plomo (mg/kg)
Suelo residencial	19	400
Suelo no residencial	19	800
Impacto en el agua subterránea	19	90
Aspecto ecológico (Plantas)	69	500
Aspecto ecológico (Invertebrados de la tierra)	93.7	3,162

Las PRG residenciales, no residenciales y de impacto al agua subterránea se basan en las Normas de Remediación de Nueva Jersey (N.J.A.C. 7:26d). Conforme a las Normas de Remediación de Nueva Jersey, la EPA está desarrollando un valor de impacto al agua subterránea específico del sitio para el plomo que se incorporará en el Registro de Decisiones de la OU2. Las PRG de plantas e invertebrados de la tierra mencionadas anteriormente se basan en los resultados de los análisis ecológicos efectuados para la OU2. Además de los valores numéricos anteriores, la meta general de remediación para el plomo en las propiedades con un uso futuro previsto razonablemente como residencial será una concentración de plomo superficial promedio en toda la propiedad de menos de 200 mg/kg. Este nivel de limpieza se basa en pautas de nivel de plomo en la sangre actualizadas recientemente provenientes de la Oficina de Tierras y Manejo de Emergencias (Directriz 9200.2-167).

RESUMEN DE LAS ALTERNATIVAS DE REMEDIACIÓN

La CERCLA exige que cada recurso seleccionado proteja la salud humana y el medioambiente, sea económicamente viable y utilice soluciones permanentes, tecnologías de tratamiento alternativas y alternativas de recuperación de recursos en la mayor medida que resulte práctico. Además, si va a quedar en el sitio alguna sustancia o contaminante que presente peligro, debe cumplirse toda norma federal y estatal promulgada, o requisito, criterio o limitación que sea legalmente aplicable o pertinente que corresponda. La CERCLA también incluye la preferencia del uso de un tratamiento como elemento principal para la reducción de la toxicidad, la movilidad o el volumen de las sustancias peligrosas.

[1] Nótese que aunque la OU2 abarca propiedades no residenciales, basándonos en las conversaciones con el Municipio de Vineland, el uso previsto razonablemente de la mayor parte de las propiedades de la OU2 es residencial.

Se identificaron las posibles tecnologías aplicables a la remediación del suelo y se seleccionaron según su eficacia, posibilidad de implementación y criterios de costos, enfatizando la eficacia. Aquellas tecnologías que pasaron el análisis inicial se integraron posteriormente en alternativas de remediación.

De las aproximadamente 50 propiedades no residenciales muestreadas como parte de la RI de la OU2, la EPA estima que aproximadamente 40 requieren remediación. Se necesitará más muestreo durante el diseño del remedio de la OU2 para definir la extensión de la contaminación en cada propiedad, y podría ser que se identificaran otras propiedades durante este proceso.

Los siguientes plazos para la construcción no incluyen el tiempo para diseñar un remedio, llegar a un acuerdo con las partes responsables, si están identificadas, ni el tiempo para obtener los contratos necesarios. Todos los costos se calcularon usando el factor de descuento del siete por ciento.

Alternativa 1: Ninguna acción

El NCP solicita que se evalúe una alternativa de "ninguna acción" para establecer una referencia para la comparación con otras alternativas de remediación. Según esta alternativa, no se tomaría ninguna medida para remediar el suelo contaminado en las propiedades no residenciales.

Costo de capital total:	*$0*
Operación y mantenimiento anual:	*$0*
Valor neto presente total:	*$0*
Plazo:	*0 años*

Alternativa 2 – Controles de ingeniería (Tapar/Controlar el acceso) y controles institucionales

Esta alternativa consta de los siguientes componentes principales:

- Instalación y/o mantenimiento de cubiertas de ingeniería
- Desecho fuera del sitio de la tierra excavada antes de instalar tapas
- Controles institucionales en forma de avisos de escritura de obra nueva
- Monitoreo a largo plazo

Con esta alternativa, se necesitaría excavar unas 8,650 yardas cúbicas de tierra contaminada para instalar tapas en propiedades individuales de la OU2. Algunas propiedades tienen áreas pavimentadas existentes que podrían actuar ya como cubiertas de ingeniería y así requerir solo mantenimiento. Se estima que los componentes activos de esta medida de remediación tardarían aproximadamente 15 meses en implementarse. El costo del valor presente estimado es de $8.1 millones. Se necesitarían controles institucionales en forma de avisos de escritura de obra nueva para prevenir que se alteren las cubiertas de ingeniería. Además, se necesitaría el monitoreo a largo plazo en forma de inspecciones visuales de las propiedades afectadas para asegurar que sigan siendo eficaces los controles de ingeniería.

Dado que esta alternativa haría que quedaran contaminantes en el sitio sobre los niveles que permiten el uso irrestricto y la exposición ilimitada, la CERCLA exige que el Sitio sea evaluado al menos una vez cada cinco años.

Costo de capital total:	*$7,961,000*
Operación y mantenimiento anual:	*$10,000*
Valor presente total:	*$8,091,000*
Plazo de la construcción:	*15 meses*

Alternativa 3 – Excavación hasta la profundidad de la contaminación (sin exceder la profundidad de la napa freática de agua subterránea), controles de ingeniería y controles institucionales

Esta alternativa consta de los siguientes componentes principales:

- Excavación de la tierra que exceda la norma de remediación de suelos específico de la propiedad respectiva, sin superar la profundidad de la napa freática de agua subterránea
- Desecho fuera del sitio de la tierra excavada
- Controles institucionales
- Controles de ingeniería, si es necesario
- Monitoreo a largo plazo, si es necesario

Con esta alternativa, se excavarían unas 57,800 yardas cúbicas de tierra para desecharla fuera del sitio. Se

estima que el componente activo de la medida de remediación tardaría unos 35 meses en implementarse. Esto incluiría movilización/desmovilización, laminado y construcción, excavación y relleno/restauración.

El costo del valor presente estimado de esta alternativa es de $36 millones. El costo estimado supone que para las propiedades de Kil-Tone y Lerco el 75% del material excavado sería descartado como desecho no peligroso y el 25% requeriría descartarlo como desecho peligroso en un centro permitido adecuadamente. Para el resto de las propiedades dentro de la OU2, los costos supuestos de desecho se dividieron en 90% no peligrosos y 10% peligrosos.

Se necesitarían controles institucionales en propiedades no abordadas por las normas residenciales. Aunque la meta sería la total excavación de toda tierra afectada sobre la napa freática, debido a consideraciones de ingeniería y/o acceso, puede ser necesario en algunos casos usar controles de ingeniería para lograr plenamente los RAO. Si este es el caso, se necesitaría el monitoreo a largo plazo en forma de inspecciones visuales para asegurar que sigan siendo eficaces los controles de ingeniería.

Dado que esta alternativa haría que quedaran contaminantes en el sitio sobre los niveles que permiten el uso irrestricto y la exposición ilimitada, la CERCLA exige que se evalúe el Sitio al menos una vez cada cinco años.

Nótese que los datos existentes indican concentraciones elevadas de COC presentes en suelos bajo la napa freática aproximadamente en 3 de las 40 propiedades de la OU2. Con la Alternativa 3, esta tierra contaminada quedaría en su lugar y se abordaría como parte de la OU3 del Sitio, que se relaciona con el agua subterránea. Se ha iniciado recientemente el muestreo de la RI de la OU3 RI y será valioso el hecho de obtener un entendimiento más completo de la contaminación del agua subterránea en relación con el sitio durante la RI de la OU3 a fin de determinar el mejor remedio para los suelos bajo la napa freática. En todo caso, al eliminar la tierra afectada sobre la napa freática, la Alternativa 3 reduciría la migración de la contaminación bajo la napa freática.

Por este motivo, con esta alternativa, la remediación de cualquier propiedad con contaminación bajo o cerca de la napa freática será diferida al menos hasta después de que avance más la etapa de RI/FS de la OU3, y que se determine si se necesita alguna remediación activa para la OU3. Las actividades de remediación en las propiedades con impactos bajo la napa freática podrían efectuarse entonces simultáneamente, o de conformidad con la medida de remediación seleccionada para la OU3 del Sitio a fin de evitar la necesidad potencial de regresar a una propiedad limpiada previamente en la OU2.

Costo de capital total:	*$35,941,000*
Operación y mantenimiento anual:	*$7,500*
Costo del valor presente:	*$36,039,000*
Plazo de la construcción:	*35 meses*

Alternativa 4 – Excavación a la profundidad de la contaminación, controles de ingeniería y controles institucionales

Esta alternativa consta de los siguientes componentes principales:

- Excavación de toda la tierra que exceda la norma de remediación de suelos específica de la parcela correspondiente
- Desecho fuera del sitio de la tierra excavada
- Controles institucionales
- Controles de ingeniería, si es necesario
- Monitoreo a largo plazo, si es necesario

Con esta alternativa, se excavarían unas 86,600 yardas cúbicas de tierra para desecharlas fuera del sitio. El volumen es más alto que con la Alternativa 3 porque la Alternativa 4 incluye excavar tierra bajo la napa freática. Se estima que el componente activo de la medida de remediación tardaría unos 50 meses en implementarse incluyendo movilización y desmovilización, laminado y construcción, excavación y relleno/restauración.

El costo del valor presente estimado es de $58.4 millones. Tal como se indica en la Alternativa 3, el costo estimado supone un costo dividido entre 75% no peligroso y 25% peligroso para las propiedades de ex Kil-Tone y Lerco. Para el resto de las propiedades dentro de la OU2, los costos supuestos de desecho se dividieron en 90% no peligrosos y 10% peligrosos.

Se necesitarían controles institucionales en propiedades no abordadas por las normas residenciales. Aunque la

meta sería la total excavación de toda tierra afectada, debido a consideraciones de ingeniería y/o acceso, puede ser necesario en algunos casos usar controles de ingeniería para lograr plenamente los RAO. Si este es el caso, se necesitaría el monitoreo a largo plazo de los controles de ingeniería para asegurar que sigan siendo eficaces.

Dado que esta alternativa puede hacer que queden contaminantes en el sitio sobre los niveles que permiten el uso irrestricto y la exposición ilimitada, conforme a la CERCLA, es posible que se exijan evaluaciones cada cinco años.

Costo de capital total:	*$58,311,000*
Operación y mantenimiento anual:	*$7,500*
Valor presente total:	*$58,409,000*
Plazo de la construcción:	*50 meses*

EVALUACIÓN DE LAS ALTERNATIVAS

La EPA utiliza nueve criterios para evaluar las alternativas de remediación individualmente y compararlas entre sí para seleccionar un remedio. Esta sección del Plan propuesto describe el desempeño relativo de cada alternativa con respecto a los nueve criterios y explica la comparación con las otras opciones que se consideran. Los nueve criterios de evaluación se analizan más adelante. El FFS incluye un análisis detallado de cada una de las alternativas.

Protección general de la salud humana y el medioambiente

Debido a que la Alternativa 1 no abordaría los riesgos presentados por los contaminantes del suelo, no protegería la salud humana ni el medioambiente. Por lo tanto, fue eliminada de mayores consideraciones según los ocho criterios restantes.

La Alternativa 2 brindaría una protección adecuada de la salud humana y el medioambiente pues elimina, reduce o controla el riesgo al contener, cubrir el suelo o eliminar suelos contaminados. Los controles de ingeniería (es decir, cubrir suelos) y un aviso de escritura evitarían la exposición a niveles de riesgo de los contaminantes.

Las Alternativas 3 y 4 protegerían la salud humana y el medioambiente eliminando suelos contaminados, previniendo así la exposición. La Alternativa 4 protegería eliminando la contaminación bajo la napa freática, resolviendo de manera más completa el RAO para prevenir o reducir la migración de COC de la tierra al agua subterránea.

LOS NUEVE CRITERIOS DE EVALUACIÓN DE SUPERFUND

1. Protección general de la salud humana y el medioambiente: evalúa si una alternativa elimina, reduce o controla amenazas a la salud pública y al medioambiente y la manera de hacerlo, a través de un tratamiento, controles institucionales, controles de ingeniería o tratamiento.
2. Cumplimiento de los requisitos aplicables, relevantes y apropiados (ARAR): evalúa si la alternativa cumple las leyes y reglamentaciones federales y estatales sobre el medioambiente, y otros requisitos que corresponden al sitio, o si se justifica una exención.
3. Eficacia y permanencia a largo plazo: considera la posibilidad de que una alternativa mantenga la protección de la salud humana y el medioambiente con el correr del tiempo.
4. Reducción de la toxicidad, movilidad o volumen (TMV) de los contaminantes mediante el tratamiento: evalúa el uso del tratamiento de una alternativa para reducir los efectos nocivos de los contaminantes principales, su capacidad de moverse en el medioambiente y la cantidad de contaminación presente.
5. Eficacia a corto plazo: considera la cantidad de tiempo necesaria para implementar una alternativa y los riesgos que presenta dicha alternativa para los trabajadores, la comunidad y el medioambiente durante la implementación.
6. Posibilidad de implementación: considera la factibilidad técnica y administrativa de implementar la alternativa, incluidos factores como la disponibilidad relativa de bienes y servicios.
7. Costo: incluye los costos estimados de capital y de operación y mantenimiento anuales, además del costo del valor presente. El costo del valor presente es el costo total de una alternativa con el correr del tiempo, en términos del valor actual del dólar. Se espera que las estimaciones de costos sean exactas, dentro de un rango de +50 a -30%.
8. Aceptación de la agencia estatal/de apoyo: considera si el Estado está de acuerdo con los análisis y recomendaciones de la EPA, según se describe en la RI/FS y en el Plan Propuesto.
***9*. Aceptación de la comunidad:** considera si la comunidad local está de acuerdo con los análisis y la alternativa preferida. Los comentarios recibidos respecto del Plan propuesto son un indicador importante de la aceptación de la comunidad.

