SITE INSPECTION REPORT

Exide Technologies - Vernon
Vernon, Los Angeles County, California

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TABLE OF CONTENTS

Section **Page**

LIST OF TABLES

LIST OF FIGURES

APPENDICES

ATTACHMENTS

List of Acronyms and Abbreviations

%	Percent
°C	Degrees Celsius
µg/L	micrograms per liter
AGS	Advanced GeoServices
Alta	Alta Environmental
amsl	above mean sea level
AOC	area of observed soil contamination
Baker	Baker Commodities
BNSF	Burlington Northern Santa Fe
bgs	below ground surface
BZ	Background Zone
CACO	Corrective Action Consent Order
CalEPA	California Environmental Protection Agency
Cal Water	California Water Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	Contaminant of Potential Concern
CPT	Cone Penetration Testing
CVAA	Cold Vapor Atomic Absorption
DHS	Department of Health Services
DNAPL	dense non-aqueous phase liquid
DTSC	Department of Toxic Substances Control
DTSC-SL	DTSC Screening Level
DHS	Department of Health Services (predecessor agency to DTSC)
DU	Decision Unit
EFI	EFI Global, Inc.
ELA	East Los Angeles
EPA	U. S. Environmental Protection Agency
ERT	Environmental Response Team
Exide	Exide Technologies, Inc.
Exide-Vernon facility	Exide Technologies, Inc. – Vernon facility, Vernon, Califorinia
FRS	Facility Registry Service
ft	feet (foot)
ft^2	square feet (square foot)
Geosyntec	Geosyntec Consultants
GNB	GNB Technologies
GSWC	Golden State Water Company
HDPE	High-Density Polyethylene
HHRA	Human Health Risk Assessment
HRS	Hazard Ranking System

List of Acronyms and Abbreviations (Continued)

ICP/MS	Inductively Coupled Plasma / Mass Spectrometry
ID	Identification
ISE	Imminent and Substantial Endangerment Determination
ISM	Incremental Sampling Methodology
ITRC	Interstate Technology and Regulatory Council
L	Liter
LBP	lead-based paint
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
N/A	not applicable
NPL	National Priorities List
NS	not sampled
PA	Preliminary Assessment
PCE	Tetrachloroethylene
PIA	Preliminary Investigation Area
QC	Quality Control
QL	Quantitation Limit
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RL	Reporting Limit
ROW	right of way
RP	responsible party
RSL	Regional Screening Level
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SCAQMD	South Coast Air Quality Management District
SCWC	Southern California Water Company
SEMS	Superfund Enterprise Management System
SEP	Supplemental Environmental Projects
SERAS	Scientific, Engineering, Response, and Analytical Services
SI	Site Inspection
SL	Screening Level
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
SU	Sampling Unit

List of Acronyms and Abbreviations (Continued)

TCE	Trichloroethylene
TDL	Target Distance Limit
TOC	Top of casing
TSDF	treatment, storage, and disposal facility
USGS	U. S. Geological Survey
URS	URS Corporation
VERT	Vernon Environmental Response Trust
VOC	Volatile organic compound
WESTON®	Weston Solutions, Inc.
WSP	WSP USA Environment & Infrastructure, Inc.
WWTP	Wastewater Treatment Plant
XRF	X-ray fluorescence

EXECUTIVE SUMMARY

The Exide Technologies, Inc. - Vernon (Exide-Vernon) facility is located at 2700 South Indiana Street in the City of Vernon, Los Angeles County, California. Lead recycling operations began at the Exide-Vernon facility in 1922. By 1982, the facility was conducting battery recycling and lead-refining operations where lead-acid batteries were crushed and recycled in a secondary lead smelter system. Previous owners included Morris P. Kirk & Sons, NL Industries, Gould Inc., and GNB Inc. Exide acquired the property in 2000, continued operations until closure in 2014, and declared bankruptcy in 2020. Historical activities conducted at the Exide-Vernon facility included battery breaking; secondary smelting; lead refining; storage, handling, and transportation of batteries and other materials associated with recycling operations; and chemical processing. Air emissions from stacks; inadequate maintenance and repair of the containment building; spills at the facility; spills from trucks transporting material to and from the facility; releases from a stormwater containment and other liquid containments; and insufficient dust controls contributed to the release and dispersion of lead-impacted airborne particulates.

Groundwater sampling from on-site monitoring wells since the 1980s consistently reveals trichloroethylene (TCE) levels an order of magnitude higher than those in nearby wells. TCE contamination associated with the south yard are elevated based on Hazardous Ranking System criteria (3 times background) and four times the Maximum Criteria Level (MCL) allowed for public drinking water supplies.

From 2013 through 2024, California Department of Toxic Substances Control (DTSC) conducted extensive soil sampling activities throughout the area within a 1.7-mile area around the former Exide-Vernon facility, including residential neighborhoods, referred to by DTSC as the Preliminary Investigation Area (PIA). Residential lead concentrations ranged from 0.48 mg/kg to 73,200 mg/kg in off-site soil within the DTSC PIA, likely linked to Exide’s past battery recycling operations and other sources like leaded fuel combustion, lead-based paint (LBP), and historical industrial operations. DTSC conducted a human health risk assessment and initiated a cleanup, setting protective goals based on property use and anticipated risks. Ongoing cleanup involves excavating lead-impacted soils up to 18 inches below ground surface (bgs), guided by pre-excavation sampling. As of June 14, 2024, DTSC had remediated 5,207 properties within the PIA, and an estimated completion of a total of 5,940 properties by June 2025 with existing funds.

On July 1, 2022, the California Environmental Protection Agency (CalEPA) requested that the EPA evaluate the former Exide-Vernon facility, and surrounding areas potentially impacted by the former facility’s operations, as a candidate for the National Priorities List (NPL) to bring in federal resources and expertise to help address hazardous levels of lead and other heavy metals.

In November 2022, EPA completed a Preliminary Assessment (PA) at the Exide-Vernon facility. The primary objective of the PA was to evaluate existing information to be used in the Hazard Ranking System (HRS) characterization process, including source areas and levels of

Ranking System (HRS) characterization process, including source areas and levels of contamination in surface soil. The PA, which relied primarily on soil data collected by DTSC, concluded that the Exide-Vernon facility is a documented source of lead contamination and historical operations at the facility likely contributed to the emission and deposition of lead along with other heavy metals onto the soil and other surfaces at the facility and surrounding areas. A Site Inspection (SI) was recommended to validate these preliminary findings by sampling and data validation.

The Site Inspection was initiated in January 2023 with the initial objective to augment DTSC collected soils and groundwater data. However, EPA determined that DTSC's existing background data and residential sampling protocols needed to be amended to comport with HRS requirements. This resulted in an extensive background soil collection effort, modifications to DTSC-executed residential sampling beginning May 1, 2023, and supplemental groundwater sampling in the south yard.

The data and documentation identified during the SI was determined to be insufficient to meet the criteria for consideration under the HRS for the soil exposure pathway. However, the results of this SI and historical on-site sampling confirms an observed release of TCE from the Exide-Vernon facility to the groundwater within the Exposition through Jefferson hydrologic unit.

Two separate exposure pathways for determining National Priorities List eligibility using the HRS were evaluated in the Site Inspection - specifically the soil and groundwater exposure pathways. The HRS requires that a background concentration for each pathway be established by evaluating local soil or groundwater not affected by the site. If a sample impacted by the site is found to exceed 3 times that background concentration, the sample is considered elevated and poses a concern. If it does not, the sample is not considered significant for HRS purposes.

Data collected and evaluated for the soil exposure pathway indicated that residential lead concentrations above 3 times background were less than 10% of those sampled with no discernable pattern. Therefore, the soil pathway did not qualify the site for NPL eligibility. However, groundwater samples indicate that there has been a TCE release to area groundwater with onsite TCE concentrations exceeding 3 times the background concentration, posing a potential impact to the Exposition through the Jefferson aquifers. Therefore, the site qualifies for NPL consideration based on the groundwater exposure pathway.

1. INTRODUCTION

1.1 EPA Regulatory Authority

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA) tasked Weston Solutions, Inc. (WESTON®) to conduct a Site Inspection (SI) of the Exide Technologies, Inc. - Vernon (Exide-Vernon) facility in Vernon, Los Angeles County, California.

The purpose of an SI is to evaluate a site with potential releases of a hazardous substance into its environs to assess the threats, if any, posed to public health, welfare of the United States, or the environment, and to determine whether further investigation under CERCLA is warranted. The site is then evaluated using the EPA Hazard Ranking System (HRS) criteria to assess the relative threat associated with actual or potential releases of hazardous substances. The HRS has been adopted by EPA to help set priorities for further evaluation and eventual remedial action at hazardous substance sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL is a list compiled by EPA of uncontrolled hazardous substance releases in the United States that are priorities for long-term remedial evaluation and response. This report summarizes the findings of these preliminary investigative activities. National Contingency Plan factors are summarized in **Appendix B**.

More information about the Superfund program is available on the EPA website at https://www.epa.gov/superfund.

1.2 EPA Regulatory History

The Exide-Vernon facility is identified in the EPA Superfund Enterprise Management System (SEMS) (EPA, 2022a) under SEMS ID CAD097854541 and in the Envirofacts Facility Registry Service (FRS) Facility Detail Report database under EPA Registry ID 110000609921 (EPA, 2022b).

On July 1, 2022, the California Environmental Protection Agency (CalEPA) requested that EPA evaluate the former Exide-Vernon facility and surrounding areas impacted by the former facility's operations for potential listing on the NPL in order to bring in federal resources and expertise to help address hazardous levels of lead and other heavy metals (CalEPA, 2022).

In November 2022, EPA completed a Preliminary Assessment (PA) at the Exide-Vernon facility. The primary objective of the PA was to document information to be used in the HRS characterization process, including source areas and levels of contamination in surface soil. The PA concluded that the former Exide-Vernon facility is a documented source of lead contamination.

Historical operations at the facility resulted in the emission and deposition of lead and other heavy metals at the facility and in the surrounding areas (WESTON, 2022).

Based on the PA findings, EPA determined that an SI should be conducted to further evaluate the Exide-Vernon facility's eligibility for the NPL. To support the HRS characterization process and document an observed release at the Exide-Vernon facility as part of the SI, EPA determined that additional on-site groundwater sampling was necessary to determine the impacts from known historical sources of trichloroethylene (TCE) and metals at the facility. EPA also determined that background soil sampling from nearby off-site areas was necessary to establish a lead background concentration suitable for HRS consideration.

1.3 Apparent Problems

EPA determined that an SI was needed at the Exide-Vernon facility because:

- An historical release of TCE has been documented in the South Yard of the former Exide-Vernon facility, in the footprint of the old mixed-metals extrusion building. On-site soils are contaminated with volatile organic compounds (VOCs), specifically TCE, which is likely a result of historical operations. TCE was used as a cooling medium during the extrusion of metal bars and stock into various shapes. TCE was stored on-site and poured into an open storage vat that fed the extrusion process. Soil and soil vapor samples collected in the vicinity of the source indicated significantly elevated concentrations of TCE (as discussed in Section 3.1.2.1). In addition, groundwater monitoring wells installed near the source exhibited TCE concentrations at an order of magnitude greater than those observed in nearby wells and the contamination has migrated vertically to the Exposition aquifer (GNB, 1990; AGS, 2016a; AGS, 2016b; AGS, 2016c).

- Based on extensive soil sampling activities throughout the Exide-Vernon facility and in the surrounding areas conducted from 2013 through 2019 by the California Department of Toxic Substances Control (DTSC), lead and other heavy metals were identified at concentrations greater than three times the DTSC-established background concentrations, as well as Exide-calculated ambient urban background concentration. EPA determined that background for HRS purposes had to be established using data collected in the general area not impacted by the Exide-Vernon facility.

- Historical operations may have resulted in the emission and deposition of lead and other heavy metals onto the Exide-Vernon facility and in the surrounding areas. As of January 1, 2024, DTSC has conducted sampling activities at approximately 9,100 residential parcels, 138 sensitive-use properties (childcare facilities, schools, parks), and 8,100 parkways. Elevated concentrations of lead have been identified in surface soil throughout the Exide-Vernon facility and in nearby residential areas (DTSC, 2024).

2. SITE DESCRIPTION

2.1 Location and Description

(Figure 1, Figure 2, Figure 3, Figure 4)

The former Exide-Vernon facility is in a heavily industrialized area, located at 2700 South Indiana Street in the City of Vernon, California. Lead recycling operations began at the Exide-Vernon facility in 1922, and, by 1982, the operations included battery recycling and lead-refining where lead-acid batteries were crushed and recycled in a secondary lead smelter system that operated until 2014. Historical activities conducted at the Exide-Vernon facility included battery breaking; secondary smelting; lead refining; storage, handling, and transportation of batteries and other materials associated with recycling operations; and chemical processing. Air emissions from stacks; inadequate maintenance and repair of the containment building; spills at the Exide-Vernon facility and spills from trucks transporting material to and from the facility; releases from a stormwater containment and other liquid containments; and insufficient dust controls contributed to the release and dispersion of lead-impacted airborne particulates (DTSC, 2017; DTSC, 2022a; DTSC, 2022b; DTSC, 2022c; EFI, 2020; URS, 2017).

The Exide-Vernon facility location is shown on **Figure 1**, and the facility layout is shown on **Figure 2**.

Areas of potential concern within the facility boundary include:

- North Yard – Located west of South Indiana Street and east of the concrete-lined drainage channel and bounded by East 26th Street to the north and the railroad right-of-way (ROW) to the south. The North Yard was used for battery recycling operations including battery breaking, secondary smelting and lead refining activities from 1982 through closure of the facility in 2014.

- South Yard – Located west of South Indiana Street and east of the concrete-lined drainage channel and bounded by the railroad ROW to the north and Bandini Boulevard to the south. The South Yard was used for battery recycling operations and lead smelting and refining activities from 1922 until 1982, when most operations were moved to the North Yard. The South Yard contained former container storage areas, a wastewater treatment plant (WWTP), a stormwater collection system, and open storage vats into which TCE was historically poured as part of the metals extrusion process.

- West Yard – Located north of Bandini Boulevard and west of the concrete-lined drainage channel. The West Yard was used as an aluminum, lead, and zinc smelter; a battery lead smelter, and a metal and solder manufacturing area from approximately 1946 until 1982. Waste (metal slag) and waste acid from smelting and refining operations are reported to have been disposed of in a large earthen pit, buried in the West Yard.

As shown on **Figure 3**, on-site groundwater, soil, and soil vapor in the South Yard of the facility have been documented to contain elevated levels of VOCs, specifically TCE, a result of historical on-site operations. Based on conditions and environmental investigations, it is believed that the contamination found beneath the old mixed metals Extrusion building likely originated from surface releases of TCE. Over time, TCE contamination has migrated vertically through at least 75 feet (ft) of unsaturated sediments. Soil and soil vapor samples collected in the vicinity indicate significantly elevated concentrations of TCE. Groundwater monitoring wells installed near the source have shown concentrations at an order of magnitude greater than those observed in nearby wells, indicating a localized plume of contamination, covering an area of at least 25,000 square feet (ft^2) (GNB, 1990; AGS, 2006; AGS, 2016b).

Figure 4 depicts DTSC’s preliminary investigation area (PIA). The DTSC PIA encompasses the former Exide-Vernon facility and an approximately 1.7-mile radius where lead, which was released into the air from historical smelting and processing operations, may have been deposited onto surface soil. The DTSC PIA is bounded by State Route 60 to the north, East Gage Avenue to the south, Eastern Avenue to the east, and Santa Fe Avenue to the west. The area includes properties in seven jurisdictions: the cities of Bell, Commerce, Huntington Park, Los Angeles (Boyle Heights neighborhood), Maywood, and Vernon, and the unincorporated County of Los Angeles. The Los Angeles River bisects the DTSC PIA. The Burlington Northern Santa Fe (BNSF) Los Angeles Intermodal railway line is located immediately north of the former Exide-Vernon facility. More than 10,000 residential properties are located within the northern and southern extents of the DTSC PIA, which also include multiple schools, parks, daycare centers, and childcare facilities (EFI, 2020; URS, 2017).

2.2 Operational and Regulatory History

2.2.1 Operational History

(Table 1)

Lead recycling operations began at the Exide-Vernon facility in 1922. By 1982, the facility operations included battery recycling and lead-refining. Lead-acid batteries were recycled in a secondary lead smelter system at the facility. As shown on **Table 1**, previous owners of the facility included Morris P. Kirk & Sons, NL Industries, Gould Inc., and GNB Inc. Exide Technologies, Inc. acquired the property in 2000, and continued operations until the facility’s closure in 2014.

Table 1. Ownership History

Dates of Operation	Facility Owner
1922 to 1974	Morris P. Kirk & Sons
1974 to 1979	NL Industries
1979 to 1984	Gould Inc.
1984 to 2000	GNB Inc.
2000 to 2014[1]	Exide Technologies, Inc

Notes:

1 = Exide declared bankruptcy in 2020

Historical activities conducted at the Exide-Vernon facility included battery breaking; secondary smelting; lead refining; storage, handling, and transportation of batteries and other materials associated with recycling operations; and chemical processing. The average production was 100,000 to 120,000 tons of lead per year. Approximately 85% of the recycled lead was derived from used automobile batteries, and the remaining 15% came from other batteries and scrap lead. Air emissions from stacks; inadequate maintenance and repair of the containment building; spills at the facility; spills from trucks transporting material to and from the facility; releases from a stormwater containment and other liquid containments; and insufficient dust controls contributed to the release and dispersion of lead-impacted airborne particulates (DTSC, 2017; EFI, 2020; URS, 2017).

2.2.2 Regulatory History

In 1980, Gould, Inc. filed a *Resource Conservation and Recovery Act (RCRA) Part A Application* as a Treatment, Storage, and Disposal Facility (TSDF), including storage of spent lead-acid batteries and other lead-bearing material before treatment and recycling, and as a wastewater treatment system. In 1981, the State of California DHS, DTSC's predecessor, issued an Interim Status Document to function as a temporary operating permit while the final permit was under review. In 1984, GNB Inc. purchased the property and filed a revised *RCRA Part A Application* and the first *RCRA Part B Application* in 1988 (DTSC, 2017; EFI, 2020; URS, 2017).

A *RCRA Facility Assessment* (RFA) was conducted at the former Exide-Vernon facility in 1990, which identified contamination from past operations at the facility. Based on the RFA, DTSC requested GNB Inc. (later acquired by Exide) to conduct the next stage in the corrective action process—an *RCRA Facility Investigation* (RFI), which is a site characterization used to ascertain the nature and extent of contamination from releases identified during the RFA.

The RFA documented a historical release of TCE in the South Yard, identified as Solid Waste Management Unit No. 11 (SWMU-11). SWMU-11 is located within the footprint of the old mixed-metals Extrusion building. TCE was used as a cooling medium during the extrusion of metal bars and stock into various shapes. TCE was stored in 20-pound containers immediately south of

SWMU-11 at the scrap aluminum storage building, at the aluminium scrap shed, and on bare ground south of the aluminum shed. When needed, TCE was taken from the storage area and poured into an open storage vat, which fed the extrusion process. It is unknown what happened to the excess TCE after the extrusion process; however, ongoing releases reportedly occurred throughout the lifespan of operations. It is unknown exactly when operations started in this location. The mixed-metal operations ceased in approximately 1978 (GNB, 1990; AGS, 2016c).

Monitoring wells were installed in 1986 and 1987 at the location of the former storage vats where levels of TCE have been observed at an order of magnitude higher than the maximum concentrations measured in nearby monitoring wells. The 2005 Phase 2 RFI monitoring performed by Exide's contractor indicates TCE likely volatilized into the soil gas, potentially impacting employees in the nearby engineering building. TCE-impacted subsurface soil in the South Yard was assessed to determine the extent of subsurface contamination and potential vapor intrusion impacts. A subsequent investigation of TCE-impacted soil beneath SWMU-11 was conducted in 2015 under the supervision of DTSC. The soil and soil vapor sampling efforts and results are discussed in Section 3.1.2.1 (GNB, 1990; AGS, 2016a; AGS, 2016b; AGS, 2016c).

GNB Inc. (owner at the time) submitted a Part B application for approval to the DHS initially in 1988. DHS issued a corrective action order in 1989. There were multiple regulatory actions due to which GNB Inc. submitted multiple revisions of Part B, which never got approved by DHS/DTSC. As a result, in March 2015, DTSC ordered Exide to withdraw its permit, permanently cease operations, and close the facility in accordance with a DTSC-approved closure plan. (see below).

In 1999, DTSC approved a Class 2 Interim Status Modification for Supplemental Environmental Projects (SEPs) as part of an enforcement case settlement. In 2000, DTSC approved a Class 2 Interim Status Modification to replace the WWTP and to provide a secondary containment. In 2001, DTSC approved a Class 1 Interim Status Modification for change of ownership and operational control to the Exide Corporation (later Exide Technologies, Inc.). Exide entered a Corrective Action Consent Order (CACO) with DTSC in 2002, requiring corrective action measures to address releases of hazardous waste or hazardous waste constituents (DTSC, 2017; EFI, 2020; URS, 2017).

In 2013, Exide submitted a *Risk Assessment* to South Coast Air Quality Management District (SCAQMD) identifying a significant health risk associated with hazardous air emissions. Following the Risk Assessment, SCAQMD required Exide to implement risk reduction measures in accordance with SCAQMD Rule 1402 (DTSC, 2017; EFI, 2020; URS, 2017).

In April 2013, DTSC ordered Exide to temporarily suspend facility operations. In October 2013, DTSC and Exide entered into a *Stipulation and Order* to settle DTSC's order to temporarily suspend operations at the facility. The *Stipulation and Order* also required Exide to implement SCAQMD's requirements and to perform residential soil sampling focused on those areas with the highest predicted concentrations of lead and arsenic north and south of the Exide-Vernon facility, to determine background levels of lead and other metals in soil, and to delineate the extent of lead contamination in residential soil (DTSC, 2017; EFI, 2020; URS, 2017).

In March 2014, Exide permanently shut down its operations because it could not meet the new rules enacted by SCAQMD. In November 2014, DTSC and Exide entered into a *Stipulation and Order*, which included requirements related to facility closure, including the cleanup of contaminated residential properties. In January 2015, DTSC determined that the liner system under the containment building where Exide stored crushed battery feed material had failed. DTSC ordered Exide to investigate the extent of contamination under the containment building and implement any necessary corrective actions (DTSC, 2017; EFI, 2020; URS, 2017).

In February 2015, DTSC notified Exide that the facility could not operate in compliance with California regulations, and in March 2015, DTSC ordered Exide to withdraw its hazardous waste permit application, permanently cease operations, and close the facility in accordance with a DTSC-approved closure plan. In November 2015, DTSC issued an *Imminent and Substantial Endangerment Determination* (ISE) for the DTSC PIA based on the elevated lead concentrations in surface soil and determined that a response action was necessary (DTSC, 2017; EFI, 2020; URS, 2017).

In December 2016, DTSC approved the *Exide Final Closure Plan.* Exide began formal closure of the facility, subject to DTSC oversight. In April 2016, DTSC received funding from the State General Fund to expedite and expand testing and cleanup of sensitive land use properties, including residential properties, schools, daycare centers, and parks. DTSC was directed to assess approximately 10,000 properties and to clean up properties with the highest levels of lead and the greatest potential exposure. Sampling activities that were conducted from 2017 to 2019 are summarized in Section 3.1.3 below (DTSC, 2017; EFI, 2020; URS, 2017).

After reviewing the sampling results, DTSC drafted a *Notification of Requirement to Perform Interim Response Measures* letter to Exide in March 2020. The notification letter summarized the analytical results indicating that high concentrations of lead and other heavy metals were present throughout the Exide-Vernon facility and could pose an imminent risk to the workers, nearby residents, and the environment. In July 2020, Exide replied to the notification disputing DTSC's order to implement corrective measures (DTSC 2022a; DTSC 2022b).

On May 19, 2020, Exide Technologies, Inc. filed for bankruptcy. In October 2020, DTSC issued an ISE for the Exide-Vernon facility and surrounding areas (industrial and residential area) that make up the DTSC designated PIA. DTSC concluded that excessive amounts of lead and other heavy metals have been emitted into the atmosphere and deposited onto the ground and other surfaces. Lead was noted as the primary COPC, and other heavy metals and VOCs have also been documented at the Exide-Vernon facility above their applicable screening levels (SLs). Later in October 2020, a U.S. Bankruptcy Court issued an order that allowed Exide Technologies, Inc. to transfer the property to an environmental response trust. Later that October, DTSC agreed to the creation of the Vernon Environmental Response Trust (VERT) to facilitate the continuation of the cleanup activities (DTSC, 2022b).

Since October 2021, EPA and DTSC have overseen the actions of the VERT at the Exide-Vernon facility. The VERT systematically decontaminated and then deconstructed the remaining lead battery processing and smelting buildings, including all of the interior machinery and stacks from supporting buildings.

On July 1, 2022, CalEPA requested EPA to evaluate the Exide-Vernon facility and surrounding areas impacted by the former facility’s operations for potential listing on the NPL to bring in federal resources and expertise to help address hazardous levels of lead and other heavy metals (CalEPA, 2022).

In November 2022, EPA completed a PA at the Exide-Vernon facility. The primary objective of the PA was to document information to be used in the HRS characterization process, including source areas and levels of contamination in soils. The PA, which relied on soils data already collected by DTSC on- and off-site, concluded that the Exide-Vernon facility is a documented source of lead contamination in soils. The PA concluded that historical operations at the facility resulted in the emission and deposition of lead and other heavy metals onto the ground and other surfaces at the facility and potentially into parts of the DTSC PIA (WESTON, 2022).

Based on the PA findings, EPA determined that an SI should be conducted to further evaluate the Exide-Vernon facility's eligibility for the NPL by evaluating the data already collected from the State and augmenting it with additional soil and groundwater data. To support the HRS characterization process and document an observed release at the Exide-Vernon facility as part of the SI, additional on-site groundwater sampling was necessary to document the impacts from known historical sources of TCE and metals at the facility. In order to better differentiate lead contamination in soils that could be attributable to the facility, EPA modified DTSC residential sampling protocols and collected background soil samples from nearby off-site areas not impacted by the facility.

Based on EPA recommendations, beginning in May 2023, DTSC collected residential soil samples using protocol in accordance with the HRS to avoid drip line and road-adjacent areas, as discussed in Section 3.1.3. This protocol was initiated because DTSC sampling protocols were not focused on identifying airborne deposition, but instead, included both deposition and lead-based paint and drip-line sources; the latter of which cannot be attributed to the Exide-Vernon facility. As of January 1, 2024, 162 of 356 identified properties have been sampled under the new protocol.

2.2.3 DTSC Residential Cleanup Activities

(Figure 5)

Through site characterization and sampling, as discussed in Section 3.1.3, DTSC has documented the presence of lead in soil at properties throughout the DTSC designated PIA. Through a human health risk-based evaluation, DTSC determined the need for a cleanup action, and, as a result, a target cleanup goal was developed to be protective of human health. The cleanup objectives were developed based on the current and future uses of the properties, and the current and future anticipated risk to sensitive individuals at the residential properties. The soil target cleanup goal was determined based on property-specific lead concentrations in soil and the review of state policy and guidance documents, as well as background lead concentrations (URS, 2017).

The most conservative risk-based screening level for unrestricted residential land use was established at a representative soil lead concentration of 80 mg/kg. Properties with lead concentrations greater than the proposed target cleanup goal would be prioritized based on the highest concentrations of lead and the greatest potential risk to sensitive individuals. Properties determined to be of highest priority for cleanup are:

- Residential properties with a representative lead concentration in soil of 400 mg/kg or higher
- Residential properties with a representative lead concentration in soil of less than 400 mg/kg, but where any soil sampling result of 1,000 mg/kg or higher is detected
- Daycare centers and childcare facilities with a representative lead concentration in soil of 80 mg/kg where no cleanup has occurred

Cleanup efforts consist of the excavation of lead-impacted soil to a maximum depth of 18 inches bgs. The extent of the removal areas is based on the concentrations of lead found in the soil and the physical accessibility for removal equipment. Pre-excavation sampling is conducted to minimize the volume of soil being excavated and disposed of, and sampling results are used to establish the excavation boundaries. Confirmation sampling is conducted to verify that the target cleanup goals are achieved (URS, 2017).

As shown on **Figure 5**, 5,940 properties were identified for cleanup during the site characterization and sampling phase of work. As of June 14, 2024, 5,207 properties have been remediated, including three schools. Based on the current rate of 80 properties remediated a month, the estimated completion in June 2025 (DTSC, 2024).

Characterization efforts to address TCE contamination at the facility have been initiated by DTSC.

3. INVESTIGATIVE EFFORTS

3.1 Previous Investigations

3.1.1 Groundwater Monitoring Well Sampling

(Figure 6, Figure 7)

Groundwater sampling at the Exide-Vernon facility has been conducted by Exide and other facility owners since 1985, and under DTSC oversight since 2005. Groundwater monitoring wells installed at the Exide-Vernon facility were periodically sampled from 1985 until 1996 and quarterly from 1996 until 2021.

The first four groundwater monitoring wells, MW-1 through MW-4, were installed at the Exide-Vernon facility in 1984 at a depth of approximately 30 ft bgs to monitor potential leaks from the surface impoundment, not intended for groundwater sampling. Between 1985 and 1987, 17 perched-zone groundwater monitoring wells were installed at the facility (MW-5 through MW-15 and PW-1 through PW-2), and periodic monitoring was initiated. Monitoring wells MW-14 and PW-2 were located within the historical TCE source area. Monitoring wells MW-16 (perched zone) and MW-17 (Exposition aquifer) were installed in 2008 and 2010, respectively, and were added to the quarterly sampling list (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021).

In 2014 and early 2015, an additional 15 monitoring wells (including 13 in the perched zone and two in the Exposition aquifer) were installed at the Exide-Vernon facility as part of an RFI, and five monitoring wells (SI-1 through SI-5) were installed within the perched zone to monitor water quality in the immediate vicinity of the surface impoundment. Later in 2015, six wells were installed surrounding the former containment building, including two monitoring wells (MW-27D and CB-3) in the regional Exposition aquifer and four monitoring wells (CB-1, CB-2, CB-5, and CB-6) in the perched zone. These 26 wells were subsequently incorporated into the quarterly groundwater monitoring program (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021). On-site monitoring well locations are shown on **Figure 6.**

In addition to the monitoring wells that were installed on Exide's behalf at and near the facility, at least 10 known groundwater monitoring wells are located immediately adjacent to the Exide-Vernon facility. These include eight Exposition aquifer wells associated with the former Honeywell property (now Baker Commodities (Baker), DTSC EnviroStor ID 19340780) immediately east of the Exide-Vernon facility, and two Exposition aquifer wells associated with the Univar site (DTSC EnviroStor ID 80001627) northeast of the Exide-Vernon facility. (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021). Nearby monitoring well locations are shown on **Figure 7.**

3.1.1.1 Groundwater Sampling Results

Groundwater sampling throughout the Exide-Vernon facility has been conducted regularly since 1985 from more than 40 monitoring wells. Historical sampling results across the facility have shown consistent trends for COPCs in both the perched zone and the Exposition aquifer wells. Initially, groundwater sampling was completed with conventional purging and sampling techniques; however, beginning in January 2011, sampling has been performed using low-flow sampling techniques. Recent sampling was conducted using a disposable bailer at the wells where the volume of water available was insufficient for standard purging techniques.

3.1.1.1.1 Perched Zone Sampling Results

(Figure 8)

The dissolved metal concentrations for lead, arsenic, cadmium, selenium, mercury, and zinc have been detected at concentrations above their respective EPA Maximum Contaminant Levels (MCLs) in the two primary areas of interest in the perched zone: the east-central portion of the South Yard and the West Yard. The dissolved metal concentrations appear to be correlated to a lower pH level in the soil (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021).

TCE, along with one of its daughter products, cis-1,2-dichloroethylene, and benzene have been detected above their respective MCLs in the perched zone in the South Yard and West Yard. Historically, the highest TCE concentrations were observed in monitoring wells MW-11/11R and MW-15 with concentrations consistently above 1,000 micrograms per liter (µg/L) before those wells went dry. As shown on **Figure 8**, the highest TCE concentrations are found in the eastern portion of the South Yard in wells MW-14 and PW-2, in the vicinity of the former metals extrusion building, and in the former TCE storage vat. The TCE concentrations in these wells have been decreasing as the water level decreases and are now an order of magnitude lower than concentrations from the initial sampling activities. (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021).

