FIRST FIVE-YEAR REVIEW REPORT FOR COOPER DRUM COMPANY SUPERFUND SITE SOUTH GATE, LOS ANGELES, CALIFORNIA

PREPARED BY

U.S. Army Corps of Engineers

Seattle District

FOR

U.S. Environmental Protection Agency

Region 9

Approved by:

DANA BARTON

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Executive Summary

This is the First Five-Year Review of the Cooper Drum Company Superfund Site located in South Gate, Los Angeles County, California. The purpose of this Five-Year Review is to review information to determine if the remedy is and will continue to be protective of human health and the environment.

The Cooper Drum Company Superfund Site (Site) is located in South Gate, Los Angeles County, California. The Site is defined as the area of contamination affected by the release of hazardous materials originating from the Cooper Drum property. The Site includes the Cooper Drum property (Property) located at 9316 South Atlantic Avenue and the downgradient area along Rayo Avenue and south of Southern Avenue to McCallum Avenue (Off-property) in South Gate, California. The Site is located 10 miles south of the city of Los Angeles and approximately 1,600 feet west of the Los Angeles River. The Cooper Drum property, which is zoned for heavy industrial use, consists of 3.8 acres, and is in a mixed residential, commercial, and industrial urban area. The Cooper Drum Company operated at the Property from 1972 to 1992; however, reconditioning and recycling of steel drums has occurred at the Property since 1941. Open concrete sumps and trenches collected waste from the drum processing.

EPA signed a Record of Decision in 2002 for the Cooper Drum Company Site selecting a remedy to address contaminated soil and groundwater. The remedy includes:

Selected Remedy for the Soil —

- Extract volatile organic compound-contaminated groundwater and soil vapor simultaneously using dual phase extraction technology.
- Excavate non-volatile organic compound contaminated shallow soil (less than 5 feet below ground surface) on the Property and dispose at an approved off-site facility.
- Implement institutional controls on the Property for soil contaminated with non-volatile organic compounds where excavation is not feasible.

Selected Remedy for Groundwater —

- Extract volatile organic compound-contaminated groundwater using liquid-phase activated carbon at a treatment system on the Property.
- Use in-situ chemical treatment, either reductive dechlorination or chemical oxidation, to enhance remediation of volatile organic compound-contaminated groundwater.
- Conduct groundwater monitoring to evaluate the effectiveness of the remedy, to determine the location of the plume, and to verify that remediation goals have been met.

The Cooper Drum Cooperating Parties Group[1] initiated soil vapor extraction in 2011. Recovered soil vapor condensate and, historically, extracted perched groundwater, are routed to liquid phase granular activated carbon vessels for treatment prior to discharge to the sanitary sewer.

The Cooper Drum Cooperating Parties Group also began operating the groundwater extraction system that was designed to both remove contaminant mass from groundwater within the Gaspur Aquifer and provide hydraulic control of volatile organic compound-impacted groundwater. The groundwater extraction well network includes the following extraction locations screened at various depths within the Gaspur Aquifer.

- On-property extraction wells EW-4 and PTW-2
- EW-A (constructed at a 45-degree angle from vertical, starting at the southeastern corner of the Site and terminating below the eastern side of Rayo Avenue)
- Three Off-property extraction wells (EW-5, EW-7A, and EW-7B) located across Rayo Avenue

Sampling data indicate that there is a small zone of decreasing contaminant trends in the central portion of the Property, and groundwater concentrations at the Site perimeter exhibit increasing trends of trichloroethene and cis-1,2-dichloroethene. Additionally, recent 1,4-dioxane concentrations on the Property and in sentinel wells are detected an order of magnitude above the California State Notification Level for drinking water. Groundwater gradients in the shallow, intermediate, and deep aquifers do not exhibit hydraulic control of the plume, and wells screened in the deeper Exposition Aquifer show increasing concentrations of site related contaminants. Based on the information reviewed during this Five-Year Review period, the remedy is not functioning as intended.

EPA did not select numeric cleanup levels for volatile organic compounds in soil at the time the Record of Decision was written. Instead, EPA required the soil cleanup levels for volatile organic compounds to be determined based on the remedial action objective, which is to prevent the vertical migration of contamination at concentrations that would impact the shallow aquifer above drinking water standards and to eliminate potential exposures to indoor air contaminants created by site contamination. To evaluate attainment of this goal, performance evaluation soil gas samples were to be used in the VLEACH model to evaluate impact to groundwater and input into the Johnson & Ettinger Model to ensure that residual volatile organic compound concentrations remaining in soil are protective of potential indoor air receptors. Since the Record of Decision was written in 2002, EPA and California's Department of Toxic Substances Control methodology for assessing the potential risk associated with vapor intrusion has changed. Therefore, the use of the Johnson & Ettinger Model and the VLEACH model are no longer valid.

[1] The Cooper Drum Cooperating Parties Group is defined as the Performing Settling Defendants that are responsible for the remediation of the Cooper Drum Superfund Site, under the oversight of EPA.

In 2017, California established a drinking water standard for 1,2,3-trichloropropane, which is lower than the Record of Decision cleanup level. While not a Site contaminant of concern listed in the Record of Decision, 1,4-dioxane is found in groundwater at concentrations that are several orders of magnitude above the California State Notification Level of 1 µg/L. The current treatment system does not treat 1,4-dioxane.

The remedy at the Cooper Drum Company Superfund Site is currently protective of human health and the environment. Direct contact with soil contamination on the Property is prevented by asphalt and concrete caps throughout the site and security fencing. The residents of South Gate are protected from exposure to contaminated groundwater because they are connected to the municipal water supply. In additional, the closest municipal production wells are in a deeper aquifer below the extent of the current contamination from the site. The current soil vapor extraction system is controlling exposure to contaminants in the soil vapor on-site and at the adjacent school property. Additional institutional controls will be implemented to further protect future tenants and/or owners from any hazardous materials left on the Property after the planned soil excavation is complete. However, to be protective in the long-term, the following actions need to be taken:

- Update the soil gas cleanup levels from the Record of Decision in a decision document to reflect current Vapor Intrusion Screening Levels.
- Define the extent of contamination in the Gaspur Aquifer should be defined, pumping rates should be increased and/or additional extraction wells installed to capture the full extent of the plume.
- Investigate the nature and extent of contamination in the Exposition Aquifer and identify the transport mechanism to address vertical migration from the Gaspur to the Exposition Aquifer.
- Evaluate the nature extent of the 1,4-dioxane on the Property, and the measures that should be implemented to ensure the existing treatment system will address the 1,4-dioxane prior to discharge.
- Update the sampling plan to include the lower the detection limit for 1,2,3-trichloropropane since the State has adopted a drinking water standard
- Record the institutional controls specified in the Record of Decision, specifically the restrictions on type of property usage.

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1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethylene
1,2-DCA	1,2-dichloroethane
1,2-DCP	1,2-dichloropropane
1,2,3-TCP	1,2,3-trichloropropane
ARAR	applicable or relevant and appropriate requirements
DCE	dichloroethylene
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
gpm	gallons per minute
MCL	Maximum Contaminant Level
µg/L	microgram per liter
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
ROD	Record of Decision
Site	Cooper Drum Company Superfund Site
TCE	trichloroethylene
USACE	United States Army Corps of Engineers

1. Introduction

The purpose of a Five-Year Review is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this Five-Year Review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 121, 40 Code of Federal Regulation Section 300.430(f)(4)(ii) of the National Contingency Plan and EPA policy.

This is the First Five-Year Review for the Cooper Drum Company Superfund Site. The triggering action for this statutory review is the initiation of the first remedial action that leaves hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure. At Cooper Drum, the first action of the remedy was the installation of the SVE system in September 2010. An internal review identified that a Five-Year Review had not been completed as required, but EPA Region 9 initiated the Five-Year Review shortly after the oversight was identified.

The Site remedy consists of both groundwater and soil remediation actions, all of which will be reviewed in this Five-Year Review.

The Cooper Drum Company Superfund Site Five-Year Review was led by Sharissa Singh, EPA Region 9 Remedial Project Manager. Participants included Cynthia Wetmore, EPA Region 9 Superfund Five-Year Review Coordinator, and from the U.S. Army Corps of Engineers (USACE): Rebecca Rule, Program Manager; Jacob Williams, Project Manager; Jennifer Phillippe, Technical Lead; Justin McNabb, Geologist; and Kevin Yu, Civil Engineer. The review began on November 5, 2020.

Table 1. Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Cooper Drum Company		
EPA ID: CAD055753370.		
Region: 9	**State:** CA	**City/County:** South Gate/Los Angeles
SITE STATUS		
National Priorities List Status: Final		
Multiple Operable Units? No	**Has the site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Sharissa Singh		
Author affiliation: U.S. Environmental Protection Agency, Region 9		
Review period: 11/5/2020 – 7/23/2021		
Date of site inspection: 7/14/2021		
Type of review: Statutory		
Review number: 1		
Triggering action date: 9/13/2010		
Due date *(five years after triggering action date)*: 9/13/2015		

1.1. Background

The Cooper Drum Company Superfund Site (Site) is located in South Gate, Los Angeles County, California (Figure 1). The Site is defined as the area of contamination affected by the release of hazardous materials originating from the Cooper Drum property. The Site includes the Cooper Drum property (Property) located at 9316 South Atlantic Avenue and the downgradient area along Rayo Avenue and south of Southern Avenue to McCallum Avenue (Off-property) in South Gate, California. The Site is zoned for heavy industrial land use. Prior to Cooper Drum's purchase of the Site in 1971, drum recycling companies owned and operated the northern portion of the Property since at least 1941 (Haley and Aldrich, 2021). In 1976, Cooper Drum expanded the drum recycling operations to the southern portion of the Property, which was previously used as a storage yard (lumber and plumbing supplies). Cooper Drum paved the entire facility with asphalt in 1986. Cooper Drum operated at the Property until 1992 when the drum reconditioning business was sold to Waymire Drum Company. Waymire Drum Company operated until 1996 when the Property was sold to Consolidated Drum Company. Consolidated Drum Company ceased drum recycling operations at the Property in 2003. The Property continued to be used for pallet storage from 2003 until 2009. Timothy J. Owens & Associates, Inc. currently owns the Property, which has been vacant since 2009, and has plans to redevelop it as a truck storage yard.

Beginning in 1984 through 1989, several incidents involving the release of hazardous substances at the Property resulted in Notices of Violation being issued to the Cooper Drum Company by the Los Angeles Department of Health Services. The Los Angeles Department of Health Services required the Cooper Drum Company to conduct investigations of soil and groundwater. In 1989, the California Department of Health Services, now known as the Department of Toxic Substances Control (DTSC), also collected soil samples from under the drum processing areas.

Under the direction of the Los Angeles Department of Health Services, consultants for the Cooper Drum Company excavated and removed contaminated soil from the Property and from the adjacent Tweedy Elementary School, after caustic fluids leaked from trenches under the drum processing building onto school property. The Tweedy School was closed in 1988 due to the concern that children attending the school could be exposed to contamination migrating from Cooper Drum and from other industrial operations in the area.

In 1987, the City of South Gate closed four municipal water supply wells found to contain PCE. These wells are 1,500 feet southwest of the Site. At that time, the City listed Cooper Drum as a possible source of the PCE contamination; however, investigations indicated that groundwater contamination found beneath the Site did not contribute to the groundwater contamination affecting these municipal wells. Nearby properties, which have also undergone investigation as sources of groundwater contamination under the direction of the Los Angeles Regional Water Quality Control Board, include the Jervis Webb site (north of Cooper Drum) and two former Dial Corporation sites (northeast and east of Cooper Drum). Data from investigations at these three facilities and the Cooper Drum Site determined that regional groundwater flows in a southerly direction.

In June 2001, the EPA added Cooper Drum to the National Priorities List of hazardous waste sites requiring remedial action. EPA conducted the Remedial Investigation activities at Cooper Drum from

1996 to 2001. The complete RI report was released in May 2002 and the Record of Decision (ROD) was signed in September 2002.

EPA completed the remedial design for both soil and groundwater in September 2007. Subsequently in 2009, EPA signed a Unilateral Administrative Order with the Cooper Drum Cooperating Parties Group to take over funding and leading implementation of the remedy. The Cooper Drum Cooperating Parties Group began implementing the remedy in 2010.

1.2. Physical Characteristics

The Site is located 10 miles south of the City of Los Angeles and approximately 1,600 feet west of the Los Angeles River (concrete trapezoidal channel). The Property consists of 3.8 acres and is in an urban area of mixed residential, commercial, and industrial uses. The adjacent school is open and is currently used for adult education.

Rayo Avenue and ELG Metals borders the Site to the east and the former Tweedy Elementary School property is located directly to the south. Esequiel Nursery is located to the north.

The drum reconditioning process consisted of flushing out and stripping the drums for painting and resale. Heavy duty cleaning called "hard washing" was performed in the northeast portion of the Property (the former hard wash area). Beginning in 1976, all reconditioning activities took place within the drum processing area located in the southwest portion of the Property; incoming drums were stored in the northeast part of the hard wash area (Figure 2). Rinse water generated by reconditioning and hard washing activities was collected in concrete pits and trenches. These former drum storage and cleaning processes areas resulted in the contamination of the soil and groundwater beneath the Property. Currently, only the vacant drum processing area structure remains at the Site (Figure 2).

Investigations conducted on the Property in the 1990s and early 2000s identified the former hard wash area and the drum processing area as the primary areas where historical releases allegedly occurred (Figure 1).