Cumplimiento de los ARAR

Las Alternativas 2, 3 y 4 abordarían los ARAR potenciales de sustancias químicas específicas. La colocación de tapas de suelos a modo de controles de ingeniería y la eliminación de tierra afectada, además de la eliminación de tierra que se incluye en la

Alternativa 2, resolvería los ARAR potenciales de sustancias químicas específicas en este aspecto. La eliminación de tierra indicada en las Alternativas 3 y 4 cumpliría con los ARAR de sustancias químicas específicas para uso residencial o no residencial. Cada alternativa activa también lograría los ARAR potenciales específicos del lugar y específicos de la medida.

Eficacia y permanencia a largo plazo

La Alternativa 2 proporciona eficacia y permanencia a largo plazo a través del mantenimiento de las cubiertas del suelo y los controles institucionales. La inspección y el mantenimiento periódicos, según lo exigen los controles institucionales, asegurarían que el remedio siguiera siendo efectivo para prevenir la exposición a los contaminantes. Sin embargo, la eficacia continua del sistema de contención de la Alternativa 2 dependería de lo bien que se mantenga la cubierta del suelo.

La Alternativa 3 brindaría eficacia y permanencia a largo plazo al eliminar los contaminantes de las propiedades no residenciales de la OU2 y proporcionar el desecho seguro de la tierra excavada en instalaciones permitidas y apropiadas. Se requerirían el monitoreo a largo plazo y el mantenimiento de las propiedades afectadas y las evaluaciones cada cinco años porque podría quedar suelo contaminado bajo la napa freática en algunas propiedades.

La Alternativa 4 aportaría la mayor eficacia y permanencia a largo plazo porque toda la contaminación de suelos relacionada con el sitio que exceda las PRG sería excavada y desechada en un centro aprobado fuera del sitio. Si es necesario, se requeriría el monitoreo a largo plazo en forma de inspecciones visuales y mantenimiento, así como evaluaciones conforme a CERCLA cada cinco años, si alguna propiedad no se pudo remediar hasta lograr condiciones de uso ilimitado y exposición irrestricta.

Reducción de la toxicidad, movilidad o volumen mediante el tratamiento

Ninguna de las alternativas reduciría la toxicidad, de la movilidad ni del volumen de contaminación mediante tratamiento, pues el tratamiento no se incluye como opción. El uso de tratamiento fue evaluado como parte del proceso del FFS, pero no se determinó ningún medio efectivo de tratar la contaminación de arsénico y plomo, incluido PTW, en los suelos. La tierra excavada para descartarla fuera del sitio puede requerir tratamiento antes de desecharla.

La Alternativa 2 reduciría la movilidad de la contaminación en cierto grado mediante la colocación de tapas sobre las áreas afectadas. La Alternativa 3 reduciría mejor la movilidad mediante la excavación y eliminación de tierra contaminada con COC del Sitio. En un grupo selecto de propiedades quedaría la contaminación bajo la napa freática, pero esta contaminación sería abordada como parte de la OU3 del Sitio.

La Alternativa 4 reduciría en el mayor grado la movilidad y el volumen mediante la excavación y desecho fuera del sitio de todas las propiedades identificadas con COC sobre las PRG. También prevendría la migración potencial de los COC de la tierra al agua subterránea.

Eficacia a corto plazo

La Alternativa 2 sería eficaz a corto plazo debido a que el suelo contaminado no se alteraría considerablemente durante las actividades de construcción. Se estima que se pondrían tapas y se establecerían avisos de escritura de obra nueva en unos 15 meses.

Las Alternativas 3 y 4 contemplan la excavación del suelo contaminado y presentarían potencial para la exposición a corto plazo. Según estas alternativas, los impactos ambientales potenciales asociados con la excavación del suelo se minimizarían con la adecuada instalación e implementación de medidas de control del polvo y la erosión, al realizar la excavación con las medidas de salud y seguridad apropiadas, y utilizar un área preparatoria provisional revestida. Se requerirían medidas de seguridad apropiadas para el transporte durante el envío de tierra contaminada a los centros de procesamiento de desechos aprobados fuera del sitio. La conclusión de la remediación para la mayor parte de las propiedades individuales podría producirse en aproximadamente 1 año o menos, aunque se espera que la Alternativa 3 tome 35 meses para implementarse plenamente y la Alternativa 4 tardaría 50 meses.

Posibilidad de implementación

La Alternativa 2 se puede implementar; sin embargo, es incierto el desarrollo de controles protectores

institucionales y de ingeniería que sean tanto aplicables como aceptables para todos los propietarios.

Las Alternativas 3 y 4 también son implementables, aunque la implementación de dichas alternativas es complicada en cierto grado por la necesidad de realizar excavaciones y rellenar en las propiedades individuales, la mayoría de las cuales están desarrolladas con estructuras primarias (como tiendas o inmuebles) y estructuras secundarias como garajes y casetas de guardar. La Alternativa 4 sería considerablemente más difícil de implementar en propiedades donde la contaminación se extienda bajo la napa freática. En algunos casos, la profundidad de la contaminación se extiende más allá de 12 pies bajo la superficie de la tierra, lo cual requeriría aplicar excavación reforzada o en pendiente y es probable que necesitara retirar al menos algo de agua.

Todas las alternativas producirían cierto impacto a corto plazo en la comunidad, en lo que respecta al tráfico de camiones y al ruido y el polvo de las actividades de construcción o excavación, aunque la Alternativa 2 (traer tierra para construir una cubierta de suelo) generaría menos tráfico de camiones que las Alternativas 3 y 4 (retirar el suelo contaminado de las propiedades y traer tierra para rellenar las áreas excavadas). Los impactos del tráfico, el ruido y el polvo se podrían mitigar al limitar el horario de construcción a un horario diurno los días de semana o a otros horarios según lo especifique la ordenanza local. Se necesitarían medidas de monitoreo del aire y control de polvo en el perímetro para resolver problemas de exposición potencial al polvo durante las actividades.

La implementación administrativa de la Alternativa 2 puede verse afectada considerablemente por la necesidad de imponer avisos de escritura de obra nueva en las propiedades no residenciales para limitar la exposición humana restringiendo la reglamentación del uso futuro de áreas contaminadas dentro de las propiedades. Estos avisos restringirían el uso de la propiedad por parte del propietario y pueden no ser aceptables para algunos de los propietarios. Dado que las Alternativas 3 y 4 producen la eliminación de suelos contaminados pero puede no abordar toda la contaminación para lograr condiciones de uso ilimitado, se requerirían controles institucionales en un número limitado de propiedades.

Costo

El costo estimado total para la Alternativa 2 es de $8,091,000. Los costos de capital incluyen el costo de colocar tapas, excavar suelos según sea necesario para adecuarse a las tapas, y el costo administrativo de establecer avisos de escritura de obra nueva. Los costos de operación y mantenimiento anual incluyen el mantenimiento de los sistemas de contención.

El costo estimado total para la Alternativa 3 es de $36,039,000. Los costos de capital incluyen el costo de la excavación y desecho de tierra, y la restauración del sitio. No se prevé mantenimiento anual alguno, aunque se requerirá un monitoreo limitado en forma de inspecciones visuales para aquellas propiedades que no logren llegar a las normas residenciales, o si se necesitan controles de ingeniería.

El costo estimado total para la Alternativa 4 es de $58,409,000. Como es el caso de la Alternativa 3, los costos de capital incluyen el costo de la excavación y desecho de tierra, y la restauración del sitio. Los costos son más altos debido a la mayor profundidad de excavación necesaria, y la labor adicional de ingeniería asociada que exige. Tal como con la Alternativa 3, no se prevé mantenimiento anual alguno, aunque se requerirá un monitoreo limitado en forma de inspecciones visuales para aquellas propiedades que no logren llegar a las normas residenciales, o si se necesitan controles de ingeniería.

Aceptación estatal

El Estado de Nueva Jersey está de acuerdo con la Alternativa preferida tal como se presenta en este Plan propuesto.

Aceptación de la comunidad

La aceptación de la comunidad de la Alternativa preferida se evaluará después de que finalice el período de comentarios del público y se describirá en el Registro de Decisiones (ROD). Conforme a los comentarios del público, la Alternativa preferida podría modificarse y diferir de la versión presentada en este plan propuesto. El Registro de Decisiones es el documento que formaliza la selección del remedio para un sitio.

ALTERNATIVA PREFERIDA

La Alternativa preferida para lograr los objetivos de la medida de remediación en propiedades no residenciales con suelos afectados por la contaminación relacionada con el sitio es la Alternativa 3, excavación hasta la profundidad de la contaminación (sin superar la profundidad de la napa freática), controles de ingeniería y controles institucionales.

La Alternativa 3 consiste en excavar unas 57,800 yardas cúbicas estimadas de tierra para desecharlas fuera del sitio excediendo la norma de remediación de suelos específica de la propiedad respectiva, sin superar la profundidad de la napa freática.

Se estima que el componente activo de la medida de remediación tardaría unos 35 meses en implementarse. Esto incluiría movilización/desmovilización, laminado y construcción, excavación y relleno/restauración. Se requerirían controles institucionales en propiedades que no logren llegar a las normas residenciales y se necesitaría monitoreo a largo plazo en forma de inspecciones visuales de estas propiedades. Además, puede necesitarse la inspección y el mantenimiento de todos los controles necesarios de ingeniería.

La Alternativa 2 depende en gran medida de la capacidad de asegurar que se mantengan vigentes y se cumplan los controles institucionales, en forma de avisos de escritura de obra nueva y restricciones. La Alternativa 3 depende en menor medida de los controles institucionales y la Alternativa 4 puede no requerir el uso de controles institucionales en absoluto, y así ambas son más eficaces a largo plazo que la Alternativa 2. La Alternativa 3 lograría los RAO, es más fácilmente implementable, tiene mayor grado de eficacia en el corto plazo y un costo menor que la Alternativa 4. Aunque la Alternativa 2 tiene un costo menor que la Alternativa 3 en aproximadamente $28 millones, habría requisitos de recursos significativos con el correr del tiempo en relación con inspecciones a largo plazo y mantenimiento de tapas. Por estos motivos, la EPA prefiere la Alternativa 3 en vez de la Alternativas 2 y 4.

La EPA prevé que será valioso el hecho de obtener un entendimiento más completo de la contaminación del agua subterránea durante la RI de la OU3 a fin de determinar el mejor remedio para los suelos bajo la napa freática. Los datos existentes indican que la contaminación de suelos bajo la napa freática es preocupante en 3 de las 40 propiedades en la OU2. Por este motivo, la EPA abordará la contaminación en el suelo bajo la napa freática después de que avance más la RI/FS de la OU3. Sin embargo, con la Alternativa 3, la excavación en las propiedades donde hay contaminación bajo la napa freática se diferirá al menos hasta que se determine si se necesita alguna remediación activa en la OU3. Las actividades de remediación en las propiedades con impacto bajo la napa freática podrían realizarse entonces simultáneamente, o de conformidad con el remedio de la OU3, para evitar la necesidad potencial de regresar a una propiedad después de haberla remediado.

La implementación de la Alternativa 3 puede requerir obras de excavación adyacentes a las estructuras y/o debajo de ellas. En general, se hará lo posible por eliminar toda la contaminación del suelo para que se determine que hay necesidad de restricciones de escritura. Todas las propiedades afectadas serán restauradas a sus condiciones originales.

Según la información disponible en este momento, la EPA ha concluido y el NJDEP concuerda que la Alternativa preferida cumple los criterios de umbral y proporciona el mejor equilibrio entre ventajas y desventajas en comparación con las otras alternativas, con respecto a los criterios de equilibrio.

La Alternativa preferida satisface los criterios de umbral y logra la mejor combinación de los cinco criterios de equilibrio del análisis comparativo. Se prefiere esta alternativa porque logrará los RAO y las metas de limpieza en el menor tiempo, y es un remedio permanente. La EPA espera que la Alternativa preferida satisfaga los siguientes requisitos legales de la Sección 121 de la CERCLA: 1) proteger la salud humana y el medioambiente; 2) cumplir los ARAR; 3) ser económicamente viable; 4) utilizar soluciones permanentes y tecnologías de tratamiento alternativas o tecnologías de recuperación de recursos en la mayor medida que resulte práctico; y 5) satisfacer la preferencia de tratamiento como elemento principal o explicar el motivo por el cual no se cumple la preferencia de tratamiento. La EPA evaluará los criterios de modificación de la aceptación de la comunidad en el ROD después del cierre del período de comentarios del público.