3.1.1.1.2 Exposition Aquifer Sampling Results

(Figure 9)

While the dissolved metal concentrations for arsenic, cadmium, selenium, lead, mercury, and zinc have been detected at concentrations above their respective MCLs in the perched zone, the concentrations of each were below their respective relative groundwater MCLs in the Exposition aquifer (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021).

VOCs were detected in all of the Exposition aquifer wells that were sampled, including wells that are upgradient or cross-gradient to the Exide-Vernon facility, indicating that VOC sources other than Exide are present in the immediate vicinity. Of the facility COPCs, tetrachloroethylene (PCE), TCE, and daughter product cis-1,2-dichloroethylene were detected at concentrations above their respective MCLs in at least one Exposition aquifer well. TCE was detected in all wells, including upgradient and cross-gradient wells, with concentrations below the MCL of 5 micrograms per liter (µg/L) in all of the North Yard wells; in well MW-1D in the South Yard; in well MW-23D in the West Yard; and in off-site wells MW-22D, MW-24D, and MW-25D (AGS, 2016b).

Well MW-11D had the highest historical TCE concentration for the on-site Exposition aquifer wells at 200 µg/L, significantly greater than concentrations at wells immediately upgradient (i.e., MW-12D). The sampling results from MW-11D suggest a localized TCE source in the South Yard beneath SWMU-11 impacting groundwater in the Exposition aquifer, separate from other sources located in the vicinity, as shown on **Figure 9**.

Two Exposition aquifer wells on-site, MW-26D and MW-11D, had TCE concentrations above the MCL. Well MW-26D exceeded the MCL for TCE with concentrations of 17 µg/L and 22 µg/L; this well is cross-gradient to the former facility and is downgradient of the former Honeywell site. The PCE and TCE detected in the former Honeywell wells appear to be associated with a Honeywell source or another source hydraulically upgradient from the Honeywell property. One possible upgradient source is the Univar site. The former Honeywell wells are cross-gradient to the Exide-Vernon facility and have TCE concentrations ranging from 9.6 µg/L to 58 µg/L (AGS, 2016b).

Exide-installed wells MW-26D and MW-17D are downgradient of the former Honeywell wells and had TCE concentrations ranging from 14 µg/L to 23 µg/L. The TCE detected in the on-site upgradient well, MW-12D, may also be related to this unknown source. Well MW-25D is downgradient of MW-11D and had much lower concentrations of 13 µg/L and 11 µg/L, respectively (AGS, 2016b; DTSC, 2017; Geosyntec, 2020; Dudek, 2021). Concentrations of TCE found in the Exposition aquifer wells are shown on **Figure 9**.

3.1.2 On-Site Sampling

3.1.2.1 SWMU-11 Sampling
(Figure 10, Figure 11, Figure 12, Figure 13)

As part of the 2005 Phase 2 RFI conducted by Exide's contractor, the TCE-impacted subsurface soil beneath SWMU-11 was assessed to determine the extent of subsurface contamination and potential vapor intrusion impacts, as shown on **Figure 10**. A subsequent investigation of TCE-impacted soil beneath SWMU-11 was conducted in 2015 under the supervision of DTSC (AGS, 2006; AGS, 2016b; AGS, 2016c).

As shown on **Figure 11** and **Figure 12**, two monitoring wells (PW-2 and MW-14) installed beneath SWMU-11 have been sampled since 1986, with maximum documented TCE concentrations of 5,500 µg/L. Downgradient perched zone monitoring wells have documented maximum concentrations up to 5,200 µg/L (MW-15) and 2,500 µg/L (MW-11). Downgradient Exposition aquifer monitoring wells have been sampled since 2015, with maximum TCE concentrations up to 200 µg/L at MW-11D (AGS, 2006; AGS, 2016b).

As shown on **Figure 13**, 68 soil vapor samples were collected from 27 temporary vapor probes (23 probes in 2005, four probes in 2015) at depths ranging from 0.5 ft to 68 ft bgs. The maximum documented TCE soil vapor concentration observed in shallow soil was 220 µg/L at a depth of 5 feet. The maximum documented TCE soil vapor concentration observed in deeper subsurface soil was 730 µg/L at a depth of 68 feet (AGS, 2006; AGS, 2016b; AGS, 2016c).

Soil samples from SWMU-11 were collected from 10 soil borings (two in 2005, four in 2014, and four in 2015) at depths ranging from 1 ft to 76 ft bgs. The highest TCE soil result observed in shallow soil was 990 µg/kg at a depth of 1.5 feet. The vapor data indicate that the concentration of vapor-phase TCE decreases with depth in the shallow soils and is highest in the eastern area of the former location of the mixed-metals extrusion building. The decreasing concentration of TCE in soil vapor with depth suggests that the source was surficial in nature. Based on the geology underlying SWMU-11, it appears that upon release, the TCE migrated vertically through approximately 75 ft of unsaturated sediments over time (AGS, 2006; AGS, 2016b; AGS, 2016c).

Indoor air samples were collected from both the engineering building and employee facilities buildings. The indoor air sampling results showed that TCE was detected at concentrations below the commercial indoor air screening level (AGS, 2006; AGS, 2016b).

3.1.2.2 On-Site DTSC Soil Sampling
(Figure 14)

From 2013 through 2019, more than 400 soil samples from differing depths were collected throughout the Exide property under DTSC oversight. From 2013 to 2016, soil samples were collected from soil borings advanced to depths ranging from 8 ft to 75 ft bgs using direct-push, hollow stem auger, and sonic drilling techniques. Samples were collected at the surface and at 18-inch intervals throughout each boring (AGS, 2016a).

Additional sampling was conducted in 2019 where Cone Penetration Test (CPT) borings were advanced at 15 locations on the Exide property to depths of approximately 125 ft bgs. Based on the results from the CPT borings, eight soil borings were advanced to depths between 10 ft bgs and 75 ft bgs using roto-sonic drilling technology. The soil borings were continuously cored, and soil samples were collected at 1 ft bgs, 3 ft bgs, and every 5 ft, beginning at 5 ft bgs. Sample results showed elevated levels of lead ranging from 10,500 mg/kg to 48,800 mg/kg (Geosyntec, 2019).

Lead in soil at concentrations greater than 1,000 mg/kg and pH levels below 6 were encountered across the entire facility. Much of the subsurface contamination was found in the West Yard, where waste metal slag and waste acid from smelting and refining operations are reported to have been disposed of in a large earthen pit. Lead was documented in the West Yard at concentrations greater than 50,000 mg/kg as deep as of 20 ft bgs and greater than 100 mg/kg as deep as 70 ft bgs; arsenic was documented at concentrations greater than 1,000 mg/kg as deep as 40 ft bgs, and pH levels below 4 were documented in soil as deep as 40 ft bgs, as shown on **Figure 14.**

3.1.3 Sampling in Industrial and Residential Areas

(Figure 15, Figure 16)

Beginning in 2013, DTSC directed Exide to conduct Phase 1 soil sampling in two residential areas known as the Northern and Southern Initial Assessment Areas, approximately one mile to the north and south of the former Exide-Vernon facility. Based on the results of the initial sampling, DTSC issued a Stipulation and Order that required Exide to conduct additional sampling at 39 randomly selected properties. An initial cleanup pilot study was conducted on two residential properties with soil lead concentrations greater than the previous EPA Regional Screening Level (RSL) for residential exposure of 400 mg/kg. The current EPA RSL for residential exposure is 200 mg/kg (January 2024). Between August 2014 and November 2015, Exide performed additional shallow soil sampling at 195 properties and soil cleanups at 186 properties. Soil lead concentrations exceeding DTSC’s screening level (DTSC-SL) for lead in residential soil of 80 mg/kg were identified in nearly all properties in the Initial Assessment Areas (AGS, 2014; AGS, 2016a; DTSC, 2017; EFI, 2020; URS, 2017; EPA, 2024).

In 2014, the Phase 2 Expanded Area characterization sampling commenced at 1,500 properties, including sensitive-use properties such as schools, daycares, and public parks. Phase 2 also included soils cleanup at 50 residential properties (AGS, 2014; AGS, 2016a; DTSC, 2017; EFI, 2020; URS, 2017).

From 2013 to 2017, 24 public schools and five private schools were assessed and sampled, and cleanups were performed at four schools under DTSC supervision. In addition to the school sampling, 52 daycare centers and childcare facilities were sampled in 2016 and 2017 under DTSC supervision, where 46 of the properties exceeded the residential DTSC-SL for lead of 80 mg/kg (EFI, 2020).

From 2014 and 2016, 16 parks and publicly used open spaces were assessed and sampled under DTSC supervision. Cleanup activities were conducted at four of the parks. (AGS, 2015; EFI, 2020).

From 2015 to 2019, DTSC assessed more than 8,000 additional properties with either X-ray fluorescence (XRF) or laboratory analysis of soil samples. Approximately 98% of the sampled properties had representative soil lead concentrations greater than 80 mg/kg and approximately 26% of the properties have a representative soil lead concentration greater than the former EPA residential RSL for lead at the time of 400 mg/kg, as shown on **Figure 15** (AGS, 2014; AGS, 2015; AGS, 2016a; EFI, 2020; URS, 2017). From 2015 to 2016, sampling was conducted under DTSC supervision at 45 industrial properties surrounding the Exide-Vernon facility to characterize concentrations of metals in dust and dirt that may have accumulated on hardscape surfaces (parking lots, roofs, streets, and sidewalks) of commercial and industrial properties. Lead concentrations were found at 10 properties at concentrations greater than the DTSC-SL for commercial/industrial soil of 320 mg/kg. In 2018, supplemental sampling was conducted at the 10 properties identified during the previous sampling event. Four of the properties, all immediately adjacent to the Exide-Vernon facility, were found to contain mean lead concentrations greater than 320 mg/kg, as shown on **Figure 16** (Alta, 2019).

In 2019, DTSC collected soil samples from approximately 8,100 locations within residential parkways, defined as narrow strips of land adjacent to public streets. Approximately 76.5% were found to have lead at or above 80 mg/kg in surface soils. The Parkways Investigation Report concluded that a Human Health Risk Assessment (HHRA) should be performed to develop applicable SLs and cleanup goals (AECOM, 2020; EFI, 2020).

As shown on **Table 2**, lead concentrations found in soil during DTSC sampling from 2013 through the present ranged from 0.52 mg/kg to 157,000 mg/kg.

Table 2. DTSC Surface Soil Lead Sample Results (as of January 1, 2024)

Sample Area	No. of Properties	No. of Samples	Minimum (mg/kg)	Maximum (mg/kg)	Mean (mg/kg)
Residential Properties	8,695	143,096	0.52	73,200	251.65
Childcare Centers	57	922	6.38	2,570	179.30
Commercial Properties	4	57	21.20	4,970	415.65
Homeowner Associations	28	360	3.23	842	36.66
Juvenile Detention Center	1	2	64.80	79	71.70
Parks / Publicly Open Spaces	16	450	2.57	980	108.14
Schools	32	352	3.67	3,040	94.16
Step-Out Area	66	246	10.0	4,500	236.50
Parkway	8,124	8,897	1.0	157,000	185.15
Industrial Areas	45	287	5.60	2,600	208.09
Exide-Vernon facility	1	199	3.53	106,000	4,276.2

Notes:
mg/kg = milligrams per kilogram

3.1.4 DTSC Residential Sampling – EPA Protocol

(Figure 17)

Beginning in May 2023, EPA recommended DTSC collect residential soil samples in accordance with the HRS to focus on soils subject to airborne deposition and not those potentially impacted by lead-based paint (LBP) and drip-lines. As of January 1, 2024, 162 of 356 EPA selected properties have been sampled under the new protocol. Fifteen properties, less than 10 percent (%) of the sample group, were found to have lead concentrations greater than three times the HRS background-derived level of 143 mg/kg. These fifteen properties were also randomly spaced and did not suggest a deposition pattern that could be associated from a single stationary source such as Exide, as shown on **Figure 17.**

3.1.5 DTSC Sample Screening Levels

(Table 3)

To provide conservative thresholds in soil to determine if cleanup is necessary, sampling results were compared to various established soil SLs as well as risk-based soil SLs, as shown on **Table 3**. For properties with sensitive or unrestricted land use, DTSC's SL for residential soil of 80 mg/kg was compared to representative, property-wide soil lead concentrations. . EPA RSLs at the time for residential exposure of 400 mg/kg was also used to further delineate and prioritize properties for cleanup. DTSC sampling results were also compared to DTSC's background level (discussed further in Section 3.1.5 and Section 4.3.1.3) of 76.6 mg/kg, and Exide's calculated background level (discussed further in Section 3.1.6 and Section 4.3.1.3) of 218 mg/kg (AGS, 2015; DTSC, 2015).

Risk-based exposure levels were calculated using EPA's statistical software package, ProUCL. The representative soil lead concentration is used as the Exposure Point Concentration to determine the potential risk to sensitive individuals for the entire property. Additionally, the maximum lead concentrations were used to assess the cleanup requirements for a specific Decision Unit (DU), where the DUs would be evaluated to determine if geographically collocated areas of elevated lead concentrations would require cleanup (AGS, 2015; DTSC, 2015).

Table 3. Screening Levels / Benchmarks for Lead in Soil

Screening Level / Benchmark	Lead Concentration
DTSC Screening Level for Residential Soil	80 mg/kg
DTSC Screening Level for Commercial/Industrial Soil	320 mg/kg
EPA Regional Screening Level for Residential Soil[1]	400 mg/kg
EPA Regional Screening Level for Industrial Soil	800 mg/kg
DTSC Background Concentration[2]	76.6 mg/kg

Notes:
DTSC = Department of Toxic Substances Control
EPA = U.S. Environmental Protection Agency
Exide = Exide Technologies, Inc.
mg/kg = milligrams per kilogram
1 = EPA Residential Regional Screening Level was revised to 200 mg/kg on January 17, 2024
2 = Representative background level as determined by DTSC Background Study, 2015

3.1.6 DTSC Background Study

Under DTSC's oversight, a "Background Study" to ensure that the selected soil SLs were not less than regional background concentrations was conducted in 2015. A background area was selected in the City of Long Beach, approximately 14 miles south of the Exide-Vernon facility, as a basis for comparing results from the Initial Assessment Areas. DTSC determined the area was similar to their DTSC-designated PIA, but without potential lead contamination from Exide's historical operations. Nineteen residential properties were sampled as part of the background study, where the lead concentrations in surface soil ranged from 29 mg/kg to 195 mg/kg, with median lead concentrations in shallow soil significantly lower than the lead concentrations in the Initial Assessment Areas. The study results showed the representative background soil lead concentration was 76.6 mg/kg, which is below the DTSC screening level for lead in residential soil of 80 mg/kg (DTSC, 2015).

3.1.7 Exide Statistical Analysis

(Figure 18)

In 2015, Advanced GeoServices conducted a statistical analysis for Exide to evaluate the spatial pattern of lead concentrations in the area extending outward from the DTSC PIA, and to derive an estimate of the potential contribution from Exide to these lead concentrations. The analysis was intended to characterize and compare Exide's contribution to lead concentrations resulting from urban lead sources and associated elevated ambient air concentrations historically present in urban areas such as Los Angeles (AGS, 2015; DTSC, 2015). Three separate analyses were performed based on soil sampling results from 244 residential and 163 non-residential properties immediately outside the DTSC PIA. The first analysis used kriging to smoothly interpolate lead concentrations and graphically show spatial patterns. The second analysis used a regression model to estimate soil lead concentration as a function of distance from the Exide-Vernon facility. The third analysis used a regression model to estimate lead concentration as a function of ambient air concentrations of lead dust from the Exide-Vernon facility. The three analyses showed relatively consistent results. Average lead concentrations in soil tended to decrease with distance from the Exide-Vernon facility and then leveled off at 0.75 mile (approximately 4,000 feet) in the prevailing wind direction and 1,000 ft in other directions, where the likely contribution from historical Exide operations reportedly becomes statistically indistinguishable from the ambient urban background concentrations (AGS, 2015; DTSC, 2015).

The interpolated kriging map, shown on **Figure 18**, shows a distinct area of elevated lead concentrations greater than 400 mg/kg extending out from the Exide-Vernon facility. However, concentrations rapidly decrease with distance before reaching the residential areas. A band of interpolated lead concentrations below 80 mg/kg rests between the Exide-Vernon facility and the residential area to the south and, at a lesser degree, to the north. The lead concentrations increase within the residential areas potentially indicating that lead sources other than Exide are contributing to the residential lead concentrations, and the low number of samples collected in the band between the Exide-Vernon facility and residential areas may be insufficient. The results of the regression analysis indicate a distinct relationship between lead concentration and distance with a high level of statistical confidence, however, the regressions do not explain the significant variation in the data. The soil sampling data collected during the 2015 statistical analysis was also utilized to generate Exide's ambient urban background concentration of 218 mg/kg, as discussed in further detail in Section 4.3.1.3 (AGS, 2015; DTSC, 2015).

3.2 Site Inspection (SI) Sampling

3.2.1 SI Groundwater Sampling

To support the HRS characterization process and document an observed release at the Exide-Vernon facility, EPA determined that additional groundwater sampling from existing monitoring wells would be beneficial in determining the impacts from known historical sources of TCE and metals at the Exide-Vernon facility.

In October 2023, EPA collected groundwater samples from the shallow perched zone (a mix of unsaturated/saturated subsurface soils) and from the regional Exposition aquifer. The purpose of the SI groundwater sampling was to collect current groundwater data and to assess impacts from a known historical release of TCE from the facility. The groundwater sampling strategy included the collection of groundwater from up to 20 monitoring wells located at and near the historical TCE source.

3.2.1.1 Groundwater Sampling Locations and Rationale
(Figure 19, Table 4)

The SI groundwater sampling strategy included the collection of groundwater from up to 20 monitoring wells located at and near the historical TCE source at SWMU-11, located within the South Yard. Due to insufficient water volume in many of the intended sample locations (i.e., dry wells), only seven monitoring wells were sampled during the event; two groundwater samples collected from the shallow perched zone, and five groundwater samples collected from the regional Exposition aquifer. Groundwater samples collected from the perched zone were only used to provide supplemental and contextual information, confirming that COPCs may be present at the facility wells. These samples are not considered critical for meeting project objectives of establishing and documenting an observed release to the Exposition aquifer. Sample locations are shown on **Figure 19** and summarized below in **Table 4**.

Table 4. Site Inspection Groundwater Sampling Locations

Sample Type	Well ID	Sampling Rationale	Project Objective
Exposition Aquifer Groundwater Samples			
Background	MW-12D	Immediately Upgradient of TCE Source	Critical
Observed Release	MW-11D	Immediately Downgradient of TCE Source	Critical
Contaminant of Potential Concern	CB-3	Upgradient of TCE Source, Facility Boundary	Non-Critical
	MW-26D	Cross-gradient of TCE Source	Non-Critical
	MW-25D	Downgradient of TCE Source,	Non-Critical
Perched Zone Groundwater Samples			
Observed Release	MW-14	TCE Source Area	Critical
Source Perimeter	MW-12	Northeast of TCE Source,	Non-Critical

Notes:
ID = identification
TCE = trichloroethene

An historical release of TCE has been documented in the South Yard of the former Exide-Vernon facility. The source of the TCE originates from former open storage vats into which TCE was poured as part of the metals extrusion process. The TCE storage vats were used until approximately 1980. Monitoring wells were installed in 1986 and 1987 at the location of the former storage vats where levels of TCE have been observed at an order of magnitude higher than the maximum concentrations measured in nearby monitoring wells. Based on previous soil vapor monitoring, the TCE has volatilized into the soil gas, (GNB, 1990; AGS, 2016b).

3.2.1.2 Groundwater Elevations

(Figure 20, Figure 21)

Depth-to-water measurements and total well depth measurements were collected from 34 on-site monitoring wells and from 19 nearby monitoring wells. The purpose of elevation measurements was to confirm groundwater flow directions, establish upgradient and downgradient well locations, and evaluate overall trends in the regional groundwater levels.

The depth to groundwater measured by EPA in October 2023 from the Exposition aquifer wells ranged from 151.01 ft below the top of casing (TOC) in well MW-12D to 156.56 ft below the TOC in well MW-23D. The depth to water measured in the off-site Exposition aquifer wells ranged from 152.6 ft below the TOC in well MW-25D to 157.78 ft below the TOC in well MW-22D. Wells MW-12D (background) and MW-11D (downgradient) were identified as critical sample locations for meeting the project objectives. Based on this data, and consistent with previous measurements, the groundwater within the Exposition aquifer in the vicinity of the two critical wells flows toward the southwest. The Exposition aquifer groundwater elevations and contours are presented on **Figure 20.**

The depth to groundwater measured by EPA in October 2023 from the on-site perched zone wells ranged from 69.12 ft below the TOC in well MW-6R to 88.12 ft below the TOC in well MW-9. The perched zone groundwater elevations are presented on **Figure 21.**

3.2.1.3 Background Groundwater Samples

To determine site-specific background concentrations in accordance with the criteria defined in Section 4.2.3, sampling was conducted at a well located upgradient of a known on-site source area. Well MW-12D was identified as the most appropriate well to be designated as the background well for the Exposition aquifer as this well should be representative of the non-Exide-impacted ambient conditions within the Exposition aquifer and has been identified as a critical sampling location for meeting the project objectives.

Due to the discontinuous flow and sporadic availability of water found in the perched zone beneath the Exide-Vernon facility, it is not meaningful to calculate groundwater flow directions within this zone and, as such, background samples were not collected from the perched zone. Perched zone samples collected from well MW-12, which is situated in a general upgradient direction of the TCE source area, were used to provide supplemental and contextual information confirming that COPCs associated with source areas may be present in the perched zone.

3.2.1.4 Historical Source Confirmation and Observed Release Groundwater Samples

To establish and document an observed release, groundwater release samples were collected from wells downgradient of the historical TCE source area and were compared to background samples collected from well MW-12D.

Monitoring well MW-11D, located approximately 100 ft downgradient of the TCE source area and screened in the Exposition aquifer, was identified as a critical sampling location for meeting the project objectives. Additionally, monitoring well MW-25D, located approximately 125 ft south of well MW-11D and screened in the Exposition aquifer, is located downgradient of the TCE source area, and was also evaluated when establishing an observed release.

Groundwater samples were also collected from well MW-14, which is a perched-zone well located within the known historical TCE source area. Data collected from this well were used to provide supplemental information confirming that TCE associated with this source area is mobile and potentially migrating downward through the subsurface and into the Exposition aquifer.

3.2.1.5 SI Groundwater Sample Results

(Figure 22, Table 5, Table A-1)

Each groundwater matrix sample was analyzed for VOCs by EPA Method 8260B, for CAM-17 metals by EPA Method 6020 (using Inductively Coupled Plasma Mass Spectrometry [ICP-MS] or equivalent), and for mercury by EPA Method 7470 (using Cold Vapor Atomic Absorption [CVAA]) or equivalent. Level IV data packages were required for all analytical results. Quantitation limits (QLs), reporting limits (RLs), method detection limits (MDLs), and EPA MCLs are shown in **Attachment 3**.

On-site well MW-12D (screened within the Exposition aquifer) is located upgradient of the known TCE source area and has been identified as an ideal background well candidate. Nearby TCE plumes originating from the Univar and Baker/Honeywell sites are potentially contributing to low levels of TCE found in Exide wells; however, the known TCE source appears to be impacting well MW-11D significantly more than these nearby sources.

Groundwater samples collected by EPA in October 2023 from well MW-12D were used to establish a background TCE concentration of 15 µg/L. Groundwater release samples collected by EPA in October 2023 from well MW-11D exhibited TCE concentrations of 21 µg/L, approximately 1.4 times those observed in the background sample, and above the MCL for TCE of 5 µg/L. Although groundwater release samples collected during the October 2023 SI sampling event were less than three times the background level, these results are consistent with the prior sampling event (November 2021), where TCE was reported in well MW-11D at a concentration of 47 µg/L, which is considered significantly above the 15 µg/L background based on the MW-12D sample collected during the same sampling event. **Table 5** summarizes analytical detections for COPCs. Groundwater sample results are shown on **Figure 22**. All detections are included in **Appendix A, Table A-1.**

Table 5. Summary of Contaminants of Potential Concern Groundwater Detections – October 2023

Analyte:	**Units**	**EPA MCL**	**Exposition Aquifer Wells**					**Perched Zone Wells**	
			MW-11D / Duplicate	**MW-12D[1] / Duplicate**	**MW-25D**	**MW-26D**	**CB-3**	**MW-12**	**MW-14[2]**
Volatile Organic Compounds via USEPA Method 8260B									
cis-1,2-Dichloroethene	µg/L	70	ND	ND	ND	0.53 J	ND	ND	ND
Tetrachloroethene (PCE)	µg/L	5	1.7 / 1.8	3.8 / 4.2	2.1	7.7	ND	ND	ND
Trichloroethene (TCE)	µg/L	5	**21 / 21**	**15 / 15**	**16**	**30**	1.2	**5**	**200**
CAM-17 Metals via USEPA Method 6010B									
Cadmium	mg/L	0.005	ND	ND	*NS*	ND	ND	ND	**0.259**
Lead	mg/L	0.015	0.0098 J / 0.0074 J	0.0066 J / ND	*NS*	ND	0.0064 J	ND	0.0445 J

Notes:
[1] Background Sample Location
[2] TCE Source Area Sample Location
EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminant Level
Bold = Result greater than MCL
ND = Non-Detect
NS = Not Sampled (Insufficient Volume in Well)
µg/L = micrograms per liter
mg/L = milligrams per liter

3.2.1.6 SI Groundwater Background Concentration Determination

In accordance with the HRS criteria defined in Section 4.2.3, the action levels to document an observed release to groundwater and to establish a source of contamination, sample results are compared to background concentrations. A sample result significantly (three times) above the background concentration would be used to document the observed release. Based on the historical operations and regulatory history of the Exide-Vernon facility, TCE and metals are the constituents deemed most likely to be elevated above background levels.

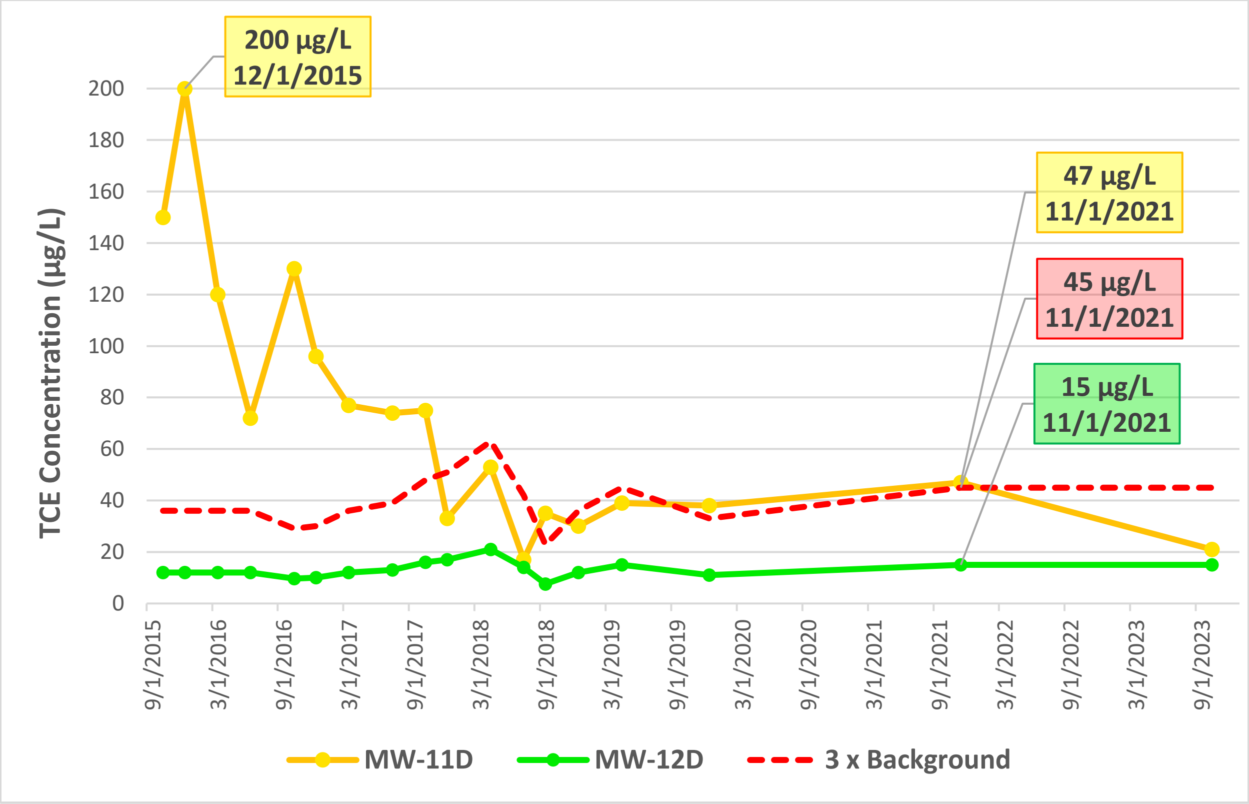
As discussed in Section 3.2.1.3, and in keeping with the criteria defined in Section 4.2.3, on-site well MW-12D (screened within the Exposition aquifer) is located upgradient of the known TCE source area and has been identified as a background well. Concentrations of TCE and metals found within MW12D should be representative of the non-Exide-impacted ambient conditions. Groundwater samples collected by EPA in October 2023 documented a background TCE concentration of 15 µg/L in background well MW-12D.

3.2.1.7 Groundwater Trends

Historically, the highest TCE concentrations in the perched zone were observed in wells MW-11/11R and MW-15 with concentrations consistently above 1,000 µg/L before those wells went dry. Presently, the highest TCE concentrations are found in the eastern portion of the South Yard in wells MW-14 and PW-2 in the vicinity of the former metals extrusion building and former TCE storage vat. Seven Exposition aquifer wells at the Exide-Vernon facility, MW-9D, MW-11D, MW-12D, MW-16D, MW-17, MW-25D, and MW-26D, have consistently had TCE concentrations above the MCL. Well MW-11D had the highest historical TCE concentrations in the Exposition aquifer at 180 µg/L.

Historical trends illustrated in the graph below have shown TCE levels from on-site wells decreasing over time; however, sample results as recent as December 2021 have indicated significantly elevated concentrations in Well 11D. TCE concentrations in the on-site wells have been decreasing as the water level decreases and are now an order of magnitude lower than concentrations from initial sampling activities. The decrease has been attributed to decreasing water levels and/or volatilization of the TCE into the vadose zone soils over time (AGS, 2016b).

Historical TCE Concentrations:
Background Well (MW-12D) & Downgradient (MW-11D) Well



3.2.1.8 Data Validation

Validation of analytical data generated by the assigned laboratories for this investigation was conducted by EPA in accordance with the *EPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review (*EPA 540-R-20-005, November 2020*)*, the *EPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (EPA 542-R-20-007 November 2020*)*, and/or the *EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 542-R-20-006, November 2020). Tier IV validation for 100% of the data was required.

3.2.2 SI Background Soil Sampling

WESTON was tasked with collecting background soil samples for comparison to residential soils data collected by DTSC. DTSC determined background based on a small residential area located approximately 14 miles south of Exide. EPA determined that the collection of background samples closer to the Exide-Vernon facility, while still outside the area of potential influence, would better reflect the current and historical mixed-use urban development near Exide. EPA determined that the sampling effort for background should be supplemented by Incremental Sampling Methodology (ISM) to determine the applicable background concentrations required for HRS evaluation, and, if necessary, to support conclusions made regarding the degree to which any identified metals contamination in residential soils could be attributable to Exide.

The HRS sample aliquots and ISM sample increments were collected using similar sample collection methodology.

- The ISM and HRS samples were representative of the same soil conditions (e.g., soil type, depth).

- The ISM and HRS samples were processed and analyzed in the same laboratory using the same sample preparation method (or methods similar enough to ensure equivalent digestion and extraction of contaminants from the sample matrix for analysis) and were analyzed using the same analytical method or methods similar enough to ensure equivalent analytic results.

- The quality of both the ISM and HRS sample datasets were understood (through data validation reports) knowing that the data are appropriate for the intended use.

Background sampling areas were defined by DUs, or Background Zones (BZs). The six background sampling area DUs were broken down into smaller areas, designated as Sampling Units (SUs). Each background sampling area DU consisted of three SUs.

ISM will give statistically useful information for background sampling areas, which, when compared to the relatively more localized HRS samples, will determine the homogeneity of contamination across large areas. Additionally, ISM will yield a statistically based average for background sampling areas compared to the HRS samples. Sampling using ISM reduces data variability and increases sample representativeness.