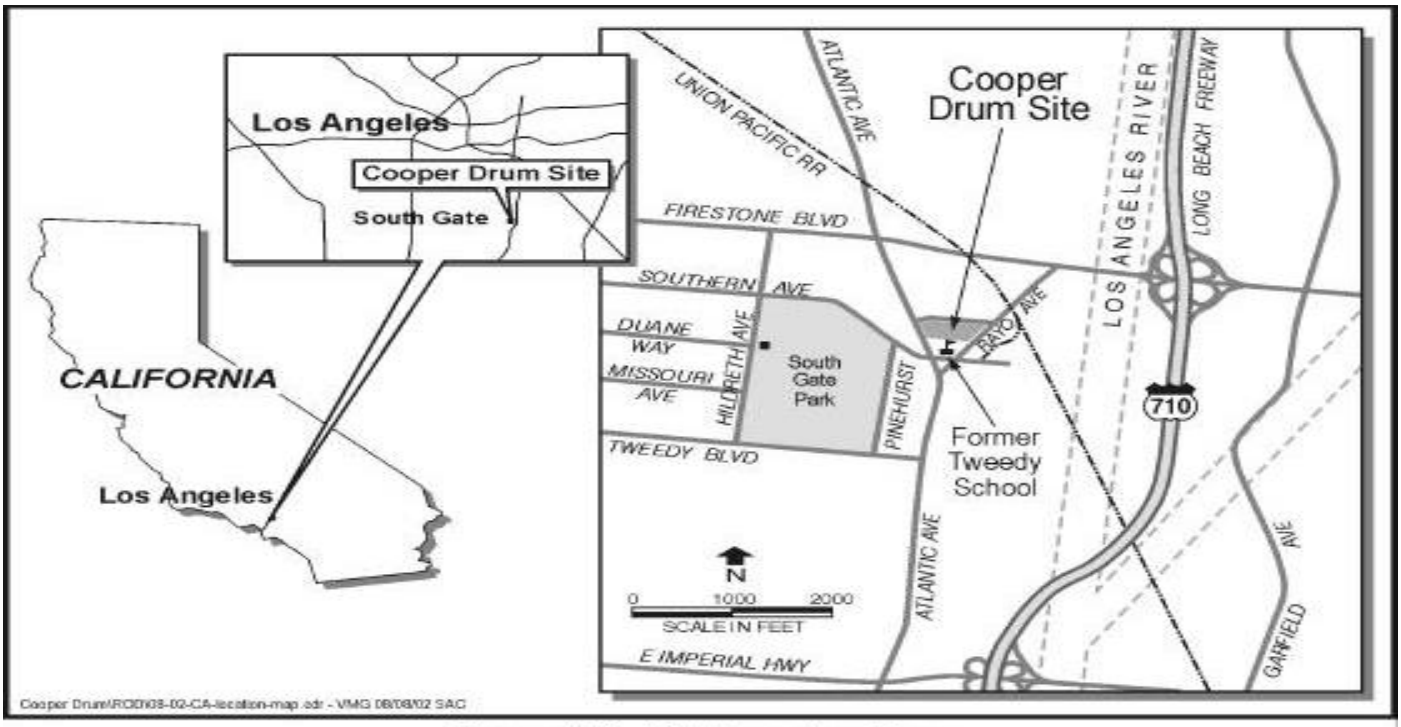


Figure 1-1. Site Location Map

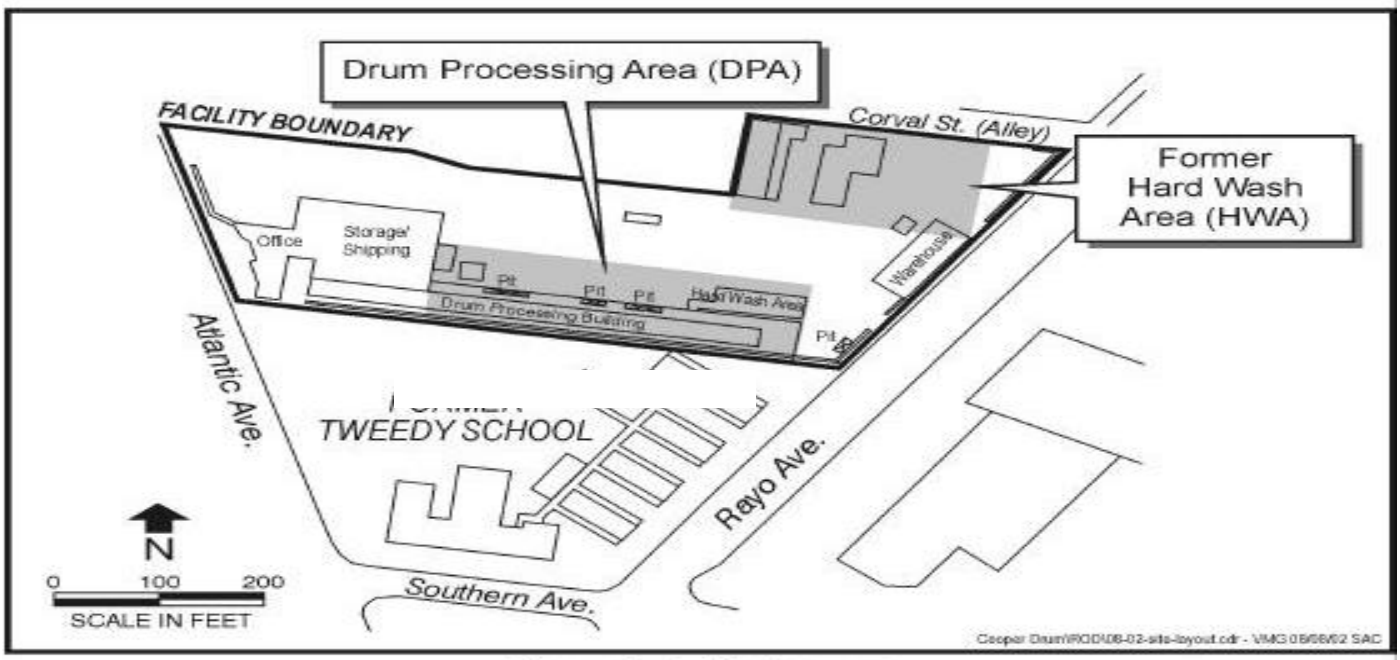
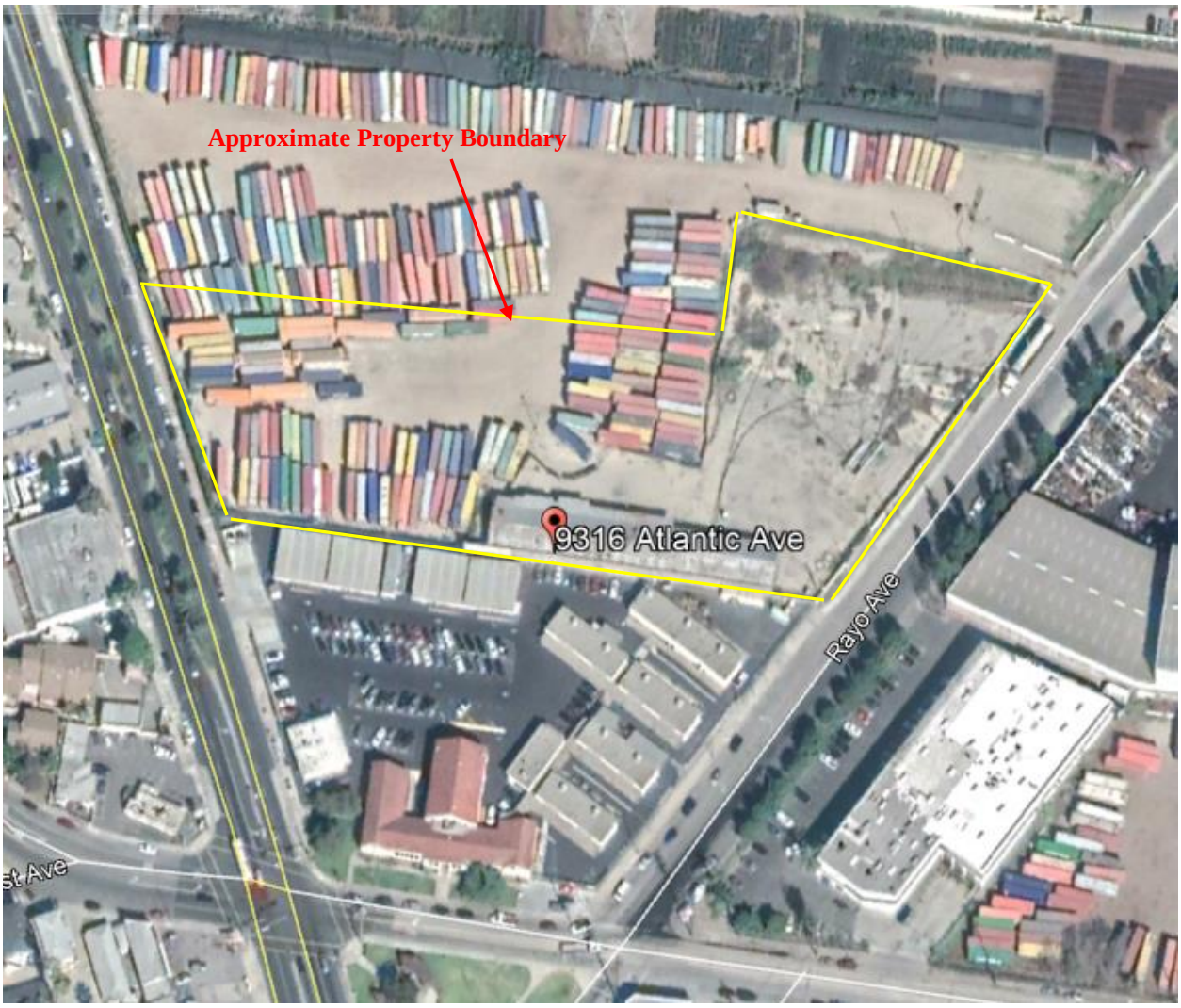


Figure 1-2. Site Layout

Source: September 2002 ROD

Figure 1. Location Map



Source: February 2002 Google Earth image

Figure 2. Cooper Drum Company Aerial Photograph

1.3. Hydrology

The Cooper Drum Company Site is in the Los Angeles basin, which is bounded by the Santa Monica Mountains, the Santa Ana Mountains, and the Newport-Inglewood uplift. The Los Angeles Basin is underlain by a structural depression and is subdivided into four structural blocks (southwestern, northwestern, central, and northeastern) that have unique stratigraphic characteristics and are bounded by faults. The Site is in the central block. The central part of the Los Angeles Basin continued to subside and deposit coarse clastic sediments from the surrounding mountain ranges. The upper Pleistocene Lakewood Formation extends throughout most of the central block region and consists of coarse sands and gravels with lenses of sandy silt and clay. Recent sediments consist of stream deposits and form perched aquifers, aquicludes, and water table aquifers. Groundwater originates by recharge from the surface and subsurface inflow from the hills and mountains bordering the areas and adjacent San Gabriel and San Fernando Valleys.

Major water-bearing units at the Site include the semi-perched aquifer, the Gaspur Aquifer, the Bellflower aquiclude, and the Exposition Aquifer (Figure 3). The Bellflower aquiclude is encountered from 0 to 70 feet bgs at the Site. The semi-perched aquifer is likely a localized water-bearing unit from the surface to a depth of approximately 35 feet bgs and consists of silts, silty clays, and sandy clays. The Gaspur Aquifer is encountered at a depth of 50 to 55 feet bgs to approximately 110 to 120 feet bgs and is poorly graded with a large range of gravelly sands to silty sands, with coarser material closer to the Los Angeles River. The Exposition Aquifer is encountered at a depth of approximately 110 feet bgs and consists of poorly graded sands, gravelly sands, and interbeds of fine-grained silts and clays. The transition from recent aged alluvium to the Upper Pleistocene Lakewood Formation represents the transition from shallow to deep aquifer. The groundwater flow direction of the Gaspur Aquifer at the Site is to the south/southeast at 0.002 foot/foot across the Site. There is a downward vertical gradient between the Gaspur Aquifer and the Exposition Aquifer.

Most of the groundwater in the area originates as runoff from distant mountains. Based on the vertically limited site-specific hydrogeologic investigation, the primary hydrostratigraphic units identified beneath the Site consist of three water-bearing zones and an aquiclude (Bellflower Aquiclude, perched aquifer, Gaspur Aquifer, and Exposition Aquifer) with a fining downward sequence in the Gaspur Aquifer to slow flow between the Gaspur and Exposition aquifers. The Exposition Aquifer is the uppermost unit of the deeper aquifer system and underlies the Gaspur Aquifer. The Exposition Aquifer is one of four water-bearing units within the Upper Pleistocene Lakewood Formation. Investigation into the Exposition Aquifer and deeper units have not been completed at the Site.

Municipal groundwater production wells in the vicinity of Cooper Drum draw water from the Gage Aquifer, the deepest of the Lakewood formation aquifers at approximately 300 feet bgs, as well as from deeper aquifers within the San Pedro formation.

All the groundwater zones are potential sources of drinking and/or irrigation water. The regional groundwater flow direction in this area is toward the south and southeast. In the immediate vicinity of the Site, water flows in a southerly direction. Since the 1990s, the regional water table has steadily declined due to a combination of groundwater extraction and insufficient recharge.

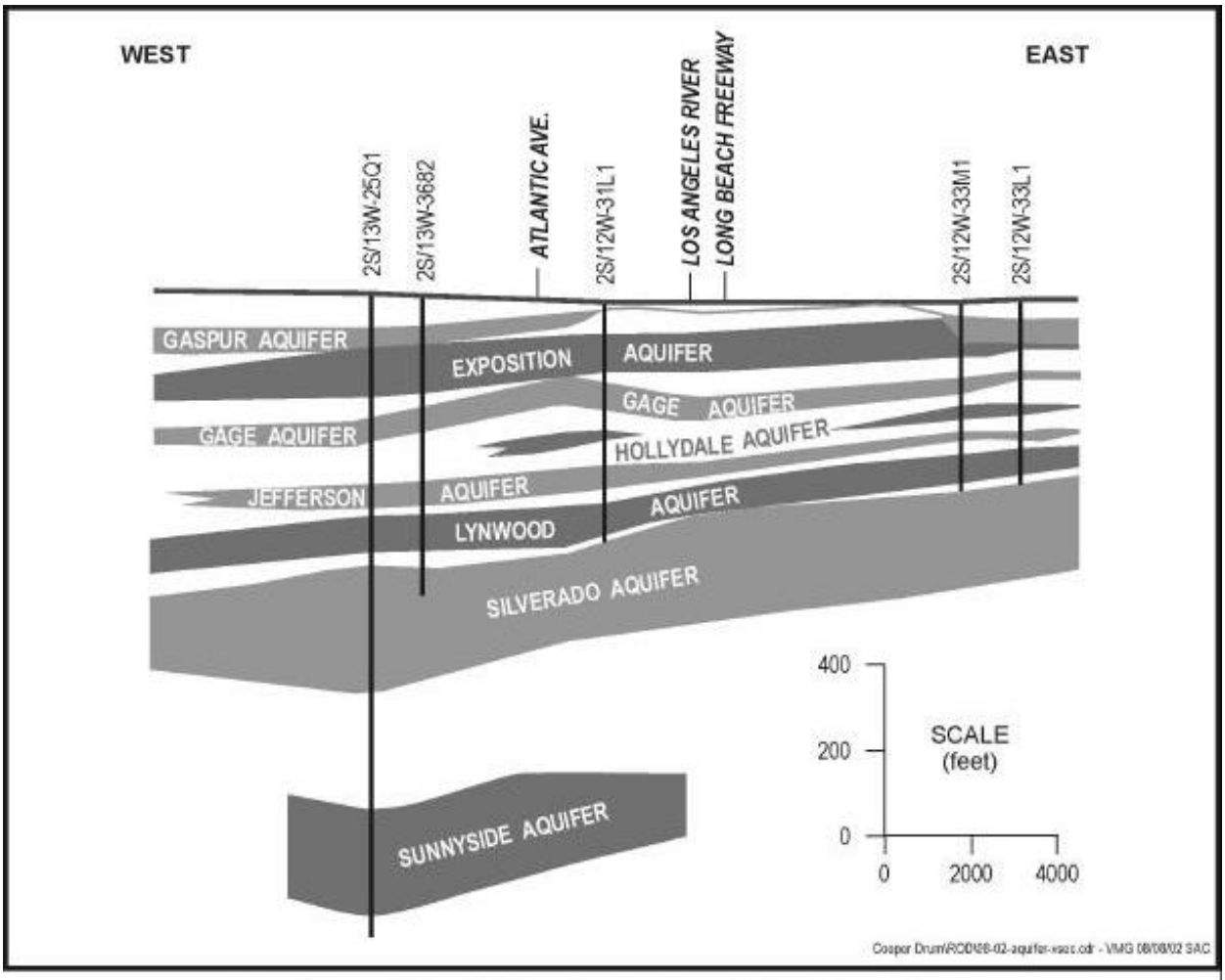


Figure 5-3. Deep Aquifer System and Production Wells

Source: EPA ROD, 2002

Figure 3. Cooper Drum Generalized Hydrogeologic Cross-Section

2. Remedial Actions Summary

2.1. Basis for Taking Action

Environmental investigations found the contamination of soil and groundwater from petroleum hydrocarbons, metals, polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons and various volatile organic compounds, including tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), vinyl chloride, 1,1-dichloroethene, 1,2-dichloropropane (1,2-DCP), 1,2,3-trichloropropane (1,2,3-TCP), and benzene. The potential for contaminants to impact drinking water was the basis for taking action since the Site is located within a groundwater basin that is designated by the Water Quality Control Plan for the

Los Angeles Region as having beneficial uses for drinking water, agricultural, industrial processes, and industrial services.

2.2. Remedy Selection

EPA signed a ROD on September 27, 2002, selecting a remedy to address contaminated soil and groundwater at the Cooper Drum Superfund Site.

The specific components of the Soil Remedy include the following:

- Extract volatile organic contaminated soil vapor and groundwater using dual phase extraction technology in the former hard wash area. The extracted soil vapor and groundwater will be treated with vapor and liquid phase carbon in vessels located within a treatment plant on the Property.

- Collect additional soil gas sampling in the drum processing area to further identify the extent of contamination and the need for remediation using dual phase extraction in this area.

- Excavate non-volatile organic contaminated shallow soil in the former hard wash area and drum processing area for disposal at an off-site facility, upon completion of the soil vapor extraction. Conduct additional soil sampling on the Property to further define the extent of contamination requiring excavation and disposal.

- Implement institutional controls for soil contamination in areas where excavation is not feasible, such as under existing structures, by requiring the execution and recording of a restrictive covenant which would prevent future use, including residential, hospital, day care center and school uses, if contaminated soil remains present.

The specific components of the Groundwater Remedy include the following:

- Extract groundwater contaminated with volatile organic compounds and treat using liquid-phase activated carbon at treatment system on the Property. The treated water will be reinjected into the contaminated groundwater aquifer or discharged to the public sewer system.

- Contain groundwater plume to prevent further downgradient migration of contaminated groundwater from the Site.

- Use in-situ chemical treatment, either reductive dechlorination or chemical oxidation, to enhance remediation of contaminated groundwater.

- Conduct additional groundwater sampling to further define the downgradient extent of the contamination.

- Conduct groundwater monitoring to evaluate the effectiveness of the remedy, to determine the location of the plume, and to verify that remediation goals have been met. The projected time to reach remedial action goals is 20 years. However, the actual time required for cleanup may be reduced if the in-situ chemical treatment is effective. Depending on the success of in-situ chemical treatment, monitoring may become the only action needed at Cooper Drum within 5-10 years. If in-situ chemical treatment provides a relatively faster reduction of the contaminant mass in the ground water plume and the mass reduction leads to stabilization of low contaminant concentrations, containment with extraction wells may no longer be necessary.

The remedial action objectives are as follows:

- Remediate soil contaminants to prevent contaminants from migrating into groundwater at levels that would exceed drinking water standards.

- Where feasible, remediate non-volatile organic contaminated soil above health-based action levels that are protective of ongoing and potential future site uses.

- Restore the groundwater through treatment to drinking water standards for beneficial use; and

- Remediate volatile organic contaminants in soil and groundwater to health-based action levels to eliminate potential exposures to indoor air contaminants created by site contamination.

EPA selected the state drinking water standard for volatile organic compounds in groundwater except for 1,2,3-trichloropropane (1,2,3-TCP), for which the cleanup level was based on the Practical Quantitation Limit[2] (Table 2).

EPA did not select specific cleanup levels for volatile organic compounds in soil. Instead, the ROD indicated that the final cleanup concentrations for volatile organic compounds in soil were to be determined based on the remedial goal, which is to prevent the vertical migration of contamination at concentrations that would impact the shallow aquifer above drinking water standards. To evaluate attainment of this goal, performance evaluation soil gas samples were to be collected during remediation (soil vapor extraction), and sampling results would be used in the VLEACH model to evaluate impact to groundwater.

Additionally, the soil gas sample analytical results were to be input into the Johnson & Ettinger Model (which estimates indoor air concentration) to ensure that residual volatile organic compound concentrations remaining in soil (after soil vapor extraction) are protective of potential indoor air receptors (Table 3). EPA selected cleanup levels for the other, non-volatile organic contaminants in soil, as shown in Table 4.

[2] Practical Quantitation Limit is the minimum concentration of a chemical that can be measured in the laboratory with a high degree of confidence that the chemical is present at or above that concentration.

Table 2. Groundwater Cleanup Levels from 2002 ROD

Chemical	Cleanup Levels (µg/L)	Basis for Cleanup Level
1,1-DCA	5	State Maximum Contaminant Level
1,1-DCE	6	State Maximum Contaminant Level
1,2-DCA	0.5	State Maximum Contaminant Level
1,2-DCP	5	State Maximum Contaminant Level
1,2,3-TCP	1	Practical Quantitation Limit
Benzene	1	State Maximum Contaminant Level
cis-1,2-DCE	6	State Maximum Contaminant Level
trans-1,2-DCE	10	State Maximum Contaminant Level
PCE	5	State Maximum Contaminant Level
TCE	5	State Maximum Contaminant Level
Vinyl Chloride	0.5	State Maximum Contaminant Level

Table 3. Soil Volatile Organic Compounds Cleanup Levels from 2002 ROD

Chemical	Cleanup Levels (µg/L)	Basis for Cleanup Level
1,1-DCA	Leachate< Maximum Contaminant Level	VLEACH modeling
1,1-DCE	Leachate< Maximum Contaminant Level	VLEACH modeling
1,2-DCA	Leachate< Maximum Contaminant Level	VLEACH modeling
1,2-DCP	Leachate< Maximum Contaminant Level	VLEACH modeling
1,2,3-TCP	Leachate< Maximum Contaminant Level	VLEACH modeling
Benzene	Leachate< Maximum Contaminant Level	VLEACH modeling
cis-1,2-DCE	Leachate< Maximum Contaminant Level	VLEACH modeling
trans-1,2-DCE	Leachate< Maximum Contaminant Level	VLEACH modeling
PCE	Leachate< Maximum Contaminant Level	VLEACH modeling
TCE	Leachate< Maximum Contaminant Level	VLEACH modeling
Vinyl Chloride	Leachate< Maximum Contaminant Level	VLEACH modeling

Table 4. Non-Volatile Organic Compound Soil Cleanup Levels from 2002 ROD

Chemical	Cleanup Levels (µg/kg)	Basis for Cleanup Level
Aroclor 1254	870	Human health hazard (10^{-05} excess cancer risk)
Aroclor 1260	870	Human health hazard (10^{-05} excess cancer risk)
B (a)P-TE[1] - Benzo(a)anthracene - Benzo(a)pyrene - Benzo(b)fluoranthene - Benzo(k)fluoranthene - Chrysene - Dibenz(a,h)anthracene - Indeno(1,2,3-cd)pyrene	900	Background
Lead	400,000	Human health hazard (Integrated Exposure Uptake Model for Lead in Children Model)

[1]Based on upper tolerance limit background Benzo(a)pyrene-toxicity equivalent (B(a)P-TE) concentration for southern California polycyclic aromatic hydrocarbon data set.

2.3. Remedy Implementation

The Cooper Drum Cooperating Parties Group initiated Site remedial activities in 2010 based on the 2009 Unilateral Administrative Order with the EPA. The Cooper Drum Cooperating Parties Group initiated soil vapor extraction on the Property as well as on the adjacent school property 2011, followed by dual phase extraction and groundwater extraction in 2012. The dual phase extraction and groundwater extraction system is located on the Property as well as Off-property.

A 1,200 standard cubic feet per minute blower skid is used to extract soil vapor from the soil vapor extraction and dual phase extraction well network. The blower skid has a knockout tank to remove condensate, an air-cooled heat exchanger, associated instrumentation, and a controller. The vapor stream is then directed to two, 2,000-pound vapor-phase granular activated carbon vessels connected in series to reduce the volatile organic compound concentrations prior to discharge to the atmosphere through a vent riser. The blower skid has an active South Coast Air Quality Management District Various Locations Permit that provides the operation and monitoring requirements associated with the blower. Recovered soil vapor condensate and historically, extracted perched groundwater, is routed to liquid phase granular activated carbon vessels for treatment prior to discharge to the sanitary sewer under a revised Industrial Waste Discharge Permit.

The Cooper Drum Cooperating Parties Group began dual phase extraction operations in 2012. The goal of the dual phase extraction system was to remove volatile organic compound-impacted perched groundwater from the Bellflower aquiclude and extend the depth of soil vapor extraction vapor recovery, while the groundwater extraction system was designed, to both remove contaminant mass from groundwater within the Gaspur Aquifer and provide hydraulic control of volatile organic compound-impacted groundwater. Since June 2015, the perched groundwater zone within the Bellflower aquiclude has been dewatered.

The groundwater extraction well network includes the following extraction locations screened at various depths within the Gaspur Aquifer.

- On-property extraction wells EW-4 and PTW-2
- EW-A (constructed at a 45-degree angle from vertical, starting at the southeastern corner of the Site and terminating below the eastern side of Rayo Avenue)
- Three Off-property extraction wells (EW - 5, EW - 7A, and EW - 7B) located across Rayo Avenue

Groundwater extraction well influent is routed to a 1,000-gallon holding tank. The treated groundwater is discharged to the sanitary sewer under a revised Industrial Waste Discharge Permit approved by the Los Angeles County Sanitary District that specifies a maximum average discharge rate of 14,400 gallons per day and a peak flow rate of 35 gallons per minute (gpm).