PARA OBTENER MÁS INFORMACIÓN

El expediente administrativo, que contiene copias del Plan propuesto y documentación complementaria, está disponible en las siguientes ubicaciones:

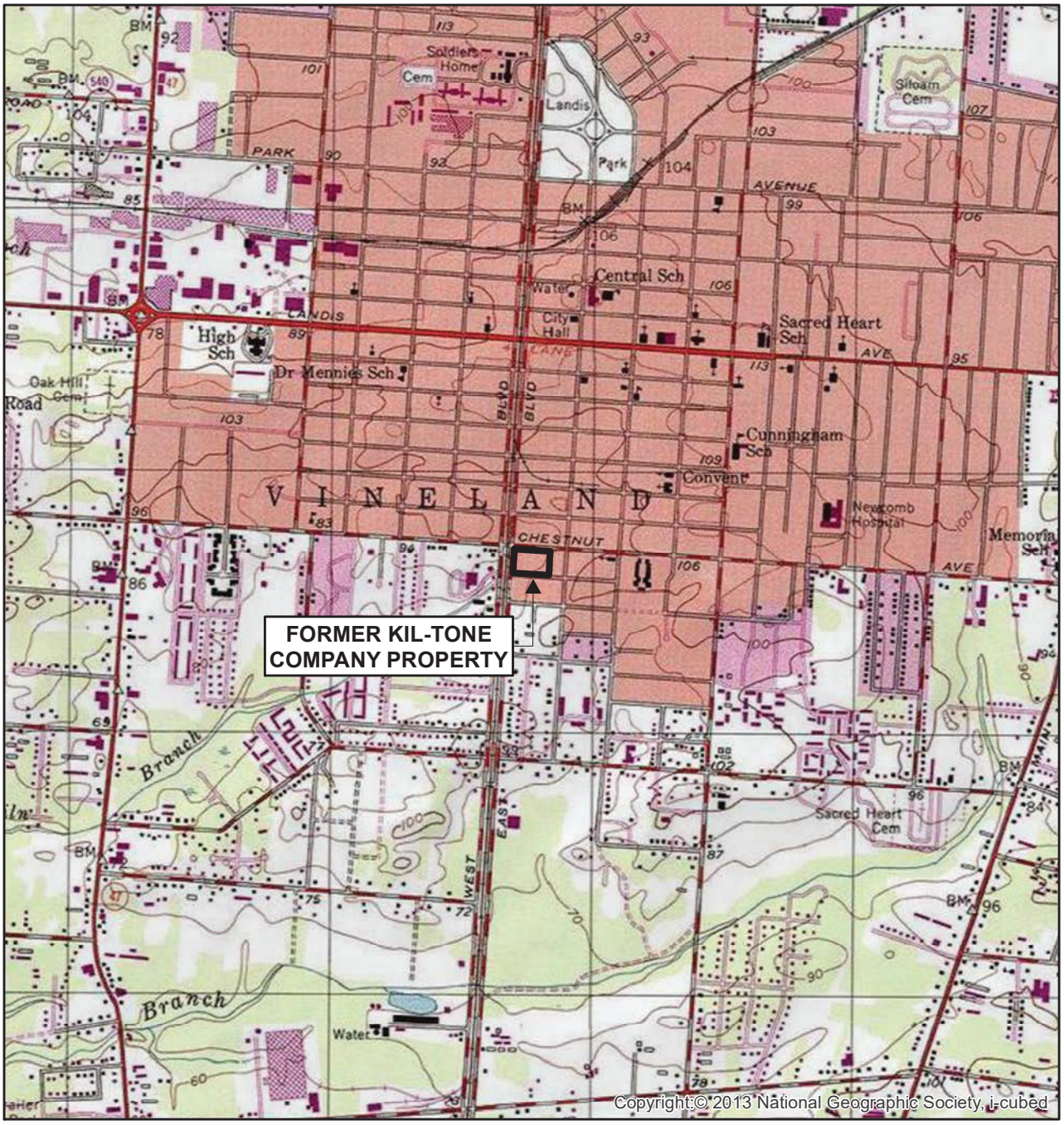
Centro de Registros de Superfund, Región 2 de la EPA
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-4308
Horarios: Lunes-Viernes – 9 A.M. a 5 P.M.

Vineland City Library
1058 East Landis Ave.
Vineland, New Jersey 08360
Consulte el horario de la Biblioteca en:
http://www.vinelandlibrary.org/

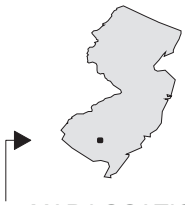
Además, encontrará documentos seleccionados del expediente administrativo en línea, en:

www.epa.gov/superfund/former-kil-tone

FIGURE 1



ADAPTED FROM: MILLVILLE, NEW JERSEY USGS QUADRANGLE



MAP LOCATION

FORMER KIL-TONE COMPANY
SUPERFUND SITE
OU2 RI REPORT
VINELAND, NEW JERSEY

SITE LOCATION

N

0 1,000 2,000 4,000
Feet

1:24,000

14426/66305
JULY 2018

HDR OBG a joint venture

7/18/2018 11:34:24 AM

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7/17/2019 9:41:21 AM

GRAPE STREET
MONTROSE STREET
MONTROSE STREET
LA FRANCE STREET
S SEVENTH STREET
ALMOND STREET
222
223
QUINCE STREET
227
69
231
232
233
230
228
226
81
81
225
237
236
229
211
212
CHERRY STREET
123
123
206
148
208
207
209
210
S WEST BOULEVARD
S EAST BOULEVARD
244
243
242
LERCO
305
SIXTH STREET
143
240
CHESTNUT AVENUE
THIRD STREET TERRACE
286
287
277
278
284
279
280
283
282
FORMER KIL-TONE
289
290
291
PAUL STREET
511 PAUL ST
302
301
304
303
296
297
295
WASHINGTON AVENUE
124
BELLAIR STREET
SUMMER AVENUE
FLORENCE AVENUE
LUCIANO AVENUE
DIFALCO AVENUE

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- OU2 PROPERTY - NO ACTION REQUIRED
- OU2 PROPERTY - ACTION REQUIRED (NJDEP NON-RESIDENTIAL SRS)
- OU2 PROPERTY - ACTION REQUIRED (NJDEP RESIDENTIAL SRS)
- OU1 PROPERTY
- APPROXIMATE OU1/OU2 STUDY AREA

PROPERTY BOUNDARY: STATE OF NEW JERSEY COMPOSITE OF PARCELS DATA, NEW JERSEY OFFICE OF INFORMATION TECHNOLOGY (NJOIT), OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (OGIS).

0 60 120 240 360 480
Feet

N

FORMER KIL-TONE COMPANY SUPERFUND SITE
OU2 FFS REPORT
VINELAND, NEW JERSEY

OU2 AREAS REQUIRING REMEDIATION

14426/66305
JULY 2019

HDR OBG a joint venture

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Attachment B

Public Notice

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EXTENDS PUBLIC COMMENT PERIOD ON THE PROPOSED PLAN

FOR THE FORMER KIL-TONE SUPERFUND SITE, OPERABLE UNIT 2

VINELAND, NEW JERSEY

The U.S. Environmental Protection Agency (EPA) announces the extension of a previously opened 30-day comment period on the preferred plan to address contaminated soil on non-residential properties at the Kil-Tone Company Superfund Site, located in Cumberland County, Vineland, N.J. The preferred remedy and other alternatives are identified in the Proposed Plan.

The initial comment period began on July 30, 2019 and was intended to end on August 28, 2019. As part of the public comment period, EPA held a public meeting on August 13 at 7 p.m. at the Gloria Sabater Elementary School, 301 So. East Blvd., Vineland, N.J. Due to unforeseen issues with the initial public comment period announcement, EPA will extend the comment period until September 26, 2019 and hold another public meeting on September 4 at 6:30 p.m. at the City of Vineland Council Chambers, 640 East Wood Street, Second Floor, Vineland, New Jersey.

The Proposed Plan is available electronically at the following address:

https://www.epa.gov/superfund/former-kil-tone

Written comments on the Proposed Plan, postmarked no later than close of business September 26, 2019, may be emailed to Hartzell.sharon@epa.gov or mailed to Sharon Hartzell, US EPA, 290 Broadway, 19th Floor, New York, NY 10007-1866.

The Administrative Record files are available for public review at the following information repository:

USEPA – Region 2, Superfund Records Center, 290 Broadway, 19th Floor, New York, NY 10007-1866.

For more information, please contact Pat Seppi, EPA's Community Liaison, at 646.369.0068 or seppi.pat@epa.gov.

LA AGENCIA DE PROTECCIÓN AMBIENTAL DE ESTADOS UNIDOS

EXTIENDE EL PERIODO DE COMENTARIOS PÚBLICOS SOBRE EL PLAN PROPUESTO

PARA EL SITIO SUPERFUND EX KIL-TONE, UNIDAD OPERABLE 2

VINELAND, NUEVA JERSEY

La Agencia de Protección Ambiental de los EE. UU. (EPA) anuncia la extensión de un periodo abierto anteriormente de 30 días para hacer comentarios sobre el plan preferido a fin de abordar el suelo contaminado en propiedades no residenciales en el Sitio Superfund de Kil-Tone Company, situado en el Condado de Cumberland, Vineland, N.J. En el Plan propuesto se identifican el remedio preferido y otras alternativas.

El periodo inicial para comentarios comenzó el 30 de julio de 2019 y estaba previsto que terminara el 28 de agosto de 2019. Como parte del periodo para recibir comentarios del público, la EPA organizó una reunión pública el 13 de agosto a las 7 p.m. en la Escuela Primaria Gloria Sabater, 301 So. East Blvd., Vineland, N.J. Debido a problemas imprevistos con el anuncio del periodo para recibir comentarios del público, la EPA extenderá el periodo de comentarios hasta el 26 de septiembre de 2019 y celebrar otra reunión pública en septiembre 4 a las 6:30 p.m. en las Cámaras del Consejo de Vineland, 640 East Wood Street, en el 2° piso, Vineland, New Jersey.

El Plan propuesto se encuentra disponible electrónicamente en la dirección siguiente:

https://www.epa.gov/superfund/former-kil-tone

Pueden enviarse comentarios por escrito sobre el Plan propuesto, con sello postal que no sea posterior al término de la jornada laboral del 26 de septiembre de 2019, dirigidos a Hartzell.sharon@epa.gov o a Sharon Hartzell, US EPA, 290 Broadway, 19th Floor, New York, NY 10007-1866.

Los archivos de Registro administrativo están a disposición del público para su evaluación en el siguiente depósito de información:

USEPA – Region 2, Superfund Records Center, 290 Broadway, 19th Floor, New York, NY 10007-1866.

Para obtener más información, sírvase contactar a Pat Seppi, Coordinador Comunitario de la EPA, llamando al 646.369.0068 o por correo electrónico seppi.pat@epa.gov.

Attachment C

Public Meeting Transcripts

FORMER KIL-TONE COMPANY

SUPERFUND SITE

PROPOSED PLAN PUBLIC MEETING

Operable Unit Two

Non-Residential Soil

August 13, 2019

- - -

APPEARANCES

- - -

EPA OFFICIALS

Patricia Seppi, Community Liaison

Sharon Hartzell, Project Manager

Stephanie Vaughn, Section Chief

Lora Smith, Risk Assessor

PUBLIC PARTICIPATION

Seth Davis

Larry Pincents

Victor Ruis

Michelle Post

- - -

PROCEEDINGS

- - -

MS. SEPPI: I thank you for attending our meeting this evening. And the purpose that we're here tonight is to present to you EPA's preferred remedy to clean up the 40 to 50 commercial properties that have been affected by the Kil-Tone Superfund Site.

Now you may have noticed if you've been driving around the neighborhood that we're still doing a lot of work on the residential properties, so that is ongoing. This will be like in stages.

I'd like to have the people from the EPA who are here and also a few other people in the audience introduce themselves.

MS. VAUGHN: Hi, my name is Stephanie Vaughn. I'm the Section Chief at EPA.

MS. HARTZELL: Hello. My name is Sharon Hartzell and I am a Project Manager at EPA for this portion of the Kil-Tone site.

MS. SMITH: Good evening, Lora Smith. I'm the Risk Assessor for the site.

MS. SEPPI: And my name is Pat Seppi. And I'm the Community Liaison for the EPA for this site. And we have a few other people here that I'd also like to introduce.

One of them is standing over there, but why don't we have our interpreters introduce themselves.

MR. TELLE: I'm Rudy Telle.

MR. GARCIA: My name is Enrique Garcia.