3.2.2.1 Background Soil Sampling Locations and Rationale
(Figure 23, Table 6)

The most appropriate background sampling locations for the determination of project-specific concentrations should reflect release sampling locations in their current and historical usage, soil depositional environments, and potential impacts from non-point sources (e.g., widespread airborne contaminants, leaded fuel emissions), but should be outside the area of influence of the former Exide-Vernon facility. However, due to the long history of mixed-use development within the region, as well as the time and resource restrictions of this project, a suitable residential neighborhood meeting the ideal background criteria could not be identified. Therefore, publicly accessible non-residential areas in the region were evaluated based on the aforementioned criteria, and the six best candidates (public parks) were selected for background sampling. These parks are generally located in opposing directions. HRS Background samples and ISM Background samples were collected concurrently and within the same DU background areas. The six selected DUs are shown in **Table 6** and **Figure 23**.

Table 6. Background Soil Sampling Decision Units

Decision Unit	Park Name	City	Distance from Exide	Direction from Exide	Development Date
BZ-1	Hollenbeck Park	Los Angeles	2.7 miles	Northwest	~1890
BZ-2	Obregon Park	Los Angeles	2.4 miles	Northeast	~1960
BZ-3	Ashiya Park	Montebello	3.7 miles	Northeast	Unknown
BZ-4	John Anson Ford Park	Bell Gardens	4.1 miles	Southeast	Unknown
BZ-5	Lueders Park	Compton	7 miles	South	~1950
BZ-6	Burrell MacDonald Park	Compton	9 miles	Southwest	~1960

Notes:
BZ = Background Zone

3.2.2.2 HRS Background Soil Sampling Methodology

HRS Background samples were collected from 90 background locations within various public parks. The specific sample locations were determined in the field to avoid maintained gardens, areas within approximately 10 ft of structures, and areas near structures with excessive amounts of peeling paint.

At each sample location, a localized four-point composite surface soil sample was collected from the upper 2 inches of the soil (0- to 2-inch interval starting below the root zone [if present] and after removal of organic layer [leaves, grass, etc.]) using a coring device or small digging tool. For sampling areas supporting plant growth, the initial sample core was collected to a depth of 4 inches to allow for removal of turf plug and root zone. Before sampling, the four aliquots designated for the composite sample were flagged, beginning with a reference aliquot location. The remaining three aliquot locations were flagged at approximately equidistant intervals from each other along the outside circumference of a 2-ft-diameter circle centered on the reference aliquot location.

Depending on the specific soil properties at each location, HRS bulk soil samples were collected using either a disposable plastic scoop, metal trowel, or slide hammer equipped with a 2-inch-diameter split-core sampler and either plastic or stainless steel sleeves. Non-dedicated equipment was appropriately decontaminated between each sample location. For each sample, the four aliquots were collected as described above, placed into a gallon-sized Ziploc® bag, homogenized, and placed into a High-Density Polyethylene (HDPE) sampling container. Sample containers were closed as soon as they were filled, immediately chilled to 4 degrees Celsius (°C), and processed for shipment to the laboratory.

HRS Background soil samples were collected from five locations within each SU from each of the six designated DUs, resulting in 90 field background samples. In addition, nine duplicate background samples were collected, resulting in 99 soil matrix samples. Additional sample volumes were collected at five locations for use as laboratory quality control (QC) samples.

3.2.2.3 ISM Background Sampling Methodology
(Figure 24)

Per Interstate Technology and Regulatory Council (ITRC) guidelines, at least 30 sample increments were collected within each of the designated SUs. ISM was performed concurrently with HRS sampling to determine average concentrations of metals in the background sampling areas. ISM sampling was performed per the Environmental Response Team (ERT)/Scientific, Engineering, Response, and Analytical Services (SERAS) Standard Operating Procedure (SOP) #2019, *Incremental Sampling Methodology for Soil*, and *Incremental Soil Sampling Methodology for Soil Sampling and Interstate Technology Regulatory Council Technical and Regulatory Guidance for Incremental Sampling Methodology*.

ISM is designed to provide more precise and less biased estimates of the mean concentration in soil by addressing specific sampling errors. Consequently, ISM can result in better performance in terms of decision error reduction versus other sampling methodologies.

Each ISM Background DU consisted of three distinct SUs. All background SUs were collected in triplicate, resulting in a minimum of 54 submitted ISM Background soil matrix samples, not including laboratory QC samples. Each ISM sample was composed of 30 individual increments that shall be homogenized in the field before their submittal to the laboratory. ISM subsampling procedures shall be conducted by the laboratory before analysis.

Incremental sampling was performed in accordance with ERT/SERAS SOP# 2012, Soil Sampling, with 30 increments (sample aliquots) to be collected from within each SU. Each increment was collected using soil probe samplers (i.e., Gator® Sampler) from the upper 2 inches of soil (0- to 2-inch interval starting below the root zone [if present] and after the removal of the organic layer [leaves, grass, etc.]). The 30 increments were accumulated in a resealable plastic bag or large bowl and homogenized into a single ISM bulk sample. Sample containers were closed as soon as they were filled, immediately chilled to 4 °C, and processed for shipment to the laboratory.

Subsampling of the bulk ISM sample was performed at the laboratory. The subsampling procedure is generally conducted by spreading the sample out in a thin layer on a clean surface (e.g., disposable aluminum baking pan), allowing the entire sample to be accessed. A subsample is then obtained by removing 30 or more equal increments from systematic random locations using a square-shaped sampling spoon and re-homogenizing the increments. The sample material collected to form the subsample should equally represent the top and bottom of the processed material. An example of the sampling methodologies are shown on **Figure 24**.

3.2.2.4 SI Background Soil Sample Results
(Table 7 and Table A-2)

A total of 90 (four point) HRS samples and 54 (30-50 point) ISM samples were collected from six distinct SUs. The SU results were grouped by designated location type (i.e., adjacent to road or open center of the park). Each soil matrix sample was analyzed for CAM-16 metals by EPA Method 6010C (using ICP-AES or equivalent) and for mercury by EPA Method 7473 (using CVAA) or equivalent. **Table 7** below shows the average lead concentrations for each SU. All detections are included in **Appendix A, Table A-2**. An overall background concentration for lead in soil was calculated as discussed below in Section 3.2.2.5.

Table 7. Sampling Unit Average Lead Concentrations

Decision Unit	Sampling Unit	Sampling Unit Location Type	HRS Results	ISM Results
			Average Lead Result (mg/kg)[1]	Average Lead Result (mg/kg)[2]
BZ-1 (Hollenbeck Park)	BZ-1A	Road Adjacent	152.3	254.0
	BZ-1B	Park Center	167.8	139.0
	BZ-1C	Road Adjacent	145.0	228.0
BZ-2 (Obregon Park)	BZ-2A	Road Adjacent	57.0	86.9
	BZ-2B	Park Center	44.0	83.7
	BZ-2C	Road Adjacent	39.2	65.5
BZ-3 (Ashiya Park)	BZ-3A	Road Adjacent	162.4	190.0
	BZ-3B	Park Center	28.6	46.5
	BZ-3C	Park Center	45.7	79.8
BZ-4 (John Anson Ford Park)	BZ-4A	Road Adjacent	66.6	65.7
	BZ-4B	Park Center	38.4	49.4
	BZ-4C	Park Center	40.9	103.2
BZ-5 (Lueders Park)	BZ-5A	Road Adjacent	540.5	538.0
	BZ-5B	Park Center	56.5	55.6
	BZ-5C	Park Center	39.0	37.7
BZ-6 (Burrell MacDonald Park)	BZ-6A	Park Center	44.0	50.7
	BZ-6B	Park Center	30.9	35.1
	BZ-6C	Park Center	56.4	52.1

Notes:

1 = Each HRS Sampling Unit includes five sampling locations, with four aliquots per location

2 = Each ISM Sampling Unit contains three composite sample locations, with 30-50 points per composite
BZ = Background Zone
HRS = Hazard Ranking System
ISM = Incremental Sampling Methodology
mg/kg = milligram per kilogram

3.2.2.5 SI Background Soil Concentration Determination (Table 8)

Individual sample locations within the HRS dataset may be used to support the determination of point-specific action levels; however, in order to determine appropriate background concentrations representative of the entire impacted area, the ISM dataset was used to statistically calculate the project-wide action level. Sampling using ISM reduces data variability and increases sample representativeness and may yield a better understanding of the background area concentrations.

Following the collection of background soil sampling, EPA determined that the two DUs, Lueders Park (BZ-5) and Burrell MacDonald Park (BZ-6), were found within an area that was less historically comparable to the Exide-Vernon facility and surrounding areas than initially anticipated. However, similar background sampling efforts were recently conducted by EPA at the

Central Metal site using the same methodology, located within 4 miles of Exide in an area consistent with the background area determination criteria.

A project-specific background lead concentration in soil of 143 mg/kg was calculated. **Table 8** below details the inputs and process used to determine the background lead concentration. A comparison of EPA, DTSC, and Exide background concentrations and SLs is discussed in Section 4.3.1.3.

Table 8. Background Lead Concentration Determination

Location Type	Project	SU	SU Lead Result (mg/kg)	DU Average Lead Result (mg/kg)	Project Location Type Average Lead Result (mg/kg)	Location Type Lead Result (mg/kg)	Combined Average Lead Result (mg/kg)
Open Park Center	Exide	BZ-1B	139	139	82	78	**143**
		BZ-2B	84	84			
		BZ-3B	46	63			
		BZ-3C	80				
		BZ-4B	49	76			
		BZ-4C	103				
	Central Metal	BZ-1A	75	71	74		
		BZ-1B	69				
		BZ-1C	70				
		BZ-5A	77	77			
		BZ-5B	89				
		BZ-5C	64				
Road Adjacent	Exide	BZ-1A	254	241	143	165	
		BZ-1C	228				
		BZ-2A	87	76			
		BZ-2C	66				
		BZ-3A	190	190			
		BZ-4A	66	66			
	Central Metal	BZ-3A	183	183	186		
		BZ-3B	193				
		BZ-3C	173				
		BZ-4A	167	189			
		BZ-4B	183				
		BZ-4C	217				
Residential	Central Metal	N/A	186	186	186	186	

Notes:

DU = Decision Unit
mg/kg = milligrams per kilogram
N/A = not applicable
SU = Sampling Unit

4. HAZARD RANKING SYSTEM FACTORS

The HRS is the principal mechanism that EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based scoring system that uses information from initial, limited investigations to assess the relative potential of sites to pose a threat to human health or the environment. The HRS uses a structured analysis approach to scoring sites. This approach assigns numerical values to factors that relate to risk-based conditions at the Site. The factors are grouped into three categories:

- Likelihood that a site has released or has the potential to release hazardous substances into the environment
- Characteristics of the waste (e.g., toxicity and waste quantity)
- People or sensitive environments (targets) affected by the release

Four pathways can be scored under the HRS:

- Groundwater migration (drinking water)
- Surface water migration (drinking water, human food chain, sensitive environments)
- Soil exposure and subsurface intrusion (population, sensitive environments)
- Air migration (population, sensitive environments)

4.1 Sources of Contamination

For HRS purposes, a source is defined as an area where a hazardous substance has been deposited, stored, disposed of, or placed.

Potential hazardous substance sources associated with the former Exide-Vernon facility include, but may not be limited to:

- Soils contaminated with VOCs, specifically TCE, which is likely a result of historical operations at Exide. TCE was used as a cooling medium during the extrusion of metal bars and stock into various shapes. TCE was stored in 20-pound containers immediately south of SWMU-11 and was taken from the storage area and poured into an open storage vat that fed the extrusion process. It is unknown what happened to the excess TCE after the extrusion process; however, ongoing releases reportedly occurred throughout the lifespan of operations. Based on environmental investigations conducted to date, it is believed that the contamination found beneath SWMU-11 likely originated from surface releases of TCE. A dissolved phase fraction entered perched groundwater and began to slowly migrate south-southeast with the hydraulic gradient. Based on the geology underlying SWMU-11, it appears that upon release, the TCE migrated vertically through approximately 75 ft of unsaturated sediments over time. Soil and soil vapor samples collected in the vicinity of

SWMU-11 in 2005 and 2015 indicated significantly elevated concentrations of TCE (as discussed in Section 3.1.2.1). In addition, groundwater monitoring wells installed near the vats exhibited TCE concentrations at an order of magnitude greater than those observed in nearby wells (GNB, 1990; AGS, 2006; AGS, 2016b; AGS, 2016c).

- Lead in soil at concentrations greater than 1,000 mg/kg and pH levels below 6 (which appear to indicate elevated levels of dissolved metals) were encountered across the entire facility. Much of the subsurface contamination was found in the West Yard, where lead was documented at concentrations greater than 50,000 mg/kg in soil as deep as 20 ft bgs and greater than 100 mg/kg in soil as deep as 70 ft bgs; arsenic was documented at concentrations greater than 1,000 mg/kg in soil as deep as 40 ft bgs; and pH below 4 was documented in soil as deep as 40 ft bgs.

4.2 Groundwater Migration Pathway

In determining a score for the groundwater migration pathway, the HRS evaluates the following factors: (1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to groundwater; (2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and (3) the people (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on the number of people who regularly obtain their drinking water from wells that are located within 4 miles of the site. The HRS emphasizes drinking water usage over other uses of groundwater (e.g., food crop irrigation and livestock watering) because, as a screening tool, it is designed to give the greatest weight to the most direct and extensively studied exposure routes.

4.2.1 Geological and Hydrogeological Setting

(Table 9)

The Exide-Vernon facility lies within the Central Subbasin in the Coastal Plain of the Los Angeles Groundwater Basin. The Central Subbasin is generally bound to the north by the folded, uplifted, and eroded Tertiary basement rocks of the La Brea High surface divide; to the northeast and east by the less permeable Tertiary rocks of the Elysian, Repetto, Merced, and Puente Hills; to the southeast by the Coyote Creek flood control channel (approximate Los Angeles County/Orange County boundary); and to the southwest by the Newport Inglewood Uplift, a regional anticline associated with the Newport Inglewood fault system. Geologic units typically found beneath the subbasin include Holocene-age alluvium, the upper Pleistocene Lakewood Formation, and the lower Pleistocene San Pedro Formation. The Los Angeles and San Gabriel rivers pass across the surface of the subbasin, primarily by way of engineered concrete channels, on their way to the Pacific Ocean. The average net annual precipitation in the subbasin is approximately 12 inches (DWR, 1961; DWR, 2004).

The Central Subbasin has historically been divided into the Los Angeles Forebay at the northwest, the Montebello Forebay at the north, the Whittier Area at the northeast, and the Central Basin Pressure Area at the center and southwest. However, these areal distinctions are appropriate for geographical purposes only and do not accurately represent hydrogeologic conditions within the areas. In actuality, the hydrogeologic forebays, which are generally characterized by unconfined and relatively interconnected aquifer systems, are limited to only small regions within the greater Forebay areas. The Montebello Forebay, as well as the Los Angeles Forebay to a lesser degree, serves as the primary groundwater recharge areas for both shallow and deep aquifers across the entirety of the subbasin. The Central Basin Pressure Area is generally characterized by confined aquifer systems separated by relatively impermeable clay layers, although semipermeable zones within these layers allow aquifers to be interconnected in some areas. These semipermeable zones gradually decrease in frequency and magnitude with increasing distance from the forebays (DWR, 1961; DWR, 2004).

The Exide-Vernon facility is located within the eastern portion of the Los Angeles Forebay geographical area; however, underlying hydrogeologic conditions are more accurately represented by those typically identified with the Central Basin Pressure Area. Groundwater beneath the Exide-Vernon facility is typically found within the coarser-grained sediments of the upper Pleistocene Lakewood Formation (Exposition and Gage-Gardena aquifers), and the lower Pleistocene San Pedro Formation (Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers). Throughout much of the subbasin, the Gaspur aquifer is described as present in the Holocene alluvium overlying the Lakewood formation; however, this aquifer is absent in the vicinity of the Exide-Vernon facility. The elevations and depths of the aquifers underlying the Exide-Vernon facility, are estimated from published source material, are presented in **Table 9**. Irregular patches of a perched or semi-perched aquifer are also present within the Holocene alluvium throughout much of the subbasin. Although significant amounts of water can be found within these perched water-bearing zones, they are often discontinuous over relatively short distances and have historically only had minimal economic benefit. Thus, these perched aquifers do not meet the criteria of an “aquifer” for HRS purposes (DWR, 1961; DWR, 2004; Dudek, 2021).

Table 9. Aquifer Summary Table

Aquifer	Estimated Elevation (ft amsl)		Estimated Depth (ft bgs)	
	Top	Base	Top	Base
Exposition (1)	80	0	95	175
Gage-Gardena	-30	-85	205	260
Hollydale	-155	-190	330	365
Jefferson	-345	-375	520	550
Lynwood	-430	-550	605	725
Silverado	-635	-750	810	925
Sunnyside	-875	-1,030	1,050	1,205

Notes:
1 = As described in "*2021 Groundwater Monitoring Report, Exide Technologies, Former Vernon Facility*"
amsl = above mean sea level
bgs = below ground surface
ft = feet
References: DWR, 1961; Dudek, 2021

Throughout much of the subbasin, the Pleistocene-age aquifers are under confined conditions due to the presence of fine-grained, low-permeability interbedded sediments. Although these fine-grained sediments, or aquicludes, generally restrict the downward migration of groundwater from overlying aquifers, semipermeable zones within the aquicludes allow aquifers to be interconnected in some areas. In addition, hydrogeologic modeling of multi-aquifer systems similar to that found in the Central Basin Pressure Area, has shown that groundwater wells screened across multiple aquifers (or wells with improperly constructed annular seals that cross multiple aquifers) can act as a direct pathway for the migration of significant volumes of shallow groundwater into deep confined aquifers when vertical hydraulic head variations create a downward hydraulic gradient. The process of this downward migration has increased in areas where the deeper aquifers have periods of high-volume pumping such as seasonal demand. Furthermore, additional studies have shown that liquids that are denser than water (i.e., dense non-aqueous phase liquids [DNAPLs] such as PCE and TCE) can migrate downward through a multi-aquifer well even when vertical hydraulic head variations create an upward hydraulic gradient. As of the end of the 2012-2013 fiscal year, there were 537 known extraction wells (306 active and 231 inactive) within the subbasin (AwwaRF, 2006; DWR, 1961; DWR, 2013; Johnson et al., 2011).

The State of California, Department of Water Resources' Bulletin No. 104 (Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, 1961) – Appendix A presents "idealized" geologic cross-sections transecting the Central Subbasin. These cross-sections indicate apparent areas of merged aquifers throughout much of the subbasin. However, no zones of merged aquifers were indicated in the vicinity of the Exide-Vernon facility. Aquifer interconnection within two miles east of the Exide-Vernon facility has been documented between the Exposition through Jefferson aquifers and between the Lynwood and Silverado aquifers. Aquifer interconnections within two miles of the Exide-Vernon facility have not been established between the Jefferson and Lynwood aquifers or between the Silverado and Sunnyside aquifers (DWR, 1961).

The regional groundwater flow direction within the subbasin, which was calculated using data from wells screened within the Upper San Pedro Formation (Lynwood through Silverado aquifers), is generally to the southwest. Based upon data collected between 2007 and 2022, flow within these deeper aquifers in the vicinity of the Exide-Vernon facility trended towards the southwest with temporal variations from west to south-southwest (WRD, 2023).

For the purposes of this SI, the Exposition aquifer beneath the Exide-Vernon facility is defined as being between 95 ft bgs and 175 ft bgs; which is based on the data reported in the 2021 Groundwater Monitoring Report for the former Exide-Vernon facility. Water-bearing units identified at shallower depths to the Exposition aquifer are defined as being associated with one or more perched (or semi-perched) aquifers. Previous on-site investigations identified discontinuous zones of saturated soils at depths between approximately 73 ft bgs and 90 ft bgs. These depths are consistent with the lower portion of the generally fine-grained unit that is commonly referred to as the Bellflower aquitard. There are currently 24 on-site and four off-site wells within the "perched zone" and 10 on-site and five off-site wells within the Exposition aquifer. Declining water levels have been observed within both zones and, since 2019, ten of the "perched" wells and four of the "Exposition" wells have been documented as dry. Due to the discontinuous nature of the "perched" zones across the Exide-Vernon facility, it is not meaningful to calculate a generalized flow direction; however, the flow direction of the Exposition aquifer beneath the facility has been calculated as being towards the southwest during the October 2023 SI groundwater sampling event (see Section 3.2.1) (DWR, 1961; Dudek, 2021).

Based on historical subsurface investigations at the Exide-Vernon facility, the soil underlying the facility is composed primarily of sand and silt with lesser amounts of clay and humus. Non-native soil fill materials have been documented down to a depth of approximately 40 ft bgs in the vicinity of Exide (AGS, 2016a).

4.2.2 Groundwater Targets

(Figure 25, Figure 26, Table 10)

There are 52 known active drinking water wells within 4 miles of the Exide-Vernon facility. These wells, which are operated by 14 distinct water purveyors, serve an estimated apportioned population of 306,890.50. Of these 52 wells, 17 were identified as having at least some portion of their screening interval consistent with the depths of the Exposition through Jefferson hydrologic unit, which serves an estimated population of 133,756.32 (RWQCB, 2024a; WRD, 2024).

Aquifer interconnection has been established between the Exposition aquifer through the Jefferson aquifers within two miles east of the Exide-Vernon facility, as shown on **Figure 25**. As such, for

HRS purposes these two aquifers, as well as the intervening Gage/Gardena and Hollydale aquifers, are considered to be a "single" hydrologic unit (DWR, 1961).

The nearest HRS-eligible drinking water well to the Exide-Vernon facility that is screened within the Exposition through Jefferson hydrologic unit is Well 10-03, which is located approximately one mile east of the facility and up-gradient to the regional groundwater flow direction. This well is owned and operated by the California Water Service's East Los Angeles District and is screened primarily in the Hollydale aquifer between 300 ft bgs and 480 ft bgs. TCE was detected in this well below the TCE MCL (5 ug/l) at a concentration of 0.9 µg/L during the most recent water quality sampling event in August 2023. The maximum TCE concentration of 1.7 µg/L was reported from this well in April 2021 (RWQCB, 2024a; RWQCB, 2024b; WRD, 2024; WESTON, 2023)

The California Water Services (CWSC) East Los Angeles (ELA) district operates a drinking water system that serves a population of approximately 152,217 and includes 11 active wells and no known standby wells. The district obtains approximately 72.3% of its drinking water from groundwater. The remaining 27.7% is composed of purchased surface water and/or recycled water. Nine of the 11 active wells maintained by the district are located within 4 miles of the Exide-Vernon facility; however, only five of these wells (Well 10-03, Well 22-01, Well 39-02, Well 62-01, and Well 62 02) are reported to have screening intervals at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

The Golden State Water Company (GSWC) [formerly the Southern California Water Company (SCWC)] Bell/Bell Gardens district operates a drinking water system that serves a population of approximately 54,309 and includes six active wells and no known standby wells. The district obtains approximately 96% of its drinking water from groundwater. The remaining 4% is composed of purchased surface water and/or recycled water. All six of the active wells maintained by the district are located within 4 miles of the Exide-Vernon facility; however, only two of these wells (Watson Well 01 and Gage Well 02) are reported to have screening intervals at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024; WESTON, 2023).

The Vernon – City Water Department (CWD) operates a drinking water system that serves a population of approximately 28,000 and includes nine active wells, including one standby well. The district obtains approximately 82% of its drinking water from groundwater. The remaining 18% is composed of purchased surface water and/or recycled water. All nine active wells maintained by the department are located within 4 miles of the Exide-Vernon facility; however, only one of these wells (Standby Well No. 14) are reported to have a screening interval at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

The GSWC [formerly the SCWC], Florence/Graham district operates a drinking water system that serves a population of approximately 62,970 and includes seven active wells and no known standby wells. The district obtains approximately 98% of its drinking water from groundwater. The remaining 2% is composed of purchased surface water and/or recycled water. Four of the seven of the active wells maintained by the district are located within 4 miles of the Exide-Vernon facility; however, only three of these wells (Converse Well 01, Nadeau Well 03, Goodyear Well 04) are reported to have screening intervals at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

Maywood Mutual Water Company (MWC) #3 operates a drinking water system that serves a population of approximately 9,500 and includes three active wells and no known standby wells. The purveyor obtains 100% of its drinking water from groundwater; however, it does maintain a connection with the Metropolitan Water District (MWD) for an emergency supply. All three of the active wells maintained by the purveyor are located within 4 miles of the Exide-Vernon facility; however only one of these wells (Warehouse Well 07) is reported to have screening intervals at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

The Walnut Park MWC operates a drinking water system that serves a population of approximately 16,180 and includes three active wells and no known standby wells. The purveyor obtains 100% of its drinking water from groundwater; however, it does maintain a connection with the MWD for an emergency supply. All three of the active wells maintained by the purveyor (Well 10, Well 11, and Well 12) are located within 4 miles of the Exide-Vernon facility and are all reported to have screening intervals at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

The Commerce - CWD operates a drinking water system that serves a population of approximately 4,203 and includes two active wells, and no known standby wells. The district obtains approximately 66.7% of its drinking water from groundwater. The remaining 33.3% is composed of purchased surface water and/or recycled water. Both active wells maintained by the department are located within 4 miles of the Exide-Vernon facility; however, only one of these wells (Well 04L) is reported to have a screening interval at depths consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

The South Gate CWD operates a drinking water system that serves a population of approximately 76,443 and includes ten active wells, and no known standby wells. The purveyor obtains 97.1% of its drinking water from groundwater, with the remaining 2.9% composed of recycled surface water. The department also maintains a connection with the MWD for an emergency supply. Only one active well maintained by the department is located within 4 miles of the Exide-Vernon facility; this well (Well 28) is reported to have a screening interval at a depth consistent with the Exposition through Jefferson hydrologic unit (RWQCB, 2024a; WRD, 2024).

Additional water purveyors operating active drinking water wells within the 4-mile TDL were identified, however they do not have screening intervals consistent with the Exposition through

Jefferson hydrologic unit. Water purveyors operating active wells within the TDL are shown on **Table 10**. Drinking water well locations are shown on **Figure 26**.

Table 10: Water Purveyors Operating Active Wells Within the Target Distance Limit

Water Company Name	No. of Wells/Intakes in System (1)	Total Population Served (2)	No. of Wells Within 4 Miles (1)
California Water Services (CWSC) East Los Angeles (ELA)	12	152,217	9
Golden State Water Co. - Florence/Graham	8	62,970	4
City of South Gate	10	76,443	1
City of Huntington Park	7	15,275	6
Walnut Park Mutual Water Company	3	16,180	3
Golden State Water Co. - Bell, Bell Gardens	7	54,309	6
Tract 349 Mutual Water Company	2	3,132	2
Maywood Mutual Water Company #1	2	5,500	2
Maywood Mutual Water Company #2	2	6,349	2
Maywood Mutual Water Company #3	3	9,500	3
Tract 180 Mutual Water Company	2	14,000	2
City of Vernon	10	28,000	9
City of Commerce	3	4,203	2
Park Water Company - Bell Gardens	1	11,292	1

Notes:

1 = Does not include standby wells unless otherwise noted
2 = Includes population served by water sources other than groundwater (e.g., imported surface water)

4.2.3 Groundwater Background Concentration Level

In accordance with the HRS, the three times background levels establish an observed release to groundwater or an area of observed soil contamination (AOC), as well as to establish an on-site source of contaminated soil, are “significantly above background” concentrations. “Significantly above background” is defined as three times the background concentration for all media. If the background concentration is below the analytical quantitation limit, then the default background level is the quantitation limit. “Significantly above background” for this scenario is defined as a detect in the media where the analyte was not detected in the background sample. In accordance with EPA, 1996 (*Using Qualified Data to Document an Observed Release and Observed Contamination*), qualified data (e.g., J-flagged) may be used to document an observed release or observed contamination by chemical analysis under the HRS by the application of specific adjustment factors to the data (see **Attachment 7**).

Based on the historical operations and regulatory history of the Exide-Vernon facility, TCE and metals are the constituents deemed most likely to be elevated above background levels. Well MW-12D (screened within the Exposition aquifer) is located upgradient of the known TCE source area and has been identified as a background well. Concentrations of TCE and metals found within MW12D should be representative of the non-Exide-impacted ambient groundwater conditions. Groundwater samples collected by EPA in October 2023 documented a background TCE concentration of 15 µg/L in background well MW-12D.

Samples were also compared with EPA MCLs for informational purposes. MCLs are not applicable to establishing an observed release under the HRS; however, they are used to determine Level 1 or Level 2 targets.

4.2.4 Groundwater Pathway Conclusion

A observed release of hazardous substances from the Exide-Vernon facility to groundwater within the interconnected Exposition aquifer, Gage-Gardena aquifer, Hollydale aquifer, and Jefferson aquifer has been established based on the results provided in Section 3.2.1. A description of the aquifers underlying the Exide-Vernon facility is provided in Section 4.2.1. For HRS purposes, a release to groundwater is established when a hazardous substance is detected in a hydraulically downgradient well at a concentration significantly above background levels, and some portion of the release is attributable to the facility. A hazardous substance is considered to be present at a concentration significantly above background levels when one of the following two criteria is met: (1) the hazardous substance is detected in the contaminated sample but not detected in the background samples, or (2) the hazardous substance is detected in the contaminated sample at a concentration equal to or greater than three times the maximum background level when the substance was detected in the background samples.

Based on the results of the SI, as well as historical on-site sampling results, an observed release from the Exide-Vernon facility to groundwater within the Exposition has been established. Sampling location MW-12D is located northeast and upgradient of release sample location MW11D, which is located immediately downgradient of a documented historical TCE source area. Both wells are screened within the upper portion of the Exposition aquifer, which flows generally toward the southwest in the vicinity of these wells (see Section 3.2.1.2).

In November 2021, TCE was reported in the groundwater release sample collected from Exposition aquifer well MW-11D at a concentration of 47 µg/L, which is considered significantly above background based on the result of 15 µg/L collected from background well MW-12D during the same sampling event (see Section 3.2.1). This release is attributable, at least in part, to the Exide-Vernon facility because the release sample was collected immediately downgradient of an area of documented TCE soil contamination, which was a result of historical operations (see section 4.1). Although groundwater release samples collected during the October 2023 SI sampling event were less than three times the background level, these results are consistent with (see Section 3.2.1) historical TCE concentration trends and, as such, do not preclude the use of the 2021 data to establish the release.

There are 52 known active drinking water wells within 4 miles of the Exide-Vernon facility. These wells, which are operated by 14 distinct water purveyors, serve an estimated apportioned population of 306,890.50. Of these 52 wells, 17 were identified as having at least some portion of their screening interval consistent with the depths of the Exposition through Jefferson hydrologic unit, which serves an estimated population of 133,756.32 (RWQCB, 2023a; RWQCB, 2023b; WESTON, 2023).

4.3 Soil Exposure and Subsurface Intrusion Pathway

4.3.1 Soil Exposure

In determining the score for the soil exposure and subsurface intrusion pathway, the HRS evaluates: 1) the likelihood that there is surficial contamination associated with the Exide-Vernon facility (e.g., contaminated soil that is not covered by pavement or at least 2 ft of clean soil); 2) the characteristics of the hazardous substances in the surficial contamination (i.e., toxicity and quantity); and 3) the people or sensitive environments (targets) that actually have been, or potentially could be, exposed to the contamination. For the targets component of the evaluation, the HRS focuses on populations that are regularly and currently present on or within 200 ft of surficial contamination. The four populations that receive the most weight are residents, students, daycare attendees, and terrestrial, sensitive environments.

4.3.1.1 Physical Conditions

The former Exide-Vernon facility was a metals recycling and secondary smelter operation for nearly 100 years, closing in 2014. Beginning in the 1920s, the Exide-Vernon facility was used for secondary smelting and for processing aluminum, lead, and zinc. By 1982, battery-recycling and lead-refining operations were conducted at the Exide-Vernon facility until closure. Exide went bankrupt in 2020, and currently the facility is owned and managed by the VERT and is undergoing closure activities (DTSC, 2022a; DTSC, 2022b).

Soil underlying the Exide-Vernon facility is composed of Quaternary alluvium, including young-alluvial sand or silt. The Lakewood Formation directly underlies the soil, which is underlain by the San Pedro Formation and the Pico Formation. Soil data for the study area indicate the alluvium that underlies the Exide-Vernon facility consists primarily of sand and silt with lesser amounts of clay and humus. Given that the properties near the facility are located in developed urban, heavy industrialized areas, much of the existing surface soil is likely fill material from unknown sources (AGS, 2016a; DTSC, 2017; Dudek, 2021).