Since the soil vapor extraction treatment work is on-going, the following items from the ROD have yet to implemented:

- Excavation of non-volatile organic contaminated shallow soil in the former hard wash area and drum processing area for disposal at an Off-Property facility, upon completion of the soil vapor extraction.
- Implementation of institutional controls for soil contamination in areas where excavation is not feasible, such as under existing structures.

The remedy also required the recording of a restrictive covenant which would prevent future use, including residential, hospital, day care center and school uses, if contaminated soil remains present above residential risk levels. This restrictive covenant has not been entered.

2.4. Operations/Operation and Maintenance

EPA identified in the ROD that operations and maintenance for the remedy would include the following activities:

- upkeep of the dual phase and soil vapor extraction systems and the liquid and vapor granulated activated carbon treatment facilities, including controls and communications systems, mechanical components (e.g., blowers, submersible pumps, flow meters, valves, connections), disposal of spent granulated activated carbon and recharging of the granulated activated carbon vessels, pipeline maintenance, extraction and vapor monitoring well maintenance, grounds upkeep, and reporting of spills, uncontrolled emissions, or other anomalous occurrences,
- administrative oversight of site activities and periodic inspections for adherence to institutional controls, and

- upkeep of the groundwater extraction systems and the liquid granulated activated carbon treatment facilities, including controls and communications systems, mechanical components (e.g., external and submersible pumps, flow meters, valves, connections), disposal of spent granulated activated carbon and recharging of the granulated activated carbon vessels, pipeline maintenance, extraction and injection well maintenance (may include periodic cleaning/acid washing), monitoring well maintenance, grounds upkeep, and reporting of spills or other anomalous occurrences.

The Cooper Drum Cooperating Parties Group prepares annual reports to document the flow rates, vacuums, pump replacements, and contaminant concentrations associated with the mechanical systems. These reports also note that regular inspections and operations and maintenance activities occur. However, more detailed information, such as carbon change outs, was not found in the annual report. Further, no information regarding inspections associated with the institutional controls was found within the review period.

3. Progress Since the Last Five-Year Review

3.1. Previous Five-Year Review Protectiveness Statement and Issues

This is the First Five-Year Review.

3.2. Work Completed at the Site During this Five-Year Review Period

3.2.1. Monitored Natural Attenuation

The Cooper Drum Cooperating Parties Group conducted a two-year monitored natural attenuation evaluation program from June 2016 through June 2018. The overall objective was to evaluate the feasibility of monitored natural attenuation as an alternate remedy in lieu of groundwater extraction. The monitored natural attenuation evaluation was submitted in September 2018. EPA did not approve the use of monitored natural attenuation based on the increasing contaminant concentrations in the Exposition Aquifer monitoring well MW-55.

3.2.2. Aerobic Co-metabolic Biodegradation

The Cooper Drum Cooperating Parties Group submitted a work plan for aerobic co-metabolic biodegradation pilot test in April 2017 to assess the feasibility of meeting the substantive requirements of the Los Angeles Regional Water Quality Control Board Waste Discharge Requirements for reinjecting treated groundwater. EPA approved the work plan in September 2017.

The pilot test began operation on January 8, 2020, with target extraction and injection rates of 2.0 gpm (PTW-2) and 1.5 gpm (PTW-1), respectively. Upon startup, the extracted groundwater was treated using two 3,000-pound liquid granulated carbon vessels and then amended with oxygen prior to reinjection at PTW-1; propane amendment began on 31 March 2020. Performance monitoring was conducted weekly

and consisted of operational data and analytical sample collection. The pilot test concluded at the end of January 2021.

This pilot test demonstrated that in situ 1,4-dioxane biodegradation can be stimulated through the addition of oxygen and propane with an average 1,4-dioxane treatment efficiency of up to 65 percent.

Performance monitoring results show that the water quality parameters are generally in the same ranges as those measured during the baseline monitoring event, demonstrating that the aerobic co-metabolic biodegradation injection did not cause adverse impact to groundwater quality. The feasibility evaluation also showed that reinjecting treated groundwater is feasible for application at the Site but is not necessary given that the existing remedy is more cost effective and has a higher up-time.

The stimulated biodegradation rate did not degrade 1,4-dioxane to below 1 µg/L during the pilot test, most likely due to limited residence time for 1,4-dioxane biodegradation, and because Site anaerobic groundwater conditions require a high dissolved oxygen loading rate to create and sustain an aerobic treatment zone.

3.2.3. Soil Vapor Extraction Rebound Testing

The Cooper Drum Cooperating Parties Group submitted the "Soil Vapor Extraction Rebound Testing Technical Memorandum" to EPA on June 28, 2019. In the Rebound Tech Memo, Cooper Drum Cooperating Parties Group concluded that soil vapor concentrations have been reduced by one to three orders of magnitude since soil vapor extraction startup. They also concluded that the soil vapor extraction system had reached its practical limitations and an asymptotic condition where appreciable increases in mass removal rate and appreciable further decreases in vapor concentrations are unlikely. The Cooper Drum Cooperating Parties Group therefore proposed the initiation of a rebound testing program for the soil vapor extraction and dual-phase extraction systems for a period of a year.

The rebound monitoring points and criteria for implementing the rebound testing period is included in Table 5.

Table 5. Soil Vapor Extraction Monitoring Points and Rebound Criteria

Monitoring Point	Criteria to Enter Rebound	Trigger to Optimize System
VP-5A, B, C to VP-13A, B, C, and VP-15A, B, C	Total COCs < 1,000 ppbv, average of A, B and C intervals	Total COCs > 10,000 ppbv (once) or 2 consecutive samples > 2,000 ppbv at same location
All SVE wells	Total COCs < 1,000 ppbv	Same as above
PZ-5, PZ-6, VP-7D to VP-15D	COCs < VLEACH goals (Table II)	COCs > 10 x VLEACH goal (once) or 2 consecutive samples > 2 x VLEACH goal
All DPE wells	COCs < VLEACH goals (Table II)	Same as above
VP-14A, B, and C	COCs < EPA Default Levels (Table II)	COCs > EPA Default Levels (Table II)

If the criteria to optimize the system have not been triggered after four quarterly sampling events, CDCPG will propose a sampling program to document shallow soil gas concentrations at the cessation of SVE to support a risk assessment for evaluating the potential future risk for indoor air receptors, and to determine whether additional remediation and/or institutional controls are warranted.

The EPA provided comments on the Rebound Tech Memo on December 31, 2019. Following a March 4, 2020 meeting with the Cooper Drum Cooperating Parties Group, EPA submitted a follow-up comment letter on April 10, 2020 recommending that soil gas concentrations be compared to the Vapor Intrusion Screening Levels for the entire Site and for additional sampling to be conducted prior to approval (Section 4.2.3). In April and May 2021, the Cooper Drum Cooperating Parties Group sampled all the deep and shallow vapor points on-site, and in July 2021, submitted a technical memorandum documenting the results of the sampling event. On September 2, 2021, EPA approved the Rebound Test Plan contingent on increased sampling frequency at vapor points VP-14A, VP-14B and VP-14C located Off-Property adjacent to the school.

4. Five-Year Review Process

4.1. Community Notification

4.1.1. Five-Year Review Public Notice

EPA issued a public notice in the *Huntington Park Bulletin* on April 1, 2021, stating that there was a Five-Year Review and inviting the public to submit any comments to the EPA. EPA did not receive any comments. The results of the review and the report will be made available at the EPA physical repository located the EPA Superfund Records Center, located at 75 Hawthorne Street, Room 3110, San Francisco, California 94105 and on the Site's webpage: http://www.epa.gov/superfund/cooperdrum.

4.2. Data Review

This data review includes a brief evaluation of the Site-wide remedies that have been implemented and focuses on data that indicate if the remedial action objectives for the groundwater, soil and soil gas are being achieved. As this is the first five-year review, the data reviewed included semiannual reports from the first half of 2011 through the most recent 2020 semiannual report.

4.2.1. Groundwater

Gaspur Aquifer

TCE and cis-1,2-DCE are the primary volatile organic compounds in groundwater. Both TCE and cis-1,2-DCE are increasing in concentration to the north, south, east, and west of the plume, with decreasing concentrations present primarily in the central area of the Site, close to the extraction wells (Figure 4). Specifically, monitoring well MW-22 along the southern perimeter of the Property exhibits increasing cis-

1,2-DCE concentrations, and monitoring well MW-23 on the northern perimeter of the Property exhibits increasing TCE and cis-1,2-DCE concentrations (Appendix C). Other contaminants of concern such as vinyl chloride and 1,2-DCA are present and show similar concentration trends to TCE and cis-1,2-DCE.

1,2,3-TCP concentrations only exceeded the cleanup level in monitoring well MW-20, with concentrations between 0.97 µg/L (Nov. 2020) and 5.5 µg/L (June 2018). Laboratory detection limits were above the 1,2,3-TCP cleanup level (1 µg/L) in wells MW-34 and MW-64A. The laboratory detection limits for all samples were above the new California drinking water standard for 1,2,3-TCP (0.005 µg/L).

While not a Site contaminant of concern listed in the ROD, 1,4-dioxane is found in groundwater south and west of the original drum processing area at concentrations that are several orders of magnitude above the California State Notification Level of 1 µg/L. The highest concentration was detected in monitoring well MW-20, located in the shallow Gaspar Aquifer at 100 µg/L and in MW-41 at 24 µg/L in the Exposition Aquifer in November 2020.

The lack of hydraulic containment by the extraction network is demonstrated by the similar groundwater elevations of down- and cross-gradient wells regardless of their proximity to extraction wells (see MW-15, MW-43, and MW-61B on Figure 5). For example, the groundwater gradient between MW-15 and MW-43 is zero even though MW-15 is adjacent to two extraction wells. Further, decreasing concentration trends in the center of the plume and increasing trends along the plume boundary indicate that the extraction wells are not drawing groundwater or contaminants inward.

The extraction network does not effectively change local horizontal groundwater gradients or prevent contaminant plume migration with the low combined average extraction rate of 10.3 gpm. Thus, contamination in the Gaspur Aquifer beneath the Site is not horizontally contained, which was a specific remedial objective established in the ROD (e.g., "prevent further downgradient migration of contaminated groundwater from the Cooper Drum Superfund Site.").

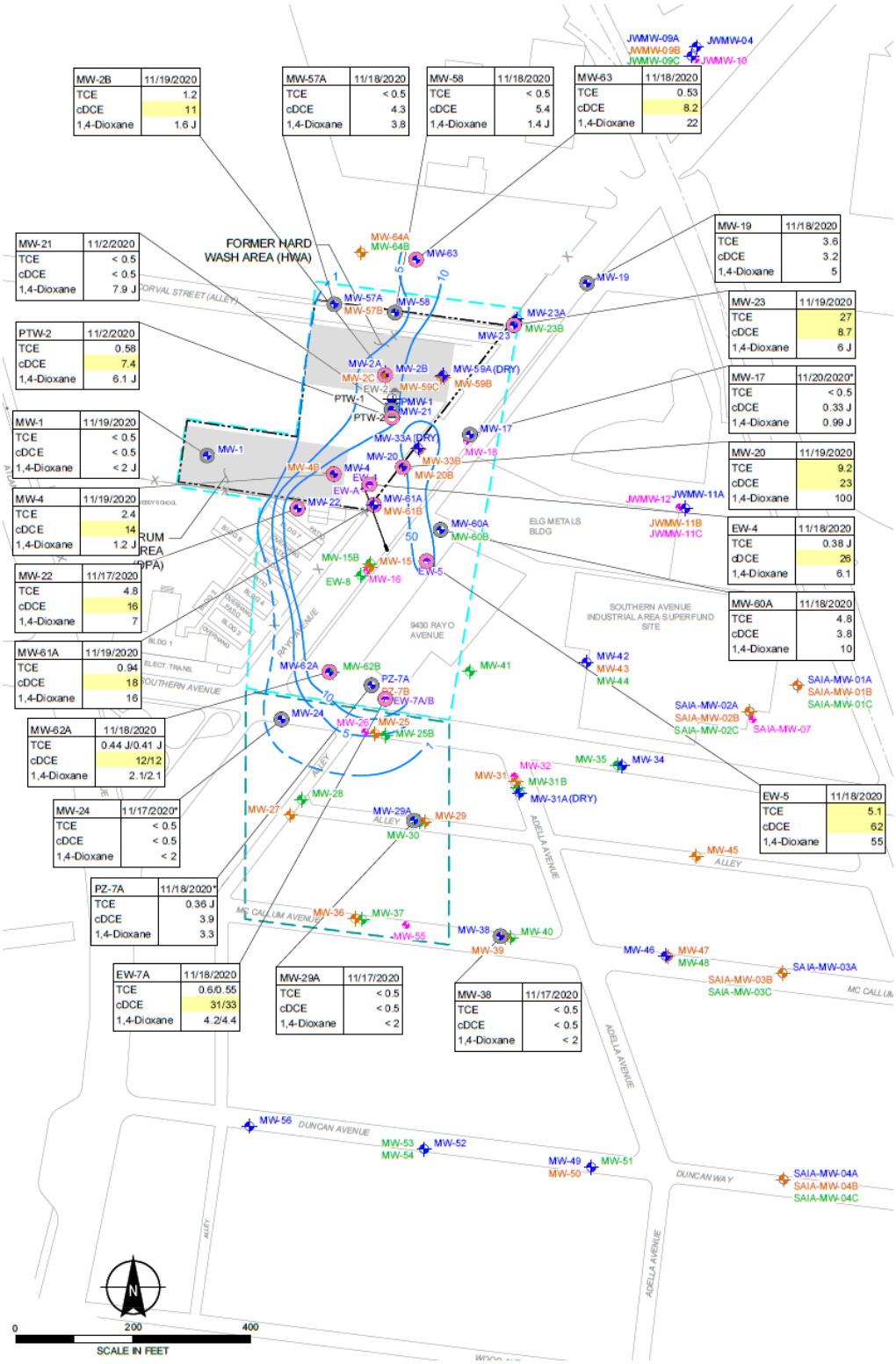
While the horizontal flow direction in the Gaspur Aquifer is from north to south, there is also a downward vertical gradient between the Upper, Intermediate, and Lower units. The current low rate of groundwater extraction (approximately 10 gpm) is not sufficient to reverse the downward vertical migration within the Gaspur Aquifer despite the north to south regional gradient historically being stronger than the downward vertical gradients within the Gaspur.

Exposition Aquifer

Based on the most recent groundwater elevation data, there is a five-foot difference in hydraulic head between the Gaspur and the Exposition aquifers, which means that there is a strong downward gradient from the Gaspur Aquifer into the Exposition Aquifer. If a conduit exists, or there are areas of increased permeability within the low permeability unit that separates the two aquifers, then contaminants can easily flow downward into the Exposition Aquifer from the Gaspur Aquifer. Within the deeper Exposition Aquifer, historical data suggest a southernly flow; however, a west to east flow direction has been observed several times including the most recent semi-annual report (AMEC 2011; Haley 2021).

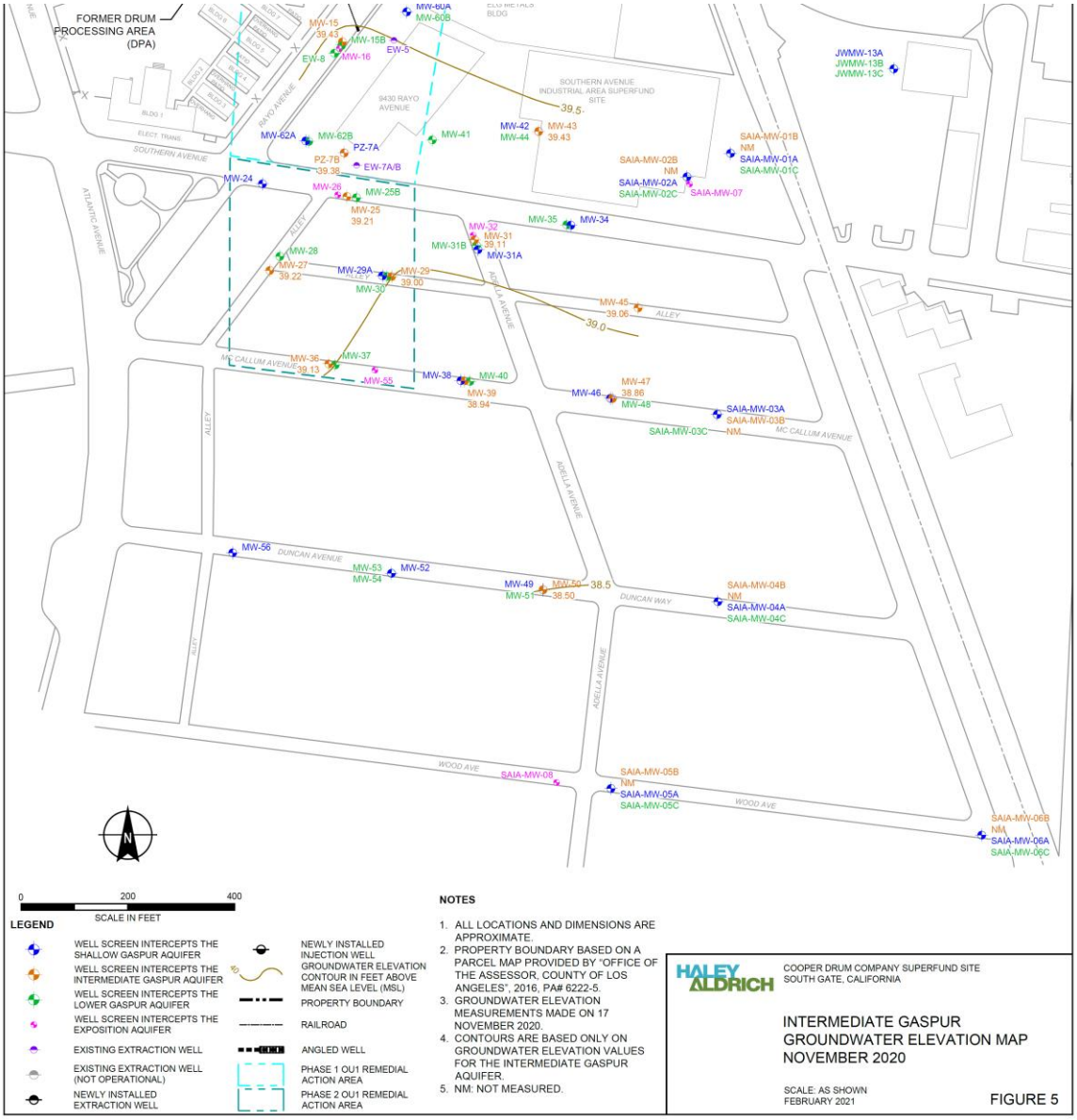
The hydrogeology of the Site supports the potential for hydraulic downward transport of contaminants between the Gaspur and Exposition aquifers (Figure 3). According to recent investigations, clays pinch out toward CPT-29 from the north and south along A-A' (Figure 6). The presence of more coarse-grained material (silty sands and sand) noted between the two aquifers near CPT-29 represents an area where downward migration or "leaking" from the Gaspur Aquifer to the Exposition Aquifer seems likely. Monitoring well MW-55, located downgradient of the Property along McCallum Avenue, is one of two Exposition Aquifer monitoring wells with increasing contaminant concentrations and is also located near CPT-29. The other Off-property Exposition Aquifer monitoring well, MW-18, also exhibited its highest TCE concentration reported in 2020 (Haley 2021).