MS. SEPPI: And we also have a technical back there.

MR. ENGLISH: Scott English and I'm helping with the technology.

MS. SEPPI: Now, one other thing I wanted to mention, if you'll notice tonight, if you've come to a meeting before, these meetings are a little more formal. We have the stenographer here, Florence, who will be taking down everything that everybody says.

And we do have the capability to have the presentation and your questions and comments translated into Spanish. So we have three headsets I believe, so if anybody would like to take advantage of that, that's fine. Just

let me know.

Would anybody like to have the translation?

- - -

(Whereupon, the translator translated the request into Spanish for the audience at this time.)

- - -

MS. SEPPI: It's very important to us to hear your comments and questions. In public participation, it's an important part of presenting a plan like this. So what happens is, Sharon will give her presentation and we ask please if you could hold your comments and questions until after the presentation. A lot of times those questions get answered. So if you could wait, we would appreciate that.

Then we'll ask you to come up, give us your questions or your comment into the mike and Florence will record it and she would ask if you could say and spell your name so we have that correctly for the record also.

The one other thing I want you to know is that we're in the middle of what's called a

public commentary. If you saw the most recent article in the paper, it did mention that. The end of the public comment period for this site is August 28th.

So if you were here tonight and you have a couple other questions, that's fine. You can send them to Sharon either by email or snail mail and that would both be included.

After this, and I think Sharon will probably go over this again, like our big defining document is called the Record of Decision. And the transcript from tonight's meeting will be included and your questions and comments that are answered in what's called a responsive summary.

So when that is available, which should be sometime in September, if everything goes according to plan, you'll be able to see the responses to your comments and everybody else's comments that are taken tonight or we receive before or after the commentary.

So I think that's really all I have to say. I wanted to keep it short and I want to turn this over to Sharon.

MS. HARTZELL: Thank you Pat and thanks for the introduction. And thank you everybody here for coming tonight. My name is Sharon Hartzell and I am EPA's Project Manager for this portion of the Kil-Tone cleanup which is the portion of the site that we call Operable Unit Two. I'll explain what that means later, but it's the non-essential soils that are surrounding the former Kil-Tone property.

So tonight we're going to go over some of the basics of the Superfund Program, how the process works, the specific investigation history of this site, and what the EPA plans to do going forward and we'll have an opportunity for everyone here to give input and ask questions. And as Pat said, all of that will be formally recorded in the Record of Decision which we hope to issue next month.

So yes, we will be accepting written comments as well as verbal comments until August 28th. I have business cards up here at the front with my information and also in the proposed plan which you can find on the EPA's website. And we will be considering all

comments and responding to those as part of our formal legal contract.

So just to give a little overview of the Superfund process, some of you may be familiar with this from having seen the work go on with the first portion of the site, which we have clear properties under construction right now.

But EPA's Superfund Program is responsible for cleaning up some of the worst contaminated waste sites in the country. We are doing this in order to protect public health, the environment, and make sure that we are making this community safe and healthy to live in.

So the process has several steps. First, the site will be investigated in sort of a preliminary way. Essentially it's added to a list called the National Priority List, otherwise known as the Superfund List. After that we do a more thorough investigation of the site called a remedial investigation, which I'll go over the results from that for the portion of Kil-Tone.

And following the remedial investigation, is the feasibility study where we look into

all of the different options for cleaning up the contamination of the site.

And then we come to the current stage that we're at which is the public noticing of the proposed plan. We give everybody in the room tonight and all other folks who might read the plan on our website the opportunity to give comments and ask questions about what we're proposing.

So we'll follow that up with the process of actually issuing the decision once comments are addressed and then designing and actually implementing the remedy.

So just to situate us, we are looking at the former Kil-Tone site which is the City of Vineland, just a few minutes down the road. I have a few figures that are pointing out some of the boundaries of the area that we're talking about.

You can see the blue outlined area in this presentation is pretty much the boundary of what we've studied for areas that may have been impacted by the former Kil-Tone property in the past. We have the other two outlined

properties where most of the action happened during the time the facility was operating. We have the Kil-Tone property itself which is outlined in red. And the yellow outlined area is the Lerco Fuel Company, former Lerco Fuel Company site which was also involved in some of the processes at Kil-Tone.

So Kil-Tone was a major manufacturer of agricultural sprays and chemicals and they got started around 1917 and began operations with creating pesticides that included a lot of arsenic and lead.

We have products here with a lot of interesting names, London purple, Paris green. Most of these pesticides were manufactured until 1933. And then the property is currently occupied by Urban Sign and Crane which is a company manufacturing and installing signs.

So the cleanup of the fuel distribution facility across the street actually triggered the investigation into the former Kil-Tone property in 2014 and that is when the EPA started realizing that there was contamination

that needed to be dealt with related to the former operation.

So that was in August that New Jersey Department of Environmental Protection started their investigation into Kil-Tone. In November of 2014 the New Jersey Department of Environmental Protection referred the site to the EPA. We had some sampling and action conducted during 2015 and 2016.

So we have a removal program that conducted sampling in the vicinity of the former Kil-Tone site and conducted an action to provide temporary protection at a few properties that were above the action level with respect to the removal program. So that occurred in March 2016. And then in April 2016 it was finally added to the national priority list.

So here's another figure that helps illustrate some of the different portions of the site. We have the Kil-Tone facility itself included in a box towards the upper right-hand corner. And then the Tarklin Branch which flows into the Maurice River is

also a portion of the site.

Now I mentioned the term operable units earlier. And we at EPA divide sites into a number of distinct areas that can be based on what specific issues we're working on cleaning up. So it's a way to make the cleanup process more efficient. And these areas can address either geographic areas of the site or specific types of environmental contamination, like water versus soil.

Kil-Tone has four operable units currently. The first operable unit is dealing with the soil and the residential properties that are in the vicinity of the former Kil-Tone property. And we mentioned earlier and you could probably see on your way to the school, we currently have cleanup ongoing at those properties.

The operable unit that we're discussing tonight is Operable Unit 2 which are the non-residential properties in the vicinity of the site. And we have the Kil-Tone site again marked with a star on this figure. And the colors in that figure designate what

properties are used for.

So the red properties are those that are currently non-residential, the yellow are residential. So you can see that we have kind of a blend of different properties going on in this area of Vineland.

Operable Unit 3 concerns the ground water that was in the vicinity of the former Kil-Tone site. And then Operable Unit 4 includes the Tarklin Branch, both the waters of the creek and the sediment and adjacent properties. And we're in the investigation phase for Operable Unit 3, ground water and Operable Unit 4 will be following after that.

Tonight Operable Unit 2 is the focus. So we conducted that investigation, the remedial investigation, which was finalized in 2018 and that was to characterize the site to figure out the nature and extent of the contamination and to assess what risks there might be to human health and the environment for the former Kil-Tone facility.

Following the remedial investigation, we conducted the feasibility study which was

finalized just last month. And in the feasibility study we looked at several different options for cleaning up the contamination at the former Kil-Tone site. We screened those for how effective they would be and compared them against one another. And that's how we arrived at the decision -- or not decision yet, but the proposal that we're coming to you with tonight.

So just to give you some background on what we actually investigated during that remedial investigation, we did two broad categories of soil sampling. The first was the Tier A soil sampling which was conducted in August of 2017. And that sampling included the Kil-Tone facility itself as well as the Lerco Property. These were sites that were most heavily impacted and were really centrally used during the operation of Kil-Tone, as well as another property that was less involved with the actual operation but still representative of other properties in the area.

And so we took surface and subsurface soil

samples from those properties and analyzed them for the full list of contaminants the EPA looks at. And the purpose of all of that was to determine which contaminants in the area were related to the operation of the former Kil-Tone site so that we could narrow the list down and figure out what we actually need to focus on as well as to start determining the nature and extent of the contamination, how far away from the site it goes, et cetera.

Following that we had another round of soil sampling on what we call the Tier B properties. That was conducted between September 2017 and March 2018 and that was on basically the rest of the non-residential properties in the area. And the total number of properties looked at was approximately 50. And those we had already kind of pinpointed as lead and the arsenic that we looked at those properties for metals as well as for Polycyclic Aromatic Hydrocarbons, which are another type of pollutant.

So in terms of the investigation findings, we found that we had a fairly high

concentration of both arsenic and lead on the former Kil-Tone property itself and the elevated concentrations were found at some locations pretty deep. At the other OU2 properties, we found still elevated levels of arsenic and lead, but generally we saw a decrease in soil concentration as you get further from the Kil-Tone property. So the most highly concentrated soil contaminants are at the facility itself and generally lower as you move further away.

In general, at the other properties, the elevated concentrations were found in the shallow soil, but in a few cases we do have deeper soils that are contaminated as well, but primarily about 4 feet below the ground surface.

After getting this data, a EPA goes through a process called the risk assessment. And we assess risks to human health for both current folks who might be exposed to the site and that includes industrial workers, construction workers, as well as any future people who might be using the site, whether

it's for the same purposes or residential uses.

So we look at risks to all these different categories of people for both cancer and non cancer and we found that at the Kil-Tone site and that these other sites that were evaluated for the risk assessment, we did have levels that were exceeding EPA's acceptable risk levels due to the arsenic in the soil primarily as well as some due to lead.

We also looked at ecological risks which is determining what the risks are to plants and invertebrates and other wildlife. And we do have the potential for ecological risk but that is also going to be further evaluated during the phase of the project that deals with the Tarklin Branch.

So since unacceptable risks are present at the site, EPA has determined that an action must be taken and we will be proposing that action tonight.

So for each Superfund site we set goals for the cleanup which we refer to as remedial action objectives. And those are the specific

cleanup goals to insure protection to human health and the environment. So for this site our first goal is to prevent any current exposure as well as any exposure to any future users for direct contact with contaminated soil.

And then the second is to prevent the migration of contaminants that are at these properties to any other properties in the area and that might happen with the flow of water or with air dispersion.

The third objective is to prevent and reduce the migration of these contaminants into the ground water. And the fourth is to prevent risks to ecological receptors. So everything that we're evaluating tonight is a remedy that we're proposing and we look at these with goals in mind.

So the EPA has a number of different cleanup goal levels that we looked at for various contaminants. And the two contaminants of concern at this site are arsenic and lead. You can see that we have different categories based on non-residential

use as well as residential use. And we have a separate number for whether the ground -- what level would be protected for ground water, and we have separate numbers for impact ecological receptors.

So a lot of different numbers in the mix here, but it's most important to note that for arsenic, the level is 19, the lowest level is 19 for all of these first three categories. So that will be the level that we clean up to.

Lead is slightly more complicated. We have two different levels based on whether you have somebody living at the site versus somebody working at the site. And so we'll be deciding which level to use on a case by case basis based on what the site is used for now and what it might be used for in the future. And we have had some conversations with the City of Vineland and have learned that most of the properties in this area have the potential for being used for residences in the future. So if that's the case, then we will go with the residential level.

We also are in the process of determining

what level would be protected of ground water. So that number is still pending, but we'll evaluate that and compare it to the others once we have the number figured out.

So we've evaluated several different options for the site. The first which we always look at is no action, which in this case was not protective of anything. So that one gets -- you know, we won't talk too much about.

Alternative 2 involves using engineering controls which is anything physical that you do to the site to prevent exposure to the contaminants. Like installing a cap would be an example of an engineering control. And institutional control which would be anything legal the EPA would do to prevent access to the site. And that might be something like a deed restriction.

Alternative 3 includes those same elements that were in Alternative 2 but also the main focus of Alternative 3 is excavation of the contaminated soil itself. And both Alternative 3 and 4 involve excavation. The

difference is that Alternative 3 excavates down to the level of the ground water table and Alternative 4 excavates to the full depth of the contamination.

The EPA has nine criteria that we use to evaluate each of the options and then we compare them to one another. The first two, which are the most critical are, will this remedy be protective of human health and the environment and will it be in compliance with the levels that the EPA has set for the site itself. And that's the chart that I was just going over a few slides ago.

The other balancing criteria that we call it are whether how it will be affected in the long-term, whether the remedy is permanent, whether we're reducing the toxicity mobility and volume of the contaminants through treatment, as well as the implementability and cost. And then we have two criteria as well, the community acceptance, which we're here tonight to get your input on, and state acceptance.

So we look at all of those factors with

each of the alternatives but here are some of the more specifics of how much soil will be excavated in each of the cases. So you can see that from Alternative 2 to Alternative 4, the amount of excavation increases as well as the cost and the time it would take to actually implement the remedy.

So we are presenting EPA's Preferred Alternative of Alternative 3 and that is excavation of contamination, not to exceed depth of ground water table as well as engineering controls and institutional controls.

So under this remedy, we would excavate down to the level of the water table. We would dispose of that contaminated soil off site, and we would also apply any institutional controls that were needed to any of the areas that we couldn't excavate, as well as long-term monitoring to make sure that the site remains, the usage remains the same and the site remedy remains protected.