4.3.1.2 Soil Exposure Targets

The primary objective of the 2023 SI for the former Exide-Vernon facility was to document information to be used in the HRS characterization process, including source areas and levels of contamination in soil. The PA concluded that the former Exide-Vernon facility is a documented source of lead contamination (WESTON, 2022).

DTSC's air modeling conducted by Environ in 2014 indicate that lead releases from the former Exide-Vernon facility may have impacted areas up to 1.7 miles from the facility. The air modeling did not take into account metals emissions from non-Exide sources.

Based on the 2020 Census estimate of 2.98 persons per household, there is an estimated population of 6,055 within one mile of the Exide-Vernon facility, and an estimated population of approximately 31,500 within the DTSC PIA. Extensive sampling by DTSC of residential properties has been conducted at more than 9,000 properties, leading to soil excavations of over 5,000 residential yards.

Based on 2023 EPA recommendations, DTSC collected samples using the protocol in accordance with the HRS. As of January 1, 2024, 162 of 356 identified properties have been sampled under the new protocol. Although fifteen properties were found to have lead concentrations greater than three times the derived background level of 143 mg/kg, it did not meet the HRS criteria for an observed released based on the population. Based on the 2020 Census estimate of 2.98 persons per household, a resident population of 44.7 is found within the potentially impacted area.

4.3.1.3 Soil Pathway Background Concentrations
(Table 11)

To establish whether an observed release has occurred for the soil pathway, sample results have been compared to various background concentrations determined by EPA, DTSC, and Exide, as well as soil SLs, as shown on **Table 11**.

While not applicable to the HRS, sampling results were compared to various soil SLs as well as risk-based soil SLs. For properties with sensitive or unrestricted land use, DTSC's SL for residential soil of 80 mg/kg was compared to representative, property-wide soil lead concentrations. EPA RSLs for residential exposure of 200 mg/kg and RSLs for industrial soil were also used to prioritize properties with elevated results.

Table 11. Soil Lead Screening Levels

Screening Level / Benchmark	Lead Concentration
EPA Site Inspection Background Soil Sampling[1]	143 mg/kg
DTSC Background Concentration[2]	76.6 mg/kg
Exide Ambient Urban Background Concentration[3]	218 mg/kg
USGS El Monte Background Concentration[4]	173 mg/kg
DTSC Screening Level for Residential Soil	80 mg/kg
DTSC Screening Level for Commercial/Industrial Soil	320 mg/kg
EPA Regional Screening Level for Residential Soil[5]	200 mg/kg
EPA Regional Screening Level for Industrial Soil	800 mg/kg

Notes:
DTSC = Department of Toxic Substances Control
EPA = U.S. Environmental Protection Agency
Exide = Exide Technologies, Inc.
mg/kg = milligrams per kilogram
USGS = United States Geologic Survey
1 = Site Inspection Background Soil Sampling by Weston Solutions, Inc. 2023
2 = Representative background level as determined by DTSC Background Study, 2015
3 = Ambient urban background level as determined by Advanced GeoServices Statistical Analysis, 2015
4 = El Monte sampling location from ’Geochemical and Mineralogical Data for Soils of the Conterminous United States”, USGS, 2013
5 = EPA Residential Regional Screening Level was revised to 200 mg/kg on January 17, 2024

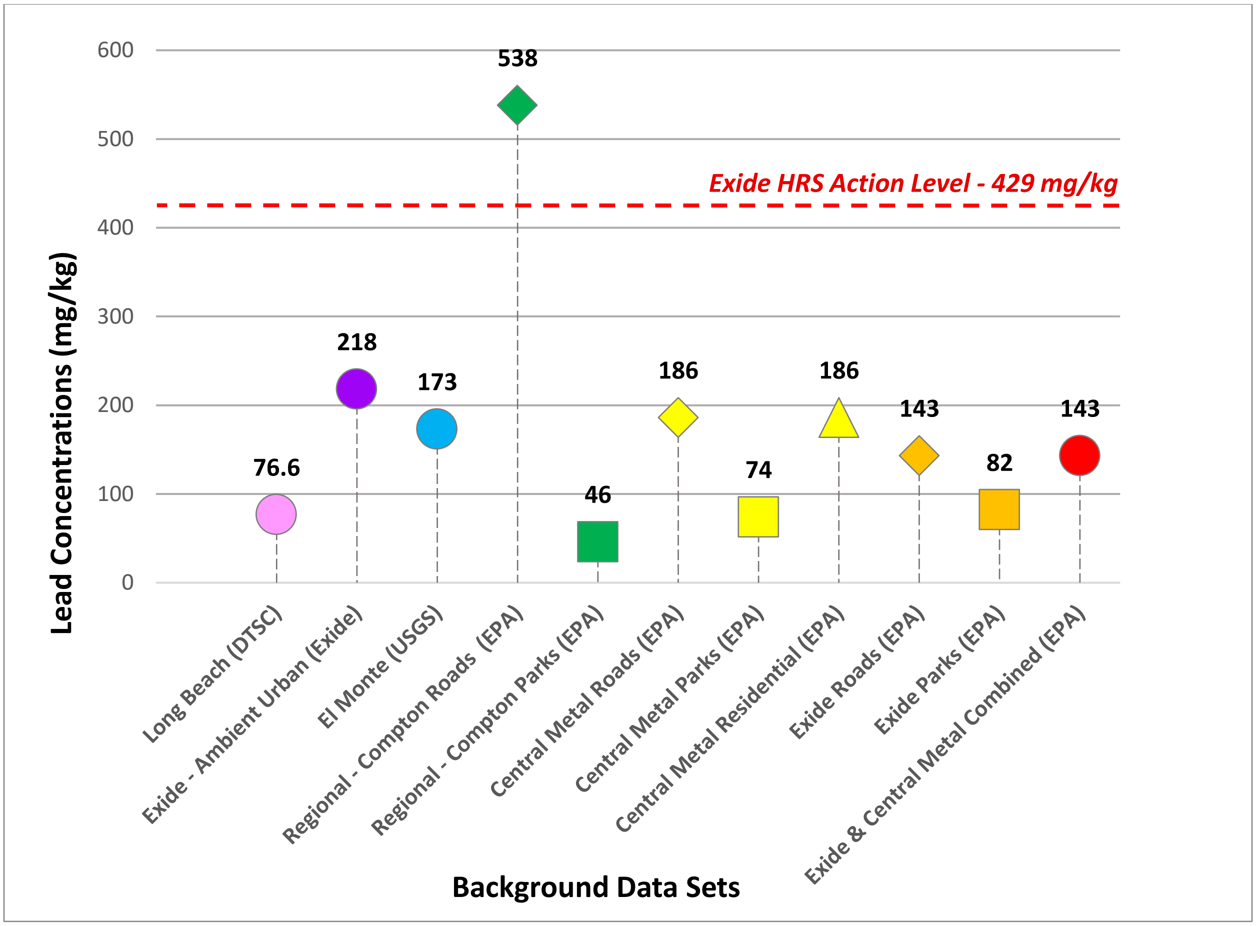
For HRS purposes, an EPA SI project-specific background lead concentration in soil was calculated using the criteria and methodology described in Section 3.2.2 and Section 3.2.2.5. The EPA background sampling included composite sampling results from 24 SUs within parks or public open spaces and one large residential dataset, all within the vicinity of the Exide-Vernon facility, but outside the likely area of influence. The average concentration of lead in soil from areas adjacent (within 50 ft) to nearby roadways was 165 mg/kg. The average concentration of lead in soil from open park areas (more than 50 ft from roadways) was 78 mg/kg. The average concentration of lead in soil from the Central Metal residential sampling was 186 mg/kg. The overall EPA SI project-specific average background concentration of 143 mg/kg was established.

DTSC conducted a background study in 2015 to determine a regional background lead concentration in soil, as described in Section 3.1.5. Nineteen residential properties in the city of Long Beach were sampled as part of the background study, where the lead concentrations in surface soil ranged from 29 mg/kg to 195 mg/kg. DTSC derived a background soil lead concentration of 76.6 mg/kg (DTSC, 2015).

Exide conducted a statistical analysis of samples taken from DTSCs Initial Assessment Areas in 2015 to derive a background concentration. Exide’s study included analysis of results from soil sampling at 244 residential and 163 non-residential properties. Average soil lead concentration ranged from 129 mg/kg, for samples not in the vicinity of houses built before 1940, freeways, or arterial roads, to 242 mg/kg for samples near a house built before 1940 or near freeways or an arterial road. The ambient urban background lead concentration of 218 mg/kg was calculated based on averaging results from all sampled locations (AGS, 2015).

A comparison of the regional background concentrations, including other established background levels from previous studies, is shown in the chart below. DTSC's derived background level of 76.6 mg/kg is below the regional background averages, and as it is located approximately 14 miles south of the Exide-Vernon facility and may not be a true representation of the land use and historic development in the areas immediate surrounding the former Exide-Vernon facility. Exide's calculated background concentration of 218 mg/kg is greater than regional averages, however sample locations may have been heavily influenced by other contributing point-sources, such as lead based paint impacting residential soils. The EPA calculated background lead concentration of 143 mg/kg was within the range of regional averages. The background sampling and analysis conducted during this SI was comprehensive and representative of the regional studies, as samples were collected using multiple methods of composite sampling (HRS and ISM), from 25 separate SUs (comprised of hundreds of aliquots) across the entire vicinity near the Exide-Vernon facility (AGS, 2015; DTSC, 2015).

Regional Background Lead Concentrations in Soil



4.3.1.4 Soil Exposure Conclusion

Historical operations at the former Exide-Vernon facility resulted in lead and other heavy metals being emitted and deposited to the ground and on other surfaces around the facility and in surrounding areas. The former Exide-Vernon facility is currently owned and managed by the VERT and is undergoing closure activities. The facility is surrounded by a fence and is entirely paved, preventing any residual on-site soil contamination from being released into the environment, and there is no public recreation use. There is an estimated population of 6,055 within one mile of the Exide-Vernon facility, and an estimated population of approximately 31,500 within the DTSC PIA. DTSC has overseen sampling activities at the former Exide-Vernon facility, at approximately 9,100 residential parcels, approximately 8,100 parkways, 66 off-site step-out locations, 45 industrial properties, and 138 sensitive-use properties (including schools, parks, and childcare centers).

To establish HRS appropriate background concentrations, six public open spaces and parks were chosen for background sampling, generally located in opposing directions. HRS Background surface soil samples and ISM background samples were collected concurrently and within the same three zones from each of the six background areas.

The results of the background soil sampling were combined with regional background sample locations collected as part of the 2023 SI at the Central Metal site located approximately 4.5 miles southwest of the Exide-Vernon facility to establish a background soil lead concentration of 143 mg/kg (WESTON, 2023).

Of the samples collected in accordance with the HRS, 15 properties were found to have lead concentrations greater than three times the background level of 143 mg/kg. Based on the 2020 Census estimate of 2.98 persons per household, a total resident population of 44.7 was calculated for the 15 properties.

4.3.2 Subsurface Intrusion

In determining the score for subsurface intrusion, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to regularly occupied structures; 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, degradation, and quantity); and 3) the people (targets) who actually have been, or potentially could be, exposed to the contamination. For the targets component of the evaluation, the HRS focuses on populations living, attending school or daycare, or working in a regularly occupied structure with observed exposure or within an area of subsurface contamination.

The Exide-Vernon facility is located within the Coastal Plain of the Los Angeles Basin in the Peninsular Range Geomorphic Province, between the northern Peninsular and Transverse ranges.

The Transverse Ranges trend east to west, while the Peninsular Ranges extend southeastward into Baja California, Mexico. These ranges are composed of mildly metamorphosed sedimentary and volcanic rocks of Jurassic age. The Los Angeles Basin is also part of the onshore portion of the California continental borderland, characterized by northwest-trending offshore ridges and basins, formed primarily during Early and Middle Miocene time. Major northwest trending strike-slip faults, such as the Whittier, Newport–Inglewood, and Palos Verdes faults, dominate the basin (DTSC, 2017; Dudek, 2021).

Based on previous soil vapor monitoring conducted at the Exide-Vernon facility, volatized TCE was present in the subsurface soil. Structures at the facility have not been occupied since 2014 and are currently being deconstructed. Limited subsurface contamination is present beneath the Exide-Vernon facility, and primarily consists of metal and VOCs. (DTSC, 2022b).

4.4 Surface Water Pathway

To determine the score for the surface water pathway, the HRS evaluates: 1) The likelihood that sources at a site actually have released, or potentially could release, hazardous substances to surface water (e.g., streams, rivers, lakes, and oceans); 2) The characteristics of the hazardous substances that are available for a release (i.e., toxicity, persistence, bioaccumulation potential, and quantity); and 3) The people or sensitive environments (targets) that actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on drinking water intakes, fisheries, and sensitive environments associated with surface water bodies within 15 miles downstream of the Exide-Vernon facility.

The nearest major surface water body is the Los Angeles River, which enters the DTSC PIA east of Boyle Heights, trends northwest-southeast nearly through the center of the DTSC PIA and continues south to the Pacific Ocean. Approximately 3.5 miles east of the Los Angeles River is the Rio Hondo Channel, which trends northeast-southwest east of the DTSC PIA and joins the Los Angeles River to the south (Dudek, 2021).

4.5 Air Pathway

In determining the score for the air migration pathway, the HRS evaluates: 1) The likelihood that sources at a site actually have released, or potentially could release, hazardous substances to ambient outdoor air; 2) The characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and 3) The people or sensitive environments (targets) that actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on regularly occupied residences, schools, and workplaces within 4 miles of the Exide-Vernon facility. Transient populations, such as customers and travelers passing through the area, are not counted.

Historical operations at the former Exide-Vernon facility resulted in lead and other heavy metals being emitted and deposited to the ground and other surfaces at the facility and in the surrounding areas. The Exide-Vernon facility has not been in operation since 2014 (DTSC, 2015).

4.6 Hazard Ranking System Summary

During the 2022 PA for the former Exide-Vernon facility, the primary objective of the investigation was to document information to be used in the HRS characterization process, including source areas and levels of contamination in soils.

The following primary HRS factors are associated with the Exide-Vernon facility:

- Documented an observed release to the Exposition aquifer based on historical concentrations of TCE greater than three times the background well. Based on Bulletin 104, a “potential” groundwater pathway from the facility to production wells within a four-mile radius was evaluated. This conservative evaluation for HRS purposes assumes the Exposition aquifer is interconnected with deeper aquifer units. Production wells with top of screen less than 350 ft bgs were defined as one “aquifer unit” known as the “Exposition-Jefferson hydrologic unit.”

- TCE contamination has been identified in the municipal drinking water sources at or above the MCL of 5 µg/L, and documented interconnections of the aquifers within the TDL justify a potential contamination to the population. There are 52 known active drinking water wells within the TDL. These wells, which are operated by 14 distinct water purveyors, serve an estimated apportioned population of 306,890.50. Of these 52 wells, 17 were identified as having at least some portion of their screening interval consistent with the depths of the Exposition through Jefferson hydrologic unit, which serves an estimated population of 133,756.32.

- The nearest HRS-eligible drinking water well to the Exide-Vernon facility that is screened within the Exposition through Jefferson hydrologic unit is Well 10-03, which is located approximately 1.1 mile east of the Exide-Vernon facility. This well is owned and operated by the California Water Service’s East Los Angeles District and is screened between 300 ft bgs and 480 ft bgs. TCE was identified in this well at a concentration of 0.8 µg/L during the most recent water quality sampling event in December 2023. The maximum TCE concentration of 1.7 µg/L was reported from this well in April 2021.

- The following secondary HRS factors are associated with the Exide-Vernon facility:
  - Soils at the facility are covered by asphalt, the property is surrounded by a fence, and there is no public recreation use.

- Structures at the Exide-Vernon facility have not been occupied since 2014 and are currently being deconstructed.

- Based on groundwater samples collected at the Exide-Vernon facility, an observed release of trichlororethylene (TCE) to groundwater was documented.

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FIGURES

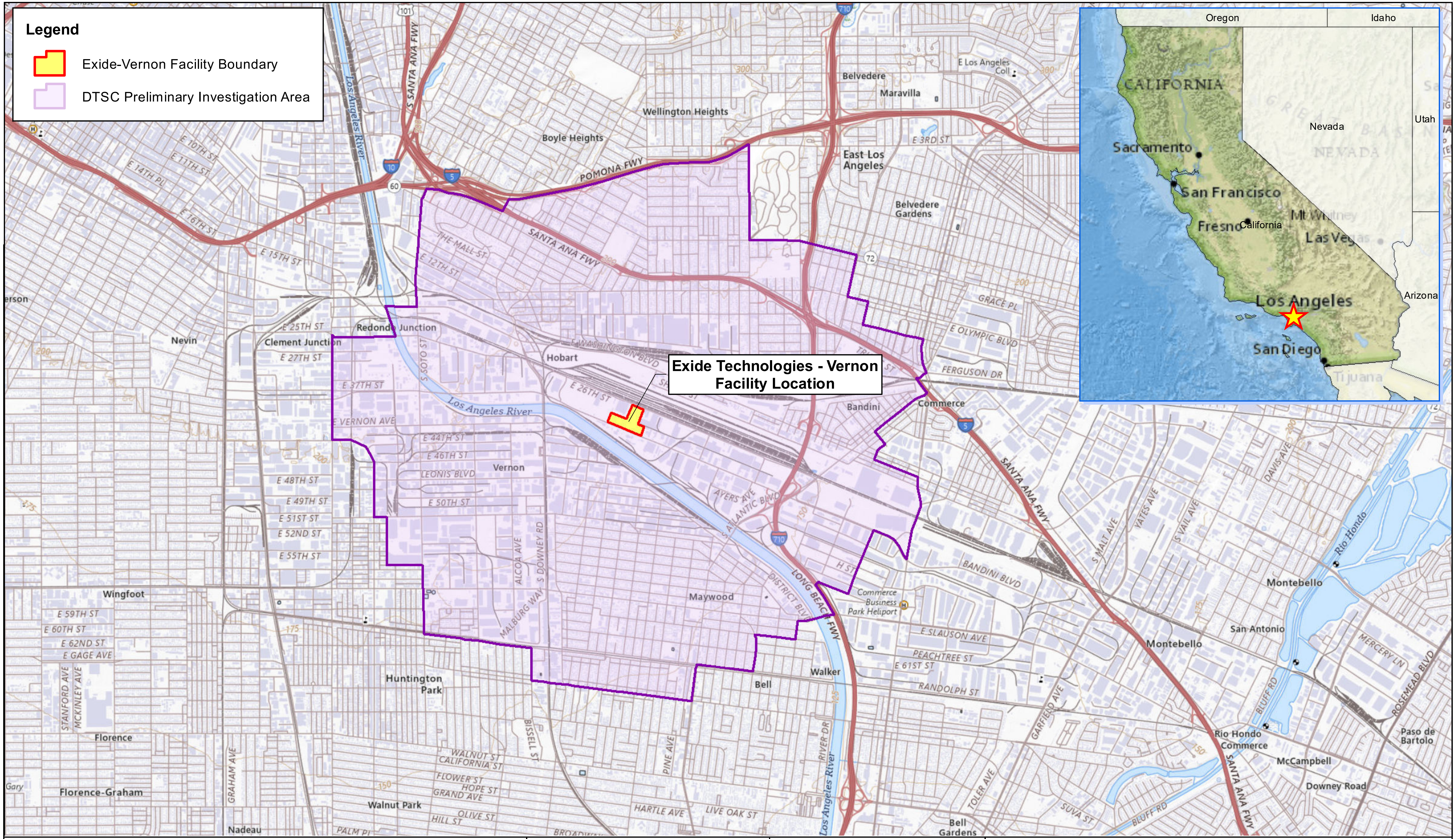

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FIGURE 1
FACILITY LOCATION MAP
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

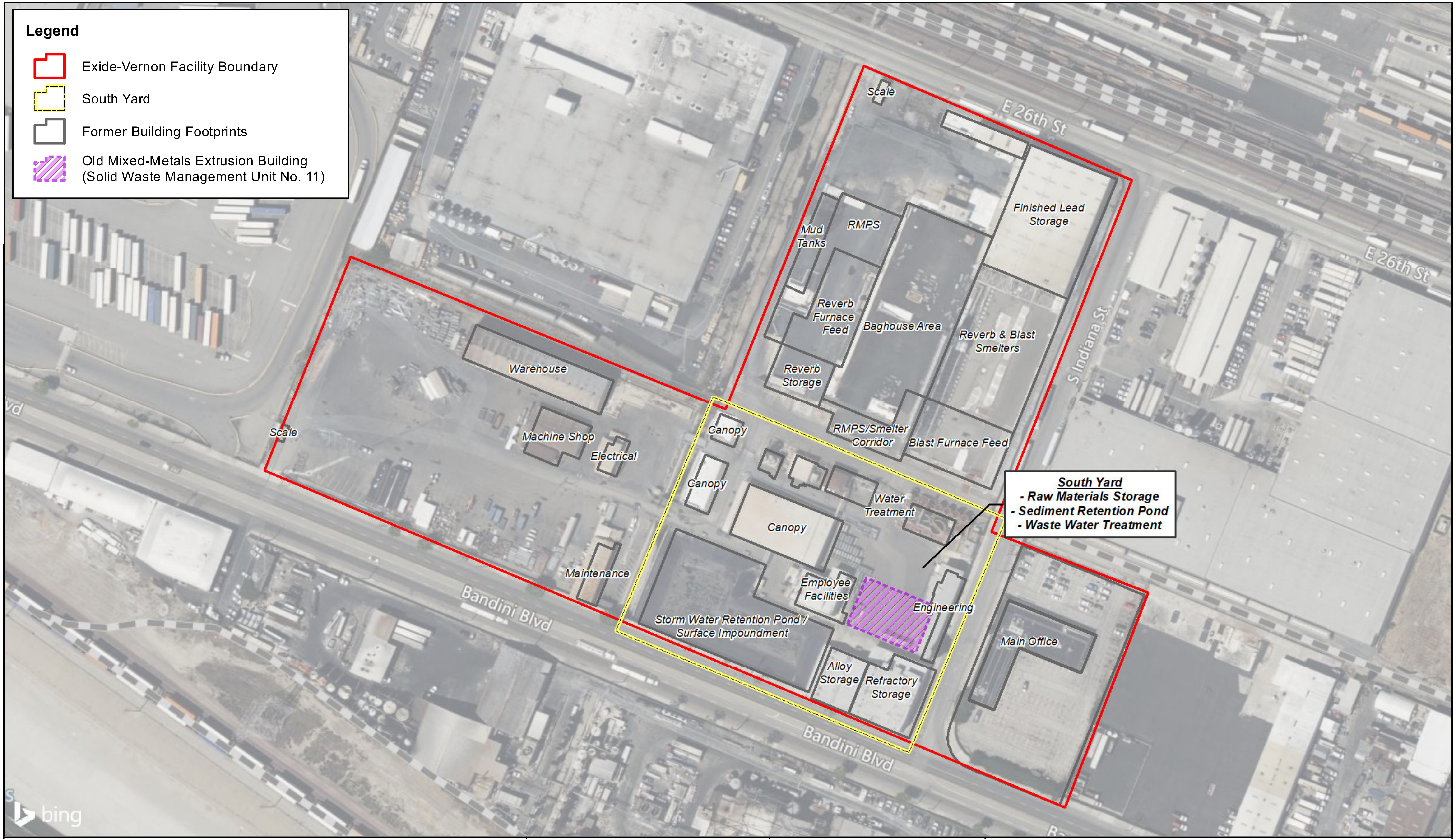

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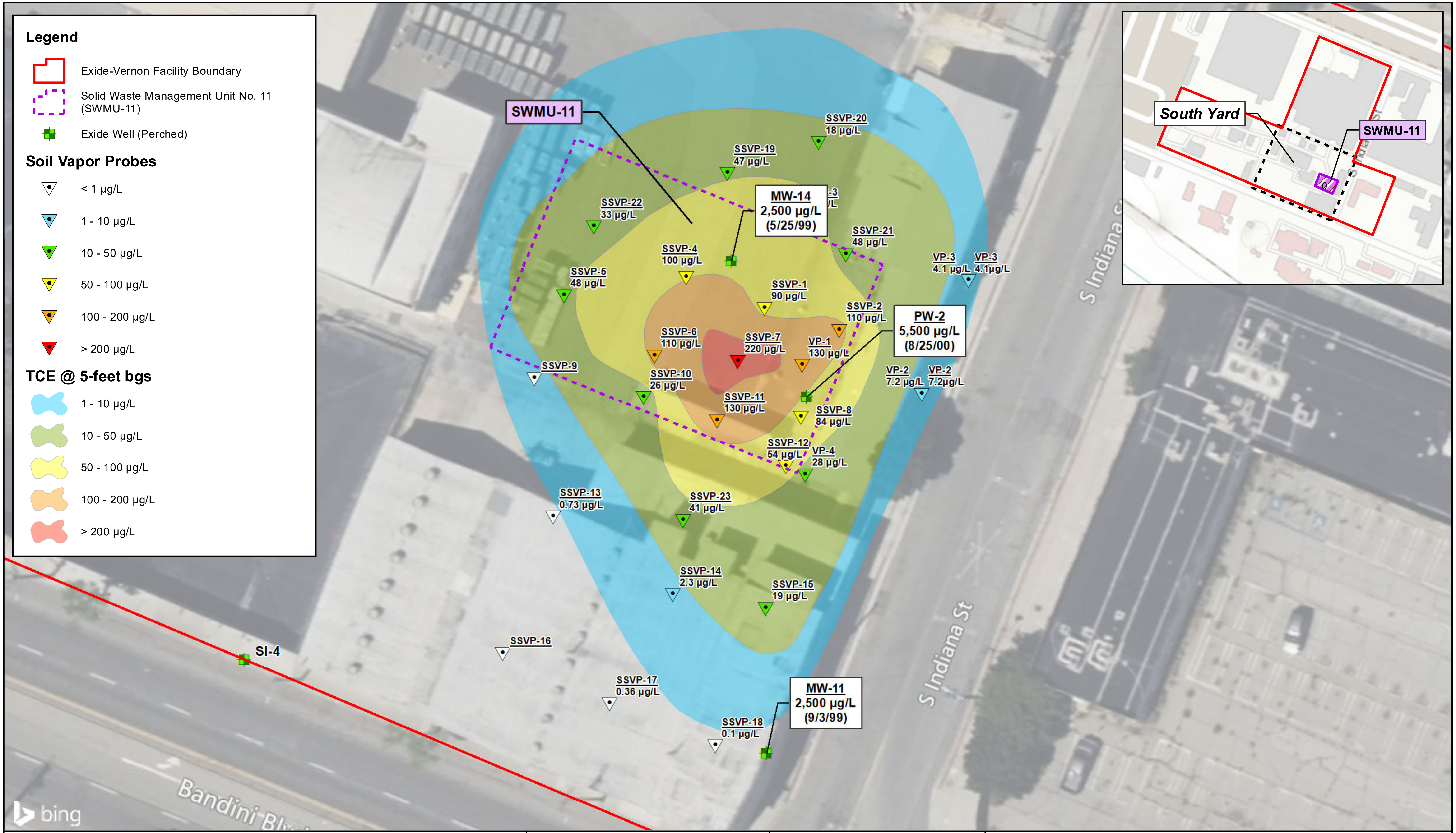
FIGURE 2
FACILITY LAYOUT
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
TCE = Trichloroethylene
bgs = below ground surface
µg/L = micrograms per Liter

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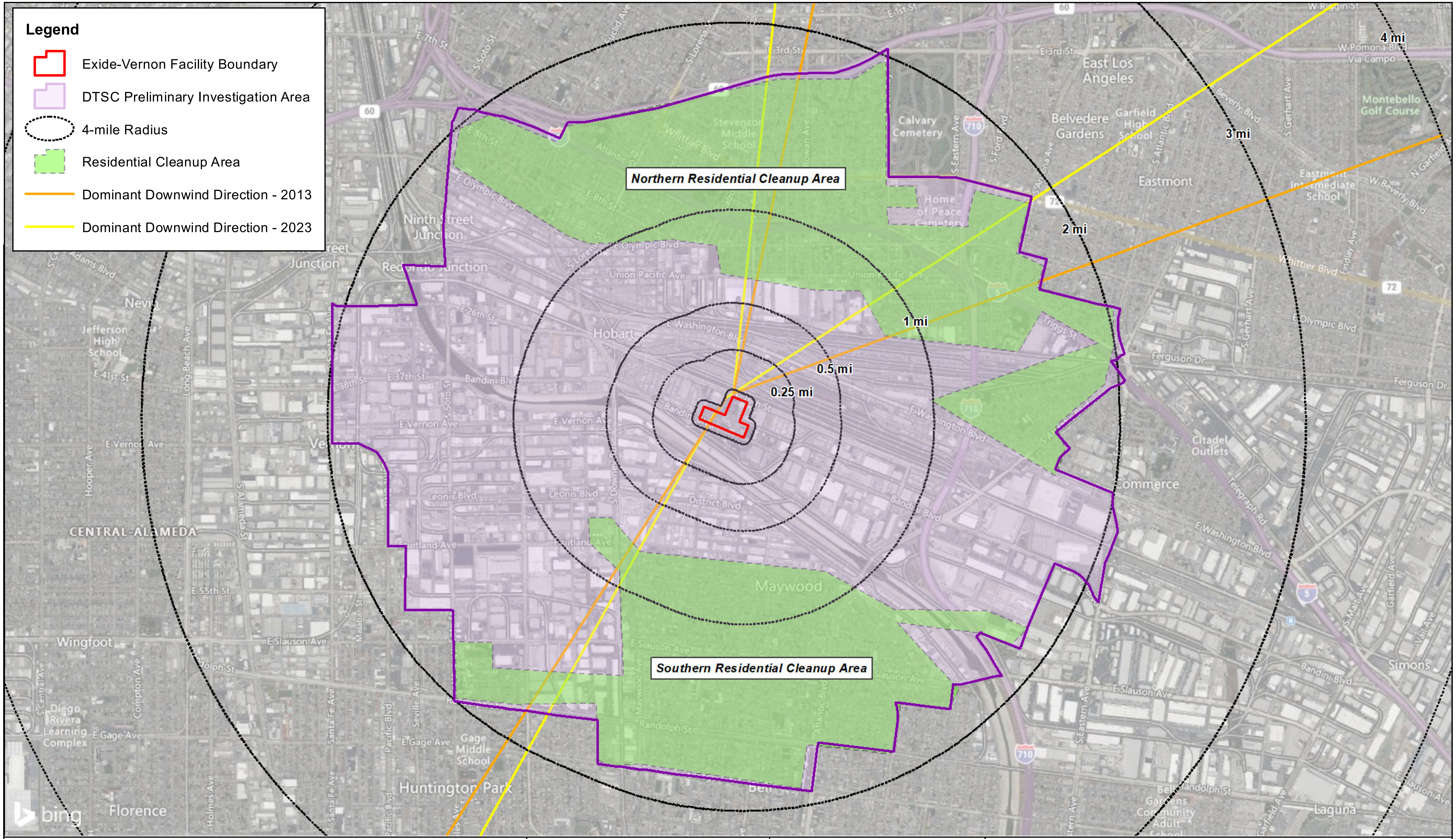
FIGURE 3
SWMU-11 TCE CONTAMINATION SUMMARY
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



N

0 2
Miles

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FIGURE 4
DTSC PRELIMINARY INVESTIGATION AREA
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