The increasing concentrations of cis-1,2-DCE and new detections of TCE in the Exposition Aquifer indicate that there is a failure in controlling vertical movement of the plume by the existing groundwater remedy. This is also supported by the previously noted downward gradients between the Gaspur and Exposition aquifers. Vinyl chloride, DCA, and benzene have been found in Off-property monitoring well MW-55 with concentrations as high as 41 µg/L for vinyl chloride in December 2018. Off-property monitoring well MW-18 also exhibits detections of Site-specific contaminants like DCA and 1,4-dioxane. These Site-specific contaminants increase the likelihood of an unknown migration pathway(s) from the Gaspur Aquifer into the Exposition Aquifer.



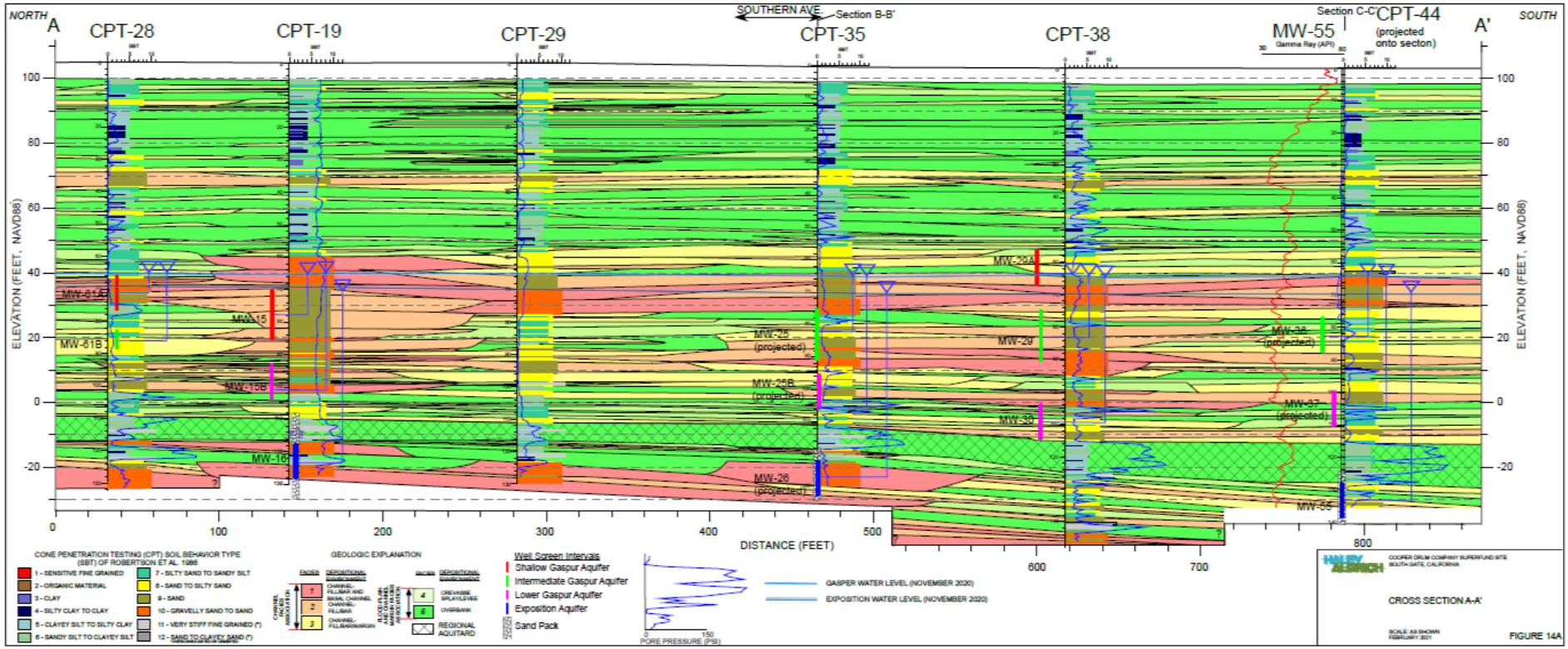
Source: Haley. Combined Groundwater Monitoring and Performance Report, 2021

Figure 4. Contaminant Concentrations in the Upper Gaspar Aquifer, Nov. 2020.



Source: Haley. Combined Groundwater Monitoring and Performance Report, 2021

Figure 5. Cooper Drum Groundwater Elevation Map for Intermediate Gaspur Aquifer



Source: Haley. Combined Groundwater Monitoring and Performance Report, 2021

Figure 6. Cooper Drum Hydrogeologic Cross Section from North to South

4.2.2. Groundwater Treatment System

The groundwater extraction system as of December 2020 has removed 28.0 pounds of contaminants from 48.73 million gallons of groundwater treated. Since the startup of the groundwater extraction system, the average incremental mass removal has been 0.23 pounds each month. Given that the incremental mass removal is not yet asymptotic, it does not appear that the groundwater treatment is close to reaching its cleanup effectiveness, in addition to the increasing concentrations noted above. When incremental mass removed is plotted since the startup of the system, it appears that current extraction rates are similar to when the extraction system was initiated. These data in conjunction with increasing trends on the exterior of the plume indicate that the extraction system needs to be augmented to improve the effective radius to capture the entire plume. This system also does not treat the Exposition Aquifer, where increasing concentrations of Site contaminants including TCE, cis-1,2-DCE and vinyl chloride have been found.

Treated groundwater from the groundwater extraction system is discharged to the sanitary sewer under permit from the Los Angeles County Sanitary District. The existing discharge permit does not require treatment of 1,4-dioxane, which is present in the influent and effluent of the groundwater extraction system at concentrations between 7.5 µg/L and 7.7 µg/L. The Cooper Drum Cooperating Parties Group conducted a yearlong aerobic co-metabolic biodegradation pilot test (Section 3.2.2) that showed a treatment efficiency of 65% for 1,4-dioxane; however, the existing treatment system is not designed to treat 1,4-dioxane.

4.2.3. Soil/Soil Gas

As discussed in Section 3.2, the ROD specified that the VLEACH and the Johnson and Ettinger models would be used to establish cleanup levels for volatiles in soil. The VLEACH model cleanup levels were intended to be protective of groundwater, while the Johnson and Ettinger model cleanup levels were intended to be protective of vapor intrusion exposure. Subsequently, EPA requested that the Vapor Intrusion Screening Levels for soil gas be used to evaluate rebound for the soil vapor extraction system.

Site soil gas concentrations still exceed the updated interim cleanup levels calculated using the Johnson and Ettinger model (Table 5). In addition, in 2019, the DTSC Human and Ecological Risk Office recommended against using the Johnson and Ettinger soil gas model for risk assessment of vapor intrusion in indoor air. As shown in Table 5, the Vapor Intrusion Screening Levels are much lower than the values calculated by the Johnson and Ettinger model.

Soil vapor sampling point VP-10B[3] had the highest PCE and TCE concentrations in December 2020 with concentrations of 31,000 µg/m^3 and 13,000 µg/m^3, respectively. VP-10B is located in the former Hard Wash Area in the northern portion of the Property. Soil vapor sampling points VP-12A and VP-12D, also

[3] The Vapor Point wells are screened at different depth intervals with the "A" designation being the shallowest and "D" being the deepest interval.

in the former Hard Wash Area, has also shown increasing soil gas concentrations over the last several sampling events.

Table 6. Cooper Drum Soil Gas Cleanup Values

Chemical of Concern	Media	Interim Soil Gas Cleanup Goals ($\mu g/m^3$)			EPA Default Soil Gas Screening Levels ($\mu g/m^3$)	
		J&E (8.5 feet bgs)	J&E (17.5 feet bgs)	VLEACH (>25 feet bgs)	Residential	Industrial
1,1-DCA	Soil Gas	19,000	40,000	24,000	60	260
1,1-DCE	Soil Gas	760,000	1,577,000	136,000	2,450	10,300
1,2-DCA	Soil Gas	1,200	2,400	520	4	16
1,2-DCP	Soil Gas	3,500	7,300	12,000	9	41
1,2,3-TCP	Soil Gas	6	13	300	0.004	0.055
Benzene	Soil Gas	1,000	2,100	4,900	3	14
cDCE	Soil Gas	84,000	170,000	21,000	280	1,170
tDCE	Soil Gas	850,000	1,800,000	36,000	2,780	11,700
PCE	Soil Gas	8,400	17,400	76,000	16	70
TCE	Soil Gas	9,200	19,100	43,000	16	100
Vinyl chloride	Soil Gas	310	650	12,000	0.3	5

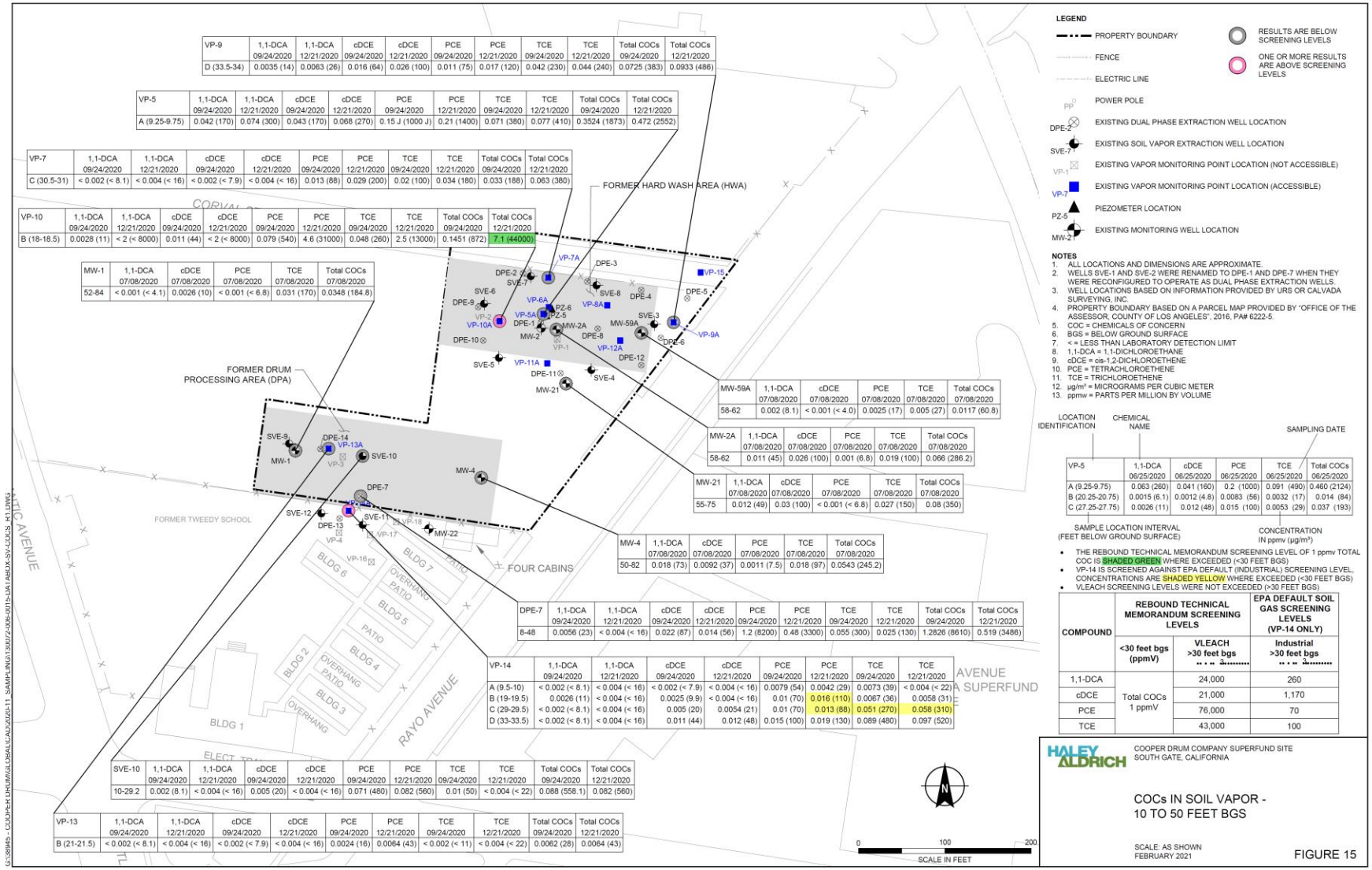
Note: EPA's Default Soil Gas Screening Levels are considered to be Site-specific Vapor Intrusion Screening Levels.
Source: Modified from Combined Groundwater Monitoring and Performance Evaluation Report, First Semi-Annual 2019. Haley 2019.

Soil vapor sampling points VP-14B, VP-14C, and VP-14D are located on the adjacent school property and have also shown increasing soil gas concentrations. In general, the shallow A and B-zone well screens appear to have the highest concentrations of PCE and TCE vapor across the Site. In June 2020, soil vapor sampling point VP-14A, exhibited a concentration of 100 $\mu g/m^3$ and 29 $\mu g/m^3$, which are above the residential screening levels for indoor air risk. However, the closest adjacent buildings on the school property to this soil vapor sampling point are modular classrooms that have been installed on masonry blocks that allow for air flow beneath the classroom building, which reduces the exposure to soil gas (Figure 38 in Site Inspection Report Appendix).

In April 2020, prior to approving the rebound test, EPA requested that Cooper Drum Cooperating Parties Group sample the deeper soil vapor sampling points of VP-9 through VP-15, which extend up to approximately 48.5 feet bgs and had not previously been sampled. The Cooper Drum Cooperating Parties Group sampled the deeper probes during June 2020, which included soil vapor sampling in all ports in each of the vapor monitoring points locations. To further characterize deeper soil vapor, in June/July 2020 the Cooper Drum Cooperating Parties Group collected soil vapor samples from shallow Gaspur groundwater monitoring wells MW-1, MW-2A, MW-4, MW-21, and MW-59A, which were either dry or had 10 to 15 feet of exposed well screen above the water column in the well. The vapor samples collected in June/July 2020 were below the criteria presented in the Rebound Tech Memo for entering rebound except for vapor port VP-14C, located at the adjacent school property.

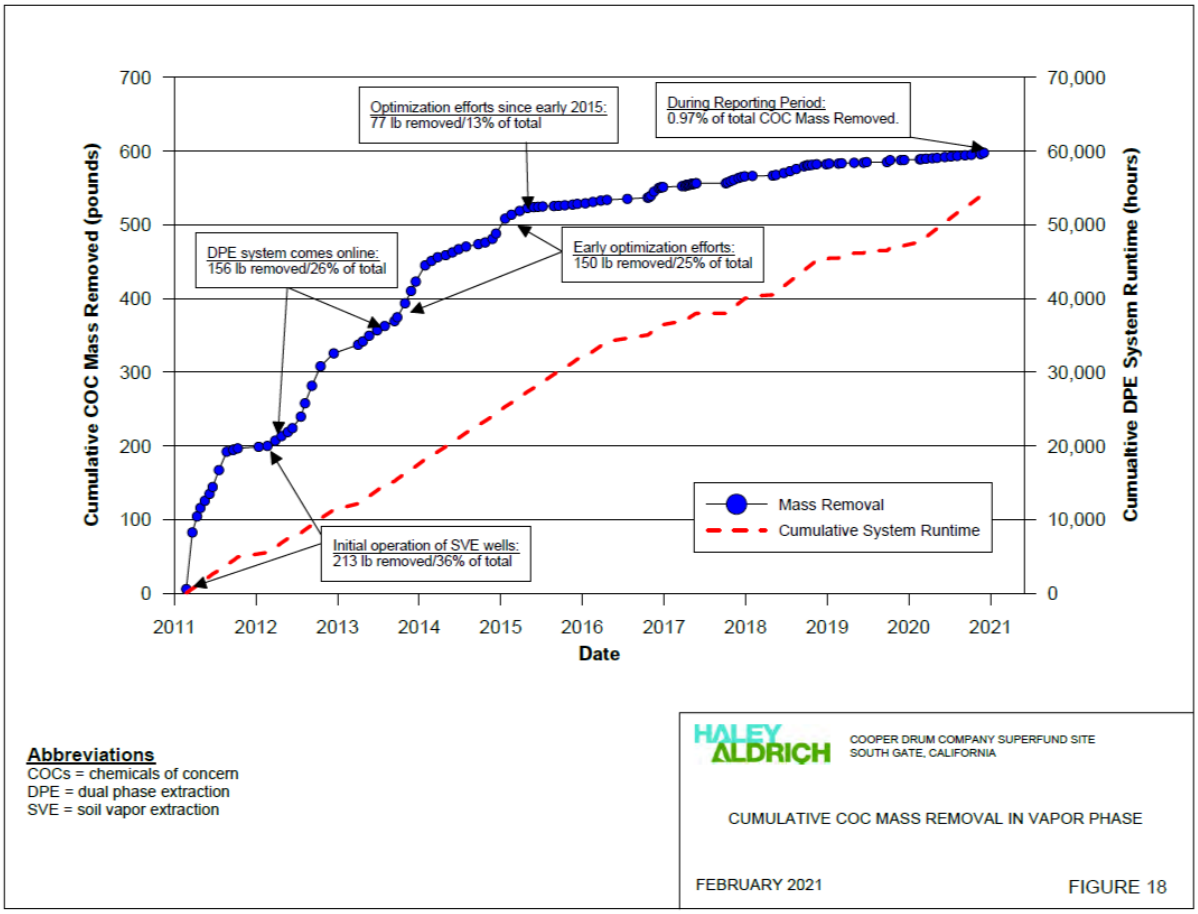
The soil vapor extraction system began operation in February 2011 and has removed approximately 598 pounds of contaminant mass through December 2020. While the mass removal curve has flattened in

recent years, the system has removed approximately 78 pounds of contaminants since approximately 2015. Thus, the system may be approaching, but has not yet fully reached asymptotic conditions (Figure 7). Additionally, as noted in the soil gas concentration discussion above, some vapor monitoring point concentrations have increased, which indicates that significant contaminant mass remains in the soil.



Source: Haley. Combined Groundwater Monitoring and Performance Report, 2021

Figure 7. Soil Vapor Monitoring Wells



Source: Haley. Combined Groundwater Monitoring and Performance Report, 2021

Figure 8. Soil Vapor Extraction System Total Cumulative Mass Removal Graph

4.3. Site Inspection

The inspection of the Site was conducted on July 14, 2021. In attendance were Kevin Yu, USACE; Chris Tsiatsios, Haley and Aldrich; and Alex Felix, JHA Environmental. The purpose of the inspection was to assess the condition of the remedy and verify that the remedy is operating as intended.

The inspection included the soil vapor extraction and dual phase extraction systems as well as the aerobic co-metabolic injection pilot test area. Wellheads were inspected at the Site and the Bimbo Bakery property. Mechanical equipment and extraction wellheads were noted to be in good working condition with operations data collected on a weekly basis. No surfacing was reported from the pilot test area. One section of fencing surrounding the property was noted to be down between the Site and an adjacent industrial property. The remainder of the fence appeared to be in good condition, and it was noted that the gate to the property was generally kept closed to prevent unauthorized access.

5. Technical Assessment

5.1. Question A: Is the remedy functioning as intended by the decision documents?

The remedy is not functioning as fully intended by the decision documents nor are the remedial objectives (restoring groundwater, preventing contaminant migration from soil to groundwater, removing non-volatile organic compound contaminants to health-based values, and eliminating volatile organic compounds in soil and groundwater above health-based values to eliminate potential vapor intrusion) being achieved. However, there is no current exposure to contaminated media.

Municipal groundwater production wells in the vicinity of Cooper Drum draw water from the Gage Aquifer, the deepest of the Lakewood formation aquifers at approximately 300 feet bgs, as well as from deeper aquifers within the San Pedro formation

Evidence that the remedial objective of restoring groundwater to beneficial use is not being met include the following:

- Both TCE and cis-1,2-DCE are increasing in concentration to the north, south, east, and west of the plume, with decreasing concentrations present primarily along the central area of the Site, close to the extraction wells. Decreasing trends in the interior of the plume and increasing trends on the exterior of the plume indicate that the extraction wells are not pumping these contaminants in toward the extraction well network. Groundwater gradients also only show a minor change in flow direction because of the low extraction rates (10 gpm). Therefore, groundwater is not being restored to the drinking water quality standards.