And so Alternative 3 is slightly preferable to the others. It meets all of our

objectives in terms of protecting human health and the environment by removing the contaminated soil. It does meet our remedial objective. It relies less heavily than Alternative 2 on those institutional controls that include things like deed restriction which limit what property owners can do with the property. So you know, we prefer to not rely too heavily on that. And it's more cost effective and easily implementable than Alternative 4.

It also avoids the potential of having to return to the site in a couple of instances. I mentioned that there were a couple of areas where the contamination does go down below the ground water table. We're currently in the middle of the investigation of that ground water contamination. And right now we have like I think three to five properties that may actually have ground water impact.

The way the time line is going to work out, we're going to try to defer our excavation on those properties until the ground water investigation is completed

because right now we're still refining our understanding of whether the ground water is being impacted and how much and we're going to try to avoid having to implement something now and then have to go back and dig it up again and do something different once we have the ground water figured out. We want to do that investigation and try to time things so that the excavation of those few properties happen once we have our answers of ground water.

So the next steps from here are to review and address any comments that we receive tonight as well as comments that you might send me after the meeting.

Next we're going to sign the Record of Decision for the site which is the legally binding document declaring what the EPA is going to do. After that, we'll actually go through the process of designing the remedy and then completing the remedial action itself.

So we're at the proposed plan public comment period and are ready to take your questions and comments.

MS. SEPPI: Thank you. Very nice. So here is the information if you have additional comments that you want to send to Sharon afterwards and also at the bottom there, that's the web address for the Kil-Tone, EPA Kil-Tone web page and it has a lot of good information on it. And what we will do is, once Sharon sends me the presentation probably tomorrow or Friday, we'll have that posted to the web page also so you'll be able to take a look at that in more depth.

So with that, I would just like to remind you, I'll go around and if anybody has questions or comments, please remember to give us your name and spell it for Florence.

Does anybody have any questions or comments?

MR. DAVIS: Seth Davis, property owner for the Kil-Tone 527 East Chestnut Avenue. What are the properties that are affected by ground water, which properties?

MS. VAUGHN: I don't have the list of addresses, but the former Kil-Tone property would be one of the ones that we deferred

action on. There is contamination. And when we say defer action, there may not actually be a delay because once the Record of Decision is signed, then we'll have to decide the remedy.

So it will take some time before we get to remedial action, but we might have those answers on the ground water before we're ready to start. So it might not actually be a delay, it's just, as Sharon said, we don't want to have to re-do the process. We want to do things as efficient as we have to.

MS. SEPPI: Does that help?

MR. DAVIS: It still doesn't tell me --

MS. VAUGHN: I don't know if it's something that I publicly should share. We can talk about it separately.

MS. SEPPI: Only because we're concerned about properties. So that's -- we can talk to you after this, if you would like.

MR. PINCENTS: My name is Larry Pincents, P-I-N-C-E-N-T-S. You have three non-residential sites listed. One of them is Kil-Tone, one of them is Lerco. There's a third undeveloped area. I believe that I live

across the street from it. Can you specify where that one is? Is it a large field area?

MS. HARTZELL: We can go back to that area here.

MR. PINCENTS: I've looked at the documents and it was unclear. I believe I live across the street from it, 600 Belair Avenue.

MS. HARTZELL: That third property is the one with the red outlined area that's not a square.

MR. PINCENTS: It's between the Boulevard and 6th Street and Washington Avenue.

MS. HARTZELL: That's the third property.

MR. PINCENTS: I live right across the street from that. And my question is, is that going to be dug up, that area? Is that going to be remediated, that whole field?

MS. HARTZELL: I'm unclear. I'm going to have to check.

MR. PINCENTS: I know it was tested because I've seen them.

MS. HARTZELL: It was tested.

MR. PINCENTS: So you don't know if that's

part of that process?

MS. HARTZELL: I would have to check the list of properties that are to be cleaned up.

MR. PINCENTS: Okay. Very good.

MS. VAUGHN: Just to be clear, it was definitely investigated as part of the process and we looked at that property closely across the street from the former Kil-Tone property, but we're not sure if it's one that requires clean up or we did not find elevated concentrations that required clean up so that we can verify with you.

And for any property owners out there, we will -- once we sign the Record of Decision, we will start contacting you to get access to do the design of the cleanup and all of that. So -- you know.

MR. PINCENTS: (Inaudible) residential property?

MS. VAUGHN: You're a residential property?

MR. PINCENTS: My property was tested a year ago this month and I was told by EPA personnel that I would be notified within a

couple of months whether or not it was contaminated or not. And as of this date, I've heard nothing. I've called the office in New York a couple times. I've talked to representatives and I was told that I would be contacted by the EPA site manager for this area and I've heard nothing. So I'm curious as to when do we hear?

MS. VAUGHN: I apologize for that. When we're done here, why don't you give me your name and number and I'll call you back tomorrow and let you know?

MR. DAVIS: 527 East Chestnut Avenue, we've seen several residential properties that have undergone cleanup and remediation, some have stayed with the property owners. I've seen one where the property's been sold. What type of kind clean bill of health are you giving these residents after they've been remediated?

So from what I'm understanding here, it's a permanent solution that you've been doing here, going down. So what's the document look like that you're giving residents?

MS. VAUGHN: So typically what we do for a residential property that's been cleaned up to an unrestricted use standard, we would give them a letter stating that there's no restrictions and all contamination to the property related to the site has been remediated, there are no restrictions, and we'll give them the file with the results from that standpoint and the work that was done on the property.

And if it were a non-residential property that did require restrictions, our goal is to fully remediate all properties, whether they're residential or non-residential to an unrestricted use standard so they can get such a letter. But there may be some properties that that's not possible on, in which case we would give them a letter indicating exactly what the restrictions might be.

And that would be on a case-by-case basis, but we anticipate that at Kil-Tone, there would only be a small handful of properties that might not be addressed to the unrestricted use standard. If that answers

your question.

MR. DAVIS: It does in part. I know one thing we've been searching for is a document saying that it's going to be addressed to a certain standard and it's funded and we've gotten nothing. We've got letters that say basically nothing, that there's a hypothetical where this could happen or may happen.

Is that available now, today, after this thing is signed, if there's an action going to be done on any owned particular property to a definite, you know, definition of what's going to happen?

MS. VAUGHN: No, not yet. Once we design the remedy for each property, then we'll give those plans to the property owner so they can see what the plans are. And then once that was complete, then they would get the letter saying the property is clear effectively.

That's going to take some time. I mean, the work on this site is actually moving pretty quickly, but it's not going to be a matter of months. It's going to be a few years before we are done with the work

particularly on the property that I know you're interested in.

The property that -- the work that we've done to date on the former Kil-Tone property was part of the removal action. So that was conducted to provide some short-term, immediate protectiveness given that we found five levels of contamination at the surface. But the permanent final remedy has not yet even been designed.

So I understand it's a frustratingly long process, but signing the Record of Decision in September will be the next step towards reaching that permanent solution.

MR. DAVIS: What, the residential or the non-residential?

MS. VAUGHN: No, for the non-residential. So we already signed the Record of Decision for the residential properties and we're currently doing the clean up. We've cleaned up six properties in 2017 to sort of get started and then we're working on another 30 or so that should be complete next spring. And then the final set of residential

properties will be addressed over the following 2020 to '21. Hopefully, the plan is that the non-residential work will start shortly after the residential work ends.

MR. DAVIS: One last question. So we have at 527 East Chestnut Avenue, we have a large section that was not paved on the east of the property that was utilized by the contractors to move dirt and do whatever they needed to do to clean up the first set of residential things. What do I have to do to have that paving completed?

Right now I have, you know, two-thirds of the property paved and I have a third of the property just sitting there unpaved.
I don't know that it's doing its job if it's not complete. So who should I talk to to try to move that along?

MS. VAUGHN: You can -- I'm not sure -- are they still actively using that part or they're no longer using that? Okay. So what I think is, either me or Caroline, if you can give us a call tomorrow or whenever you get a chance and we can discuss that.

MS. SEPPI: Or you can call me also. I can get in touch with Caroline, you know, she's at the site quite often and you can give me a call tomorrow. And that was 527 East Chestnut?

MR. DAVIS: (Inaudible) what was, but there's no work going on there and it's just a patch of ground with weeds. (Inaudible.)

MS. SEPPI: Right. I think I know where the property is. And we can check with the contractor to see what the schedule is and look at that tomorrow. Thank you.

Sir, did you have another question?

MR. RUIS: My name is Victor Ruis and I have a couple. Actually, I've got two questions. The first one is I'm a tenant, so my landlord has been very resistant to the testing of the soil and everything.

So now that I see the risk of cancer, it gets me worried because I was talking to another friend and he said that once everything is done, you guys aren't coming back. So if my landlord decides not to let you guys go in and do all your tests, I'm just

going to be -- I mean, for now I'm just staying there, but is there a way for me to force him to agree to get in the process or is it his decision?

MS. SEPPI: Do you know, has the owner of the property spoken to you about it at all?

MR. RUIS: Well, he said -- I don't know what he wants and I talked to someone else and he said, no, to let you guys in, but I think at the end he allows some of the workers to get into the property. But from what I know, he seems like he doesn't want to go through the process.

MS. SEPPI: Maybe after this meeting, if you come up and give us the address, we can check with the contractor and the people at EPA and see if we have access and see if there is a plan to do that property also, because we do have to reach out to the property owners first, you know.

But we certainly do try to encourage them to provide access for us to do the cleanup. That's very important to us. And then also, once we have his okay, we can talk to you

directly as the tenant. So I want to check with them first and then we'll get back to you tomorrow. Okay. Thank you. Do you have another one?

MR. RUIS: I don't know how to ask this question, but I hear something about institutional control and does that mean that most of time for the work to get done or everything's going to get done and I'm going to be able to open my business every day as usual?

MS. SEPPI: Now, that's a good question. I'm going to let Stephanie answer that because she knows more about institutional control.

MS. VAUGHN: So no, the majority of the properties we will try to clean up to what we call unrestricted use so that we won't need any institutional control. But if let's say there was some reason that we couldn't remove all of the contamination on the property, let's say there were utilities that we just could not get the contamination away from, then we might have to put some sort of deed notice or use restriction on the property

saying if someone wanted to do work on this property, they couldn't excavate below 2 feet in this portion, something like that.

So it's not that the business would have to close, but there might be some restrictions on future development. That's just one example, but the goal would be to complete this work and not have institutional control.

MS. SEPPI: Did that answer your question?

MR. RUIS: Yes.

MS. POST: Michelle Post, I'm with the Atlantic City Press. The gentleman over here has said that his yard was tested but and it sounded like a residential property. So are there still residential properties that may need to be brought into the program and would they be brought in under this Phase 2 or how would that work?

MS. VAUGHN: So at this point, we think -- so the way we think the contamination got spread through the community is basically through overflow like when it rains, the soil spreads and while the facility was operating somewhat without restriction. So we think we

have sort of reached the limits of how far the contamination has gone.

You know, we kept moving out how far we investigate until we were finding clean soil and non-impacted properties. There are still a few residential properties within that ring that we have not been given access to. So we are still actively trying to get access to those properties.

So I don't know if the property that you're concerned about is one that we either haven't investigated at all and should or one that we may need to or properties where we've collected limited samples and need to collect more and for some reason the owner is no longer giving us access. So we are actively still trying to get access to all those properties that we have reason to believe might be affected.

And you know, if we have data showing there's an impact, we will -- we will keep persuing it aggressively so that we get to, you know -- if we need to clean up the property, we will.

MS. SEPPI: Any other questions?

MR. DAVIS: Seth Davis, 527 East Chestnut Avenue. I was told by a couple of the environmental folks that have been testing that the Lerco property across the street from the Kil-Tone site actually has the highest contamination levels; is that true? The Lerco property?

MS. VAUGHN: I'd have to look at the data. I know that Kil-Tone and Lerco, the former Kil-Tone facility and Lerco have the highest concentration. I don't know what the actual highest concentration will be at Kil-Tone and Lerco.

MS. HARTZELL: I believe it was Kil-Tone, but I can verify it and check whether, what the levels were at Lerco as well.

MS. VAUGHN: It appears that the Lerco facility was used to store waste materials from Kil-Tone. So it's almost like it could be one facility with Kil-Tone. And this was all the way back in the past, nothing to do with current owners or operators, when it stopped operating in like 1933. So this is

all historic operations, nothing to do with current people that are there.

MS. SEPPI: We're certainly here to answer any more questions that you may have. And if you don't have any more questions, we thank you for coming.

MS. POST: About the non-residential properties, how would you describe the neighborhood? Is it a mix of residential and non-residential? You know, like describe the neighborhood.

MS. VAUGHN: So I would say based on this figure, if you go, so as you move this way, down left, it becomes more less residential, more commercial/industrial.

MS. POST: But Kil-Tone in relation to that, I see the little thing at the top. Is that Kil-Tone?

MS. HARTZELL: This slashed one is Kil-Tone, yes. Okay. This slashed property is Kil-Tone. And all of the properties in red is commercial and the purple color is industrial. And then the yellow is residential.