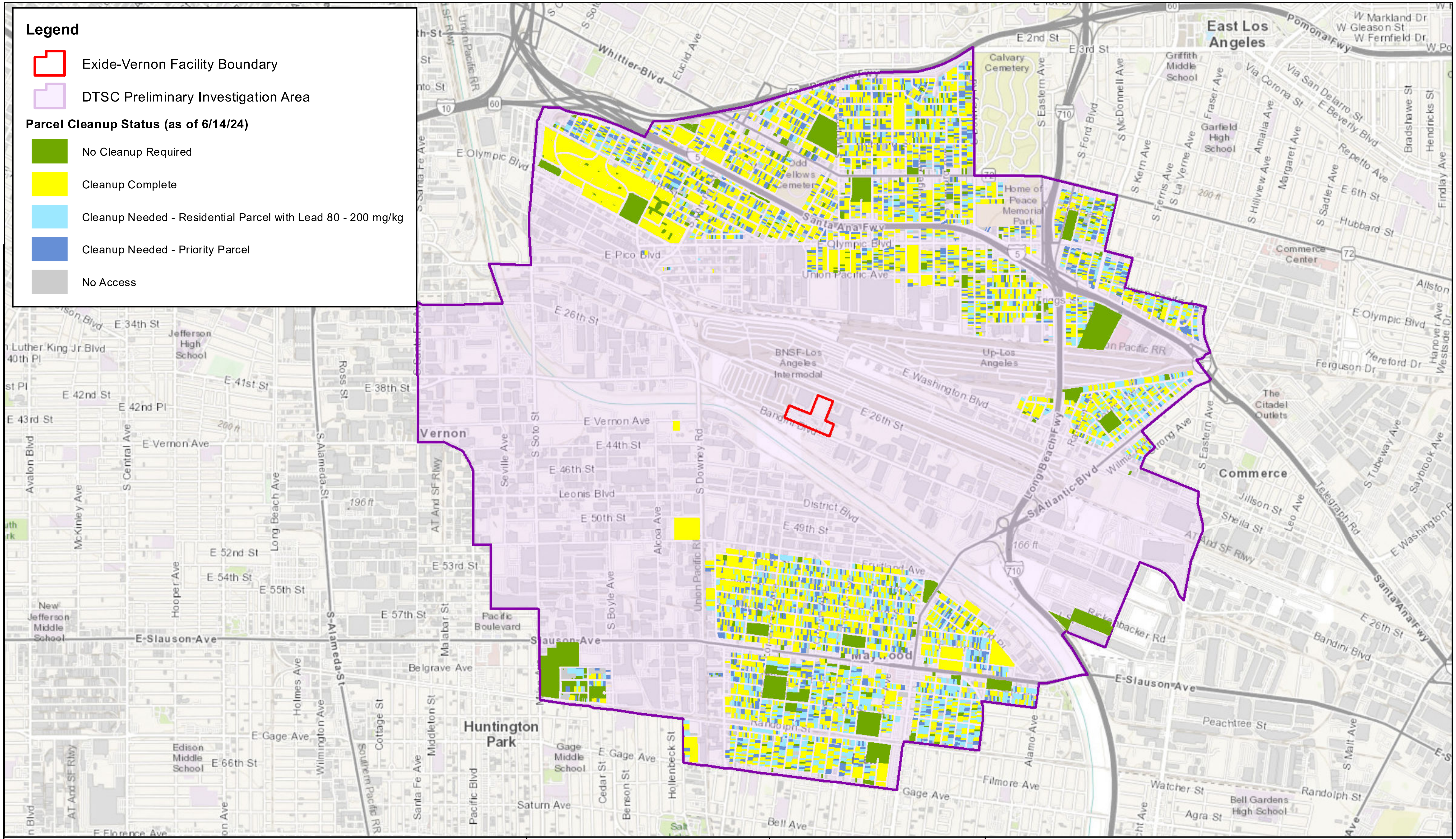

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FIGURE 5
DTSC PARCEL CLEANUP STATUS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

N

0 — 500
Feet

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FIGURE 6
ON-SITE MONITORING WELL LOCATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

0 Feet 500

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FIGURE 7
NEARBY MONITORING WELL LOCATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

🟥 Exide-Vernon Facility Boundary

🟩 Exide Well (Perched)

Well ID	Most Recent TCE (ug/L)	Historic Max TCE (ug/L)	Max TCE Year
MW-5	1.2	7.7	2000
MW-6R	ND	1	2015
MW-7R	ND	2	2020
MW-8	2	58	2000
MW-9	ND	4.8	2000
MW-10R	ND	1	2015
MW-11	1,500	2,500	1999
MW-12	5	34	2000
MW-13	ND	20	2000
MW-14	200	2,500	1999
MW-15	1,100	5,200	2000
MW-16	ND	4.3	2010
MW-30	ND	-	-
CB-1	ND	1	2015
CB-2	ND	1	2015
CB-5	-		
CB-6	2.6	1.6	2015
PW-1	4.9	23	2000
PW-2	250	5,500	2000
SI-1	ND	1	2015
SI-2	ND	-	-
SI-3	-	-	-
SI-4	-	-	-
SI-5	0.39	1	2015
MW-22	ND	1	2015
BMW-1	-	-	-
BMW-2	2.1	2.1	2015
BMW-3	1.3	1.3	2015
MCL	**5**	**5**	-

Notes:
MCL = EPA Maximum Contaminant Level
TCE = Trichloroethylene
µg/L = micrograms per Liter
Red > MCL

N

0 500
Feet

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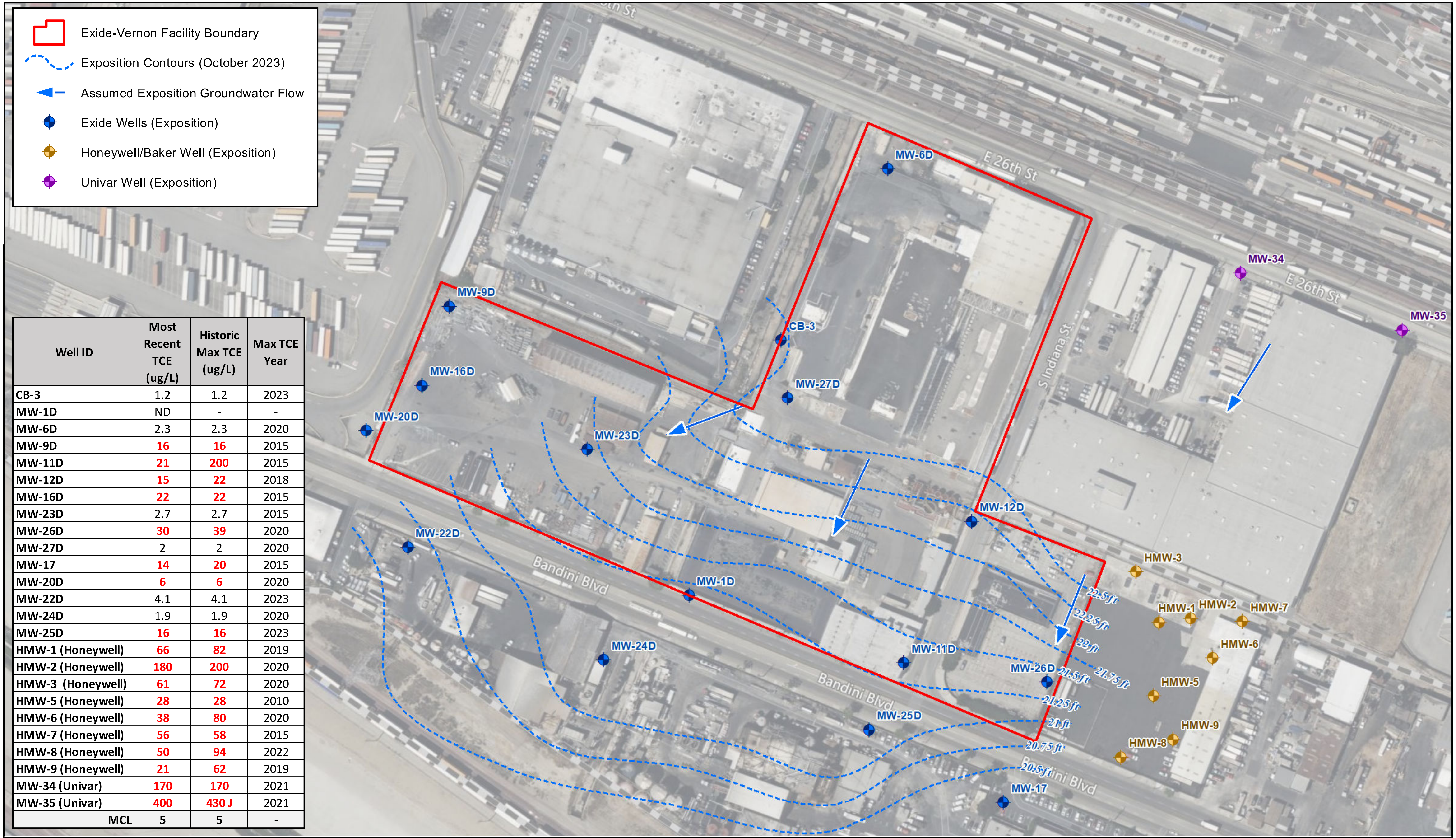
FIGURE 8
TCE CONCENTRATIONS SUMMARY PERCHED ZONE WELLS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Well ID	Most Recent TCE (ug/L)	Historic Max TCE (ug/L)	Max TCE Year
CB-3	1.2	1.2	2023
MW-1D	ND	-	-
MW-6D	2.3	2.3	2020
MW-9D	16	16	2015
MW-11D	21	200	2015
MW-12D	15	22	2018
MW-16D	22	22	2015
MW-23D	2.7	2.7	2015
MW-26D	30	39	2020
MW-27D	2	2	2020
MW-17	14	20	2015
MW-20D	6	6	2020
MW-22D	4.1	4.1	2023
MW-24D	1.9	1.9	2020
MW-25D	16	16	2023
HMW-1 (Honeywell)	66	82	2019
HMW-2 (Honeywell)	180	200	2020
HMW-3 (Honeywell)	61	72	2020
HMW-5 (Honeywell)	28	28	2010
HMW-6 (Honeywell)	38	80	2020
HMW-7 (Honeywell)	56	58	2015
HMW-8 (Honeywell)	50	94	2022
HMW-9 (Honeywell)	21	62	2019
MW-34 (Univar)	170	170	2021
MW-35 (Univar)	400	430 J	2021
MCL	5	5	-

Notes:
MCL = EPA Maximum Contaminant Level
TCE = Trichloroethylene
μg/L = micrograms per Liter
Red > MCL

N
0 500
Feet

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FIGURE 9
TCE CONCENTRATIONS SUMMARY EXPOSITION AQUIFER
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

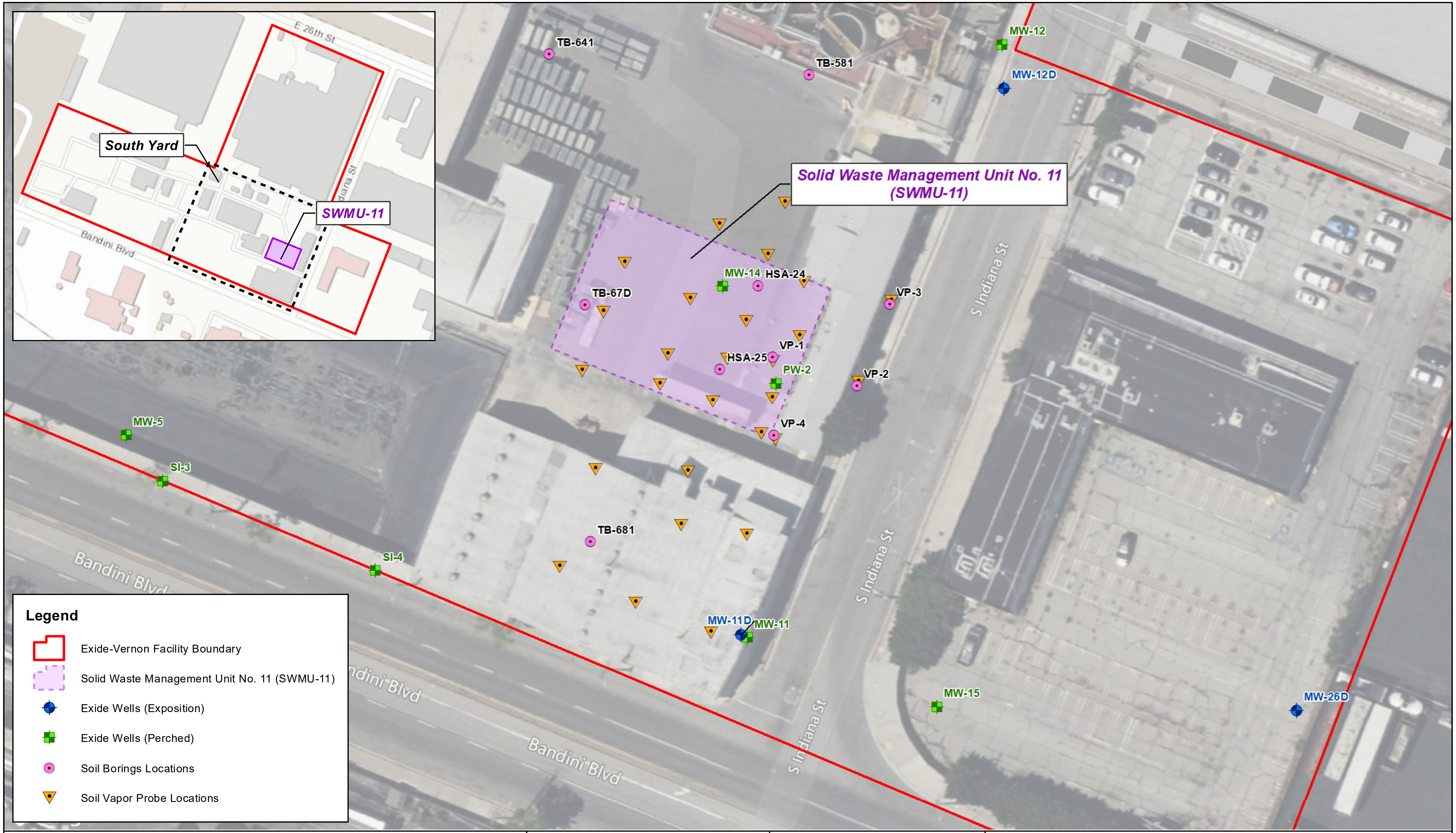

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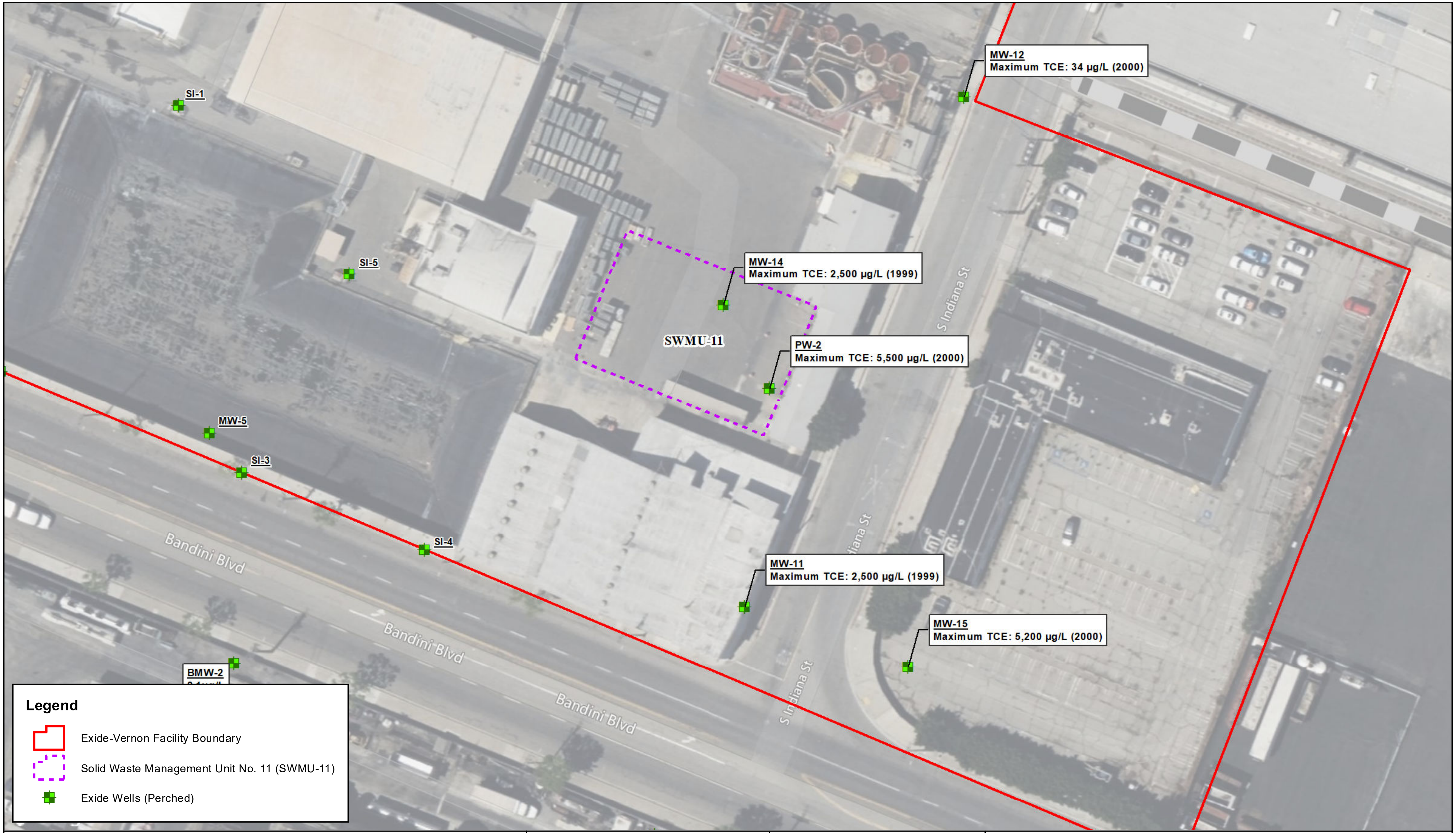
FIGURE 10
SWMU-11 SITE LAYOUT
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
TCE = Trichloroethylene
µg/L = micrograms per Liter

N
0 150
Feet

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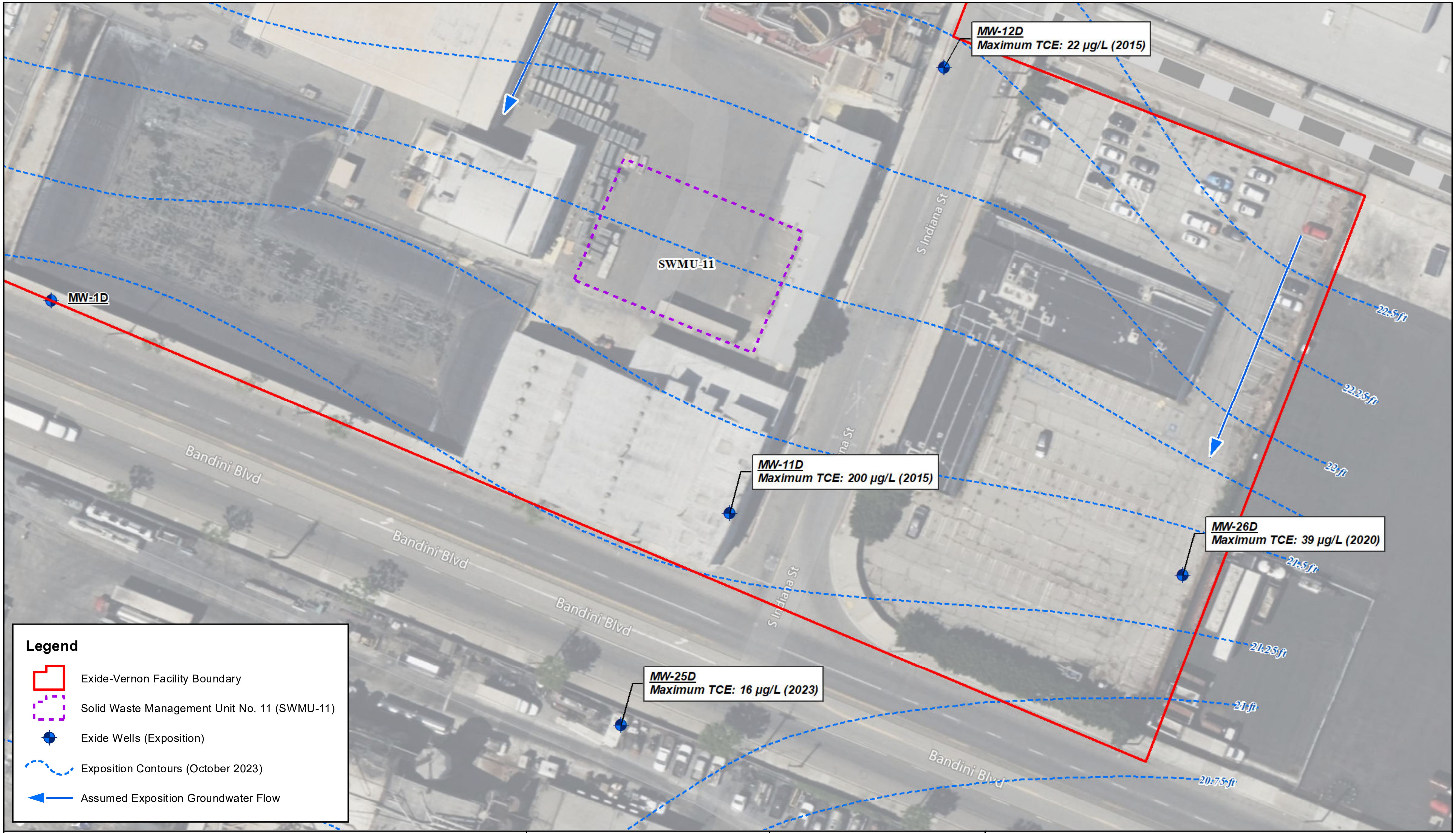
FIGURE 11
SWMU-11 TCE CONCENTRATIONS SUMMARY PERCHED ZONE

EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
TCE = Trichloroethylene
µg/L = micrograms per Liter

N

0 150
Feet

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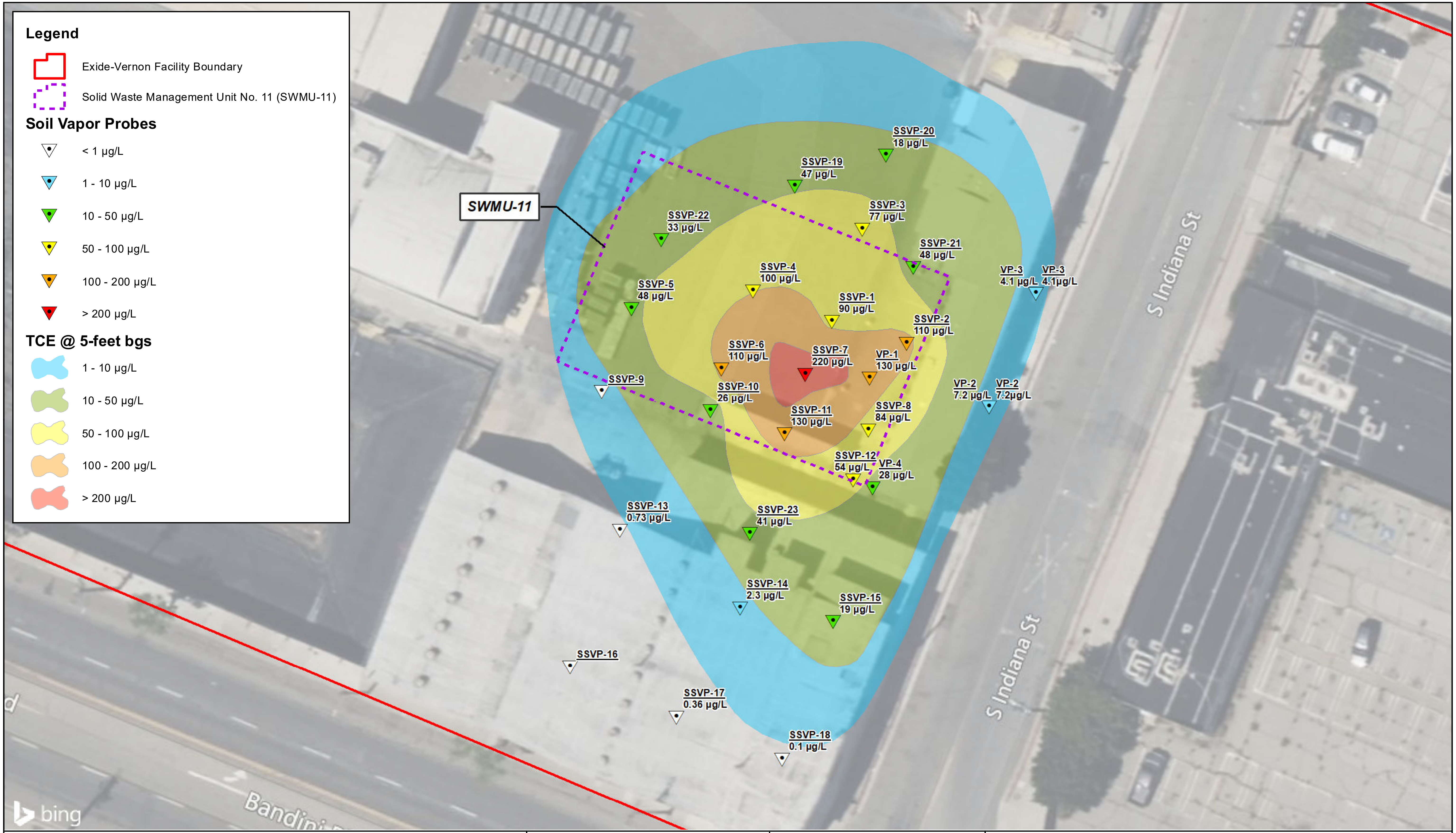
FIGURE 12
SWMU-11 TCE CONCENTRATIONS SUMMARY EXPOSITION AQUIFER
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
TCE = Trichloroethylene
bgs = below ground surface
µg/L = micrograms per Liter

N

0 100
Feet

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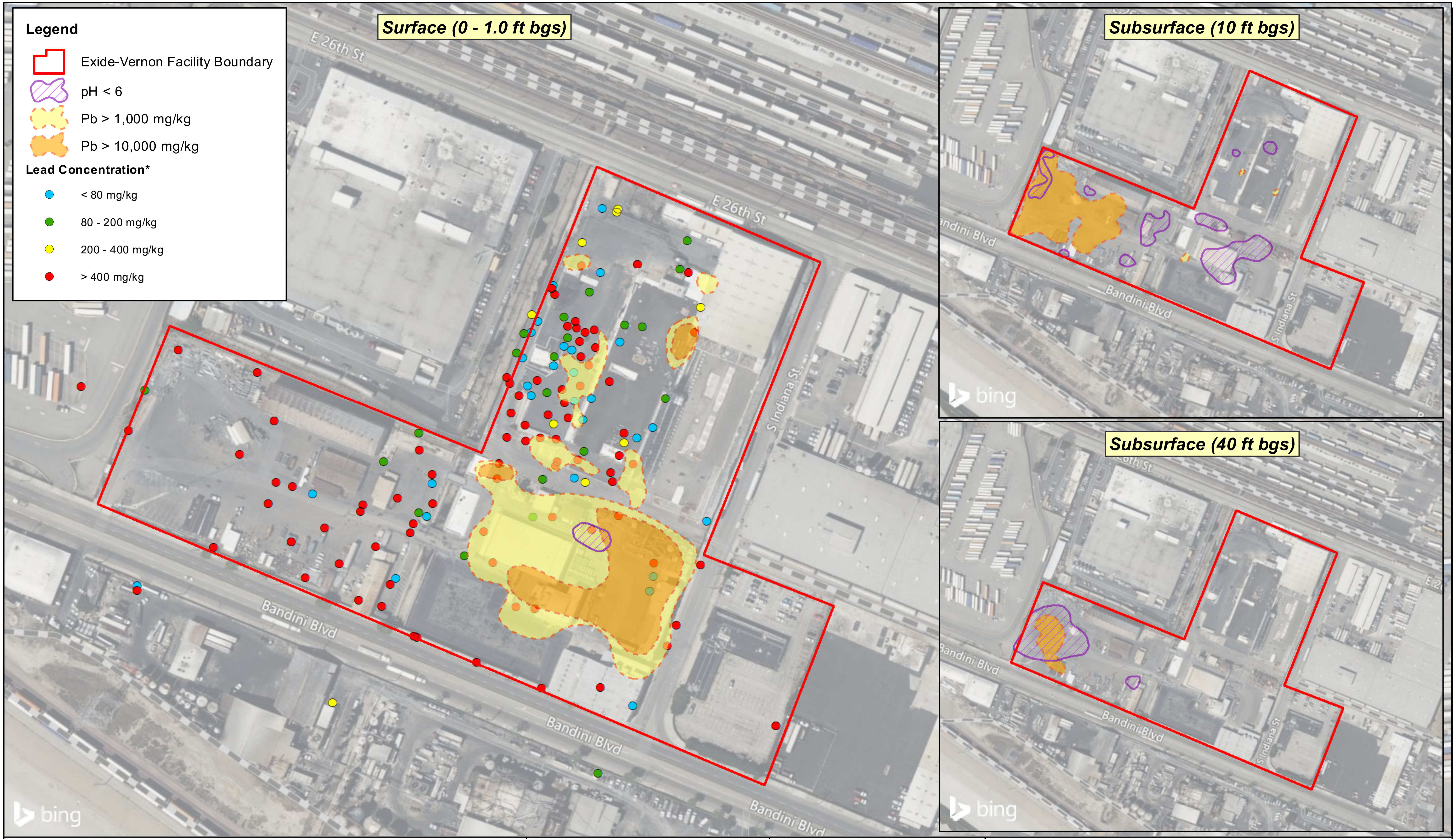
FIGURE 13
SWMU-11 SOIL VAPOR TCE CONCENTRATIONS SUMMARY
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
ft bgs = feet below ground surface
Pb = Lead
mg/kg = milligrams per kilogram
* Lead concentrations compared to EPA Regional Screening Levels (RSLs) for residential soil of 200 mg/kg (revised January 17, 2024).

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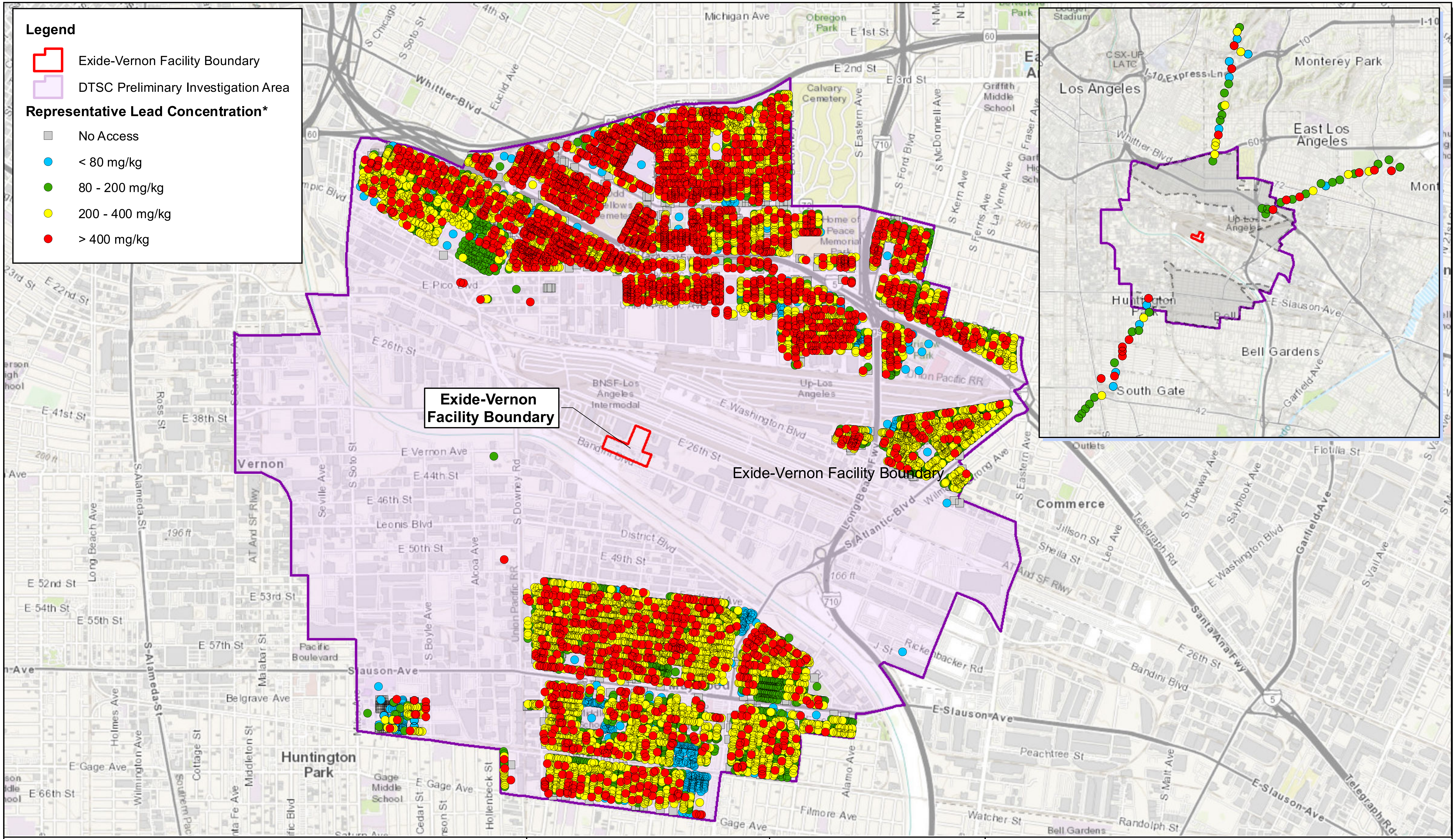
FIGURE 14
ON-SITE LEAD AND PH SOIL SAMPLING RESULTS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
DTSC = Department of Toxic Substances Control
mg/kg = milligrams per kilogram
* Lead concentrations compared to EPA Regional Screening Levels (RSLs) for residential soil of 200 mg/kg (revised January 17, 2024).