- Contaminants are migrating downward to the Exposition Aquifer via one or multiple unknown conduits. Exposition Aquifer wells in the northern and southern portion of the Site have increasing concentrations of cis-1,2-DCE and vinyl chloride. In November 2020, monitoring well MW-18, in the Exposition Aquifer, had a first detection of TCE above cleanup levels since 2008 at a concentration of 9.4 ug/L. Monitoring well MW-18 is located Off-property along Rayo Avenue. The continued downward migration of volatile organic compounds indicates that the remedies intended to prevent migration to groundwater and to reduce soil and groundwater contaminant concentrations to health-based values does not appear to be functioning.

The current soil vapor extraction system is controlling exposure to contaminants in the soil vapor on the Property and at the adjacent school property. The soil vapor extraction system began operation in February 2011 and has removed approximately 600 pounds of contaminant mass through December 2020. While the mass removal curve appears to be flattening in recent years, the system may be approaching, but has not yet fully reached, asymptotic conditions. Some vapor monitoring point concentrations have increased, which indicates that significant contaminant mass remains in soil.

EPA selected institutional controls for areas on the Property where excavation is not feasible. Excavation is required for contaminated shallow soil in the former hard wash area and drum processing area for

disposal at an off-site facility, upon completion of the soil vapor extraction treatment activities. Since the soil vapor extraction treatment work is on-going, institutional controls have not been implemented. Additionally, the remedy also required the recording of a restrictive covenant which would prevent future use, including residential, hospital, day care center and school uses, if contaminated soil remains present above residential risk levels. This restrictive covenant has not been entered.

5.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives Used at the Time of Remedy Selection Still Valid?

The ROD exposure assumptions for evaluating the risk to indoor air from vapor intrusion using the Johnson and Ettinger soil gas model are no longer appropriate.

EPA did not select numeric cleanup levels for volatile organic compounds in soil at the time the ROD was written. Instead, EPA required the soil cleanup levels for volatile organic compounds to be determined based on the remedial goal, which is to prevent the vertical migration of contamination at concentrations that would impact the shallow aquifer above drinking water standards and to eliminate potential exposures to indoor air contaminants created by site contamination. To evaluate attainment of this goal, performance evaluation soil gas samples would be used in the VLEACH model to evaluate impact to groundwater and input into the Johnson & Ettinger Model to ensure that residual volatile organic compound concentrations remaining in soil are protective of potential indoor air receptors. Since the ROD was written in 2002, EPA published the OSWER *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*, June 2015. In addition, in 2019, the DTSC Human and Ecological Risk Office recommended against using the Johnson and Ettinger soil gas model for risk assessment of vapor intrusion for indoor air quality. The Vapor Intrusion Screening Levels are much lower than the values calculated by the Johnson and Ettinger and the VLEACH models at the Site. There is significant difference between the Vapor Intrusion Screening Levels and the modeled remediation goals developed from the VLEACH and the Johnson & Ettinger models and it is unlikely that the modeled remediation goals will achieve Remedial Action Objectives to prevent impact to the aquifer and to the indoor air quality. Therefore, the use of these models is no longer valid.

While not a Site contaminant of concern listed in the ROD, 1,4-dioxane is found in groundwater south and west of the original drum processing area on the Property at concentrations that are several orders of magnitude above the California State Notification Level of 1 µg/L. The current treatment system does not treat 1,4-dioxane.

The state has established a drinking water standard for 1,2,3-TCP (0.005 ug/L) since the ROD was signed. The cleanup level for 1,2,3-TCP (1 ug/L) was based on the practical quantification limit, which is not a risk-based standard, but reflected the ability of laboratories to detect 1,2,3-TCP. Since the ROD was signed in 2002, laboratory quantification limits have decreased and can now meet the lower risk-based value of the drinking water standard (Appendix D). The current data for 1,2,3-TCP had quantification limits above the current state drinking water standard. Therefore, the extent of 1,2,3-TCP is unknown.

There have been no changes to the toxicity assumptions for the non-volatile organic compounds in soil, which is the only risk-based cleanup levels in the ROD that would impact protectiveness (Appendix E).

The remedial action objectives identified within the ROD remain valid.

5.3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

The Site was identified as potentially at moderate risk for increased flooding (GAO, 2019). In highly developed locations, such as Los Angeles County, flash floods can occur with relatively small rainfall totals since the ground surface is unable to absorb water due to pavement. The increased risk of flooding in certain areas is the result of changes to the hydrologic cycle related to climate change. Flooding near the Site could disrupt the mechanical systems on the Property by loss of power and/or damage if the flooding occurs.

6. Issues/Recommendations

Table 7. Issues and Recommendations Identified in the Five-Year Review

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): Sitewide	**Issue Category: Monitoring**			
	Issue: The Exposition Aquifer exhibits increasing trends of Site related contaminants. The mechanism allowing the contamination to move from the Gaspur Aquifer to the Exposition Aquifer is unclear.			
	Recommendation: Install additional Exposition Aquifer monitoring wells to evaluate contaminant trends and transport mechanisms.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	Cooper Drum Cooperating Parties	EPA	10/31/2022

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): Sitewide	**Issue Category: Remedy Performance**			
	Issue: There are trends of increasing contaminant concentrations along the northern, southern, eastern, and western edge of the contaminant plume of the Gaspur Aquifer. Additionally, the groundwater extraction and treatment system does not effectively contain the plume vertically or horizontally and does not prevent further downward migration of the plume.			
	Recommendation: Define full extent of contamination in the Gaspur Aquifer and increase pumping rates and/or install additional extraction wells to capture the full extent of the plume. To prevent downward migration, install an Exposition Aquifer extraction system or establish upward gradients between Exposition Aquifer and Gaspur Aquifer.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	Cooper Drum Cooperating Parties	EPA	11/30/2022

OU(s): Sitewide	**Issue Category: Other**			
	Issue: The modeled soil cleanup levels are no longer consistent with EPA policy. Further, the modelled soil cleanup levels are significantly higher than EPA's Vapor Intrusion Screening Levels.			
	Recommendation: Evaluate soil gas and soil cleanup levels for protectiveness and ability to meet remedial objectives.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	Cooper Drum Cooperating Parties	EPA	11/30/2023

OU(s): Sitewide	**Issue Category: Other**			
	Issue: California established a drinking water standard for 1,2,3-TCP in 2017, which is significantly lower than the cleanup level. The cleanup level was selected based on laboratory capabilities at the time of signature and is outside the acceptable risk range. Laboratory methods have improved over the last two decades and detection limits can now be achieved at the established drinking water standard. The current sampling and analysis program is not using the lower detection limits.			
	Recommendation: Revise the Sampling and Monitoring Program to include the revised sampling analysis with lower detection limits for 1,2,3-TCP.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	Cooper Drum Cooperating Parties	EPA	1/1/2025

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): Sitewide	**Issue Category: Changed Site Conditions**			
	Issue: 1,4-Dioxane present in both the Gaspur and Exposition aquifers but is not listed as a Site contaminant of concern and the existing groundwater extraction system does not include treatment for 1,4-dioxane.			
	Recommendation: Investigate the nature and extent of 1,4-dioxane in both the Gaspur and Exposition aquifers to further evaluate 1,4-dioxane as a Site contaminant of concern. Measures should be implemented to ensure the existing treatment system will address the 1,4-dioxane prior to discharge			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	Cooper Drum Cooperating Parties	EPA	1/1/2025

OU(s): Sitewide	Issue Category: Institutional Controls			
	Issue: No institutional controls have been recorded on the property, which is now being developed for reuse. While some of the land use restrictions are related to the excavations that have not yet been completed, other land use controls regarding Site use can be recorded prior to the soil excavation.			
	Recommendation: Implement land use controls that are not dependent on completing the soil excavation.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	1/1/2026

6.1. *Other Findings*

In addition, the following are recommendations to improve management of operations and maintenance but do not affect current and/or future protectiveness and were identified during the Five-Year Review:

- Detailed information on system operations and maintenance, such as carbon change outs, was not found in the Cooper Drum Cooperating Parties Group annual report and should be included in future reports.

- The section of fencing between the Cooper Drum Property and the adjacent industrial property should be repaired.

7. Protectiveness Statement

Table 8. Protectiveness Statement

Sitewide Protectiveness Statement
Protectiveness Determination: Short-term Protective
Protectiveness Statement: The remedy at the Cooper Drum Company Superfund Site is currently protective of human health and the environment. Direct contact with on-site soil contamination is prevented by asphalt and concrete caps throughout the site and security fencing. The residents of South Gate are protected from exposure to contaminated groundwater because they are connected to the municipal water supply. In additional, the closest municipal production wells are in a deeper aquifer below the extent of the current contamination from the site. The current soil vapor extraction system is controlling exposure to contaminants in the soil vapor on the Property and at the adjacent school property. Additional institutional controls will be implemented to further protect future tenants and/or owners from any hazardous materials left on the Property after the planned soil excavation is complete. However, to be protective in the long-term, the following actions need to be taken: • The soil gas cleanup levels from the Record of Decision should be updated in a decision document to reflect current Vapor Intrusion Screening Levels. • The extent of contamination in the Gaspur Aquifer should be defined, pumping rates should be increased and/or install additional extraction wells installed to capture the full extent of the plume. • The nature and extent of contamination in the Exposition Aquifer should be investigated and the transport mechanism identified to address vertical migration from the Gaspur to the Exposition Aquifer. • Evaluate the nature extent of the 1,4-dioxane on-site, and the measures that should be implemented to ensure the existing treatment system will address the 1,4-dioxane prior to discharge. • Sampling plan should be updated to lower the detection limit for 1,2,3-trichloropropane since the State has adopted a drinking water standard for it. • The institutional controls specified in the Record of Decision should be recorded, specifically the restrictions on type of property usage.

8. Next Review

The next Five-Year Review report for the Cooper Drum Superfund Site is required five years from the completion date of this review.

Appendix A: List of Documents Reviewed

AMEC. 2009. Draft Remedial Action Work Plan for Phase 1 Operable Unit 1, Cooper Drum Company Superfund Site, South Gate, California.

AMEC. 2009. Final Remedial Action Work Plan for Phase 1 Operable Unit 2, Cooper Drum Company Superfund Site, South Gate, California. November 6.

AMEC. 2010. Supplemental Investigation Work Plan, Cooper Drum Company Superfund Site, South Gate, California.

AMEC 2010. Site Management Plan, Phase 1 Remedial Action for Operable Units 1 and 2, Cooper Drum Company Superfund Site, 9316 South Atlantic Avenue, South Gate, California. April 19.

AMEC. 2011. First Semi-Annual 2011 Groundwater Monitoring Report, Operable Unit 1, Cooper Drum Company, Superfund Site, 9313 Rayo Avenue, South Gate, California, August 31.

AMEC. 2011. Monitored Natural Attenuation Assessment Work Plan, Cooper Drum Company Superfund Site, South Gate, California, October.

AMEC. 2012. Proposed Modifications to Off-Site Extraction Well Network, Cooper Drum Company Superfund Site, South Gate, California, June 5.

AMEC. 2012. First Semi-Annual 2012 Groundwater Monitoring Report, Operable Unit 1, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. August 31.

EPA (United States Environmental Protection Agency). 2002. Record of Decision, Cooper Drum Superfund Site, South Gate, California. September 27.

EPA. 2014. Modifications to Off-Property Extraction Well Network, Cooper Drum Superfund Site, Approval Letter. June 6.

EPA. 2021. Vadose Zone Leaching (VLEACH). https://www.epa.gov/water-research/vadose-zone-leaching-vleach. Accessed 07/26/2021.

Government Accounting Office. 2019. Interactive Map: https://www.gao.gov/multimedia/GAO-20-73/interactive/. Accessed 04/12/2021.

Haley (Haley and Aldrich, Inc.). 2013. First Semi-Annual 2013, Groundwater Monitoring Report, Cooper Drum Company Superfund Stie, South Gate, California. August.

Haley. 2014. Modifications to Off-Property Extraction Well Network, Cooper Drum Company, Superfund Site, 9313 Rayo Avenue, South Gate, California. May 16.

Haley. 2015. November 2014 Progress Report. Cooper Drum Superfund Site, South Gate, California. January 30.

Haley. 2015. Performance Evaluation Report Second Semi-Annual 2014, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. February.

Haley. 2016. Second Semi-Annual 2015 Groundwater Monitoring Report and Groundwater Monitoring Plan Update, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, California. February 29.

Haley. 2016. Performance Evaluation Report First Semi-Annual 2016, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. August.

Haley. 2017. Revised Aerobic Cometabolic Biodegradation Pilot Test Work Plan, Cooper Drum Company Superfund Site, 9313 Ray Avenue, South Gate, California. July 12.

Haley. 2017. Performance Evaluation Report First Semi-Annual 2017, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. August.

Haley. 2019. Combined Groundwater Monitoring and Performance Evaluation Report First Semi-Annual 2019, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. August.

Haley. 2019. August 2019 Progress Report, Cooper Drum Company, Superfund Site, South Gate, California. October 31.

Haley. 2021. Combined Groundwater Monitoring and Performance Evaluation Report Second Semi-Annual 2020, Cooper Drum Company Superfund Site, 9313 Rayo Avenue, South Gate, California. February.

Haley. 2021. Aerobic Cometabolic Biodegradation Pilot Test Report, Cooper Drum Superfund Site, 9323 Rayo Avenue, South Gate, California. May.

Haley. 2021. Soil Vapor Extraction Rebound Testing, Cooper Drum Company Superfund Site, South Gate, California. July 9.

Los Angeles Regional Water Quality Control Board. 2019. Potential Applicable or Relevant and Appropriate Requirements for a Pilot Test of In situ Aerobic Cometabolic Biodegradation of Volatile Organic Compounds, 1,4-Dioxane and Other Contaminants in Groundwater, Cooper Drum Superfund Site, Operable Unit 1, 9313 Rayo Avenue, South Gate, California 90280. March 18.

USGS (United States Geologic Survey). 1965. Geology of the Los Angeles Basin California – An Introduction, Professional Paper 420-A.

United States District Court, Central District of California, Western Division. 2016. Consent Decree. April 20.

URS (URS Group, Inc.). 2002. Cooper Drum Company Remedial Investigation Feasibility Study Report. May.

URS. 2007. Groundwater Remedial Design Report, Operable Unit 1, Cooper Drum Company Superfund Site. September 19.

URS. 2008. Remedial Design Technical Memorandum for Field Sampling Results, Addendum No. 3 Monitoring Well Installation and Groundwater Sampling Results, February/March 2008. September 22.

Appendix B: Site Chronology

Event	Date
Excavation and disposal of contaminated soil from north of the Drum Processing Area	1984
Excavation and disposal of contaminated soil from Tweedy Elementary School with post-excavation paving.	April 1987
Initial Site assessment	May 1988
Proposed for National Priorities List	February 7, 1992
Groundwater combined remedial investigation and feasibility study started	August 12, 1993
Proposed for National Priorities List	January 11, 2001
Site placed on National Priorities List	June 14, 2001
Groundwater (OU1) ROD signed, and final Groundwater remedy selected	September 27, 2002
Remedial design started (Groundwater and Soil)	October 7, 2002
Remedial design completed (Groundwater and Soil)	September 21, 2007
EPA issues Unilateral Administrative order	March 19, 2009
Final remedial action started	September 13, 2010
Soil vapor extraction system begins operation	February 2011
Groundwater treatment system construction complete	September 2011
Dual phase extraction wells begin operation	February 2012
On-site extraction and treatment of contaminated groundwater begins	August 2012
South Gate Superfund Sites Fact Sheet Updates	February to July 2015
Consent Decree signed with EPA	April 20, 2016
South Gate Superfund Sites Fact Sheet Update	October 1, 2016
South Gate Superfund Sites Fact Sheet Update	April 1, 2017
South Gate Superfund Sites Fact Sheet Update	October 1, 2017
Consent decree signed with EPA	December 21, 2017
Community Involvement Plan released	March 1, 2018
Soil vapor and dual phase extraction wells begin cycling with two weeks of extraction followed by six weeks of shutdown	November 2018
South Gate Superfund Sites Fact Sheet Update	October 1, 2019
Kickoff meeting for EPA Optimization Team	August 11, 2020

Appendix C: Data Review

Data since the ROD was finalized were evaluated to determine the effectiveness of the remedy implementation for the Cooper Drum Company Superfund Site. Groundwater elevations and groundwater contaminant concentrations were both used to determine if the plume was being fully treated and if the plume was migrating downward to a drinking water source aquifer. Based on the analysis of groundwater elevations, there is a downward hydraulic gradient both within the Gaspur Aquifer and between the Gaspur and Exposition aquifers. Based on cross-sections from borings and well construction data, it appears that the low permeability layer between the Gaspur and Expedition Aquifer contains coarser sediment zones that could allow for the downward migration of contamination especially in the southern portion of the plume. The Exposition Aquifer does seem to have a west to east gradient, based on water levels from the most recent semi-annual report. Contamination can also be transmitted downward via poor well sealing and construction, and it is possible that the increase in contamination detected in the Expedition Aquifer is due to poor construction. Several wells that penetrate the less permeable layers between the lower Gaspur Aquifer and the Exposition Aquifer have sand around the wells that was used in construction. This sand has a larger grain size than the surrounding layers and with a high downward hydraulic gradient, can transport contaminants into the Exposition Aquifer. TCE has only recently been found in MW-18 at levels above drinking water standards. Given the proximity of MW-18 to the original source area and consistent downward gradients noted since the Remedial Investigation, if this well were poorly constructed, it should have conveyed TCE much earlier. Monitoring well MW-55 has always had a decreasing concentration of TCE but has an increasing concentration of cis-1,2-DCE.

Groundwater gradients in the Gaspur Aquifer also do not appear to be greatly affected by the current pump and treat rates that are used on the Site (Figure C-5, C-6, and C-7). Based on groundwater elevations across the Site, it does not appear that there is an effective cone of depression that is containing the plume, and the low pumping rates are not capturing wells that exhibit increasing concentrations of site related COCs (i.e., MW-22 and MW-23) located on the southern and northeastern side of the plume respectively. Also, the natural hydraulic head that creates a downward gradient from the Gaspur into the Exposition Aquifer could also be causing contamination to move into the Exposition Aquifer through conduits in the aquitard. If the extraction system pumping rates were increased, changing the hydraulic head to create an upward gradient, then it could prevent contaminants from flowing downward into the Exposition Aquifer.

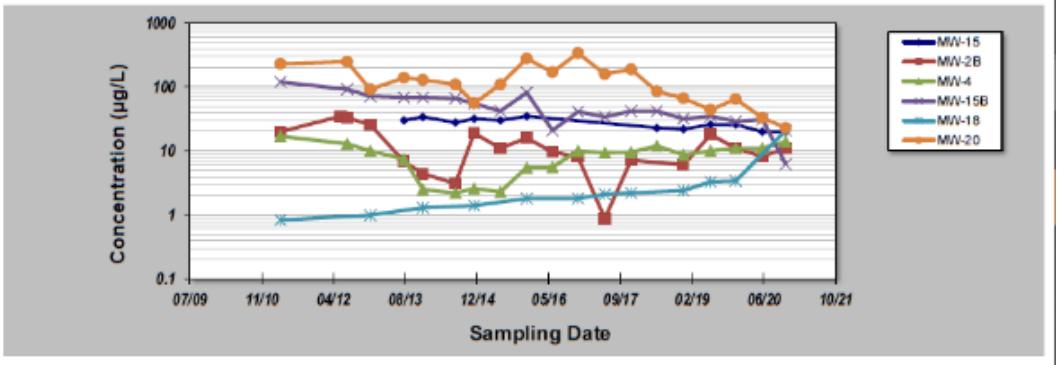
1,4-Dioxane is detected throughout the site at concentrations, exceeding the CA State Notification Level for drinking water by several orders of magnitude. It is present in the Exposition as well as the Gaspur Aquifer. The current remedy also does not contain the 1,4-dioxane contamination in groundwater. Currently there is no federal maximum contaminant level for 1,4-dioxane, however the California State Drinking Water Notification Level for 1,4-dioxane is 1 microgram per liter (µg/L). If 1,4-dioxane is added to the current Site remedy as a contaminant of concern, a method to contain and treat the plume of volatile organic compounds, including 1,4-dioxane, will be required as the current treatment train of the extraction system does not address 1,4 dioxane.