So we have sort of -- we have some areas where it's very mixed of residential properties and kind of businesses that are in some structures that could be re-used for residential in the future.

MS. POST: Where have you already done the work residentially? Is that on there? Is that neighborhood on there where you've already excavated? Where would that be on there?

MS. HARTZELL: So -- do you have the exact areas --

MS. VAUGHN: The residential properties we are currently addressing and have addressed are in this area. And it's the same area as the non-residential properties. It's just sort of because you might wonder why we separated it out. Part of the reason is because the residential and non-residential properties might have different clean up goals, so we often address those in different Records of Decision.

In this case, almost most, if not all, have been non-residential properties that

won't always be addressed with residential standards. So that's why we're hoping the work will just be able to continue sort of fluently from the residential to the non-residential because it is the same neighborhood and there might be a non residential property next to a residential.

MS. SEPPI: Any other questions? Thank you so much for coming. And as I mentioned, give it a day or two and this presentation will be up on the webpage. And if you just Google, Kil-Tone Superfund Site, it'll bring you right to it. So you don't even have to put in all that other information if you don't want to.

Other than that, I don't think there's anything else to share. We thank the interpreters for coming tonight and Scott. So thank you very much and the few people that had questions, please stay behind and we'll get your names and your questions. Thank you.

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(Whereupon, the hearing was concluded at 8:00 p.m.)

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C E R T I F I C A T E

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I hereby certify that the proceedings and evidence noted are contained fully and accurately in the notes taken by me in the hearing of the above matter, and that this is a correct transcript of the same.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 2

- -

FORMER KIL-TONE COMPANY SUPERFUND SITE

PROPOSED PLAN PUBLIC MEETING

OPERABLE UNIT TWO

NON-RESIDENTIAL SOIL

- -

City of Vineland Council Chambers
640 East Wood Street, 2nd Floor
Vineland, New Jersey 08360

September 4, 2019.
6:30 p.m.

- - -

APPEARANCES

- - -

EPA PRESENT:

PAT SEPPI, COMMUNITY INVOLVEMENT COORDINATOR
SHARON HARTZELL, PROJECT MANAGER
ABBEY STATES, HUMAN HEALTH RISK ASSESSOR
ANGELA CARPENTER, CHIEF OF SPECIAL PROJECTS BRANCH
STEPHANIE VAUGHN, SECTION CHIEF

PUBLIC PARTICIPATION:
STEPHEN HAWK
PERRY NOVAK
IAN STEWART
JESSE ALBERT
STEVEN CREIGHTON

- - -

P R O C E E D I N G S

- - -

MS. SEPPI: If everyone is ready, let's get started. First off, thank you for attending our public meeting tonight. We know you couldn't make the first one, so we're happy to do this again for you. And maybe for anyone else who showed up.

What I would like to do first is go around and have everybody who is here introduce themselves and their relationship to the site.

So let's start -- there.

MS. VAUGHN: Hi. I am Stephanie Vaughn. I am with EPA. I am the Section Chief.

MS. CARPENTER: I am Angela Carpenter. I am the Chief of the Special Projects Branch, and this project is within my current portfolio, as they like to say.

AUDIENCE MEMBER: Current?

MS. CARPENTER: Portfolios change.

MS. HARTZELL: Hi. My name is Sharon Hartzell. I am the Remedial Project Manager for Kil-Tone OU2.

MS. SEPPI: Abbey.

MS. STATES: I am Abbey States. I am the Human Health Risk Assessor for the site.

MS. SEPPI: And to end up, EPA people, my name is Pat Seppi. I am the Community Liaison for this site.

We have a couple of people tonight from the core of engineers who I would like to have introduce themselves.

Steve.

MR. CREIGHTON: I am Steve Creighton. I am the Resident Engineer on the project, core of engineering.

MR. STEWART: And I am Ian Stewart, Project Engineer of the project.

MS. SEPPI: We also have a couple of people from our con -- the course contractor who is actually doing the work right now.

So why don't you introduce yourself also.

MR. NOVAK: Perry Novak, Superintendent of 7C.

MR. ALBERT: Jesse Albert, Project Engineer for 7C.

MS. SEPPI: All right.

Now, the gentlemen in the back, please

introduce themselves. The two gentlemen at the side of the table are translators who we provide just in case there was anybody who came to this meeting tonight who needed to have the information translated.

So would you introduce yourselves?

MR. GARCIA: My name is Enrique Garcia.

MR. TELLE: My name is Rudy Telle.

MR. AMBER: And I am Scott Amber. I am here to set all this up.

MS. SEPPI: And our stenographer. Would you like to introduce yourself?

MS. RICCI: Sharon Ricci.

MS. SEPPI: Thank you, Sharon. Now, this is a little bit different. I don't know if you've been to EPA meetings before. This is a more formal public meeting where we do have Sharon, our stenographer, who will take down any comments or questions you may have at the end of the presentation.

So we want to make sure that you have time. You know, if you have any comments. If you leave here tonight and you think of a few more things, you have until the 23rd -- 26th. I am sorry. I keep saying 23rd -- of

September to send that information into Sharon.

I don't know if you've seen a copy of the proposed plan.

MR. HAWK: I have not.

MS. SEPPI: We have some here that I can give you when I leave. It's online too. Yeah. It's right there.

Don't fear reading it while we're doing the presentation, though.

MR. HAWK: No, I am not going to read it. I want to pay attention.

MS. SEPPI: You want to pay attention. All right. Thank you.

I think that that's pretty much everything to get started. When we do have the -- when the presentation has ended, we do ask if you could please hold your questions until the end. And then before you come up and ask your question or give your comments, if you could just say and spell your name so Sharon gets that information. Okay. All right.

I think then we're all set for you.

MS. HARTZELL: All right. Well, welcome,

everyone. Can everyone hear me okay without the microphone?

Okay. Wonderful.

Thank you for being here tonight for our public meeting part two on the Kil-Tone project for OU2. Tonight I will be covering the proposed plan for the project. I'll also go over some of the basics of the Superfund process, the site history that's gotten us where we are today, what we've done so far to investigate this section of the project, the remedial alternatives that we considered, as well as the preferred alternative that we have put forth in the proposed plan. And we'll discuss the next steps and you will have a chance to give questions and comments in person, as well as an opportunity to submit them to me after the meeting.

So we are here tonight to discuss the proposed remedial action plan for Operable Unit 2 of the Kil-Tone site. This operable unit is encompassing the non-residential properties in the vicinity of Kil-Tone, including the Kil-Tone facility itself.

So as Pat stated in her introduction, we

will be accepting written and verbal comments until Thursday, September 26th. And all of these comments will be formally addressed within the record of decision that will be producing and it will be included in the official administrative record for the site.

So to discuss a little background of the Superfund process, we start with all of the sites at the preliminary assessment and site investigation stage. This is to determine whether the site has significant risk to human health or to ecological health. And that process eventually leads to -- for sites like this, to the placement of the site on the national priorities list.

After that, we commence a more in-depth investigation called the remedial investigation, and that process is tied in with a process called the feasibility study where we look at different options for dealing with the contamination that we're dealing with.

So following that is the stage that we're at right now, the proposed plan stage. And that will lead into a record of decision once

we have fully addressed any public comments on the proposed plan.

After that, we'll work on the remedial design and put that into place with the remedial action. And that will involve a period of -- you know, since conduction, completion and then whatever monitoring we need to do after the site is finished. And throughout all of that, community involvement is a very important part of our process and we are here to take your comments and questions and respond to whatever concerns you might have.

So to situate us, we are discussing the formal Kil-Tone site in Vineland, New Jersey. It is located in the pinpointed area of the map. I think I have -- did I have a laser pointer? I did have a laser pointer. Yes. I am pretty sure that you can all see that.

It's a little light, but we're here right in Vineland. To go over some of the main areas at the site, this blue outline is the approximate boundary of the site that we have been looking at for potential environmental impacts from Kil-Tone itself. The red

outlined area of this map is the former Kil-Tone facility, which is included in this portion of the project.

And the Lerco fuel company, which is across the street from the former Kil-Tone facility, was also used as apart of a lot of the operations of Kil-Tone, including waste management. So we're considering that a highly impacted site as well.

So the Kil-Tone company was operating here in the early 20th century. It started operations at the property on or about 1917 and proceeded to manufacture lead and arsenic-based pesticides until about 1933. So some of the specific compounds that they made here are pictured below. They have some very vocative names. London purple, Paris Green. But all of them included arsenic compounds, which is one of the primary contaminants that we're looking at here.

The property itself is currently operated by Urban Sign & Crane, which installs and manufactures signs for commercial businesses. And so I pointed out the Lerco facility before, but that was sort of -- the

investigation of that area triggered an investigation into Kil-Tone itself in 2014. And so at that point we began to realize some of the environmental problems that we were dealing with.

So August of 2014, the New Jersey Department of Environmental Protection started their investigation into the site. In November of that year, they referred the site to us. And then our removal program, which deals with risks above a certain level, conducted sampling in the vicinity of the former property and conducted a few actions to provide temporary protection at some of the properties in the vicinity of Kil-Tone, including the Kil-Tone property, that exceeded their specific action levels. So that was a temporary measure to prevent exposures.

In April 2016, the site was added to the national priorities list, which designates it an official Superfund site, and here we are.

So to look at the site itself, we see we have the former Kil-Tone property in this red area. This is the broad outline that you saw in blue on one of the earlier maps. And then

the Tarklin Branch is also a portion of the project that we'll be dealing with at a future point. So the Tarklin itself actually originates on the Kil-Tone property and we'll be investigating that going forward.

So I mentioned operable units before. Just to go over what that phrase means. A site on the Superfund list can be divided into a number of different areas. That's usually based on how complex the problems associated with the site are. And we kind of group parts of the project together so that we can deal with them most efficiently. They can address geographic areas or specific portions of the environment like groundwater or soil.

The Kil-Tone site has four operable units. The first, operable unit one, involves the residential properties in the vicinity of Kil-Tone. And that is currently undergoing cleanup. So if you've seen any of the excavation and refilling work that's been going on in the neighborhood, that's all associated with this first portion of the project.

Operable unit two, which is what we're

here to talk about tonight, is the non-residential properties in the vicinity of Kil-Tone. So you can see from this map that we have the property itself and then kind of a wide variety of different land uses that are scattered around the property.

So these purple sites are industrial. The red are considered commercial. And then we have some commercial sites that are interspersed with residential sites that are being dealt with through OU1. So it's an interesting blend of different land uses that we are contending with.

Operable unit three concerns the groundwater in the vicinity of the former Kil-Tone site. So that is -- that portion of the project is currently in the remedial investigation stage. So we are -- we just finished up around a Hydropunch sampling on various properties around the Kil-Tone site, and we'll be going out and installing some other more permanent wells and getting a better idea of how the groundwater might be impacted.

And operable unit four, which I mentioned

a moment ago, concerns the Tarklin branch and the sediments and service water of the Tarklin, as well as adjacent properties in the flood plan.

So the remedial investigation for operable unit two, the non-residential properties, was finalized in 2018. That investigation characterized the overall conditions of the site. We were looking at what contaminants we were dealing with and determining the nature and extend of that contamination, as well as looking at what risks were present to the human health and the environment.

Following that, we developed a focus feasibility study, which was finalized just a month or two ago. And that is the part, portion of the project where we look at different alternatives for dealing with the contamination. So we screened all of these remedial alternatives against one another for effectiveness and evaluated which would meet the project objectives and which might not.

To go over some of the results, the sampling process and the results from the

remedial investigation, we did the sampling in two different phases. The first section of the sampling was the Tier A soil sampling, and that was conducted in August of 2017. So that Tier A portion involved the sampling of the former Kil-Tone facility itself and the Lerco property, as well as another property in the vicinity.

These, this process involved collecting surface and subsurface soil samples and analyzing them for the full suite of potential contaminants including heavy metals and organic constituents that we though might potentially be present at the site.

So the purpose of this was to determine which contaminants present in soil were related to operations of Kil-Tone or potentially related, and also to get a head start in figuring out the extent of contamination in the properties.

The next portion, the Tier B soil sampling, was conducted between September 2017 and March of 2018. And that involved sampling approximately 50 of the non-residential properties in the vicinity of Kil-Tone. And

these properties we collected samples and analyzed them as well for metals and organic constituents including PAHs.

So in terms of findings, the highest contamination was found on the Kil-Tone property itself. Not surprising since that is the center of arsenic pesticide manufacturing. We found arsenic in soil up to 45,900 milligrams per kilogram, lead and soil up to 91,700. And -- at the Kil-Tone property itself, some of these elevated concentrations were found at locations below the depth of groundwater table. For the most part, concentrations were found in the shallow soil, though. Like in the zero to four-foot range.

At the other OU2 properties we still saw elevated levels of arsenic and lead, although at much lower levels than at Kil-Tone itself. And another trend to observe that we observed about the properties was that elevated concentrations generally decreased with distance from former Kil-Tone.