N

0 Miles 1

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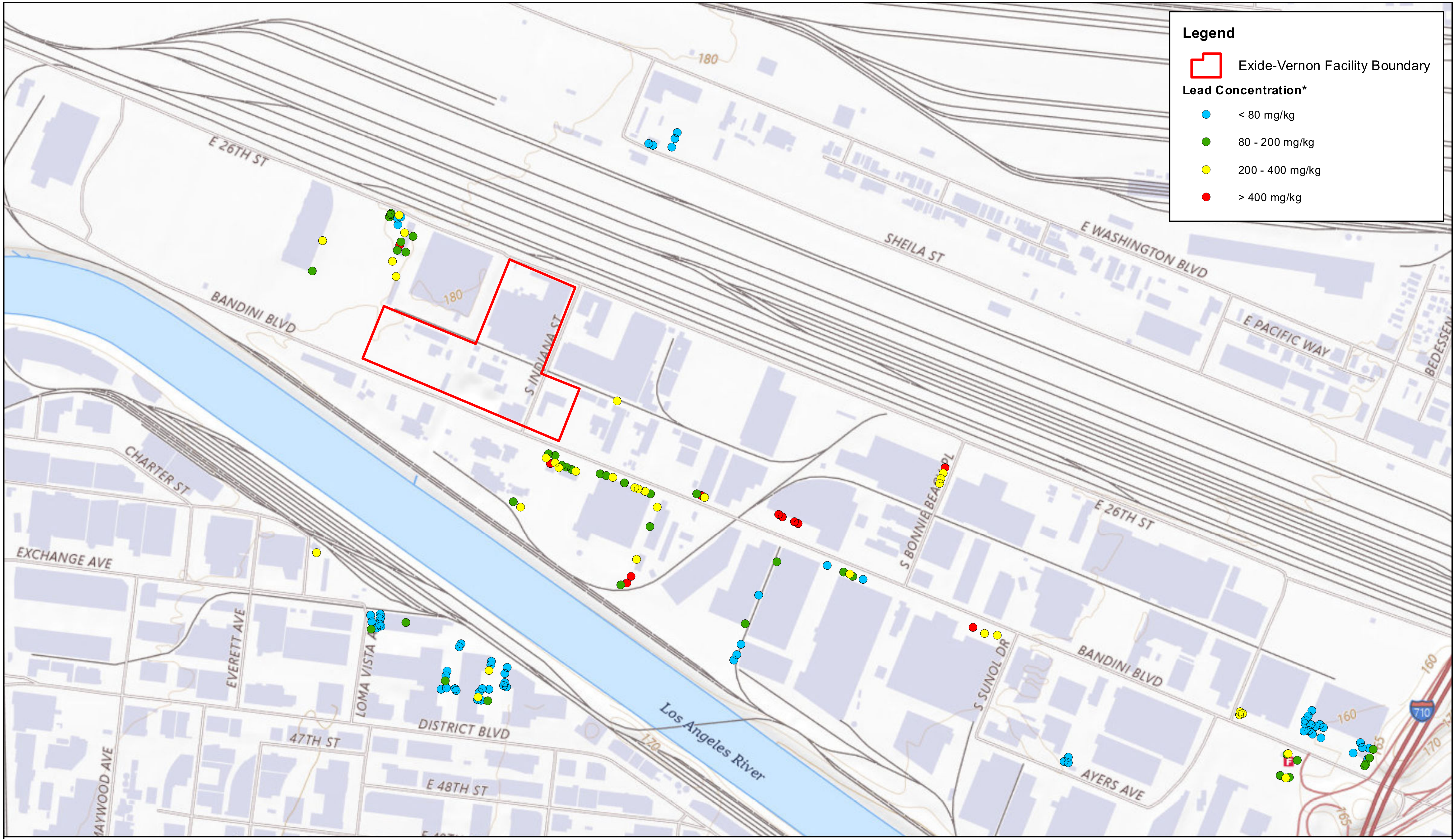
FIGURE 15
DTSC PRELIMINARY INVESTIGATION AREA RESIDENTIAL SOIL SAMPLING RESULTS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
mg/kg = milligrams per kilogram
* Lead concentrations compared to EPA Regional Screening Levels (RSLs) for residential soil of 200 mg/kg (revised January 17, 2024).

N

0 1,500
Feet

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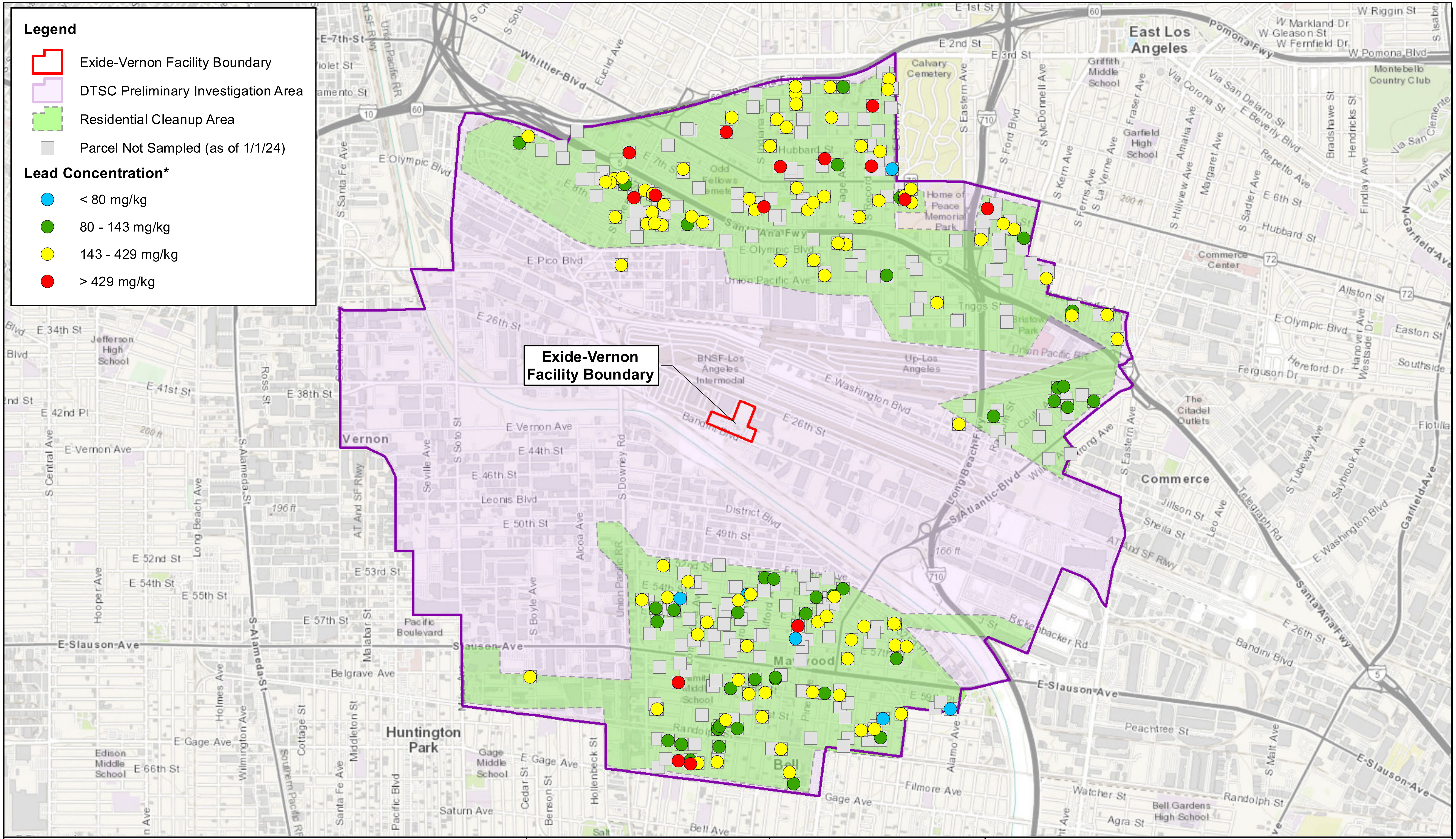
FIGURE 16
OFF-SITE INDUSTRIAL LEAD SOIL SAMPLING RESULTS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
DTSC = Department of Toxic Substances Control
mg/kg = milligrams per kilogram
* Lead concentrations compared to EPA background concentration of 143 mg/kg, and three times EPA background concentration of 429 mg/kg

N

0 1
Miles

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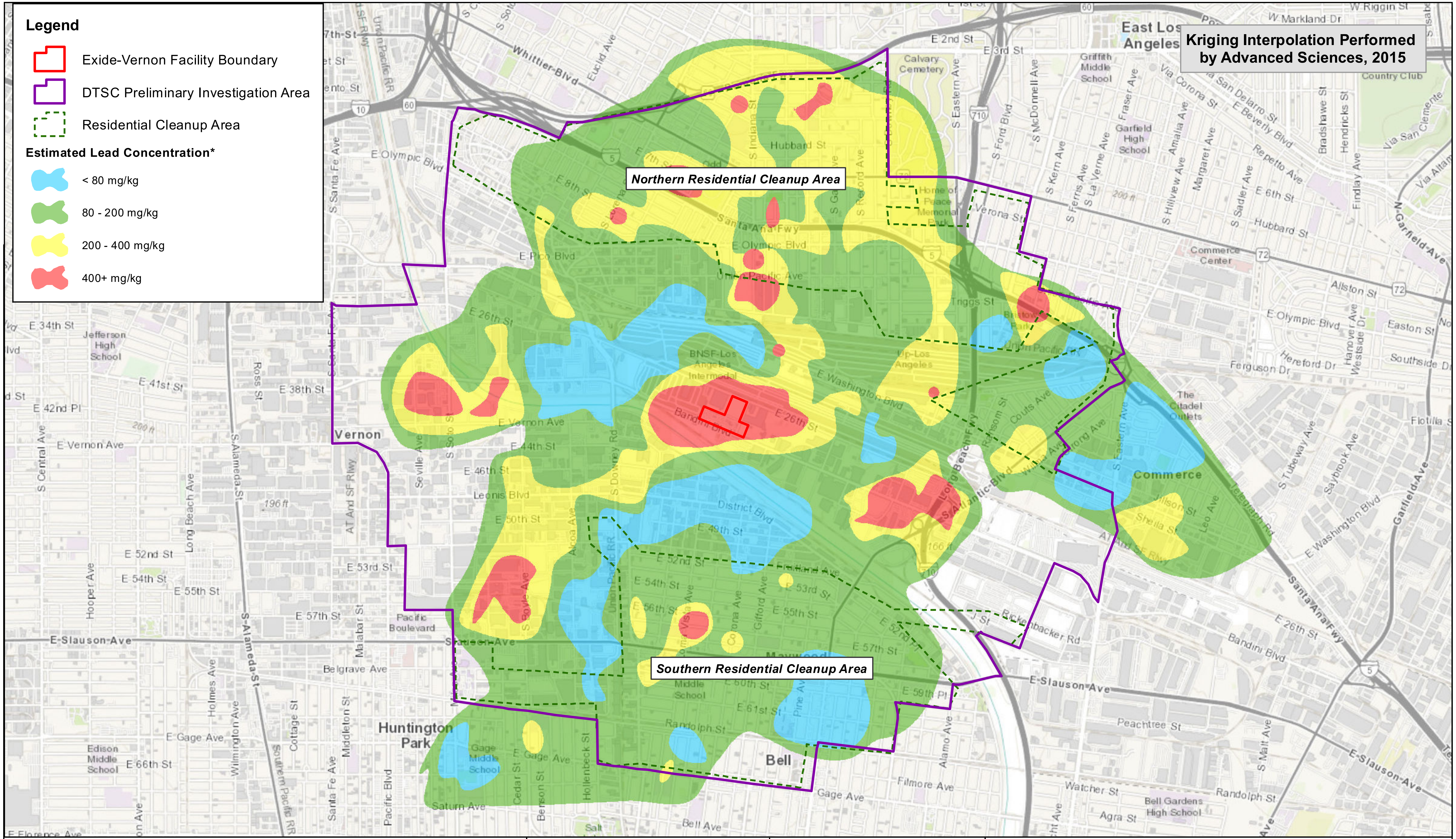
FIGURE 17
DTSC RESIDENTIAL SOIL SAMPLING RESULTS UPDATED EPA PROTOCOL
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Legend

🟥 Exide-Vernon Facility Boundary

🟪 DTSC Preliminary Investigation Area

🟩 Residential Cleanup Area

Estimated Lead Concentration*

🟦 < 80 mg/kg

🟩 80 - 200 mg/kg

🟨 200 - 400 mg/kg

🟥 400+ mg/kg

Notes:
mg/kg = milligrams per kilogram
DTSC = Department of Toxic Substances Control
* Lead concentrations compared to EPA Regional Screening Levels (RSLs) for residential soil of 200 mg/kg (revised January 17, 2024).

N

0 1
Miles

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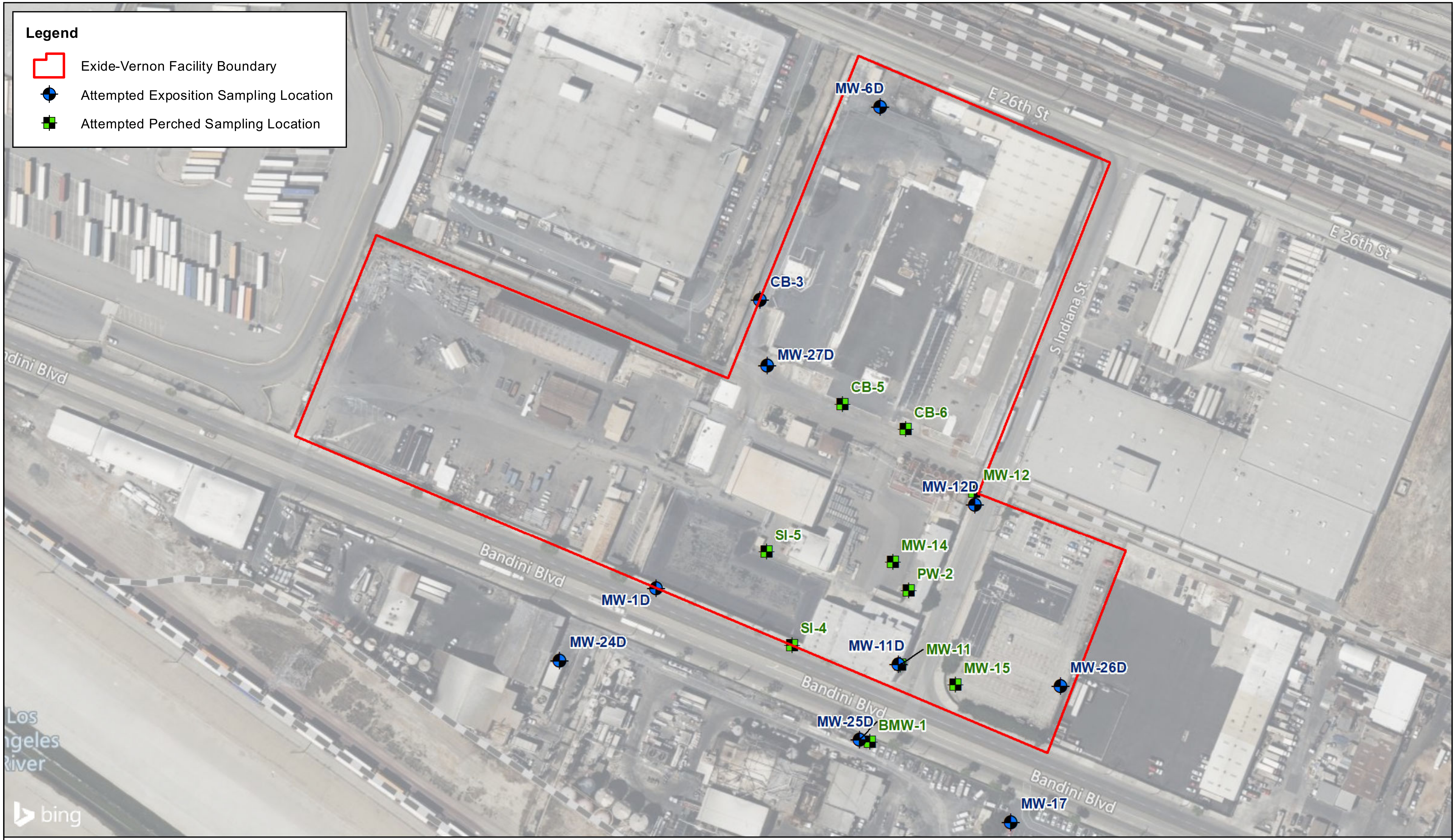
FIGURE 18
INTERPOLATED LEAD CONCENTRATIONS IN SOIL
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



0 500
Feet

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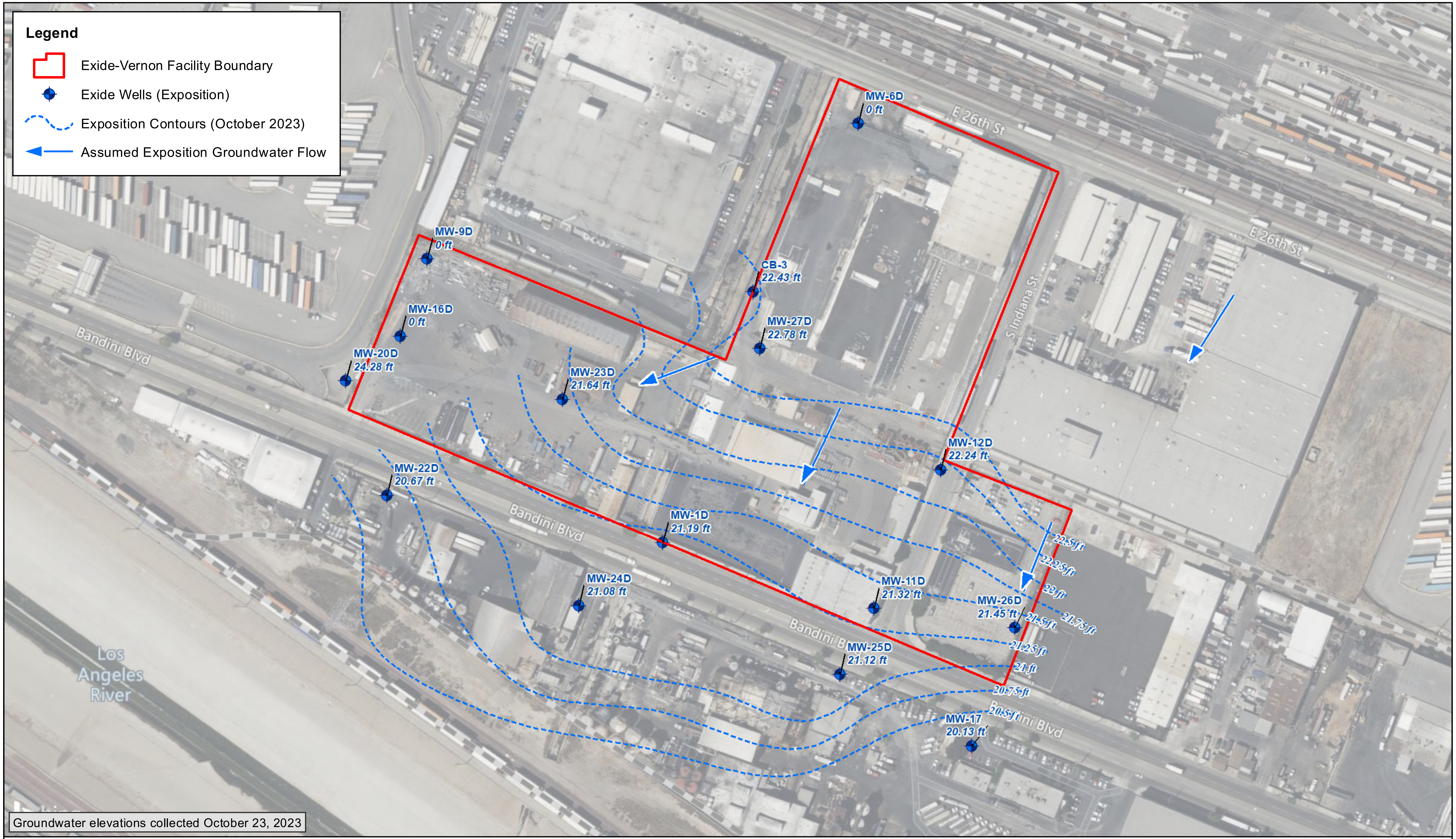
FIGURE 19
2023 SI GROUNDWATER SAMPLING LOCATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Groundwater elevations collected October 23, 2023

Notes:
ft = feet above mean sea level

0 500
Feet

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FIGURE 20
EXPOSITION AQUIFER GROUNDWATER ELEVATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

Notes:
ft = feet above mean sea level

N

0 500
Feet

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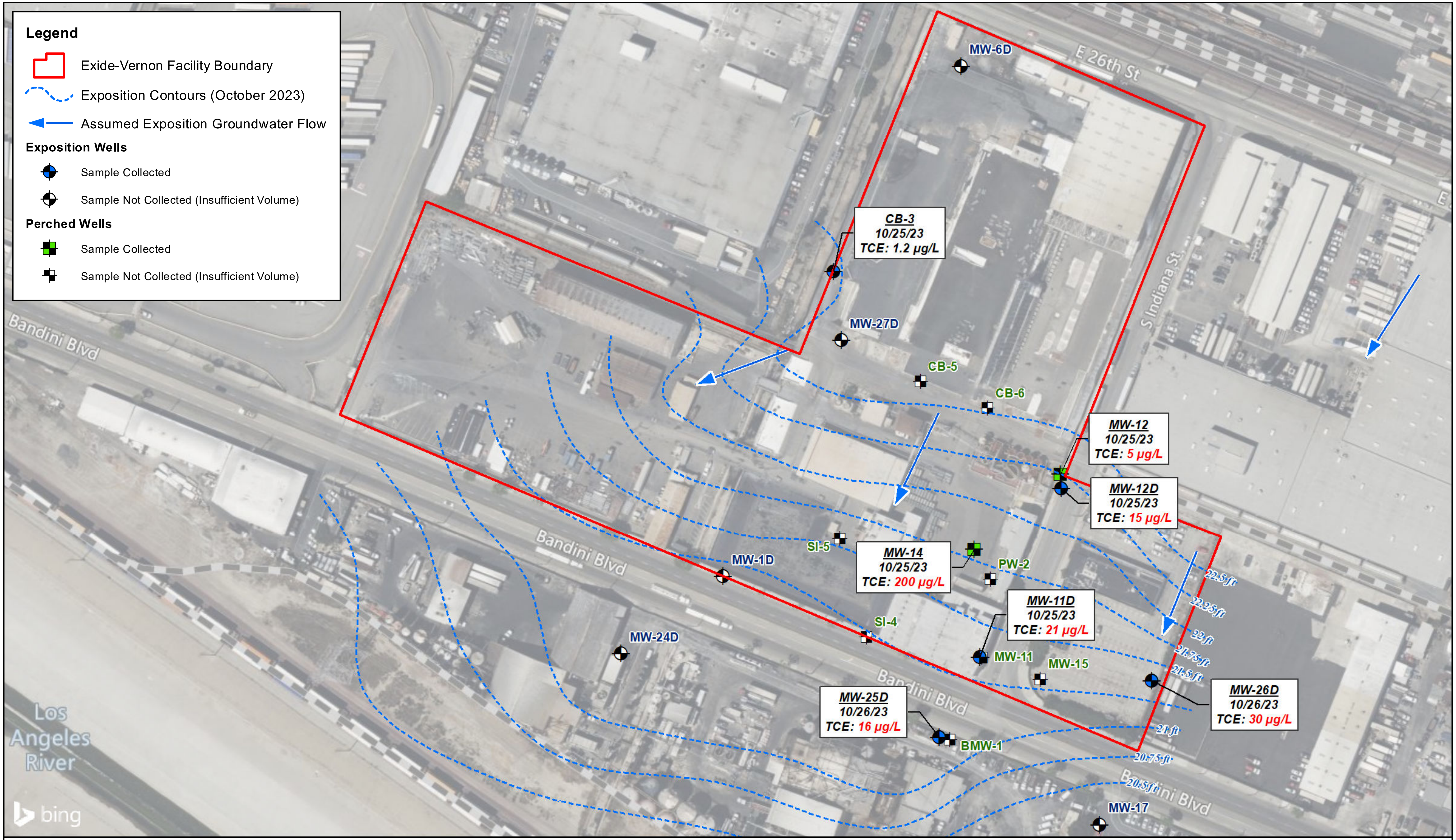
FIGURE 21
PERCHED ZONE GROUNDWATER ELEVATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
MCL = Maximum Contaminant Level
TCE = Trichloroethylene
µg/L = micrograms per Liter
Red = TCE exceeds MCL (5.0 µg/L)

N

0 500
Feet

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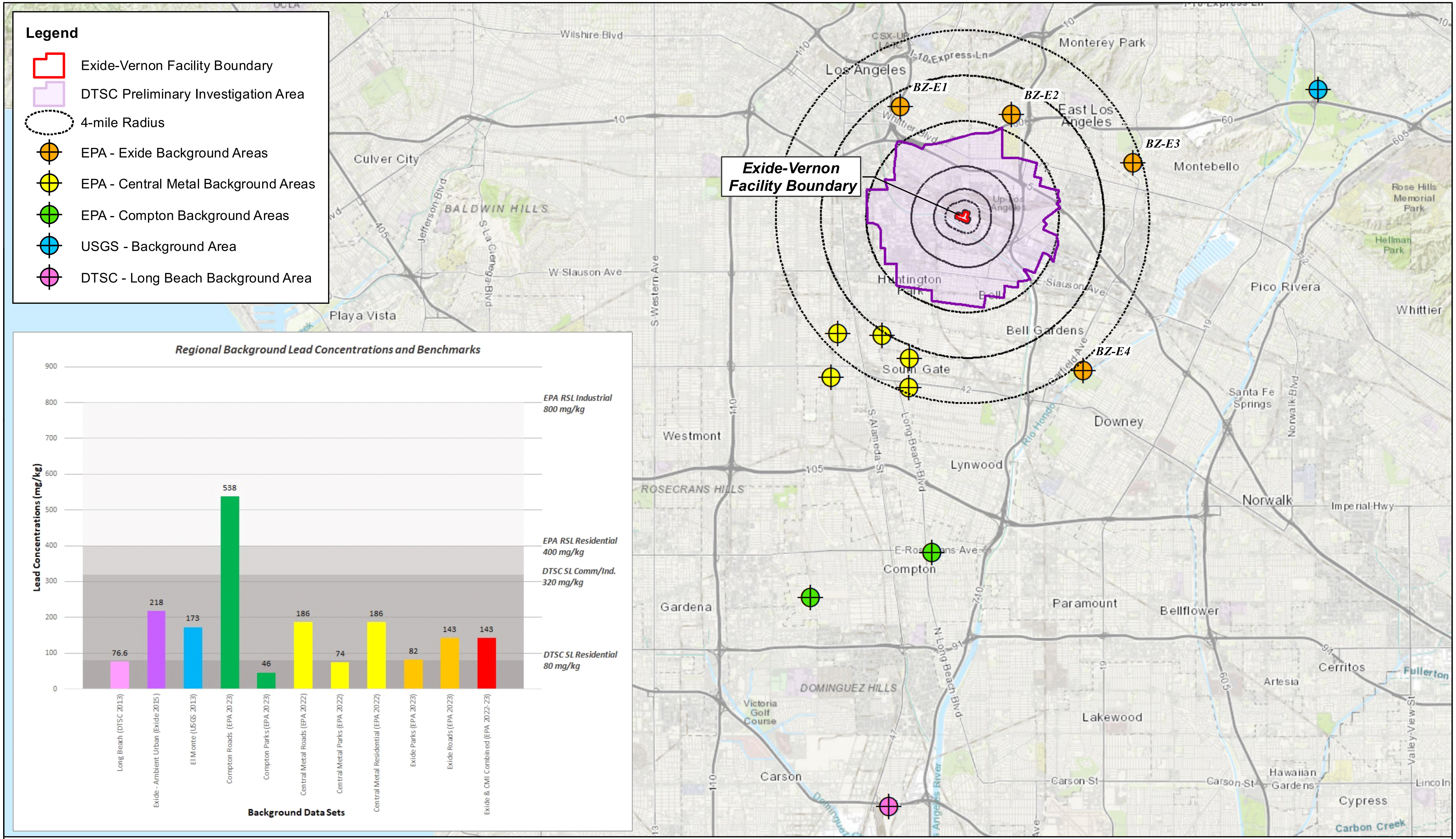
FIGURE 22
SITE INSPECTION GROUNDWATER SAMPLING RESULTS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



Notes:
DTSC = Department of Toxic Substances Control
EPA = United States Environmental Protection Agency
USGS = United States Geologic Survey

0 5
Miles

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FIGURE 23
BACKGROUND SOIL SAMPLING LOCATIONS
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

Notes:
ISM = Incremental Sampling Method
HRS = Hazardous Ranking System
mg/kg = milligram per kilogram

0 150
Feet

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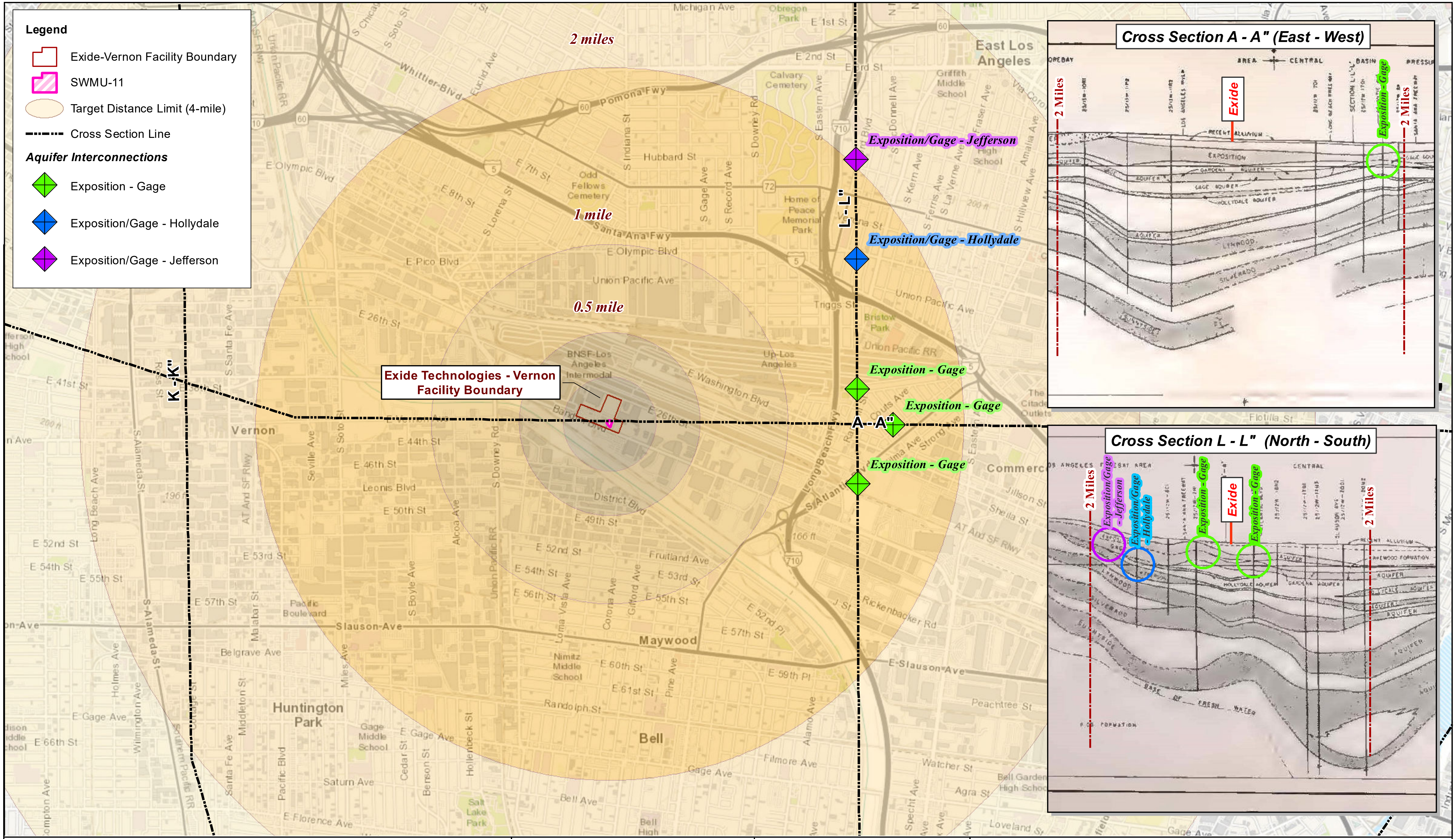
FIGURE 24
EXAMPLE BACKGROUND SAMPLING METHODOLOGY
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