A summary of the Mann-Kendall statistical trend analysis for select monitoring wells is provided in Figures C-1 to C-4.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Mar-21	Job ID:	
Facility Name:	Cooper Drum	Constituent:	cDCE
Conducted By:	USACE	Concentration Units:	µg/L

Sampling Point ID:	MW-15	MW-2B	MW-4	MW-15B	MW-18	MW-20	MW-20B
Sampling Event	Sampling Date	CDCE CONCENTRATION (µg/L)						
1	3/30/2011		20	17	120	0.83	230	160
2	5/24/2012		35					
3	7/6/2012		33	13	92		250	180
4	9/14/2012							
5	12/14/2012		26	10	72	0.99	92	140
6	3/22/2013							
7	8/7/2013	30	6.8	7.4	69		140	140
8	10/29/2013							
9	12/17/2013	34	4.4	2.5	69	1.3	130	100
10	7/31/2014	28	3.1	2.2	67		110	74
11	12/9/2014	32	19	2.6	55	1.4	56	10
12	6/10/2015	30	11	2.3	42		110	13
13	12/10/2015	35	16	5.5	82	1.8	280	19
14	6/7/2016		9.7	5.6	21		170	9.6
15	12/2/2016		8.1	10	41	1.8	340	20
16	6/6/2017		0.88	9.4	34	2.1	160	22
17	12/7/2017		7.2	9.6	42	2.2	190	1.5
18	6/4/2018	23		12	42		86	26
19	12/7/2018	22	6.1	8.7	32	2.4	67	18
20	6/14/2019	26	18	10	35	3.3	44	26
21	12/6/2019	26	11	11	29	3.4	65	18
22	6/9/2020	20	8.2	11	31		33	
23	11/19/2020	20	11	14	8.2	21	23	18
24								
25								
Coefficient of Variation:		0.19	0.72	0.49	0.54	1.57	0.66	1.09
Mann-Kendall Statistic (S):		-37	-48	43	-125	65	-74	-68
Confidence Factor:		99.5%	95.0%	92.8%	>99.9%	>99.9%	99.6%	99.6%
Concentration Trend:		Decreasing	Prob. Decreasing	Prob. Increasing	Decreasing	Increasing	Decreasing	Decreasing



Notes:

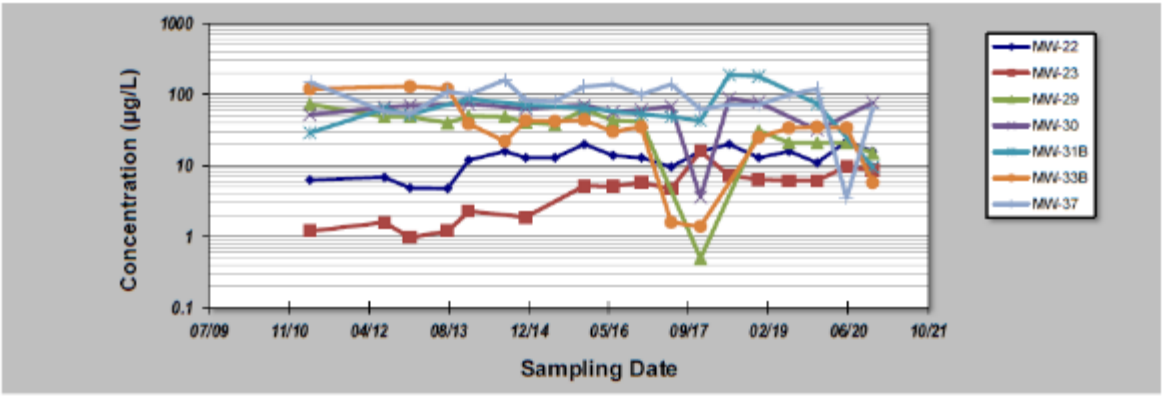
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

Figure C-1. DCE concentration trend plot since the ROD for wells over the 6 µg/L, drinking water standard.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 18-Mar-21
Facility Name: Cooper Drum
Conducted By: USACE
Job ID:
Constituent: cDCE
Concentration Units: µg/L

Sampling Point ID:	MW-22	MW-23	MW-29	MW-30	MW-31B	MW-33B	MW-37
Sampling Event	Sampling Date	CDCE CONCENTRATION (µg/L)						
1	3/30/2011	6.3	1.2	73	52	29	120	150
2	5/24/2012							
3	7/6/2012	6.9	1.6	49	66	63		58
4	9/14/2012							
5	12/14/2012	4.9	0.96	49	70	52	130	53
6	3/22/2013							
7	8/7/2013	4.8	1.2	40			120	110
8	10/29/2013							
9	12/17/2013	12	2.3	50	74	87	39	100
10	7/31/2014	16		49			22	160
11	12/9/2014	13	1.9	41	63	71	43	84
12	6/10/2015	13		38			42	81
13	12/10/2015	20	5.2	62	71	64	44	130
14	6/7/2016	14	5.1	43	57		30	140
15	12/2/2016	13	5.8	41	61	53	35	100
16	6/6/2017	9.7	4.7		68	49	1.6	140
17	12/7/2017	16	16	0.5	3.6	43	1.4	62
18	6/4/2018	20	7.2		88	190		72
19	12/7/2018	13	6.4	31	78	180	25	72
20	6/14/2019	16	6.2	21			34	99
21	12/6/2019	11	6.2	21	32	74	35	120
22	6/9/2020	22	9.8	21			34	3.5
23	11/19/2020	16	8.7	15	77	9.6	5.8	64
24								
25								
Coefficient of Variation:		0.38	0.73	0.48	0.35	0.71	0.89	0.42
Mann-Kendall Statistic (S):		76	94	-85	11	4	-67	-32
Confidence Factor:		99.7%	>99.9%	>99.9%	70.5%	57.1%	99.8%	85.9%
Concentration Trend:		Increasing	Increasing	Decreasing	No Trend	No Trend	Decreasing	Stable



Notes:

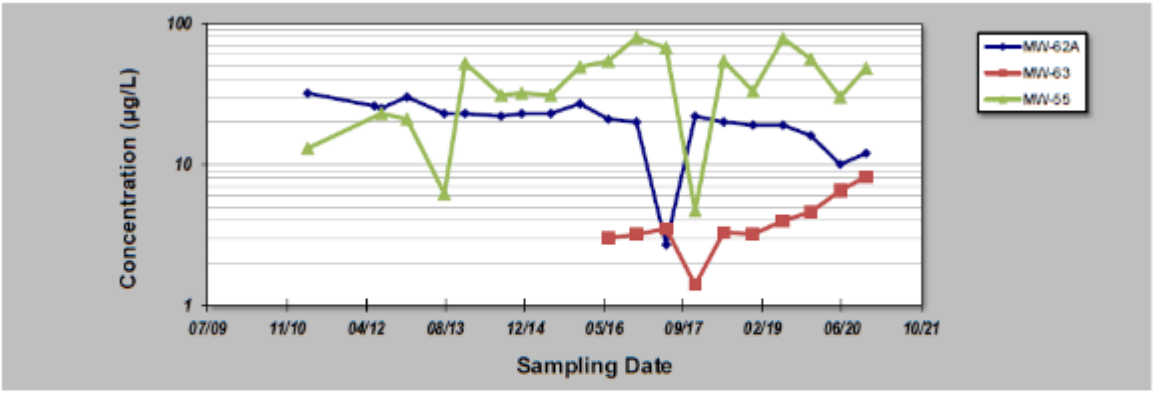
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

Figure C-2. DCE concentration trend plot since the ROD for wells over the drinking water standard (6 µg/L).

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Mar-21	Job ID:	
Facility Name:	Cooper Drum	Constituent:	cDCE
Conducted By:	USACE	Concentration Units:	µg/L

Sampling Point ID:	MW-62A	MW-63	MW-55				
Sampling Event	Sampling Date	CDCE CONCENTRATION (µg/L)						
1	3/30/2011	32		13				
2	5/24/2012	26						
3	7/6/2012	25		23				
4	9/14/2012							
5	12/14/2012	30		21				
6	3/22/2013							
7	8/7/2013	23		6.2				
8	10/29/2013							
9	12/17/2013	23		52				
10	7/31/2014	22		31				
11	12/9/2014	23		32				
12	6/10/2015	23		31				
13	12/10/2015	27		49				
14	6/7/2016	21	3	54				
15	12/2/2016	20	3.2	79				
16	6/5/2017	2.7	3.5	67				
17	12/7/2017	22	1.4	4.7				
18	6/4/2018	20	3.3	54				
19	12/7/2018	19	3.2	33				
20	6/14/2019	19	4	78				
21	12/6/2019	16	4.6	56				
22	6/9/2020	10	6.5	30				
23	11/19/2020	12	8.2	48				
24								
25								
Coefficient of Variation:		0.33	0.47	0.55				
Mann-Kendall Statistic (S):		-139	32	61				
Confidence Factor:		>99.9%	99.9%	98.3%				
Concentration Trend:		Decreasing	Increasing	Increasing				



Notes:

At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*

Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.

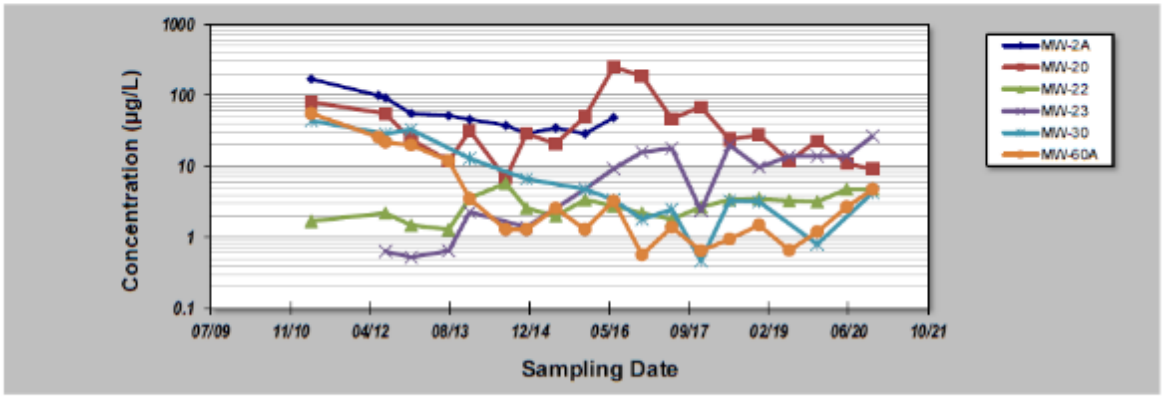
Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

Figure C-3. DCE concentration trend plot since the ROD for wells over the drinking water standard, 6 µg/L.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Mar-21	Job ID:	
Facility Name:	Cooper Drum	Constituent:	TCE
Conducted By:	USACE	Concentration Units:	µg/L

Sampling Point ID:	MW-2A	MW-20	MW-22	MW-23	MW-30	MW-60A
Sampling Event	Sampling Date	TCE CONCENTRATION (µg/L)					
1	3/30/2011	170	81	1.7		44	58
2	5/24/2012	100					26
3	7/6/2012	93	56	2.2	0.64	29	22
4	9/14/2012						
5	12/14/2012	56	24	1.5	0.53	33	20
6	3/22/2013						
7	6/7/2013	52	12	1.3	0.65		12
8	10/29/2013						
9	12/17/2013	46	32	3.8	2.3	13	3.5
10	7/31/2014	38	6.8	5.8			1.3
11	12/9/2014	29	29	2.8	1.4	6.7	1.3
12	6/10/2015	35	21	2			2.6
13	12/10/2015	29	50	3.4	4.8	4.8	1.3
14	6/7/2016	49	250	2.8	9.3	3.4	3.3
15	12/2/2016		190	2.2	16	1.8	0.57
16	6/6/2017		47	1.8	18	2.5	1.4
17	12/7/2017		69	2.7	2.4	0.47	0.65
18	6/4/2018		24	3.4	20	3.3	0.95
19	12/7/2018		28	3.5	9.8	3.2	1.5
20	6/14/2019		12	3.3	14		0.66
21	12/6/2019		23	3.2	14	0.81	1.2
22	6/9/2020		11	4.8	14		2.7
23	11/19/2020		9.2	4.8	27	4.3	4.8
24							
25							
Coefficient of Variation:		0.67	1.24	0.41	0.85	1.31	1.68
Mann-Kendall Statistic (S):		-42	-47	68	81	-59	-85
Confidence Factor:		>99.9%	94.6%	99.1%	>99.9%	100.0%	99.8%
Concentration Trend:		Decreasing	Prob. Decreasing	Increasing	Increasing	Decreasing	Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

Figure C-4. TCE concentration trend plot since the ROD for wells with recent concentrations above the drinking water standard, 5 µg/L.