And that's just an image of some of our soil borings because we were investigating the soils both at surface and at depth.

So the next portion of the remedial investigation was to look at human health risk. And we looked at risks to several different categories of potential, what we call, receptors. But in general it included future and current workers and residents in the vicinity of the site.

We looked at two categories of risks, both cancer risks and non-cancer risks, and found that both of these categories of risks had exceedances of EPA's risk levels for the region. We also had some instances of ecological risk, the potential for adverse effects to terrestrial plants, to soil invertebrates.

And so the take-home message for this is since unacceptable risks are present, the remedial action is necessary for the site. And so that leads us to this, the stage that we're in now.

So once we identify an unacceptable risk and determine that we need to take action, the next step is determining what the goals of those actions are so we can make sure that we meet them with the remedy that we've selected.

So we have four remedial action objectives for this portion of the site, which are specific cleanup goals to make sure that human health and the environment are both protected.

So the first is to prevent current and potential future unacceptable risks to human receptors. That includes the workers, potential future residents at any of these properties included in OU2.

The second is to prevent migration of the contaminants from the soil via either overland flow of water or air dispersion. We want to stop them from getting anywhere else.

Our third REO is to prevent or reduce the migration of COCs into the groundwater from the soil. And the fourth is to prevent these same unacceptable risks to our ecological receptors.

So EPA sets specific soil cleanup goals for projects like these. And so you can see that we have a couple of different numbers put up here for each of the two contaminants that we're dealing with at the site. Arsenic is the easiest one to grapple with.

So the non-residential level, the residential level and the level that determines whether groundwater is impacted are all the same and are the lowest of all of the levels that we look at here. So for arsenic, the cleanup goal is going to be 19 milligrams per kilogram.

Lead is a little bit more complicated because there are a few different levels. So we have 800 milligrams per kilograms of lead in soil is the level that EPA sets for non-residential properties use versus 400 for residential use.

So we had some discussions with the city of Vineland and determined that most of the properties in OU2, even though it deals with commercial and industrial properties, could potentially be zoned as residential in the future. So for most of these properties we are, with the exception of a few that will definitely be industrial going forward, we will be pursuing residential cleanup levels for lead.

There's also a separate number for lead that we're in the process of calculating that

determines whether groundwater can potentially be impacted, so we'll be looking at that number as well for the properties that have a potential to impact groundwater.

But it will be a case-by-case evaluation of each of the properties to determine what the future site use is going to be and, therefore, what level we're going to use. But in general, aiming for residential.

So we looked at several remedial alternatives in the feasibility study and we presented the one that we decided to put forward as our proposed remedy in the proposed plan. So we always look at alternative one, which is no action. That would be essentially leaving the site as-is and not doing anything.

Alternative two includes engineering controls, and that might be something like adding a cap on the site, any physical barrier to prevent contaminants from reaching receptors, as well as institutional controls. And an institutional control would include something like a deed restriction or restriction on property use.

Alternative three includes excavation to

the groundwater table, as well as those engineering and institutional controls. And alternative four includes excavation below the groundwater table, in addition to the controls discussed.

Alternative three and alternative four are the same essentially, except for the depth of excavation. One stops at the water table and one goes below.

In looking at each of the remedial alternatives, EPA has nine evaluation criteria that we apply. The two most important are the threshold criteria. And those determine whether the remedy is overall protective of human health and the environment and whether it complies with those standards that I had showed in the table a few slides ago.

The balancing criteria include how effective the remedy will be in both the short term and the long term, whether the remedy includes reducing toxicity and mobility through the processes, and as well as cost. And modifying criteria include community acceptance and state acceptance.

So the state has agreed with the remedy

that we put forth in the proposed plan and we are here tonight to discuss with the community and find out if there are any concerns there, which we'll take into consideration in deciding on the final remedy.

This table goes over some of the -- you know, the numbers associated with each of the remedies, including the excavation of -- quantity of excavated soil that we're anticipating. This is pending change based on what we find during the remedial design process, but in general you could see that the estimated quantity of soil that we'll be taking out increases through the four alternatives. Cost estimates and the estimated timeframe of how long it will take to put this remedy in place also increases.

So after evaluating the four alternatives presented, EPA has decided that our preferred alternative is alternative three, excavation to depth of contamination, not to exceed depth of groundwater table, engineering controls and institutional controls. And the parts of this remedy are the actual excavation process

itself where we'll take out any soil that exceeds our standards, off-site disposal of that contaminated soil in the proper place, institutional controls and long-term monitoring of any properties that have contamination remaining in place that we can't get to for whatever reason.

This alternative provides protection of human health and the environment by removing the contaminated soil. It meets our remedial action objectives through achieving property specific soil cleanup standards. It's preferable to alternative two in that it relies less heavily on institutional controls and more heavily on actually removing the contaminated soil. And it's superior to alternative four in that it's more cost effective and easily implementable.

Now, I did mention that a few properties have soil below the level of the groundwater table. What we are doing with those properties -- we're still in the investigation process with OU3, which is the groundwater portion of the project. And so the Kil-Tone property itself and a couple of other

properties that have contamination below the groundwater table level, we'll be trying to time the implementation of the remedy for when we have a better understanding of the groundwater contamination.

We're expecting that there will be a remedy for groundwater and we want to avoid doing excavation on these properties that might have to -- we might have to return to them in the future once we have the groundwater figured out. We don't want to do something that we are going to have to undo and then redo in the future.

So in terms of timing, we think that we can work it out that our dealing with the Kil-Tone property and a few other properties with very deep contamination will work out with having a better understanding of the groundwater and at that point we'll have a clearer path forward on those.

So our next steps in this process are to review and address public comments, which we will be taking tonight, as well as verbally or in writing to me. My contact information will be on the next slide. The next step in the

process is actually signing the record of decision, and then we will go through the remedial design process to decide how we're actually going to do the remedy on each property and then completing the action itself.

So as we stated at the beginning, the public comment period opened initially at the end of July, but we have extended it through September 26th. And we can take comments in written form or in verbal form any time during that period. And we also have a few copies of the proposed plan, if you're interested in more information, up at the front. And it's also available on the website.

So with that, I can take any questions that anyone has about the proposed remedy or the site in general.

MS. SEPPI: Thank you, Sharon. That was very interesting.

Just one thing I want to mention before we turn it over to Steve. When we were talking before the meeting, he said -- he was commenting about how nice the residential properties look and he said, and I heard a

rumor that you have to go back and dig them up again to do something else and completion.

So maybe that was what -- whoever has told you that was referring to, the fact that some of these properties, you know, with the groundwater table. But we sure didn't know we had to go back and dig up those properties again.

MR. HAWK: Sure.

MS. SEPPI: So certainly if you have any questions or comments.

MR. HAWK: Yeah, I'll come up. It's been very informative.

So I need to give my name, right? It's Stephen with a P-H, and the last name is H-A-W-K. And I own a property at 633 Almond Street. It's within the study area. My first question has to deal with that.

What was the closest spot that you tested to that area? Do you know? Or -- and what kind of testing did you do?

MS. HARTZELL: Which property is it again?

MR. HAWK: It's near the school. It's on Almond Street. And probably as you go farther

north and east of the site itself, you probably didn't do much in the way of deep testing.

But you did soil borings it looks like, right?

MS. HARTZELL: So we have done surface soil sampling and soil borings on a lot of different properties. I would have to find your specific property.

Do you know if there was sampling on your property, or you're just wondering what the closest was?

MR. HAWK: Yeah, I was wondering what the closest was given the fact that I lived there two years and did a lot of yard work and was wondering what I was encountering as I was doing that.

And if you can give me information -- you don't have to give it now. You can contact me. Like I said before -- and I asked this question. It just blows me away that there's contamination north and east of the Kil-Tone site because of groundwater flows going in a southwesterly direction and I would love to hear -- Steve gave me a little explanation,

but I would love to hear how you think that those contaminations got north of the site.

MS. HARTZELL: So you're on Almond Street, you said?

MR. HAWK: Yeah. It would be right here.

MS. HARTZELL: Okay. So this map only has the OU2 properties. I am not sure if we have anything that's closer. But the two closest would be these 223 and 233. And I would have to check our --

MR. HAWK: Okay. And they look like they're on -- if I look at it, they're on 6th and Quince area. I see that. So those are two close soil sample spots.

MS. HARTZELL: And those are no action required.

MR. HAWK: Okay. So that's good.

MS. HARTZELL: So that's what I know from what I have here. But I would have to look at the maps to see if there's anything else that's not on this map.

MS. SEPPI: And I think Stephanie had something to add.

MS. VAUGHN: I was just going to say, we could get back to you with more detail. And

also if you want to go to the website, the remedial investigation reports for both OU1, the residential, and OU2, this action, the non-residential, are online.

So you can --

MR. HAWK: Yeah. You don't have to get back to me. I think I'll do that through the website. And I am sure I'll be satisfied.

And the other thing is, I am curious what's going to happen with the commercial remediation that you're going to do. You're actually going to take down buildings in some cases? Smaller buildings? And remediate sites? Or you are going to work around buildings and just take out site improvements and then remove soil.

MS. HARTZELL: So in every case that we can, we're going to try to avoid demolishing structures, aside from sheds and garages that has been done with OU1, where we can't deal with contamination via underpinning or some other form of getting underneath the building.

It's possible that demolition will be needed, but that will all be further investigated during the design process.

MR. HAWK: Okay. And did you find -- you found that there was the hotspot across the street in the Lerco fuel site because I guess they dumped some of the residuals there.

Did you find any other spots that you thought might be along those lines where there was dumping? Any other --

MR. CREIGHTON: That was the only major hotspot that we found.

COURT REPORTER: Sir, can you state your name.

MR. CREIGHTON: I am sorry. Steve Creighton, core of engineers.

MS. VAUGHN: So the investigation is still ongoing. There might be another -- so there's the Lerco property, the one -- another nearby property may also have some of that residual contamination.

So as we're sort of conducting the remedial action for the residential properties and when we start with the non-residential, you know, we may -- once you put a shovel in the ground --

MR. HAWK: You'll find out.

MS. VAUGHN: Yeah, you'll find more.

MR. HAWK: Yeah. Unfortunately, 40, 50 years ago there wasn't the same amount of scrutiny and if an industrial user owned a property they often used it as a dumping ground without any public scrutiny.

You may find some others. I hope you don't but --

MS. HARTZELL: So far Lerco and Kil-Tone has had by far the highest levels. We consider that the epicenter. But you never know what we're going to find.

MR. HAWK: Yeah. I was -- I mentioned it to a few of you, but I was on the planning staff here in Vineland for a long time and I was on the staff when the Lerco came before the city planning board for the site plan approval. And there was a lot of opposition to the Lerco site because it was going to be storage of natural gas in high quantities and there was a lot of public concern.

And that's when the Kil-Tone issue came up; is that correct?

MS. HARTZELL: Right.

MR. HAWK: And there was actually some written testimony from a gentleman who

remembers there being quite a lot of life and aquatic life in the Tarklin branch, and at one point he found it was dead one summer when he went back there to fish. I don't know if you ever got ahold of that testimony. But he had very specific recollections of that and that the aquatic life actually died and he wondered why.

MS. VAUGHN: Yeah. Yeah. I think that is included in the investigation report for the first operable unit, yeah.

MR. HAWK: So that was pretty revealing testimony to us. You know, we couldn't do anything about Lerco because there was an LSRP that gave an approval for them to pave most of it to capsulate it, but at this point you're probably going to just tear it all out, the soil out.

MS. VAUGHN: Sorry. What you may have heard is that there was a removal action conducted on several properties sort of -- its ability EPA has to address a risk in a quick way.

So our removal program did go out and put caps on a number of these properties. So

those may need to come up when we do the full remedial action, which will be permanent. But the remedial actions we're taking where we're digging up the soil, we do not think we will need to go back to any property.

MR. HAWK: Oh, good. When do you think you might start and how long do you think it will last?

MS. HARTZELL: So that's dependant on a number of factors. We still have to get the raw design, which we are trying to do this month. And then following that, we'll have the remedial design process that takes maybe six months to a year. But --

MS. VAUGHN: Two years.

MS. HARTZELL: Two years. Beyond that -- sorry.

MR. HAWK: So no shovels in the ground for a while.

MS. HARTZELL: There will be no shovels in the ground until about two years.

MR. HAWK: And then it's hard to tell how long it will take to take care of all these sites?

MS. HARTZELL: We have estimates on that.

So during the feasibility study we estimated that the -- for the selected or the proposed remedy, that it might take 35 months.

MR. HAWK: Oh, yeah.

MS. VAUGHN: So but that's if we sign the record of decision in September -- assume it could be quicker, but two years for design. I am just being realistic here. We have a design ready to go in Septemberish 2021, and so then the remedial action would be 20 -- for, you know, two, two and a half years.

MR. HAWK: Almost three years later. Okay.

MS. SEPPI: But I think Stephanie makes a good point, we are still continuing to move on with the residential properties. So it's not like we're leaving or anything.