0 2
Miles

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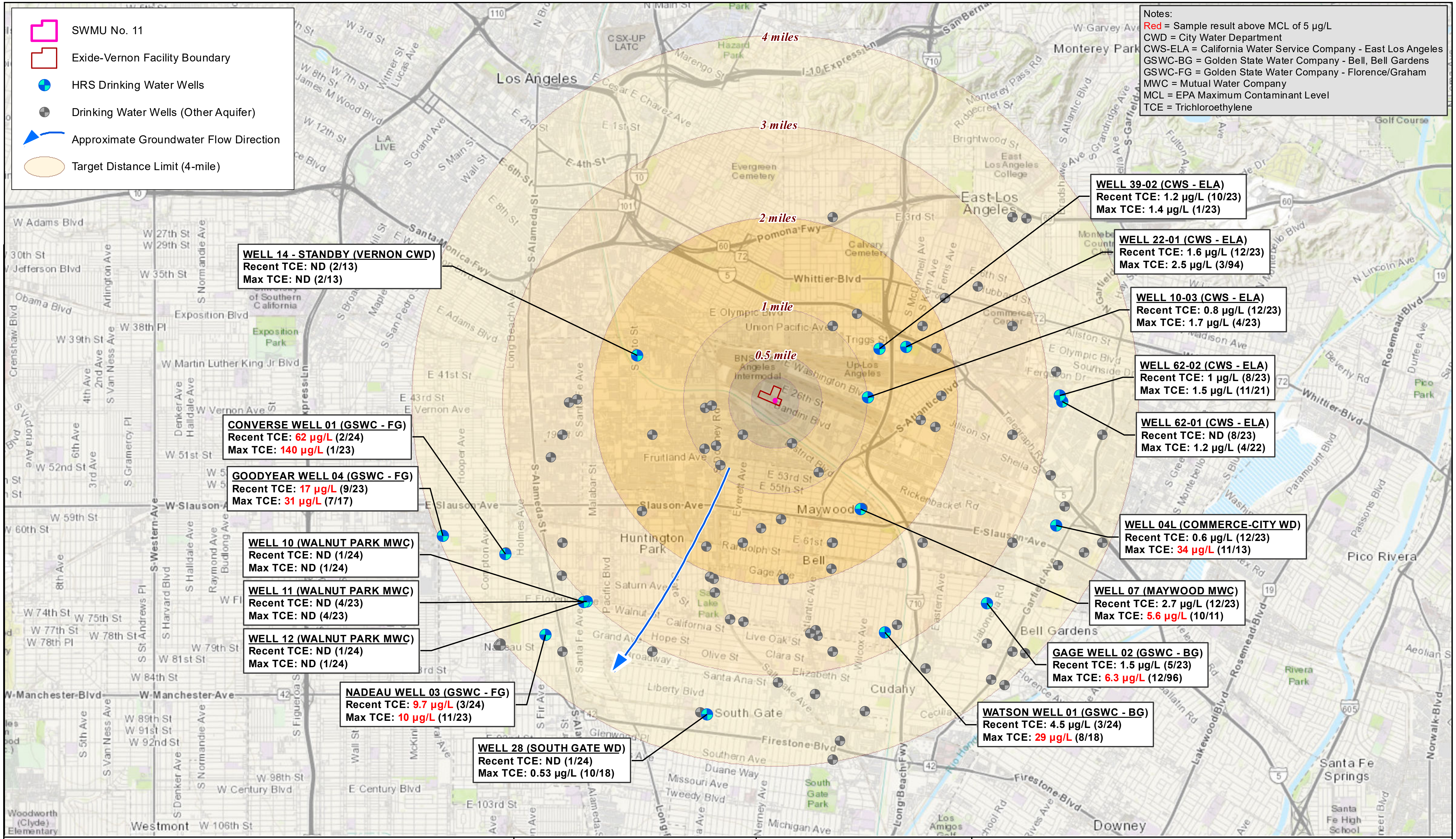
FIGURE 25
AQUIFER INTERCONNECTIONS WITHIN 2 MILES
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA



SWMU No. 11
Exide-Vernon Facility Boundary
● HRS Drinking Water Wells
● Drinking Water Wells (Other Aquifer)
Approximate Groundwater Flow Direction
Target Distance Limit (4-mile)

Notes:
Red = Sample result above MCL of 5 µg/L
CWD = City Water Department
CWS-ELA = California Water Service Company - East Los Angeles
GSWC-BG = Golden State Water Company - Bell, Bell Gardens
GSWC-FG = Golden State Water Company - Florence/Graham
MWC = Mutual Water Company
MCL = EPA Maximum Contaminant Level
TCE = Trichloroethylene

WELL 14 - STANDBY (VERNON CWD)
Recent TCE: ND (2/13)
Max TCE: ND (2/13)

CONVERSE WELL 01 (GSWC - FG)
Recent TCE: 62 µg/L (2/24)
Max TCE: 140 µg/L (1/23)

GOODYEAR WELL 04 (GSWC - FG)
Recent TCE: 17 µg/L (9/23)
Max TCE: 31 µg/L (7/17)

WELL 10 (WALNUT PARK MWC)
Recent TCE: ND (1/24)
Max TCE: ND (1/24)

WELL 11 (WALNUT PARK MWC)
Recent TCE: ND (4/23)
Max TCE: ND (4/23)

WELL 12 (WALNUT PARK MWC)
Recent TCE: ND (1/24)
Max TCE: ND (1/24)

NADEAU WELL 03 (GSWC - FG)
Recent TCE: 9.7 µg/L (3/24)
Max TCE: 10 µg/L (11/23)

WELL 28 (SOUTH GATE WD)
Recent TCE: ND (1/24)
Max TCE: 0.53 µg/L (10/18)

WELL 39-02 (CWS - ELA)
Recent TCE: 1.2 µg/L (10/23)
Max TCE: 1.4 µg/L (1/23)

WELL 22-01 (CWS - ELA)
Recent TCE: 1.6 µg/L (12/23)
Max TCE: 2.5 µg/L (3/94)

WELL 10-03 (CWS - ELA)
Recent TCE: 0.8 µg/L (12/23)
Max TCE: 1.7 µg/L (4/23)

WELL 62-02 (CWS - ELA)
Recent TCE: 1 µg/L (8/23)
Max TCE: 1.5 µg/L (11/21)

WELL 62-01 (CWS - ELA)
Recent TCE: ND (8/23)
Max TCE: 1.2 µg/L (4/22)

WELL 04L (COMMERCE-CITY WD)
Recent TCE: 0.6 µg/L (12/23)
Max TCE: 34 µg/L (11/13)

WELL 07 (MAYWOOD MWC)
Recent TCE: 2.7 µg/L (12/23)
Max TCE: 5.6 µg/L (10/11)

GAGE WELL 02 (GSWC - BG)
Recent TCE: 1.5 µg/L (5/23)
Max TCE: 6.3 µg/L (12/96)

WATSON WELL 01 (GSWC - BG)
Recent TCE: 4.5 µg/L (3/24)
Max TCE: 29 µg/L (8/18)

0 Miles 4

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FIGURE 26
DRINKING WATER WELLS WITHIN 4 MILES
EXIDE TECHNOLOGIES - VERNON SITE INSPECTION
VERNON, LOS ANGELES COUNTY, CA

APPENDIX A
SI SAMPLING RESULT TABLES

Table A-1
October 2023 Groundwater Sampling Results
Exide Technologies - Vernon Site Inspection

Analyte	MCL	Result Units	ET-CB3	ET-MW11D	ET-MW42B	ET-MW12D	ET-MW42A	ET-MW25D	ET-MW26D	ET-MW12	ET-MW14	ET-EB01	ET-EB02	ET-TB01
			Exposition	Exposition	Exposition	Exposition	Exposition	Exposition	Exposition	Perched	Perched	Equipment Blank	Equipment Blank	Trip Blank
			Upgradient	Downgradient	Duplicate (MW-11D)	Background	Duplicate (MW-12D)	Downgradient	Cross-Gradient	Background	Source			
			10/25/2023	10/25/2023	10/25/2023	10/25/2023	10/25/2023	10/26/2023	10/26/2023	10/25/2023	10/25/2023	10/25/2023	10/26/2023	10/25/2023
Volatile Organic Compounds - 8260B														
1,1,1,2-Tetrachloroethane		µg/L	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1.5 U	0.36 U	0.36 U	0.36 U
1,1,1-Trichloroethane	200	µg/L	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1.4 U	0.36 U	0.36 U	0.36 U
1,1,2,2-Tetrachloroethane		µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	1.2 U	0.31 U	0.31 U	0.31 U
1,1,2-Trichloro-1,2,2-trifluoroethane		µg/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	2.5 U
1,1,2-Trichloroethane	5	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.2 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane		µg/L	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	1.4 U	0.34 U	0.34 U	0.34 U
1,1-Dichloroethene	7	µg/L	0.42 U	0.42 U	0.42 U	**0.79 J**	**0.72 J**	0.42 U	**1.4**	0.42 U	1.7 U	0.42 U	0.42 U	0.42 U
1,1-Dichloropropene		µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	1.6 U	0.41 U	0.41 U	0.41 U
1,2,3-Trichlorobenzene		µg/L	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	2.4 U	0.59 U	0.59 U	0.59 U
1,2,3-Trichloropropane		µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1.7 U	0.42 U	0.42 U	0.42 U
1,2,4-Trichlorobenzene	70	µg/L	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	2.8 U	0.71 U	0.71 U	0.71 U
1,2,4-Trimethylbenzene		µg/L	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	1.3 U	0.34 U	0.34 U	0.34 U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	8.3 U	2.1 U	2.1 U	2.1 U
1,2-Dibromoethane	0.05	µg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	1.7 U	0.41 U	0.41 U	0.41 U
1,2-Dichlorobenzene	600	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.26 U	0.26 U
1,2-Dichloroethane	5	µg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	5	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1.7 U	0.42 U	0.42 U	0.42 U
1,3,5-Trimethylbenzene		µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene		µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.26 U	0.26 U
1,3-Dichloropropane		µg/L	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	1.3 U	0.32 U	0.32 U	0.32 U
1,4-Dichlorobenzene	75	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.1 U	0.28 U	0.28 U	0.28 U
2,2-Dichloropropane		µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U
2-Butanone		µg/L	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	18 U	4.5 U	4.5 U	4.5 U
2-Chlorotoluene		µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.3 U	0.33 U	0.33 U	0.33 U
2-Hexanone		µg/L	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	11 U	2.7 U	2.7 U	2.7 U
4-Chlorotoluene		µg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	1.4 U	0.35 U	0.35 U	0.35 U
4-Methyl-2-pentanone		µg/L	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	13 U	3.2 U	3.2 U	3.2 U
Acetone		µg/L	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	29 U	7.4 U	7.4 U	7.4 U
Benzene		µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.97 U	0.24 U	0.24 U	0.24 U
Bromobenzene		µg/L	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	1.2 U	0.29 U	0.29 U	0.29 U
Bromochloromethane		µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	1.5 U	0.38 U	0.38 U	0.38 U
Bromodichloromethane	80	µg/L	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	1.2 U	0.29 U	0.29 U	0.29 U
Bromoform	80	µg/L	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	7.4 U	1.9 U	1.9 U	1.9 U
Bromomethane		µg/L	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	29 U	7.4 U	7.4 U	7.4 U
Carbon disulfide		µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1.7 U	0.42 U	0.42 U	0.42 U
Carbon tetrachloride	5	µg/L	**0.92**	**1.2**	**1.2**	**3.3**	**3.1**	**3**	**2.2**	0.37 U	1.5 U	0.37 U	0.37 U	0.37 U

Table A-1
October 2023 Groundwater Sampling Results
Exide Technologies - Vernon Site Inspection

Analyte	MCL	Result Units	ET-CB3	ET-MW11D	ET-MW42B	ET-MW12D	ET-MW42A	ET-MW25D	ET-MW26D	ET-MW12	ET-MW14	ET-EB01	ET-EB02	ET-TB01
			Exposition	**Exposition**	**Exposition**	**Exposition**	**Exposition**	**Exposition**	**Exposition**	**Perched**	**Perched**	**Equipment Blank**	**Equipment Blank**	**Trip Blank**
			Upgradient	**Downgradient**	**Duplicate (MW-11D)**	**Background**	**Duplicate (MW-12D)**	**Downgradient**	**Cross-Gradient**	**Background**	**Source**			
			10/25/2023	**10/25/2023**	**10/25/2023**	**10/25/2023**	**10/25/2023**	**10/26/2023**	**10/26/2023**	**10/25/2023**	**10/25/2023**	**10/25/2023**	**10/26/2023**	**10/25/2023**
Chlorobenzene	100	μg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.26 U	0.26 U
Chloroethane		μg/L	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	7.7 U	1.9 U	1.9 U	1.9 U
Chloroform	80	μg/L	1.0 U	**2.1 J**	**2.0 J**	**2.7 J**	**2.8 J**	**2.2 J**	**2.5 J**	0.32 U	4.0 U	**0.82 J**	**0.88 J**	0.85 J
Chloromethane		μg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	8.9 U	2.2 U	2.2 U	2.2 U
cis-1,2-Dichloroethene	70	μg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	**0.53 J**	0.39 U	1.6 U	0.39 U	0.39 U	0.39 U
cis-1,3-Dichloropropene		μg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	0.26 U	0.26 U	0.26 U
Dibromochloromethane	80	μg/L	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	1.5 U	0.37 U	0.37 U	0.37 U
Dibromomethane		μg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.3 U	0.33 U	0.33 U	0.33 U
Dichlorodifluoromethane		μg/L	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	2.5 U	0.62 U	0.62 U	0.62 U
Di-isopropyl ether (DIPE)		μg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.3 U	0.33 U	0.33 U	0.33 U
Ethanol		μg/L	52 U	52 U	52 U	52 U	52 U	52 U	52 U	52 U	210 U	52 U	52 U	52 U
Ethylbenzene	700	μg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.2 U	0.3 U	0.3 U	0.3 U
Ethyl-t-butyl ether (ETBE)		μg/L	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	1.4 U	0.35 U	0.35 U	0.35 U
Isopropylbenzene		μg/L	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	1.7 U	0.41 U	0.41 U	0.41 U
m,p-Xylene		μg/L	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	2 U	0.49 U	0.49 U	0.49 U
Methylene Chloride	8	μg/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	12 U	3 U	3 U	3 U
Methyl-t-Butyl Ether (MTBE)		μg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.2 U	0.3 U	0.3 U	0.3 U
Naphthalene		μg/L	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	20 U	4.9 U	4.9 U	4.9 U
n-Butylbenzene		μg/L	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	2.1 U	0.53 U	0.53 U	0.53 U
N-Propylbenzene		μg/L	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	1.9 U	0.47 U	0.47 U	0.47 U
o-Xylene		μg/L	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	1.1 U	0.27 U	0.27 U	0.27 U
p-Isopropyltoluene		μg/L	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	1.9 U	0.47 U	0.47 U	0.47 U
sec-Butylbenzene		μg/L	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	1.5 U	0.37 U	0.37 U	0.37 U
Styrene	100	μg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	1.5 U	0.38 U	0.38 U	0.38 U
Tert-amyl-methyl ether (TAME)		μg/L	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	1.6 U	0.39 U	0.39 U	0.39 U
tert-Butyl alcohol (TBA)		μg/L	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	11 U	2.7 U	2.7 U	2.7 U
tert-Butylbenzene		μg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	1.5 U	0.38 U	0.38 U	0.38 U
Tetrachloroethene	5	μg/L	0.4 U	**1.7**	**1.8**	**3.8**	**4.2**	**2.1**	**7.7**	0.4 U	1.6 U	0.4 U	0.4 U	0.4 U
Toluene	1000	μg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.2 U	0.3 U	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	μg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	1.7 U	0.42 U	0.42 U	0.42 U
trans-1,3-Dichloropropene		μg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	1.2 U	0.31 U	0.31 U	0.31 U
Trichloroethene	5	μg/L	**1.2**	**21**	**21**	**15**	**15**	**16**	**30**	**5**	**200**	0.39 U	0.39 U	0.39 U
Trichlorofluoromethane		μg/L	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3 U	0.75 U	0.75 U	0.75 U
Vinyl acetate		μg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Vinyl chloride	2	μg/L	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	1.7 U	0.43 U	0.43 U	0.43 U

Table A-1
October 2023 Groundwater Sampling Results
Exide Technologies - Vernon Site Inspection

Analyte	MCL	Result Units	ET-CB3	ET-MW11D	ET-MW42B	ET-MW12D	ET-MW42A	ET-MW25D	ET-MW26D	ET-MW12	ET-MW14	ET-EB01	ET-EB02	ET-TB01
			Exposition	Exposition	Exposition	Exposition	Exposition	Exposition	Exposition	Perched	Perched	Equipment Blank	Equipment Blank	Trip Blank
			Upgradient	Downgradient	Duplicate (MW-11D)	Background	Duplicate (MW-12D)	Downgradient	Cross-Gradient	Background	Source			
			10/25/2023	10/25/2023	10/25/2023	10/25/2023	10/25/2023	10/26/2023	10/26/2023	10/25/2023	10/25/2023	10/25/2023	10/26/2023	10/25/2023
Metals + Mercuty - 6010B + 7470A														
Antimony	0.006	mg/L	0.0255 U	0.0255 U	0.0255 U	0.0255 U	0.0255 U	--	0.0255 U	0.0255 U	0.127 U	0.0255 U	0.0255 U	--
Arsenic	0.01	mg/L	0.0199 U	0.0199 U	0.0199 U	0.0199 U	0.0199 U	--	0.0199 U	0.0199 U	0.0995 U	0.0199 U	0.0199 U	--
Barium	2	mg/L	**0.109**	**0.0258**	**0.0255**	**0.0575**	**0.0564**	--	**0.0676**	**0.0047 J**	**0.015 J**	0.00111 U	0.00111 U	--
Beryllium	0.004	mg/L	0.00127 U	0.00127 U	0.00127 U	0.00127 U	0.00127 U	--	0.00127 U	0.00127 U	**0.0365 J**	0.00127 U	0.00127 U	--
Bismuth		mg/L	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	--	0.0106 U	0.0106 U	0.053 U	0.0106 U	0.0106 U	--
Cadmium	0.005	mg/L	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	--	0.00062 U	0.00062 U	**0.259**	0.00062 U	0.00062 U	--
Chromium	0.1	mg/L	0.00296 U	**0.0076 J**	**0.0072 J**	**0.0093 J**	**0.0092 J**	--	**0.0089 J**	**0.0081 J**	0.0148 U	0.00296 U	0.00296 U	--
Cobalt		mg/L	0.00088 U	0.00088 U	0.00088 U	0.00088 U	0.00088 U	--	0.00088 U	**0.0023 J**	**0.956**	0.00088 U	0.00088 U	--
Copper	1	mg/L	0.00269 U	0.00269 U	0.00269 U	0.00269 U	0.00269 U	--	0.00269 U	0.00269 U	**0.189 J**	0.00269 U	0.00269 U	--
Lead	0.015	mg/L	**0.0064 J**	**0.0098 J**	**0.0074 J**	**0.0066 J**	0.00527 U	--	0.00527 U	0.00527 U	**0.0445 J**	0.00527 U	0.00527 U	--
Mercury	0.002	mg/L	0.000124 U	0.000124 U	0.000124 U	0.000124 U	0.000124 U	--	0.000124 U	0.000124 U	0.000124 U	0.000124 U	0.000124 U	--
Molybdenum		mg/L	**0.0046 J**	**0.0062 J**	**0.0065 J**	**0.0096 J**	**0.0087 J**	--	0.05 U	0.00391 U	0.0196 U	0.00391 U	0.0046 U	--
Nickel		mg/L	**0.0059 J**	0.00307 U	0.00307 U	0.00307 U	0.00307 U	--	0.00307 U	0.00307 U	**1.74**	0.00307 U	0.00307 U	--
Selenium	0.05	mg/L	0.0162 U	0.0162 U	0.0162 U	0.0162 U	0.0162 U	--	0.0162 U	**0.027 J**	0.0812 U	0.0162 U	0.0162 U	--
Silver		mg/L	0.00259 U	0.00259 U	0.00259 U	0.00259 U	0.00259 U	--	0.00259 U	0.00259 U	0.013 U	0.00259 U	0.00259 U	--
Thallium	0.002	mg/L	0.00996 U	0.00996 U	0.00996 U	0.00996 U	0.00996 U	--	0.00996 U	0.00996 U	0.0498 U	0.00996 U	0.00996 U	--
Vanadium		mg/L	**0.0026 J**	**0.0036 J**	**0.0036 J**	**0.0045 J**	**0.0046 J**	--	**0.0053 J**	**0.0046 J**	0.012 U	0.00239 U	0.00239 U	--
Zinc		mg/L	**0.0205 J**	0.0133 U	0.0133 U	0.0133 U	0.0133 U	--	0.0133 U	0.0133 U	**12.6**	0.0133 U	0.0133 U	--

Notes:

MCL = EPA Maximum Contaminant Level

mg/L = milligrams per Liter

µg/L = micrograms per Liter

U = Not detected

J = Estimated

Bold = Analyte detected

Red = Result greater than MCL

Table A-2
Background Soil Sample Results
Exide Technologies - Vernon Site Inspection

Sample ID	Park	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	Percent Moisture
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
HRS Methodology																					
ET-HB1A-01	Hollenbeck	Field	2/17/2023	3.23 U	4.15	188 B	0.621	0.763	25.3	9.72	34.7	88.7	0.862 J	20.2	1.38 U	0.163 U	2.38 U	49.5	370	0.0982	10.6
ET-HB1A-02	Hollenbeck	Field	2/17/2023	3.34 U	4.44	198 B	0.628	9.07	77.2	10.6	84.2	208	1.05 J	22.3	2.15 J	5.01	2.46 U	48.1	311	0.38	14
ET-HB1A-03	Hollenbeck	Field	2/17/2023	3.62 U	2.84 J	200 B	0.507 J	12.8	99.8	9.31	86.6	259	1.33 J	23	1.55 U	6.61	2.67 U	40.7	333	0.432	19.5
ET-HB1A-04	Hollenbeck	Field	2/17/2023	3.22 U	3.87	179 B	0.662	0.662	27.4	12.2	51	94.6	0.774 J	22.3	1.63 J	0.162 U	2.37 U	52.3	142	0.0884 J	10.8
ET-HB1A-05	Hollenbeck	Field	2/17/2023	3.15 U	4.3	189 B	0.565	3.81	45.7	9.4	56.6	111	0.979 J	20.7	1.35 U	2.12	2.32 U	44.9	179	0.251	9.79
ET-HB1B-01	Hollenbeck	Field	2/17/2023	3.55 U	4.95	170 B	0.42 J	3.75	40.7	7.9	51.7	210	1.32 J	17.2	1.52 U	2.55	2.62 U	37.3	209	0.231	18.8
ET-HB1B-02	Hollenbeck	Field	2/17/2023	3.64 U	1.98 J	162 B	0.446 J	5.98	57	8.67	57.8	156	1.12 J	18.2	1.56 U	3.25	2.69 U	39.5	242	0.356	20
ET-HB7A-06	Hollenbeck	Duplicate	2/17/2023	3.59 U	4.31	182	0.566 J	5.66	51.4	10.3	55.1	128	1.05 J	20.1	1.54 U	2.53	2.65 U	46	223	0.355	21.3
ET-HB1B-03	Hollenbeck	Field	2/17/2023	3.47 U	3.99	166 B	0.471 J	5.01	43.3	6.88	44.8	137	2.93	21.9	1.48 U	2.35	2.56 U	38.1	173	0.269	18.9
ET-HB1B-04	Hollenbeck	Field	2/17/2023	3.64 U	1.77 U	147 B	0.35 J	8.49	69.8	6.1	62.8	144	1.08 J	18.8	1.56 U	5.08	2.68 U	28.8	230	0.364	20.7
ET-HB1B-05	Hollenbeck	Field	2/17/2023	3.65 U	3.78 J	172 B	0.287 J	15.6	116	5.09	79.9	192	1.25 J	18.2	1.56 U	8.86	2.69 U	25.7	326	0.546	20.1
ET-HB1C-01	Hollenbeck	Field	2/17/2023	3.26 U	4.55	144	0.399 J	6.53	37.8	7.67	57.2	205	1.05 J	24.4	1.39 U	2.14 B	2.4 U	30.8	246	0.23	10.5
ET-HB1C-02	Hollenbeck	Field	2/17/2023	3.15 U	3.5	122	0.386 J	2.4	25.1	7.12	29.3	89.1	0.73 J	18.5	1.35 U	1.03 J B	2.32 U	29.3	112	0.195	8.37
ET-HB1C-03	Hollenbeck	Field	2/17/2023	3.26 U	3.1 J	142	0.385 J	5	43.2	7.68	55.4	164	0.684 J	17.7	1.39 U	1.85 B	2.4 U	30.9	212	0.197	11.8
ET-HB1C-04	Hollenbeck	Field	2/17/2023	3.18 U	3.34	102	0.306 J	1.75	20.9	5.05	30.5	108	0.573 U	13.5	1.36 U	0.403 J B	2.34 U	24.7	116	0.125	8.78
ET-HB1C-05	Hollenbeck	Field	2/17/2023	3.16 U	1.54 U	128	0.345 J	2.55	26.8	5.63	42.6	159	0.663 J	17.7	1.35 U	1.04 J B	2.33 U	27.8	197	0.19	8.53
ET-HB2A-01	Obregon	Field	2/21/2023	3.16 U	2.96 J	107	0.346 J	0.359 J	11.2	4.86	14.6	26.2	0.569 U	9.22	1.35 U	0.159 U	2.33 U	22.7	68.4	0.122	10.9
ET-HB2A-02	Obregon	Field	2/21/2023	3.04 U	2.08 J	83.2	0.386 J	0.186 J	11	4.69	15.7	35.1	0.549 U	10.7	1.3 U	0.153 U	2.24 U	25.2	71.2	0.118	7.07
ET-HB2A-03	Obregon	Field	2/21/2023	3.07 U	2.11 J	97.6	0.43 J	0.242 J	14.1	5.83	20.8	56.6	0.631 J	11.5	1.31 U	0.155 U	2.26 U	28.1	106	0.0763 J	6.91
ET-HB7A-08	Obregon	Duplicate	2/21/2023	3.1 U	2.89 J	98.1	0.406 J	0.23 J	14	6.18	22.2	55.7	0.759 J	11.5	1.32 U	0.156 U	2.28 U	28	110	0.0808 J	6.34
ET-HB2A-04	Obregon	Field	2/21/2023	3.11 U	2.53 J	121	0.504 J	0.504 J	17.8	7.12	39.9	91.2	0.926 J	12.3	1.33 U	0.157 U	2.3 U	33.9	174	0.258	6.84
ET-HB2A-05	Obregon	Field	2/21/2023	3.03 U	2.19 J	105	0.371 J	0.358 J	18.4	5.5	25.4	75.8	0.546 U	13.8	1.3 U	0.153 U	2.23 U	25.9	134	0.112	6.67
ET-HB2B-01	Obregon	Field	2/21/2023	3.37 U	5.08	168	0.635	0.428 J	20.3	8.28	33	94.2	0.768 J	15	1.44 U	0.17 U	2.49 U	42.5	153	0.152	14
ET-HB2B-02	Obregon	Field	2/21/2023	3.1 U	1.51 U	55.2	0.257 J	0.178 U	7.36	3.2	10.9	24.3	0.558 U	5.18	1.32 U	0.156 U	2.28 U	15.1	44.9	0.08 J	8.65
ET-HB2B-03	Obregon	Field	2/21/2023	3.11 U	1.52 U	58.7	0.286 J	0.191 J	8.61	3.53	10.4	27.9	0.561 U	6.51	1.33 U	0.157 U	2.3 U	16.6	55.8	0.12	6.38
ET-HB2B-04	Obregon	Field	2/21/2023	3.34 U	1.83 J	81.2	0.292 J	0.292 J	9.55	4.02	18.4	49.3	0.905 J	10.3	1.43 U	0.168 U	2.46 U	17.8	89.6	0.139	12.7
ET-HB2B-05	Obregon	Field	2/21/2023	3.21 U	1.56 U	119	0.632	0.184 U	17.2	6.91	15.5	24.1	0.579 U	10.2	1.37 U	0.162 U	2.37 U	37.6	70.5	0.112	11.1
ET-HB2C-01	Obregon	Field	2/21/2023	3.14 U	2.7 J	121	0.495 J	0.385 J	17.8	7.48	22.5	39.8	0.908 J	16.5	1.34 U	0.158 U	2.32 U	35.6	94.5	0.0855 J	9.57
ET-HB2C-02	Obregon	Field	2/21/2023	3.17 U	2.86 J	102	0.416 J	0.902	21.7	6.23	21.9	40.3	0.694 J	14.1	1.36 U	0.16 U	2.34 U	29.9	296	0.15	8.04
ET-HB7A-09	Obregon	Duplicate	2/21/2023	3.13 U	2.51 J	120	0.535 J	0.932	26.3	8.32	25	45.5	0.658 J	16	1.34 U	0.158 U	2.31 U	36	337	0.14	8.38
ET-HB2C-03	Obregon	Field	2/21/2023	3.15 U	3.18 J	130	0.592	0.234 J	19.5	8.4	21.1	32.4	0.744 J	12.6	1.35 U	0.159 U	2.32 U	40.8	105	0.0926	9.7
ET-HB2C-04	Obregon	Field	2/21/2023	3.2 U	4.02	186	0.7	0.21 J	20.2	11.1	22.4	32.2	0.995 J	15.4	1.37 U	0.161 U	2.36 U	46.6	105	0.0724 J	10.8
ET-HB2C-05	Obregon	Field	2/21/2023	3.24 U	3.17 J	140	0.511 J	0.326 J	17.2	7.42	24.2	51.1	0.852 J	11.4	1.39 U	0.164 U	2.39 U	34	146	0.101	11
ET-HB3A-01	Ashiya	Field	2/20/2021	3.11 U	2.96 J	114	0.503 J	0.367 J	20.5	7.63	36.5	143	0.626 J	12.3	1.33 U	0.157 U	2.29 U	33.8	146	0.0646 J	6.69
ET-HB3A-02	Ashiya	Field	2/20/2021	4.19 U	3.91 J	147	0.881	0.241 U	34	10.2	34.5	113	0.756 U	20.5	1.79 U	0.211 U	3.09 U	61.2	159	0.119 J	31.2
ET-HB7A-07	Ashiya	Duplicate	2/20/2021	4.1 U	5.01	137	0.808	0.305 J	30	8.91	35	138	0.808 J	19.1	1.76 U	0.207 U	3.02 U	54	189	0.205	29.3
ET-HB3A-03	Ashiya	Field	2/20/2021	3.14 U	4.56	96.1	0.399 J	0.412 J	18.1	6.83	35.6	222	1.14 J	25.4	1.34 U	0.158 U	2.32 U	30.2	203	0.139	9.04
ET-HB3A-04	Ashiya	Field	2/20/2021	3.87 U	2.88 J	98.5	0.356 J	0.406 J	19.8	5.66	30.1	172	0.999 J	13.2	1.66 U	0.195 U	2.85 U	26.4	183	0.152	27.3
ET-HB3A-05	Ashiya	Field	2/20/2021	3.34 U	4.7	129	0.467 J	0.511 J	24.3	16.2	34.9	162	1.15 J	18.1	1.43 U	0.168 U	2.46 U	34	191	0.297	16.1
ET-HB3B-01	Ashiya	Field	2/20/2021	4.35 U	2.12 U	70.1 B	0.4 J	0.25 U	10.2	3.96	21.3	49.6	1.58 J	8.38	1.86 U	0.219 U	3.21 U	28.8	86.8	0.131	34.7
ET-HB3B-02	Ashiya	Field	2/20/2021	3.82 U	3.09 J	86.9 B	0.468 J	0.219 U	15.5	6.51	19.1	25.5	0.852 J	12.5	1.63 U	0.192 U	2.81 U	33	68	0.107 J	24.4
ET-HB3B-03	Ashiya	Field	2/20/2021	3.23 U	1.57 U	37 B	0.226 J	0.186 U	7.85	3.55	8.69	19.9	0.863 J	7.57	1.38 U	0.163 U	2.38 U	19	38.1	0.0844 J	10.3
ET-HB3B-04	Ashiya	Field	2/20/2021	3.27 U	1.59 U	73.5 B	0.443 J	0.188 U	12.8	5.32	15.4	29.6	0.589 U	11.5	1.4 U	0.165 U	2.41 U	29.8	74.6	0.105	11.7
ET-HB3B-05	Ashiya	Field	2/20/2021	3.28 U	1.59 U	38.8 B	0.229 J	0.188 U	6.99	2.74	8.54	18.6	0.59 U	7.12	1.4 U	0.165 U	2.41 U	16.4	38.1	0.103	13.6
ET-HB3C-01	Ashiya	Field	2/20/2021	3.2 U	1.56 U	102 B	0.602	0.184 U	19	7.64	25.9	35.2	0.577 U	16.6	1.37 U	0.161 U	2.36 U	40.2	75.6	0.0935 J	10.2
ET-HB3C-02	Ashiya	Field	2/20/2021	3.11 U	1.53 J	80.1 B	0.463 J	0.259 J	14.8	6.38	23.2	28.2	0.561 U	10.5	1.33 U	0.157 U	2.3 U	34.7	63.9	0.0335 U	6.37
ET-HB3C-03	Ashiya	Field	2/20/2021	3.11 U	2.01 J	82.6 B	0.421 J	0.353 J	11.8	5.14	22.4	90.7	0.56 U	9.54	1.33 U	0.157 U	2.29 U	26.6	129	0.139	8.46
ET-HB3C-04	Ashiya	Field	2/20/2021	3.54 U	3.84	116 B	0.665	0.203 U	19.4	9.03	26.2	38.7	0.727 J	14	1.51 U	0.178 U	2.61 U	43.3	104	0.0408 U	20
ET-HB3C-05	Ashiya	Field	2/20/2021	3.02 U	1.78 J	95 B	0.476 J	0.173 U	13.7	6.65	19.8	35.9	0.545 U	23.7	1.29 U	0.152 U	2.23 U	30.4	105	0.106	5.43
ET-HB4A-01	John Anson Ford	Field	2/16/2023	4.51 U	4.42 J	127	0.375 J	0.259 U	23.9	9.54	34.7	38.1	0.812 U	20	1.93 U	0.227 U	3.32 U	40.7	131	0.0669 J	37.2
ET-HB4A-02	John Anson Ford	Field	2/16/2023	4.02 U	5.03	92.6	0.282 J	0.231 U	18.1	7.64	26.3	61.1	0.725 U	17.6	1.72 U	0.203 U	2.97 U	32.6	172	0.0654 J	27.9
ET-HB4A-03	John Anson Ford	Field	2/16/2023	4.15 U	5.14	102	0.309 J	0.345 J	20	8.1	30.1	106	0.748 U	18.2	1.77 U	0.209 U	3.06 U	33.5	177	0.0941 J	30.5
ET-HB7A-04	John Anson Ford	Duplicate	2/16/2023	4.22 U	2.83 J	99.6	0.351 J	0.351 J	25.1	8.33	32.2	112	0.761 U	24	1.81 U	0.213 U	3.11 U	35.5	199	0.0843 J	33.3