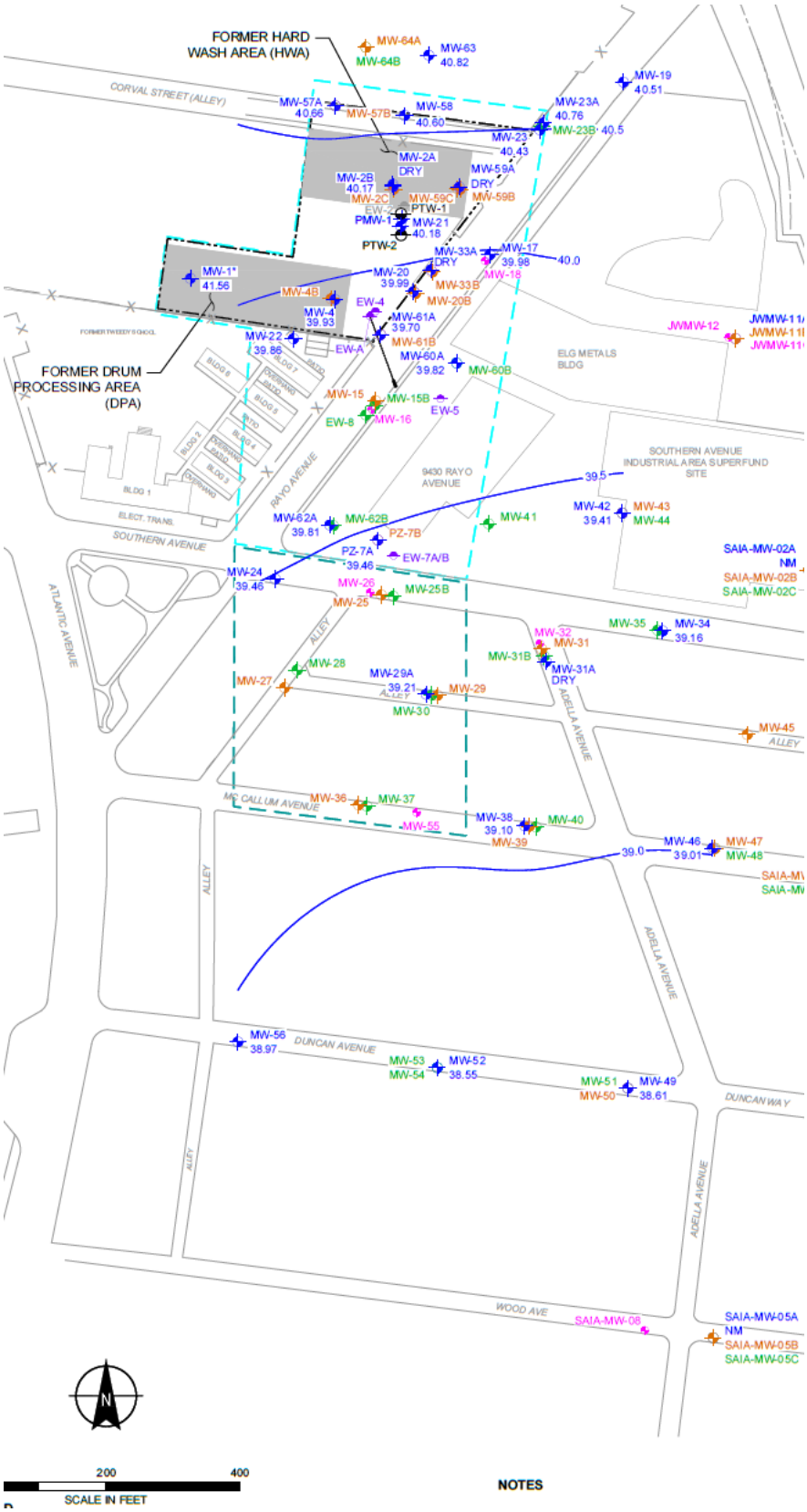


Figure C-5. Groundwater gradient for the Upper Gaspur Aquifer

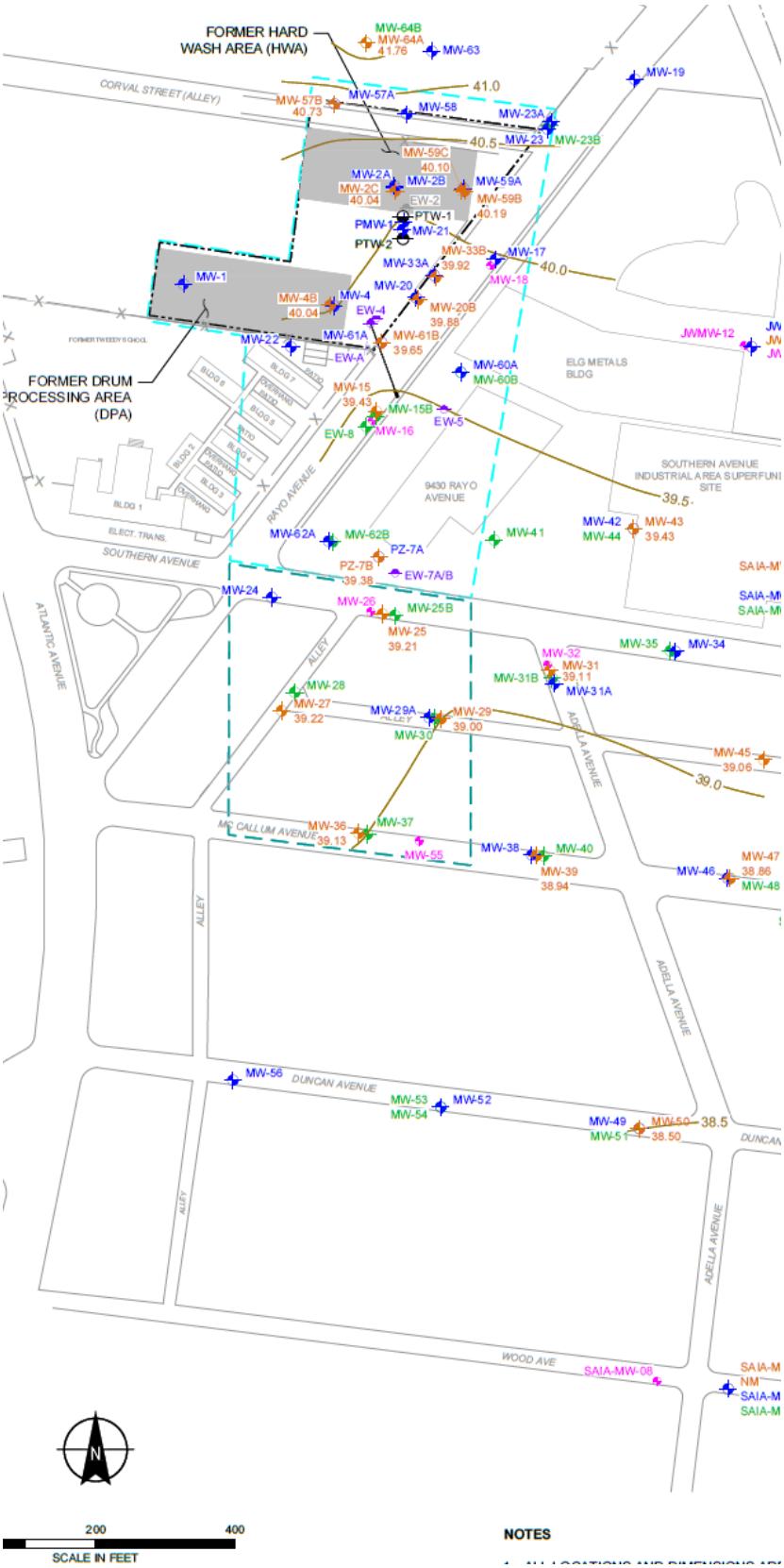


Figure C-6. Groundwater gradient for the Intermediate Gaspur Aquifer

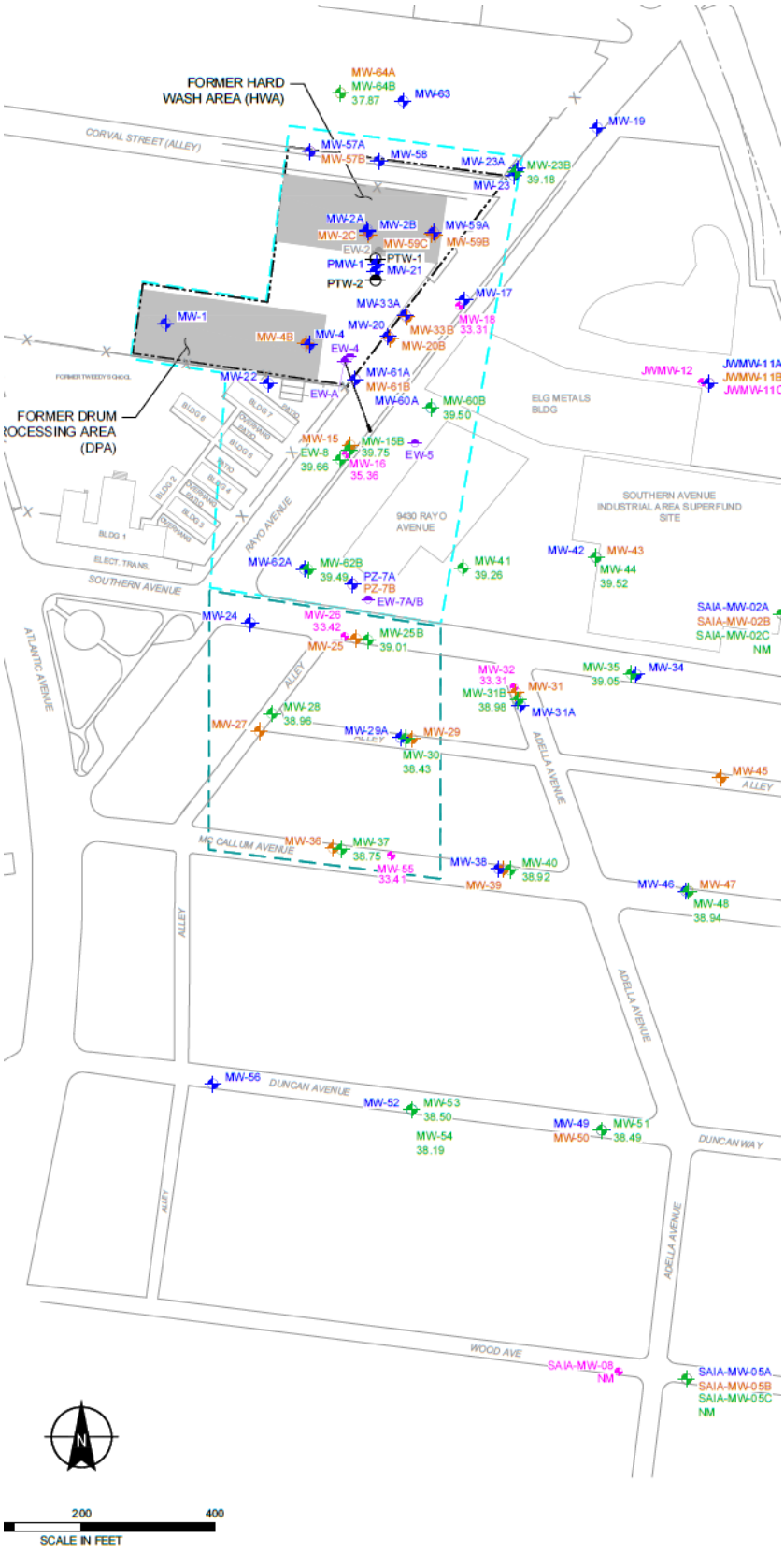


Figure C-7. Groundwater gradient for the Lower Gaspur and Exposition Aquifers.

Appendix D: ARAR Assessment

Section 121 (d)(2)(A) of Comprehensive Environmental Response, Compensation, and Liability Act specifies that Superfund remedial actions must meet any Federal standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements (ARARs). ARARs are those standards, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Comprehensive Environmental Response, Compensation, and Liability Act site.

Changes (if any) in ARARs are evaluated to determine if the changes affect the protectiveness of the remedy. Each ARAR and any change to the applicable standard or criterion are discussed below.

Chemical-specific ARARs identified in the 2002 ROD for groundwater were evaluated (Table D-1).

Since the ROD was signed in 2002, California has established a drinking water standard (i.e., MCL) for 1,2,3-TCP of 0.005 ug/L. The cleanup level for 1,2,3-TCP (1 ug/L) was based on the primary quantitation limit at the time the ROD was signed. The new California drinking water standard, established in 2017, for 1,2,3-TCP is lower than the cleanup level. Based on a review of EPA's Integrated Risk Information System (IRIS) updates toxicity values, the ROD cleanup level (1 ug/L) falls outside the acceptable risk range of 1^{-4} to 1^{-6} for ingestion of tap water (0.075 ug/L to 0.00075 ug/L).

Cleanup levels for soil were toxicity-based, not ARAR-based, and are evaluated in the Toxicity Analysis (Appendix E).

Table D-1. Summary of Groundwater Chemical-Specific ARAR Changes

Chemical	2002 ROD Cleanup Levels (µg/L)	Basis for Cleanup Level	Current Regulations (µg/L)		ARARs More or Less Stringent than Cleanup Levels?
			State	Federal	
1,1-DCA	5	State MCL	5	None	No
1,1-DCE	6	State MCL	6	7	No
1,2-DCA	0.5	State MCL	0.5	70	No
1,2-DCP	5	State MCL	5	5	No
1,2,3-TCP	1	Practical Quantitation Limit	0.005	--	**Yes**
Benzene	1	State MCL	1	5	No
cis-1,2-DCE	6	State MCL	6	70	No
trans-1,2-DCE	10	State MCL	10	100	No
PCE	5	State MCL	5	5	No
TCE	5	State MCL	5	5	No

Chemical	2002 ROD Cleanup Levels (µg/L)	Basis for Cleanup Level	Current Regulations (µg/L)		ARARs More or Less Stringent than Cleanup Levels?
			State	Federal	
Vinyl Chloride	0.5	State MCL	0.5	2	No

Federal and State laws and regulations other than the chemical-specific ARARs discussed in Table D-1 that have been promulgated or changed since the 2002 ROD are described in Table D-2. There have been no revisions to laws or regulations that affect the protectiveness of the remedy.

The following action- or location-specific ARARs have not changed since the ROD was signed in 2002, and therefore do not affect protectiveness:

- Title 22, Division 4, CH. 15, Article
- Title 22: 22 CCR 66262.10 to 66262.12, 66262.20 to 66262.23, 66262.27, 66262.30 to 66262.35, 66262.40 to 66262.45, 66262.47, 66262.50, 66262.52 through 66262.58, 66262.60, 66262.70, and 66262.80 through 66262.89
- Title 22: 22 CCR 66264.13 through 66264.15, 66264.30 through 66264.35, 66264.37, 22 CCR 66264.91 through 66264.100, 66264.111 through 66264.120, 66264.170 through 66264.179, 66264.190 through 66264.200, and 66264.601 through 66264.603
- Title 23 CCR Division 3, CH.15, Article 5
- Title 27, Division 2, Subdivision 1, CH. 3, sub CH. 2, Article 2
- Fish and Game Code 3503 Prohibition-Destruction of Bird Eggs and Nests
- South Coast Air Quality Management District, Regulation IV, 402 through 405
- South Coast Air Quality Management District Regulation XIV, 1401
- California Health and Safety Code 4010 et seq
- State Regional Water Control Board Resolution No. 92-49,
- State Regional Water Control Board Resolution No. 68-16
- State Regional Water Control Board Resolution No. 88-63
- Basin Plan for Los Angeles Region, Ch. 4 Remediation of Pollution
- California Water Code 13140-13147, 13172, 13240, 13260, 13263, 13267, 13304, and 13307

Table D-2. Summary of ARAR Changes for Site

Requirement and Citation	Document	Description	Effect on Protectiveness	Comments	Recent Amendment Date
40 CFR Part 141	2002 ROD	National Primary Drinking Water Regulations: Lead and Copper Rule Revisions	Changes do not affect protectiveness.	Greater and more effective protection of public health by reducing exposure to lead and copper in drinking water. The Rule will better identify high levels of lead, improve the reliability of lead tap sampling results, strengthen corrosion control treatment requirements, expand consumer awareness, and improve risk communication.	March 16, 2021
Fish & Game Regulations 14 CCR §472 Non-Game Animals	2002 ROD	General provisions for non-game animals.	Changes do not affect protectiveness.	Amendment of first paragraph and subsections (a) and (b), new subsections (b)(1)-(2) and amendment of Note filed 12-22-2016; operative 4-1-2017 (Register 2016, No. 52).	April 1, 2017
Title 22, Division 4, CH. 15, Article 5.5 (64444)	2002 ROD	Maximum contaminant levels- organic chemicals for primary drinking water	Changes do not affect protectiveness.	Amendment of first paragraph, table and Note filed 12-14-2017; operative 12-14-2017 pursuant to Government Code section 11343.4(b)(3) (Register 2017, No. 50).	12/14/2017
22 CCR 66264.16	2002 ROD	Personnel Training	Changes do not affect protectiveness.	Amendment of section and Note filed 10-24-2018; operative 1-1-2019 (Register 2018, No. 43).	1/1/2019
22 CCR 66264.90	2002 ROD	Applicability of water quality monitoring and response programs for permitted facilities	Changes do not affect protectiveness.	New subsection (i) and amendment of Note filed 10-31-2018: (i) The regulations in this article apply to all owners and operators subject to the requirements of Section 66270.1(c)(7), when the Department issues either a post closure permit or an enforceable document (as defined in Section 66270.1(c)(7)) at the facility. When the Department issues an enforceable document, references in this article to "in the permit" mean "in the enforceable document." Note Authority cited: Sections 25150, 25159, 25159.5, 25245, 25247 and 58012, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; and 40 CFR Section 264.90.	1/1/2019
22 CCR 66264.101	2002 ROD	Corrective Action for Waste Management Units for water quality monitoring and response programs for permitted facilities	Changes do not affect protectiveness.	Amendment of section and Note filed 10-24-2018	1/1/2019
22 CCR 66264.110	2002 ROD	Applicability of Closure and Post-Closure	Changes do not affect protectiveness.	New subsection (c) and amendment of Note filed 10-31-2018; operative 1-1-2019 (Register 2018, No. 44). *(c) The regulations in this article apply to all owners and operators subject to the requirements of Section 66270.1(c)(7), when the Department issues either a post closure permit or an enforceable document (as defined in Section 66270.1(c)(7)) at the facility. When the Department issues an enforceable document, references in this article to "in the permit" mean "in the enforceable document."*	1/1/2019

Requirement and Citation	Document	Description	Effect on Protectiveness	Comments	Recent Amendment Date
22 CCR 66264.121	2002 ROD	Post closure Requirements for Facilities that Obtain Enforceable Documents In lieu of Post closure Permits	Changes do not affect protectiveness.	New section filed 10-31-2018; operative 1-1-2019 (Register 2018, No. 44).	1/1/2019
Water Quality Control Plan (Basin Plan) for LA Region		Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties	Changes do not affect protectiveness.	Amendments to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Fresh, Estuarine and Marine Waters Designated for Water Contact Recreation, based on the Statewide Bacteria Provisions	2/13/2020

Appendix E. Toxicity Assessment

Chemical-specific, risk-based cleanup levels identified in the 2002 ROD for non-volatile organic compounds in soil were evaluated (Table E-1). EPA selected soil cleanup levels based on-site-specific modelling, background concentrations, and health hazards in the 2002 Record of Decision. EPA's Integrated Risk Information System updates toxicity values used by EPA in risk assessments when newer scientific information becomes available, and the most recent update available for the Five-Year Review was in November 2020.

Polycyclic aromatic hydrocarbon cleanup levels were based on the upper tolerance limit benzo(a)pyrene-toxicity equivalent (B(a)P-TE) concentration for southern California polycyclic aromatic hydrocarbon data set. There have been no changes to the background concentrations.

No changes have occurred to Regional Screening Levels since the 2002 ROD (Table E-1) that would impact protectiveness.

Table E-1. Summary of Commercial Soil Toxicity Changes

Chemical	2002 ROD Soil Cleanup Level (µg/kg)	Basis for Cleanup Level	Current Composite Worker RSL (µg/kg) c = cancer n = noncancer	Current More or Less Stringent than Cleanup Levels?
Aroclor 1254	870	Based on 1 x 10^{-5} lifetime cancer target risk	970 (c)	Less stringent
Aroclor 1260	870	Based on 1 x 10^{-5} lifetime cancer target risk	990 (c)	Less stringent
B (a)P-TE[1] - Benzo(a)anthracene - Benzo(a)pyrene - Benzo(b)fluoranthene - Benzo(k)fluoranthene - Chrysene - Dibenz(a,h)anthracene - Indeno(1,2,3-cd)pyrene	900	Background	1100 (c) 110 (c) 1100 (c) 11000 (c) 110,000 (c) 110 (c) 1100 (c)	Not relevant, cleanup level based on background concentrations
Lead	400,000	Human health hazard (IEUBK Model) [1]	None	--

c = cancer, n = noncancer, RSL = Regional Screening Level

IEUBK Model - Integrated Exposure Uptake Model for Lead in Children

[1]A new version of the IEUBK Model was released in May 2021. However, the Regional Screening Levels have not yet been updated.

Appendix F: Public Notice

LA EPA QUIERE OÍR SU OPINIÓN SOBRE LA LIMPIEZA DEL SITIO SUPERFUND COOPER DRUM (SOUTH GATE, CALIF.)

La Agencia de Protección Ambiental de EE. UU. (EPA, por sus siglas en inglés) ha comenzado una revisión de cada cinco años de su limpieza del sitio Superfund Cooper Drum. El sitio se encuentra en South Gate, California. El propósito de esta revisión es comprobar si la acción de limpieza está teniendo el efecto previsto y confirmar que aún protege la salud humana y el medioambiente.

La limpieza de la EPA utiliza un sistema de tratamiento para eliminar los contaminantes llamados compuestos orgánicos volátiles (VOC) presentes en el suelo y en el agua subterránea poco profundo. Para tratar otro tipo de contaminantes (no VOC), por ejemplo, los bifenilos policlorados (PCB) y el plomo del suelo, el plan de limpieza requiere que se excave el suelo y se lo elimine fuera del sitio. El plan también requiere restricciones respecto de cómo se puede reutilizar el sitio una vez finalizada la limpieza. Estas restricciones evitarán el contacto con toda la tierra restante que pueda contener pequeñas cantidades de contaminación. También se impondrán restricciones de uso de la tierra en toda área donde no sea posible eliminar el suelo contaminado (por ejemplo, debajo de las estructuras que existen en el sitio).

La iniciativa de tratamiento del agua subterránea contaminada con VOC emplea un sistema de contención y limpieza. También se utilizará tratamiento químico in situ (inyección de compuestos en el acuífero para tratar el agua subterránea contaminada sin bombear el agua a la superficie) para potenciar la eliminación de los VOC del agua subterránea a fin de lograr los objetivos de limpieza y restaurar el uso beneficioso del acuífero.

Proceso de revisión

Las leyes federales exigen que la EPA lleve a cabo una revisión cada cinco años si una limpieza toma más de cinco años en completarse o si todavía hay desechos peligrosos en el sitio. Durante esta revisión, la EPA evalúa el remedio para determinar en qué medida está logrando los objetivos de limpieza del sitio y para tomar en cuenta cualquier cambio en los conocimientos científicos sobre los contaminantes del sitio, en los riesgos potenciales o en las reglamentaciones federales, estatales y locales.

La EPA quiere oír su opinión

Nos gustaría entrevistar a los miembros de la comunidad en relación con el progreso de la limpieza del sitio. Si desea obtener más información sobre el sitio, proporcionar comentarios o ser entrevistado, comuníquese con la Gerente de Proyectos de Remediación o la Coordinadora de Participación Comunitaria mencionadas a continuación **antes del 26 de abril de 2021:**

- Gerente de Proyectos de Remediación - Sharissa Singh, 213-347-7776, singh.sharissa@epa.gov
- Coordinadora de Participación Comunitaria - Romie Duarte (hispanohablante), 213-244-1801, duarte.romie@epa.gov

¿Dónde puedo encontrar más información?
Para obtener más información, visite la página web de la EPA en http://www.epa.gov/superfund/cooperdrum. La EPA también tiene un centro de información gratuito con copias impresas del Registro Administrativo del sitio (es decir, los principales documentos e informes utilizados en la limpieza) disponibles para que usted los consulte en la biblioteca que se indica a continuación:

Leland R. Weaver Library
4035 Tweedy Blvd.
South Gate, CA 90280
**Nota: Llame a la biblioteca para conocer el horario actual de atención:* (323) 567-6853

La EPA completará el informe de revisión de cada cinco años a más tardar el 30 de septiembre de 2021. Una vez completado, la EPA publicará una copia en la página web del sitio y enviará una copia al centro de información.

EPA WANTS TO HEAR FROM YOU ABOUT THE COOPER DRUM SUPERFUND CLEANUP (SOUTH GATE, CALIF.)

The U.S. Environmental Protection Agency (EPA) has started a Five-Year Review of its cleanup of the Cooper Drum Superfund site. The site is in South Gate, Calif. The purpose of this Review is to see if the cleanup action is working as intended and to confirm that it still protects human health and the environment.

EPA's cleanup uses a treatment system to remove contaminants called volatile organic compounds (VOCs) in soil and shallow groundwater. To treat non-VOCs such as PCBs and lead in soil, the cleanup plan calls for the soil to be removed and disposed offsite. The plan also requires restrictions about how the site can be reused when cleanup is done. These restrictions will prevent contact with all remaining soil that may have small amounts of contamination. Land-use restrictions will also be placed on any area where removing contaminated soil is not possible (for example, removing contaminated soil under structures on-site).

The effort to address groundwater contaminated with VOCs uses a system for containment and cleanup. Chemical *in-situ* treatment (injecting compounds into the aquifer to treat the contaminated groundwater without pumping the water to the surface) will also be used to enhance the cleanup of VOCs in groundwater to achieve cleanup goals and restore the beneficial use of the aquifer.

The Review Process

Federal law requires EPA to conduct a review every five years if a cleanup takes more than five years to complete, or if hazardous waste is still on-site. During such a review, EPA assesses the remedy to see how well it is achieving the site cleanup goals, and to account for any changes in scientific knowledge about site contaminants, changes in potential risks, and/or changes in federal, state and local regulations.

EPA Would Like to Hear From You!