MR. HAWK: You didn't stop that part.

MS. SEPPI: No. That's still going on.

MS. VAUGHN: And we may be able to -- we may be able to start some work sooner.

MR. HAWK: Okay. Great. I learned a lot.

MS. HARTZELL: Well, thank you for your questions.

MS. SEPPI: Thank you.

MS. HARTZELL: And if you have any more, you can reach me at my email or a phone number.

MS. SEPPI: And you have the copy, right?

MR. HAWK: I do.

And that concludes your presentation?

MS. SEPPI: That does, yes. Unless you think of any more questions.

MR. HAWK: No. I am sure you all want to head home, get out of here.

MS. SEPPI: Well, I am sure it's raining because every time I leave here to drive home, it's raining. So I am sure it must be.

_ _ _

(A brief discussion was held off the record)

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MS. SEPPI: Well, thank you so much. It was a pleasure meeting you. Don't hesitate to contact us with any questions.

_ _ _

(Hearing adjourned at 7:24 p.m.)

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C E R T I F I C A T I O N

I, hereby certify that the proceedings and evidence noted are contained fully and accurately in the stenographic notes taken by me in the foregoing matter, and that this is a correct transcript of the same.

_____

Court Reporter - Notary Public

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Attachment D

Written Comments

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PLEASE RESPOND TO CHERRY HILL

August 26, 2019

Via E-Mail and Overnight Mail
Sharon Hartzell, Project Manager
U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, NY 10007

Re: ***Former Kil-Tone Company Site***
Lerco Fuel Co., Inc., Vineland, NJ
Comments on EPA Plan to Remediate Contaminated Soil
at 520 Chestnut Avenue, Vineland New Jersey.

Dear Ms. Hartzell:

This office represents Lerco Fuel Co., Inc. the owner of 520 Chestnut Avenue, also known as Block 4116, Lot 17 on the Tax Map of the City of Vineland. Lerco purchased the property long after the arsenic and inorganic lead contaminants were placed in the soil, and it had nothing to do with causing that contamination. After consultation with the New Jersey Department of Environmental Protection ("NJDEP"), it installed in 2016, at a significant expense, a cap over the entire site using a combination of asphalt and oil and chip material. We request that the existing cap, which also serves a role in a petroleum cleanup of the property, be allowed to remain, and that given the cap, the excavation proposed in EPA's plan for soil be eliminated for this property.

As detailed in a Remediation Action Report submitted to NJDEP in 2017 by Lerco's Licensed Site Remediation Professional, Gary Brown of RT Environmental Services, Inc., a cap consisting of two inches of asphalt was placed down the eastern driveway area between the garage and the office building to a total width of approximately 40 feet. All other portions of the site which were not covered by a concrete slab were covered using a 2 inch oil and chip cap, another asphalt product. Underneath the asphalt was placed 4 inches of stone and underneath the oil and chip was 6 inches of stone. Photographs and additional details concerning the cap are

provided as Exhibit A. RT concluded that "the asphalt cap will prevent exposure to the metals and residual petroleum contamination and will reduce surface water infiltration and stabilize contaminated soils, thereby protecting groundwater." A deed notice was thereafter placed on the property to impose usage restrictions and ensure that monitoring/inspection requirements were met. Further details concerning the cap will be provided upon request.

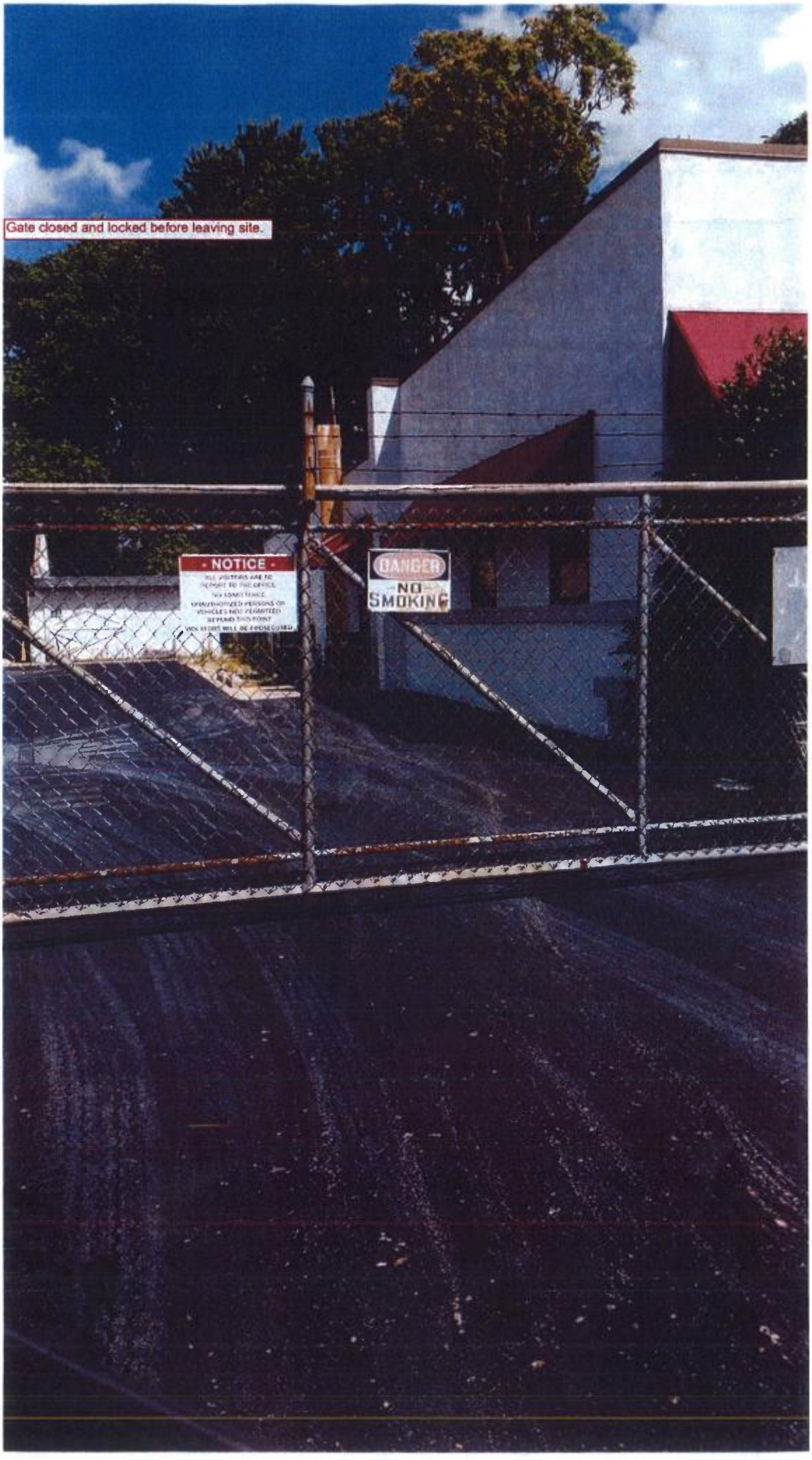
Lerco submits that the recently installed cap is an effective means of dealing with the contaminated soil at this site. As shown by the fact that EPA is not proposing that the soil remediation extend below the water table, the lead and arsenic contamination on this site is not migrating from the property. The cap installed in 2016 is protective of the environment and public health and safety. It would be wasteful to now remove that cap and engage in the unnecessary task of excavating and removing contamination that is staying in place. We therefore request that EPA revise its proposed remedy concerning the soil on this property and allow the cap to remain as the remedy on Lerco's property for the soil contamination in question.

Very truly yours,

FLASTER/GREENBERG P.C.

Mitchell H. Kizner

MHK/crf


Gate closed and locked before leaving site.
- NOTICE -
DANGER
NO
SMOKING


Capping work is finished.

GB, CW, Files

RT ENVIRONMENTAL SERVICES, INC.
FIELD ACTIVITY LOG

Client: Lerco Fuel ~~BB 8/24/16~~	**Project #:** 03382-026	**Initials:** BB
Job Location: ~~Location Site~~ Lerco	**Date:** ~~8/24/16~~ 8/24/16	**Weather:** Sunny
Site Address: ~~215 to Chestnut Ave~~ Vineland, NJ		520 E. Chestnut Ave.
Equipment: None ~~BB 8/24/16~~		
Equipment Calibration: Model:		
PID: Gas/Lot#:	**Gas ppm=**	**Instrument ppm=**
H & S: Hospital Name:		
Location:	**Number:**	
Police:	**Number:**	
Explosive Atmosphere/Conditions:	**Yes** (No)	
Utility Clearance	**Client Approval:**	
Serial #	**(On-Site Utilities)**	**Name** **Date/Time**
Drums on Site: (No)	**Yes**	**Soil Pile:** (No) **Yes/Size**

FIELD ACTIVITY: Capping Oversight

0630: Leave office (King of Prussia)

0740: Arrive at Location on GPS (It was not correct location, but was close), Spoke to Jim Berg and GRB about directions.

0758: Arrive at Lerco Fuel Site, met several members of Subcontractor Company, Asphalt Industries of Chester, PA. They informed me that other employees & equipment were on their way. Personal Vehicle was parked outside fence per request of one of the workers.

0815: Workers begin preparing area for oil/chip operation (weed/grass removal)

0822: Trucks/other equipment arrives on site, Met Asphalt Industries owner Sam Logason.

0837: More employees/equipment arrives.

0908: Oil Truck begins applying oil

0913: Stone truck begins laying stone on oiled surface

1020: Second layer of oil and stone application begins

1105: Employees oil/chip remaining areas not reachable ~~writing~~ BB 8/22/16 with heavy equipment. This is done manually.

1145: Work is finished, equipment/employees begin to move offsite

1155: All equipment/personnel now offsite, gates are closed and locked.

1200: RT offsite.

Comments:

Photos attached to activity log.

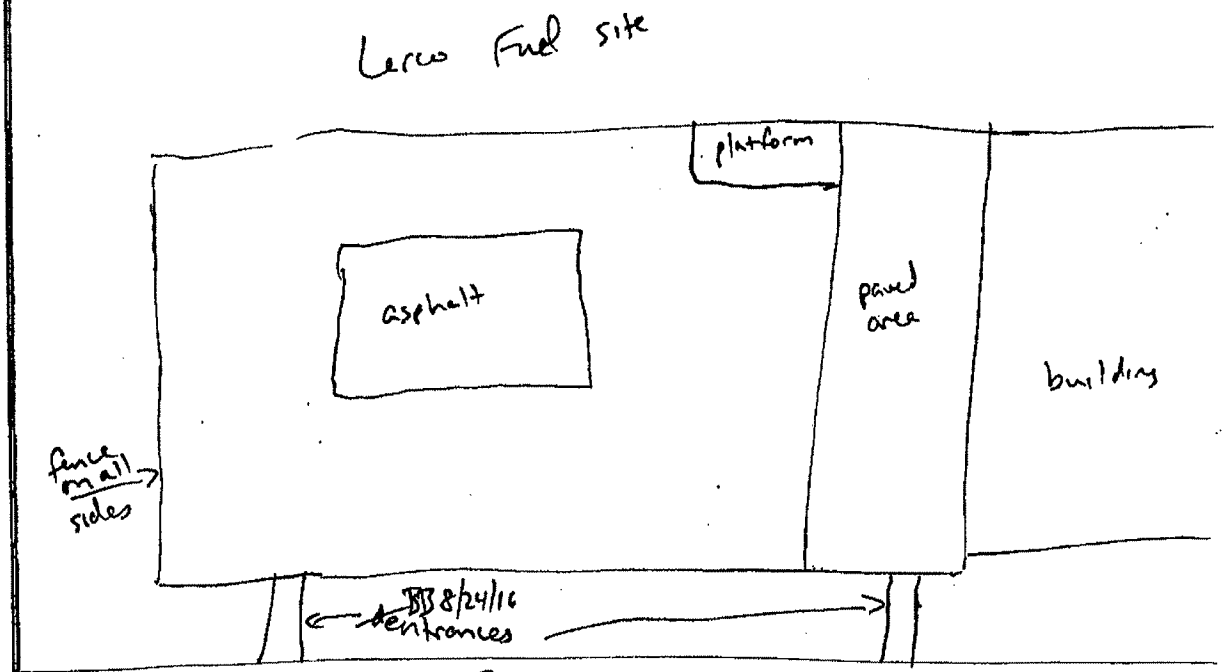
Signature: B-B

BB 8/24/16

RT ENVIRONMENTAL SERVICES, INC.
FIELD ACTIVITY LOG

Client: Lerco Fuel	**Project #:** 3382-026	**Initials:** BJS
Job Location: Lerco Fuel	**Date:** 8/24/16	**Weather:** Sunny
Site Address: 520 E. Chestnut Ave Vineland, NJ		
Equipment: None		

FIELD ACTIVITY: Capping oversight



Comments: Area surrounding asphalt was oiled/chipped. Entrance on West side of site was also oiled/chipped.

Signature: BJS