We would like to interview community members about the site cleanup's progress. If you would like to learn more about the site, provide feedback, or be interviewed, please contact either the Remedial Project Manager or Community Involvement Coordinator below **before April 26, 2021:**

County advances to next level of state's COVID blueprint

CORONAVIRUS from Page 1

April 2 so business owners will be aware of all the new guidelines and have the weekend to adjust their operations accordingly. While the county is largely aligning with state guidelines for the orange tier, it will have some stricter requirements.

Most notably, bars will be limited to outdoor table service only, operating only from 11:30 a.m. to 10 p.m., and a required 8-foot distance between outdoor tables. Although state guidelines allow a lifting of all capacity restrictions on retail establishments in the orange tier, Los Angeles County will impose a 75% limit for grocery stores and other retail operations, while "strongly" recommending they remain at 50% capacity until April 15 to allow time for more workers to get vaccinated.

The county also will raise the capacity limit from 25% to 50% for movie theaters, churches, museums, zoos, aquariums and restaurants. Fitness center capacity will be increased from 10% to 25%. Card rooms and family entertainment centers can resume indoor operations at 25% capacity.

The move also allows Dodger Stadium to increase fan capacity to 33%, up from the current 20%, while theme parks can expand capacity to 25%, up from 15%.

Breweries and wineries will be able to offer indoor service at 25% capacity. Breweries, wineries and bars will all be allowed to turn on their television sets outdoors, but live entertainment remains prohibited.

It was unclear if the county will continue to ban restaurants from turning on their television sets — a requirement imposed to prevent gatherings of sports fans.

Despite the move to the orange tier, health officials are continuing to preach vigilance, warning that cases have been rising in other states and countries. They said the continued emergence of COVID-19 variants that can spread more easily from person to person could lead to another surge in cases.

County officials also fear that upcoming spring break activities — along with the Easter and Passover holidays — could prompt gatherings that threaten to quickly spread the virus.

"COVID-19 cases are rising in 27 states, and the U.S. seven-day average saw a 10% increase in cases compared to the prior seven-day period," Ferrer said. "While L.A. County has yet to experience such increases, this week is critical as we are now two weeks out from when we moved into the red tier and reopened several sectors. We're also in the height of spring vacations and we're in the height of many of our spring holidays."

Vaccine eligibility expands April 1 to all residents aged 50 and over, but with vaccine supplies still relatively limited, getting an appointment could prove difficult. Eligibility will expand to everyone aged 16 and up on April 15.

The county this week was set to receive its largest weekly allotment of vaccine to date — 338,100 doses — and tens of thousands more doses will be sent directly to other local vaccination providers, such as pharmacies and health care centers.

Southeast area renters urged to apply for state relief

RELIEF from Page 1

as determined by the U.S. Department of Housing and Urban Development. In Los Angeles County, the area median income for a family of four in 2020 was $77,300, and to qualify they should report earnings of $61,840 or less.

The rent relief program would prioritize funds to eligible households earning 50% or less than the area median income, or $38,650, and then to communities disproportionately impacted by coronavirus.

The COVID-19 Tenant Relief Act does not require proof of citizenship or legal status in the country to be approved for emergency funds.

"Priority would be given to those who are the poorest," Santiago said. "And that is absolutely important for the district

"We need your help," Martinez said. "We need you to talk to your cousins, family members and neighbors to get the word out. This is very important and we only can do so much by being here speaking of it. We all need you to be active and spread this word."

Gov. Gavin Newsom signed SB 91 on Jan. 29, a day after the Legislature approved its final version.

It requires landlords who have tenants with past due rent from March 2020 until January 2021 to send them a notice with form CA-405, telling them about the act's June extension and the relief program by Feb. 28. Otherwise they would face barriers serving the new 15-day notices, said Whitney Prout, policy and compliance attorney

the tenant, sought governmental assistance for that resident and cooperated with the resident to get any rental assistance from a public or private party.

Bell Gardens Community Service Supervisor Diana Ortiz said her city will provide assistance to area landlords and tenants filing the financial relief applications by scheduling appointment at (562) 806-7654.

Ortiz told residents that despite the eviction moratorium, renters must give a financial distress statement once a month to the landlord, even if they did not receive a document by Feb. 28.

Another tenant protection bans landlords from charging new fees on services provided before March 2020, and for billing late fees and efforts to collect them, Prout said.

in small claims courts until Aug. 1.

In addition, the law bars agencies in the field from screening prospective tenants on behalf of landlords to use any records related to COVID-19 rental debt to deny applications to rent a dwelling, or as basis to reject an application.

Courts can reduce damages awarded to a landlord during the pandemic, if the court determines the landlord refused to receive assistance from the state, and the resident met the criteria to qualify for the funds and the money was available, Madison said.

Santiago said the rent relief program is a win-win for landlords and tenants.

"Likewise, landlords would benefit from this because the

EPA Would Like to Hear From You!

We would like to interview community members about the site cleanup's progress. If you would like to learn more about the site, provide feedback, or be interviewed, please contact either the Remedial Project Manager or Community Involvement Coordinator below **before April 26, 2021**:

- Remedial Project Manager- Sharissa Singh, 213-247-7776, singh.sharissa@epa.gov
- Community Involvement Coordinator- Romie Duarte (hispanohablante), 213-244-1801, duarte.romie@epa.gov

Where Can I Learn More?

Visit EPA's webpage at http://www.epa.gov/superfund/cooperdrum for more information. EPA also has a free information repository with paper copies of the site's Administrative Record (i.e., key documents and reports used in the cleanup) available for you to view at the library below:

Leland R. Weaver Library
4035 Tweedy Blvd.
South Gate, CA 90280
Note: Please call the library for current hours of operation: (323) 567-8853

EPA will complete the Five-Year Review report no later than September 30, 2021. Once completed, EPA will post a copy on the site webpage and send a copy to the information repository.
CNS8#3447195

NOTICE OF PUBLIC HEARING FOR
PARCEL MAP CASE NO. PM 83152
ZONE CHANGE CASE NO. ZC 20-02
SITE DESIGN REVIEW CASE NO. SDR 20-01

TAKE NOTICE that the Bellflower City Council will hold a Virtual Public Hearing on Monday, April 12, 2021, at 7:00 p.m. to consider testimony for and against a Parcel Map (PM 83152) to allow subdivision of a 10,114-square foot lot into two lots; a Zone Change (ZC 20-02) from R-1 (Low Density Residential Zone) to R1–PD (Low Density Residential Planned Development Overlay District); and a Site Design Review (SDR 20-01) to allow flexibility of the development standards for the expansion of an existing single-family unit and the construction of a new 2-story, single-family dwelling unit on property located at 9437 Rose Street. The Planning Commission considered this project on March 1, 2021 and recommended approval to the City Council, the final decision-making body. Pursuant to the authority and criteria of the California Environmental Quality Act (CEQA), this project has been determined to be Categorically Exempt pursuant to §15303, Class 3 (New Construction or Conversion of Small Structures) because the proposed project involves expansion of an existing dwelling unit and construction of a new dwelling unit in an urbanized area. The project is also exempt pursuant to §15315, Class 15 (Minor Land Divisions) because the project consists of the division of a property in an urbanized area zoned for residential use into two parcels. The division is in conformance with the General Plan and zoning, no variances or exceptions are required, all services and access to the proposed parcels to local standards are available, the parcel was not involved in a division of a larger parcel within the previous two years, and the parcel does not have an average slope greater than 20 percent.

This meeting will be partially conducted by electronic means pursuant to Executive Order No. N-29-20 issued on March 17, 2020. City Council Members will be physically present in the Council Chambers. However, because of Orders issued by the Los Angeles County Department of Public Health, the City is required to comply with physical distancing and occupancy limitations at City Hall. To ensure public participation, the City Council ordered that the meeting be, in part, conducted virtually pursuant to Executive Order No. N-29-20. Accordingly, the public may provide public comment by emailing comments to cclerk@bellflower.org before the start of the meeting or telephonically during the meeting by participating via the Zoom website/app (https://www.zoom.us/) or by calling (669) 900-6833 (Zoom Meeting ID provided on the Meeting Agenda).

Copies of the report and supporting documents regarding this matter may be inspected, by appointment, at the City of Bellflower Planning Division, 16600 Civic Center Drive, Bellflower, CA 90706. On April 9, 2021, (by 4:30pm), the Staff Report will be made available on the City's website (https://www.bellflower.org/government/city_council/city_council_meetings.php). Please address all public comments to City of Bellflower, Attn: Eliana Muñoz, at (562) 804-1424, ext. 2011, or emunoz@bellflower.org. If you wish to challenge the project in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the City at or prior to the Public Hearing.

The following Notice is to be published once in the ***Thursday, April 1, 2021,*** *issue of the* ***Herald American Bellflower Edition*** **newspaper.**

MAYRA OCHIQUI, CITY CLERK

those who are the poorest," Santiago said. "And that is absolutely important for the district I represent, and the city we are sitting in, the city of Huntington Park."

The city's vice mayor called on religious organizations, LGTBQ groups and community members to share the news about the funds that can free families from long-term debt and potential financial misery.

notices, said Whitney Prout, policy and compliance attorney with the California Apartment Association in a video.

If the landlords refuse to apply, and tenants move along with their application, the state agency in charge of disbursements would issue payment for 25% of the total rent owed, and grant eviction moratoriums until June 30, 2021.

"The state's rental assistance program was tailored to allow low-income residents," Prout said. "Suits against tenants with higher incomes could be allowed to continue either in small claims or Superior Court with documents that prove landlords made good faith efforts to investigate whether public assistance was available to relieve

ing late fees and efforts to collect them, Prout said.

If landlords serve a 15-day notice of eviction, they should state the reason for which they are terminating the tenancy, as part of the just clause requirement.

For her part, Huntington Park City Councilwoman Karina Macias said she is glad a slice of the funds would bring relief to undocumented working-class people in communities nested in Southeast Los Angeles County.

"Many communities in the area have suffered a lot, and do not qualify for the federal relief programs," Macias said. "This money would help them in a big way to pay for rent."

The law calls for regular civil cases on accrued COVID-19 rental debt to be filed on or after July 1 in Superior Court, and allows stay to pending cases filed before Oct. 1, 2020, with the caveat that the suits should be versus residents who did not qualify for the state's rental assistance plan, said attorney Embert Madison with the California Apartments Association.

Parties seeking rent adjudication against tenants affected by the dislocation wrought by COVID-19 cannot file lawsuits

"Likewise, landlords would benefit from this because the state would give you 80% of what is owed, if you forgive 20%," he said. "This is a rescue not just for tenants, but for small landlords as well. And we hope that they'll apply."

Applications will be accepted until April 30.

For further information, visit www.housingiskey.com, or contact Housing Rights Center at (213) 387-8400, ext. 1012, or Los Angeles House of Ruth at (805) 399-1664.

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Appendix G: Site Inspection Report and Photos

1. INTRODUCTION

a. Date of Visit: 14 July 2021

b. Location: South Gate, CA

c. Purpose: A site visit was conducted to visually inspect and document the conditions of the remedy, the site, and the surrounding area for inclusion into the Five-Year Review Report.

d. Participants:

Kevin Yu	US Army Corps of Engineers, Civil Engineer	626-401-4087
Chris Tsiatsios	Haley Aldrich, Senior Engineer	714-371-1820
Alex Felix	JHA Environmental, Senior Remediation Manager	714-719-6858

2. SUMMARY

A site visit to the Cooper Drum Company Superfund Site was conducted on 14 July 2021. The Superfund site is in the city of South Gate in Los Angeles County, California. The participants toured the treatment facility and former wash areas following a safety meeting. The treatment facility is managed by Mr. Alex Felix, the Senior Remediation Manager.

3. DISCUSSION

On 14 July, Mr. Yu arrived at the Cooper Drum Superfund Site at 0900. Mr. Tsiatsios and Mr. Felix greeted Mr. Yu in the lot outside the treatment facility. The weather was sunny, calm, and approximately 72 degrees Fahrenheit. A meeting was held in the parking lot where Mr. Felix led a safety meeting which included the COVID protocol for the site. Following the tailgate meeting, Mr. Tsiatsios and Mr. Felix gave an overview and history of the project and site, emphasizing the changes in the past five years. The highlighted changes are summarized in the following paragraphs.

Mr. Tsiatsios explained that the site has not had any significant changes or development to the remedial program over the past five years. All changes to the system are done with notification to and approval from the EPA though a work plan or technical memorandum via email. Mr. Felix noted that the front gate is typically always closed so members of the public do not enter the site unintentionally. Mr. Felix stated that they occasionally have transients who enter the property. They usually like to use the portable restroom. The property has an alarm and cameras to monitor the area.

The extraction well network was expanded to downstream and Off-Property locations with EW-5, EW-7A, EW-7B, and EW-A in 2015. The operations and maintenance for the system includes removing biofouling from the wells, balancing the flow rates, and reprogramming the floats.

The aerobic co-metabolic pilot test program began and concluded in 2020. As part of the program, an injection point and an extraction point were installed in the well field. The extracted groundwater was treated with carbon, amended with oxygen and propane, and reinjected into the groundwater with the intent of stimulating the biological activity of certain microbes that degrade 1,4-dioxane. The latest performance evaluation report for the program was submitted in February 2021.

The soil and perched groundwater contaminated by VOCs were treated using dual phase extraction (DPE). Because there is no longer perched groundwater, the DPE system has been modified into a soil vapor extraction (SVE) system. The SVE system has been operated using a couple of different venting programs. The first pulls vapor from a single well. The wells surrounding the extraction well are open to the atmosphere and air is pulled from the extraction well. The second operates the system in a cyclical mode. Certain wells are turned off and turned on periodically to remove VOCs which build up over time. This allows the surface to equilibrate and pull additional VOCs out.

Mr. Felix is on the site one day per week for monitoring activities. When the SVE system is running, Mr. Felix records the PID, vacuum, and flow rate readings. Vapor probe readings are taken quarterly. If activities outside of monitoring are required (e.g., carbon changeout) then Mr. Felix will be on site for additional days. In the past couple of years, carbon has been changed twice per year. Currently, concentrations of contaminants of concern are generally low enough to discharge to the sanitary sewer after going through the equalization basin only.

After discussion of the notable changes, the team proceeded to inspect the treatment facility where the SVE system and groundwater extraction system are located. Mr. Felix shut down the SVE system during the inspection, so the party members did not have to shout or get close to each other to talk. The system is secured by chain-link fencing which has privacy slats that are in good condition and show no sun damage. The concrete pavement in the treatment facility is in good condition, and any major cracks have been repaired. The secondary containments for the two systems are in very good condition and show little to no cracking. The two granulated activated carbon (GAC) vessels for the SVE system appear to be in good condition. The two GAC vessels and the two equalization basins for the groundwater extraction system also appear to be in good condition. Mr. Tsiatsios stated that they try not to open the GAC vessel unless it is to change out the carbon, and that they always inspect the inside and replace the screens if they show signs of degradation. Overall, the systems appear to be in good condition and are well maintained.

Next, the group moved to the Drum Processing Area (DPA). SVE well SVE-9 was inspected. The well head and vault were in good condition. Vapor monitoring point VP-13 was inspected. The well head and tubing inside the vault were in good condition. DPE well DPE-14 was inspected. The DPE wells are now run as SVE wells. The well appeared to be in good condition. The DPA has an elevated area where empty drums and high-density polyethylene (HDPE) piping are stored.

Mr. Tsiatsios and Mr. Yu went to the well field where the aerobic co-metabolic degradation (ACB) test area is also located. The SVE and extraction well pipes were inspected and appear to be in good

condition. Mr. Tsiatsios pointed out an SVE pipe joint that occasionally detaches slightly due to thermal expansion. The pipes contain negative pressure, so vapor does not escape the pipe. Typically, a detached pipe is detected from inspection or if concentrations are lower than expected which means air from the atmosphere is infiltrating the pipe.

The SVE pipe manifold is enclosed behind chain-link fencing which has privacy slats that are in good condition and show no sun damage. The manifold has a secondary containment zone which is in good condition. The manifold was inspected and appeared to be in good condition.

The injection and extraction points installed as part of the ACB pilot test are in good condition and have secondary containment around the area. Mr. Yu asked if there had been any surfacing of injection material during the pilot test. Mr. Tsiatsios responded that water never came up after injection and that the secondary containment would capture any liquid that surfaced. The well heads and pipes in the well field were inspected and were in good condition. The pipe leading from the equalization basin to the sanitary sewer was in good condition.

The pair continued along the perimeter of the site. Mr. Yu inspected the perimeter fencing which is continuous around the site and did not show signs of significant damage. One section of fencing on the western border was toppled over likely due to wind. This fence is shared with the adjacent property which also has a perimeter fence and is owned by the company, IRS.

The asphalt pavement throughout the facility has some cracking and potholes due to normal wear and tear. There are no signs of excavation or ground disturbance. Mr. Tsiatsios mentioned that the site owner had been looking into using the site as a truck storage area but has not been able to proceed with the plan. There were no signs of the site being used as a truck storage area.

The extraction well EW-A was inspected. The vault appeared to be in good condition. The pair then walked off the site to look at the adjacent LA USD property where one vapor extraction point, one DPE well, and two SVE wells are located. The building was not open but the pipes leading from one of the wells could be seen from the sidewalk. This pipe goes through the wall separating the two properties to a sampling point where samples can be taken without going onto the LA USD property.

Next, the pair walked across the street onto the Bimbo (wholesale bakery) property where the extraction well EW-7A/B and EW-5 are located. EW-7B was inspected and appeared to be in good condition. Typically, Mr. Felix is able to access the property to perform the measurements or maintenance without the needing to notify the property owners because they are aware of the wells and who Mr. Felix is.

Following the Bimbo property, Mr. Yu inspected a vapor extraction point which is located on the southeast corner of Rayo Avenue and Southern Avenue. The well head appeared to be in good condition.

Overall, the components of the remedial action at the Cooper Drum Superfund site appeared to be in good condition and operating as intended.

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Figure 9. Entrance to the SVE system facility. Facing south.

Figure 10. Overview of the treatment facility facing northwest.

Figure 11. Overview of the groundwater extraction system. Facing west.

Figure 12. Overview of the SVE system. Facing south.

Figure 13. Groundwater extraction lines running to and from the treatment facility. Facing North.

Figure 14. Drum Processing Area. Facing southwest.

Figure 15. Empty drums and HDPE pipes staged on the elevated area. Facing southeast.

Figure 16. Elevated area in the Drum Processing Area. White pipes exiting the wall in the background are connected to wells located on the adjacent LA USD property. Facing southwest.

Figure 17. SVE well SVE-9. Facing northwest.

Figure 18. Vault interior SVE-9.

Figure 19. Vapor extraction point VP-13.

Figure 20. Interior of VP-13

Figure 21. DPE-14 which is run as an SVE well now. Facing south.

Figure 22. Overview of the well field. Facing north.

Figure 23. SVE pipe manifold. Facing southeast.

Figure 24. Groundwater extraction point installed for the ACB pilot test. Facing south.

Figure 25. Groundwater injection point installed for the ACB pilot test. Facing southwest.

Figure 26. SVE lines. Facing northeast.

Figure 27. SVE joint which occasionally decouples due to thermal expansion.

Figure 28. Area behind a row of vegetation. The north fence line is to the left. Facing east.

Figure 29. Extraction well line that runs from the equalization basin to the sanitary sewer. Facing south.

Figure 30. Length of fence partially toppled over along the west perimeter. Facing south.

Figure 31. Angled extraction well EW-A. Facing southeast.

Figure 32.Vault interior EW-A.

Figure 33. Potholes on the asphalt lot. Facing northwest.

Figure 34. White pipes leading from wells located on the LA USD property. Facing northwest.

Figure 35. Front gate of the LAUSD property which were chained. Facing north.

Figure 36. Vault interior EW-7B.

Figure 37. Extraction well EW-5. Facing northwest.

Figure 38. Vapor extraction point located on the southeast corner of Rayo Ave and Southern Ave. LAUSD property is in the background. Facing northwest.