Table A-2
Background Soil Sample Results
Exide Technologies - Vernon Site Inspection

Sample ID	Park	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	Percent Moisture
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
ET-HB4A-04	John Anson Ford	Field	2/16/2023	4.13 U	4.21 J	104	0.289 J	0.237 U	19.1	7.77	32.1	80.4	0.744 U	19.7	1.77 U	0.208 U	3.04 U	31.7	188	0.0856 J	30.8
ET-HB4A-05	John Anson Ford	Field	2/16/2023	3.7 U	4.02	92.4	0.275 J	0.213 U	17.5	7.37	25	47.3	0.668 U	20.8	1.58 U	0.187 U	2.73 U	31.7	242	0.0459 J	22.9
ET-HB4B-01	John Anson Ford	Field	2/16/2023	4 U	2.92 J	108	0.28 J	0.23 U	18.2	7.53	26.3	34	0.721 U	14.7	1.71 U	0.202 U	2.95 U	31.4	102	0.053 J	27.1
ET-HB4B-02	John Anson Ford	Field	2/16/2023	3.96 U	3.78 J	95.6	0.277 J	0.228 U	17.1	7.25	24.2	28.8	0.715 U	15.6	1.7 U	0.2 U	2.92 U	30	92	0.0427 U	26.5
ET-HB4B-03	John Anson Ford	Field	2/16/2023	3.79 U	2.95 J	91.2	0.332 J	0.217 U	16.7	7.09	24.9	32.4	0.878 J	16.2	1.62 U	0.191 U	2.79 U	30.1	113	0.0538 J	24.2
ET-HB4B-04	John Anson Ford	Field	2/16/2023	3.95 U	3.35 J	103	0.345 J	0.259 J	18	7.51	27.1	44.6	0.712 U	15.6	1.69 U	0.199 U	2.91 U	32.4	127	0.106 J	28.7
ET-HB4B-05	John Anson Ford	Field	2/16/2023	3.92 U	4.85	118	0.412 J	0.309 J	21.5	9.01	32.1	52	0.707 U	19.4	1.68 U	0.198 U	2.89 U	39.4	142	0.0702 J	28.2
ET-HB7A-05	John Anson Ford	Duplicate	2/16/2023	4.02 U	3.32 J	95.3	0.352 J	0.264 J	18.2	7.39	25.8	40.6	0.724 U	15.7	1.72 U	0.203 U	2.96 U	33.9	112	0.0928 J	28.9
ET-HB4C-01	John Anson Ford	Field	2/16/2023	4.26 U	2.7 J	94.1	0.336 J	0.245 U	17	7.33	23.9	25.9	0.768 U	14.5	1.82 U	0.215 U	3.14 U	31.7	95.5	0.0487 U	34.3
ET-HB4C-02	John Anson Ford	Field	2/16/2023	3.79 U	3.38 J	112	0.348 J	0.332 J	19.9	7.46	33.7	51.8	0.796 J	18.5	1.62 U	0.191 U	2.79 U	33.4	153	0.107 J	23.5
ET-HB4C-03	John Anson Ford	Field	2/16/2023	3.99 U	2.32 J	90.5	0.297 J	0.28 J	15.2	6.32	26.7	40.3	0.72 U	18.6	1.71 U	0.201 U	2.94 U	27.4	396	0.0856 J	29.2
ET-HB4C-04	John Anson Ford	Field	2/16/2023	3.67 U	3.24 J	97.5	0.321 J	0.385 J	16.9	6.92	29.1	56.1	0.661 U	18.9	1.57 U	0.185 U	2.7 U	30.7	138	0.0552 J	21.3
ET-HB4C-05	John Anson Ford	Field	2/16/2023	3.74 U	3.73 J	87.5	0.295 J	0.229 J	14.9	6.63	23.8	30.3	0.674 U	15.1	1.6 U	0.189 U	2.76 U	28.9	152	0.0465 J	23.6
ET-HB5A-01	Lueders	Field	2/14/2023	3.69 U	5.07	157 B	0.323 J	0.872	21.9	7.28	46.8	719	2.15 J	24.6	1.58 U	0.186 U	2.72 U	34.2	301	0.161	21
ET-HB5A-02	Lueders	Field	2/14/2023	3.73 U	5	149 B	0.343 J	0.555 J	20.3	8.07	35.4	445	1.4 J	25.9	1.6 U	0.188 U	2.75 U	37.7	217	0.0946 J	23.1
ET-HB5A-03	Lueders	Field	2/14/2023	4.07 U	4.38	177 B	0.409 J	0.8	24.4	9.07	41.5	551	1.42 J	19.7	1.74 U	0.205 U	3 U	40.9	251	0.117 J	29
ET-HB5A-04	Lueders	Field	2/14/2023	3.53 U	6.97	170 B	0.387 J	0.758	23.4	8.95	38.6	589	1.58 J	21.8	1.51 U	0.178 U	2.61 U	39.8	232	0.203	18.4
ET-HB5A-05	Lueders	Field	2/14/2023	3.35 U	4.09	129 B	0.293 J	0.572 J	18.7	6.92	36.5	398	1.07 J	19.6	1.43 U	0.169 U	2.47 U	31.3	214	0.101	14.7
ET-HB5B-01	Lueders	Field	2/14/2023	3.84 U	3.09 J	140 B	0.353 J	0.303 J	18.6	8.2	37.4	56.8	1.28 J	20.2	1.64 U	0.194 U	2.83 U	36.8	154	0.0983 J	25.2
ET-HB5B-02	Lueders	Field	2/14/2023	3.44 U	3.7	132 B	0.376 J	0.197 U	18.9	8.58	28.3	33.5	0.828 J	22.6	1.47 U	0.173 U	2.53 U	37.9	89.4	0.0755 J	15.2
ET-HB5B-03	Lueders	Field	2/14/2023	3.55 U	2.55 J	120 B	0.342 J	0.233 J	17.5	7.34	24.1	30.5	0.64 U	19.6	1.52 U	0.179 U	2.62 U	33.1	97.1	0.0649 J	19.6
ET-HB5B-04	Lueders	Field	2/14/2023	4.09 U	2.85 J	146 B	0.376 J	0.448 J	22.1	8.36	37.3	87.6	0.738 U	16.3	1.75 U	0.206 U	3.02 U	38.1	150	0.0818 J	30.2
ET-HB5B-05	Lueders	Field	2/14/2023	4.25 U	4.5	180 B	0.372 J	0.521 J	21.7	8	37.6	74	0.949 J	17.9	1.82 U	0.214 U	3.14 U	36.6	170	0.121 J	32.5
ET-HB7A-01	Lueders	Duplicate	2/14/2023	4.04 U	5.22	173	0.336 J	0.389 J	19.5	7.59	37.4	279 B	0.849 J	15.6	1.98 J	0.204 U	2.98 U	33.9	156	0.111 J	28.3
ET-HB5C-01	Lueders	Field	2/14/2023	3.85 U	2.44 J	136 B	0.337 J	0.27 J	18.4	8.03	23.7	32.3	0.826 J	16.7	1.65 U	0.194 U	2.84 U	35.2	97.6	0.0609 J	25.1
ET-HB5C-02	Lueders	Field	2/14/2023	3.91 U	3.69 J	135 B	0.308 J	0.444 J	17.2	7.09	25.4	39	0.704 U	24.8	1.67 U	0.197 U	2.88 U	32.6	201	0.0803 J	25.4
ET-HB5C-03	Lueders	Field	2/14/2023	3.46 U	5.32	126 B	0.302 J	0.318 J	16.8	7.15	25.3	56.9	0.623 U	19.8	1.48 U	0.174 U	2.55 U	32.3	113	0.119	16.1
ET-HB5C-04	Lueders	Field	2/14/2023	3.93 U	1.91 U	110 B	0.258 J	0.258 J	18.2	6.5	18.9	35.9	0.709 U	13.8	1.68 U	0.198 U	2.9 U	30.4	82.8	0.0896 J	26.6
ET-HB5C-05	Lueders	Field	2/14/2023	4.03 U	5.47	139	0.353 J	0.247 J	18.6	8.57	23.6	31.2 B	0.727 U	13.8	1.72 U	0.203 U	2.97 U	36.7	97.5	0.0737 J	28.1
ET-HB6A-01	Burrell McDonald	Field	2/15/2023	3.91 U	3.35 J	171 B	0.616 J	0.377 J	24	10	38.9	38.9	0.839 J	21.6	1.67 U	0.197 U	2.88 U	42.1	168	0.0624 J	25.5
ET-HB7A-02	Burrell McDonald	Duplicate	2/15/2023	3.69 U	4.62	180	0.711	0.275 J	27.2	12.2	46	38.2 B	0.856 J	42.8	1.63 J	0.186 U	2.72 U	49.5	156	0.0533 J	22.6
ET-HB6A-02	Burrell McDonald	Field	2/15/2023	3.47 U	3.11 J	147 B	0.47 J	0.243 J	18.8	7.77	25.4	30.7	0.683 J	20.1	1.48 U	0.175 U	2.56 U	35.3	105	0.058 J	17.2
ET-HB6A-03	Burrell McDonald	Field	2/15/2023	3.63 U	5.84	187 B	0.698	0.254 J	26.6	11.8	41	61.5	0.841 J	25	1.55 U	0.183 U	2.67 U	49.9	234	0.0514 J	20
ET-HB6A-04	Burrell McDonald	Field	2/15/2023	3.32 U	3.43 J	110 B	0.406 J	0.261 J	17.6	7.42	23.4	35	0.682 J	25.3	1.42 U	0.167 U	2.45 U	32.7	119	0.0616 J	14.3
ET-HB6A-05	Burrell McDonald	Field	2/15/2023	3.48 U	5.1	117	0.548 J	0.259 J	23.8	10.6	31.9	53.9 B	0.792 J	17.6	1.49 U	0.175 U	2.57 U	44.7	248	0.0822 J	16.2
ET-HB6B-01	Burrell McDonald	Field	2/15/2023	3.32 U	5.2	204	0.726	0.261 J	25.9	13.3	29.7	30.3	0.871 J	21.9	1.42 U	0.167 U	2.45 U	52.6	76.9	0.0459 J	13.9
ET-HB7A-03	Burrell McDonald	Duplicate	2/15/2023	3.39 U	4.21	180 B	0.668	0.267 J	25	11.3	29.4	30.2	0.89 J	21.3	1.45 U	0.171 U	2.5 U	48.7	83.3	0.0596 J	16.2
ET-HB6B-02	Burrell McDonald	Field	2/15/2023	3.85 U	6.09	166 B	0.639 J	0.221 U	24.7	9.83	30.7	32.6	0.909 J	20.4	1.65 U	0.194 U	2.84 U	46.8	98.3	0.0464 J	24.6
ET-HB6B-03	Burrell McDonald	Field	2/15/2023	3.74 U	6.95	153	0.557 J	0.215 U	23.3	9.62	27.7	19.8	0.77 J	22	1.6 U	0.189 U	2.76 U	42.2	84	0.0569 J	22.5
ET-HB6B-04	Burrell McDonald	Field	2/15/2023	3.75 U	3.38 J	127	0.476 J	0.216 U	20.4	8.76	27.5	40.6	0.677 U	17.8	1.61 U	0.189 U	2.77 U	38.7	124	0.0664 J	23.1
ET-HB6B-05	Burrell McDonald	Field	2/15/2023	3.57 U	3.64 J	203	0.687	0.205 U	25.4	11.4	29.8	31	0.812 J	20.9	1.53 U	0.18 U	2.63 U	49.7	87.5	0.065 J	18.3
ET-HB6C-01	Burrell McDonald	Field	2/15/2023	3.45 U	5.59	130	0.574 J	0.332 J	21.6	10.5	30.6	120 B	0.997 J	19.5	1.48 U	0.174 U	2.54 U	41.8	227	0.0418 J	16.8
ET-HB6C-02	Burrell McDonald	Field	2/15/2023	3.42 U	4.4	165	0.749	0.24 J	26.9	13	31	28.2 B	0.644 J	22.6	1.46 U	0.172 U	2.52 U	50.8	98.4	0.0431 J	15.7
ET-HB6C-03	Burrell McDonald	Field	2/15/2023	3.57 U	7.94	172	0.656	0.375 J	26.5	10.9	33.6	47.8 B	0.644 U	24.3	1.53 U	0.18 U	2.63 U	49.1	238	0.0616 J	18.4
ET-HB6C-04	Burrell McDonald	Field	2/15/2023	3.43 U	3.91	161	0.629	0.3 J	23.6	11	31.3	36.7 B	0.617 U	21.9	1.46 U	0.173 U	2.52 U	44	1090	0.0478 J	15.3
ET-HB6C-05	Burrell McDonald	Field	2/15/2023	3.57 U	6.17	177	0.672	0.328 J	27.2	12.3	42.3	48.9 B	0.953 J	23	1.53 U	0.18 U	2.63 U	50.8	364	0.066 J	19.6
ISM Methodology																					
ET-IB1A-01	Hollenbeck	Field	2/17/2023	2.86 U	5.01	207	0.488 J	7.11	69.2	9.53	76	266	1.71 J	23	1.22 U	4.31	2.11 U	41.6	319	0.452	15.9
ET-IB1A-02	Hollenbeck	Duplicate	2/17/2023	2.86 U	3.48	206	0.488 J	7.36	73.6	9.19	107	270	1.44 J	22.2	1.22 U	4.31	2.11 U	41.3	298	0.423	15.5
ET-IB1A-03	Hollenbeck	Triplicate	2/17/2023	2.86 U	4.3	210	0.488 J	4.76	53.6	9.29	68.5	226	1.45 J	23.9	1.22 U	2.75	2.11 U	40.9	482	0.357	14.7
ET-IB1B-01	Hollenbeck	Field	2/17/2023	2.86 U	3.8	163	0.363 J	4.76	47.1	7.31	56.5	134	1.35 J	23.1	1.22 U	2.75	2.11 U	33	208	0.354	17.6
ET-IB1B-02	Hollenbeck	Duplicate	2/17/2023	2.86 U	3.45	181	0.388 J	6.96	61.9	7.91	63.2	144	1.34 J	19.4	1.22 U	3.96	2.11 U	33.4	232	0.451	18.9
ET-IB1B-03	Hollenbeck	Triplicate	2/17/2023	2.86 U	2.83 J	170	0.4 J	5.05	50.2	7.96	63	139	1.39 J	48.7	1.22 U	2.9	2.11 U	34.3	291	0.378	19.4
ET-IB1C-01	Hollenbeck	Field	2/17/2023	2.86 U	4.9	150	0.363 J	3	35	6.78	52.1	186	0.975 J	31	1.22 U	1.43 J	2.11 U	32.4	204	0.237	8.46

Table A-2
Background Soil Sample Results
Exide Technologies - Vernon Site Inspection

Sample ID	Park	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	Percent Moisture
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
ET-IB1C-02	Hollenbeck	Duplicate	2/17/2023	2.86 U	3.79	145	0.35 J	3.4	36.5	6.19	49.2	183	1.29 J	27.8	1.22 U	1.8	2.11 U	30.6	214	0.207	7.82
ET-IB1C-03	Hollenbeck	Triplicate	2/17/2023	2.86 U	5.4	155	0.375 J	3.59	39.1	6.89	121	315	0.988 J	26.1	1.22 U	1.86	2.11 U	33.2	204	0.224	8.49
ET-IB2A-01	Obregon	Field	2/21/2023	2.86 U	3.08	142	0.5	0.4 J	20	7.88	30.8	89.9	0.763 J	15	1.22 U	0.144 U	2.11 U	36.9	167	0.148	7.19
ET-IB2A-02	Obregon	Duplicate	2/21/2023	2.86 U	2.4 J	135	0.5	0.4 J	20	7.91	31.8	76.9	0.975 J	14.9	1.22 U	0.144 U	2.11 U	37.5	162	0.13	8.35
ET-IB2A-03	Obregon	Triplicate	2/21/2023	2.86 U	3.3	143	0.525	0.388 J	20.3	8.21	31.9	94	0.85 J	18.4	1.22 U	0.144 U	2.11 U	39.2	167	0.119	7.8
ET-IB2B-01	Obregon	Field	2/21/2023	2.86 U	3.11	147	0.488 J	0.363 J	18.5	7.68	31.7	85.8	0.738 J	20.7	1.22 U	0.144 U	2.11 U	35.6	148	0.143	12.3
ET-IB2B-02	Obregon	Duplicate	2/21/2023	2.86 U	3.3	154	0.475 J	0.313 J	17.5	7.38	28.8	82.7	0.8 J	17.6	1.22 U	0.144 U	2.11 U	33.6	143	0.119	12.6
ET-IB2B-03	Obregon	Triplicate	2/21/2023	2.86 U	3.29	143	0.488 J	0.325 J	17.9	7.68	29.5	82.6	0.825 J	14.7	1.22 U	0.144 U	2.11 U	35.3	141	0.117	12.6
ET-IB2C-01	Obregon	Field	2/21/2023	2.86 U	3.24	141	0.563	0.35 J	20.5	9.11	28.6	78.7	0.75 J	19.6	1.22 U	0.144 U	2.11 U	40.4	165	0.0944 J	12.9
ET-IB2C-02	Obregon	Duplicate	2/21/2023	2.86 U	3.79	139	0.55	0.588	22.7	8.91	30.1	58.4	0.838 J	18.2	1.22 U	0.144 U	2.11 U	38.9	178	0.111	13.5
ET-IB2C-03	Obregon	Triplicate	2/21/2023	2.86 U	3.75	142	0.538	0.488 J	20.5	8.68	31	59.5	0.863 J	15.6	1.22 U	0.144 U	2.11 U	38.8	189	0.102	12.8
ET-IB3A-01	Ashiya	Field	2/20/2021	2.86 U	4.55	125 B	0.513	0.463 J	24.5	8.09	42.6	211	1.39 J	23.9	1.22 U	0.144 U	2.11 U	40	204	0.21	16.4
ET-IB3A-02	Ashiya	Duplicate	2/20/2021	2.86 U	3.96	134 B	0.55	0.4 J	25.8	8.38	42.4	180	1.21 J	23.1	1.22 U	0.144 U	2.11 U	42.3	187	0.145	16.7
ET-IB3A-03	Ashiya	Triplicate	2/20/2021	2.86 U	4.64	140 B	0.563	0.475 J	25.6	8.65	45.2	179	1.25 J	21.3	1.22 U	0.144 U	2.11 U	42.7	203	0.156	13.5
ET-IB3B-01	Ashiya	Field	2/20/2021	2.86 U	3.2	91.3 B	0.413 J	0.164 U	15.6	6.26	21	37.9	0.775 J	19.4	1.22 U	0.144 U	2.11 U	36.8	83.6	0.138	18.5
ET-IB3B-02	Ashiya	Duplicate	2/20/2021	2.86 U	3.26	97.8 B	0.475 J	0.164 U	17.5	6.56	27.5	56.7	1.13 J	14.4	1.51 J	0.144 U	2.11 U	39.6	109	0.197	21.5
ET-IB3B-03	Ashiya	Triplicate	2/20/2021	2.86 U	2.79 J	103 B	0.438 J	0.164 U	16.6	6.55	23.4	44.8	0.938 J	14.7	1.22 U	0.144 U	2.11 U	37.4	96.2	0.138	21.4
ET-IB3C-01	Ashiya	Field	2/20/2021	2.86 U	3.94	113 B	0.55	0.325 J	20	7.88	39.1	66.7	0.713 J	16.8	1.22 U	0.144 U	2.11 U	41.2	165	0.182	8.28
ET-IB3C-02	Ashiya	Duplicate	2/20/2021	2.86 U	4.06	115 B	0.55	0.3 J	20	7.99	43.5	62.7	0.613 J	14.7	1.22 U	0.144 U	2.11 U	42.1	162	0.172	9.17
ET-IB3C-03	Ashiya	Triplicate	2/20/2021	2.86 U	3.43	109 B	0.563	0.325 J	20.5	8.36	35.5	110	0.7 J	18.1	1.22 U	0.144 U	2.11 U	42.4	201	0.184	13.1
ET-IB4A-01	John Anson Ford	Field	2/16/2023	2.86 U	3.79	99	0.288 J	0.3 J	19.2	8.33	29.6	79.3	0.515 U	17	1.22 U	0.144 U	2.21 J	34.1	178	0.0844 J	20.7
ET-IB4A-02	John Anson Ford	Duplicate	2/16/2023	2.86 U	3.79	104	0.3 J	0.164 U	19.3	8.51	28.9	61.8	0.515 U	17.5	1.22 U	0.144 U	2.99 J	35.2	185	0.0615 J	28.2
ET-IB4A-03	John Anson Ford	Triplicate	2/16/2023	2.86 U	3.83	99.5	0.3 J	0.225 J	18.6	8.19	29	56	0.515 U	16.3	1.22 U	0.144 U	2.35 J	33.6	200	0.0626 J	23.9
ET-IB4B-01	John Anson Ford	Field	2/16/2023	2.86 U	3.06	120	0.3 J	0.238 J	18.8	8.1	28	51.4	0.525 J	17	1.22 U	0.144 U	2.11 U	33.9	126	0.0923 J	18.2
ET-IB4B-02	John Anson Ford	Duplicate	2/16/2023	2.86 U	4.04	115	0.288 J	0.25 J	18.5	7.89	28.2	45.3	0.613 J	17	1.22 U	0.144 U	2.11 U	33.5	134	0.0756 J	20
ET-IB4B-03	John Anson Ford	Triplicate	2/16/2023	2.86 U	3.53	101	0.263 J	0.164 U	17	7.43	26.2	51.6	0.638 J	18.3	1.22 U	0.144 U	2.11 U	31	112	0.0658 J	16.7
ET-IB4C-01	John Anson Ford	Field	2/16/2023	2.86 U	3.3	101	0.263 J	0.25 J	16.9	7.29	29	48.1	0.515 U	15.4	1.22 U	0.144 U	2.11 U	31.2	121	0.0687 J	25.6
ET-IB4C-02	John Anson Ford	Duplicate	2/16/2023	2.86 U	3.8	105	0.275 J	0.25 J	17.6	7.56	29.4	51.6	0.638 J	16.6	1.22 U	0.144 U	2.11 U	31.5	126	0.0794 J	22.9
ET-IB4C-03	John Anson Ford	Triplicate	2/16/2023	2.86 U	3.15	106	0.263 J	0.2 J	16.6	7.23	51.2	210	0.538 J	16.4	1.22 U	0.144 U	2.11 U	30.7	129	0.0532 J	23.1
ET-IB5A-01	Lueders	Field	2/14/2023	2.86 U	4.88	159	0.325 J	0.775	22.4	8.3	39.2	556	1.49 J	21.1	1.22 U	0.144 U	2.56 J	37.5	248	0.135	26.8
ET-IB5A-02	Lueders	Duplicate	2/14/2023	2.86 U	3.6	160	0.325 J	0.725	22.1	8.35	37.5	499	1.41 J	20.2	1.22 U	0.144 U	2.91 J	37.6	235	0.126	32.2
ET-IB5A-03	Lueders	Triplicate	2/14/2023	2.86 U	4.05	162	0.325 J	0.775	22.6	8.33	41.2	559	1.63 J	22.9	1.44 J	0.144 U	2.28 J	36.8	251	0.128	26.5
ET-IB5B-01	Lueders	Field	2/14/2023	2.86 U	2.91 J	137	0.338 J	0.325 J	18.8	8.11	31.9	55.3	1 J	17.8	1.51 J	0.144 U	2.43 J	36.2	139	0.0779 J	22.5
ET-IB5B-02	Lueders	Duplicate	2/14/2023	2.86 U	2.84 J	138	0.338 J	0.363 J	18.9	8.21	32	56.2	1.08 J	16.5	1.22 U	0.144 U	2.43 J	36.3	126	0.0861 J	28.1
ET-IB5B-03	Lueders	Triplicate	2/14/2023	2.86 U	2.95 J	139	0.338 J	0.338 J	18.8	8.09	32.4	55.3	0.963 J	17	1.22 U	0.144 U	2.21 J	36.4	126	0.102 J	32.8
ET-IB5C-01	Lueders	Field	2/14/2023	2.86 U	5.2	174	0.325 J	0.263 J	18.3	8.13	24.4	38.1	0.875 J	16.9	1.22 U	0.144 U	2.79 J	37.1	116	0.0954 J	31.8
ET-IB5C-02	Lueders	Duplicate	2/14/2023	2.86 U	5.14	180	0.325 J	0.3 J	17.8	8	23.5	37.2	0.788 J	15.2	1.22 U	0.144 U	2.7 J	35.9	117	0.0827 J	29
ET-IB5C-03	Lueders	Triplicate	2/14/2023	2.86 U	5.3	171	0.338 J	0.288 J	19.4	8.33	25.5	37.9	0.875 J	15.2	1.22 U	0.144 U	2.66 J	38	126	0.0848 J	35.3
ET-IB6A-01	Burrell McDonald	Field	2/15/2023	2.86 U	4.01	130 B	0.45 J	0.313 J	20.4	9	30.2	47.2	0.925 J	21	1.22 U	0.144 U	2.11 U	38.6	175	0.107	19.9
ET-IB6A-02	Burrell McDonald	Duplicate	2/15/2023	2.86 U	3.24	131	0.425 J	0.288 J	19.3	8.56	31.5	48.6	0.763 J	24	1.22 U	0.144 U	2.11 U	36.3	174	0.161	19.5
ET-IB6A-03	Burrell McDonald	Triplicate	2/15/2023	2.86 U	5.25	132 B	0.475 J	0.363 J	21.2	9.59	31.3	56.3	1.04 J	20.6	1.22 U	0.144 U	2.11 U	40.5	253	0.1 J	17.9
ET-IB6B-01	Burrell McDonald	Field	2/15/2023	2.86 U	4.5	173 B	0.575	0.2 J	24.2	10.8	31.4	35.8	1.04 J	22.7	1.22 U	0.144 U	2.11 U	47	117	0.0799 J	21.4
ET-IB6B-02	Burrell McDonald	Duplicate	2/15/2023	2.86 U	4.43	172 B	0.575	0.2 J	24	10.4	31	34.7	0.975 J	23.4	1.22 U	0.144 U	2.11 U	46.8	114	0.0913 J	21
ET-IB6B-03	Burrell McDonald	Triplicate	2/15/2023	2.86 U	4.49	178 B	0.563	0.175 J	23.8	10.4	30.6	34.7	0.988 J	39.3	1.22 U	0.144 U	2.11 U	46.6	112	0.12	18.1
ET-IB6C-01	Burrell McDonald	Field	2/15/2023	2.86 U	5.24	180	0.613	0.388 J	24.5	11.1	36.2	46.8	0.95 J	24.2	1.22 U	0.144 U	2.11 U	47.6	729	0.0737 J	21.2
ET-IB6C-02	Burrell McDonald	Duplicate	2/15/2023	2.86 U	5.76	185 B	0.6	0.313 J	24.5	11	38	47.2	1 J	25.9	1.22 U	0.144 U	2.11 U	47.9	434	0.0923 J	20
ET-IB6C-03	Burrell McDonald	Triplicate	2/15/2023	2.86 U	7.48	186 B	0.613	0.425 J	26.3	11.4	43.2	62.3	1.11 J	25.3	1.22 U	0.144 U	2.11 U	49.8	567	0.0911 J	17.7

Notes:
% = Percent
mg/kg = milligrams per kilogram
U = Not detected
J = Estimated
HRS = Hazardous Ranking System
ISM = Incremental Sampling Methodology

APPENDIX B
REMOVAL EVALUATION CONSIDERATIONS

Appendix B
National Contingency Plan Removal Evaluation Considerations

If the answer to question·1 is "No", or if the answer to any question of 2 through 8 is, '"Yes", the site is ineligible for CERCLA evaluation and the decision at the bottom of this page is "No Further Action Under CERCLA". A "yes" answers to questions 9 through 16 identifies sites that may not be appropriate for CERCLA evaluation without further justification. If a question cannot be answered, explain why in the Comments section below.

1. Has a release of hazardous substances, pollutants, or contaminants occurred? ☐ Unknown ☒ Yes ☐ No
2. Does the release or threat of release consist only of crude oil or unaltered petroleum product? ☐ Yes ☒ No
3. Is the site subject to corrective action under RCRA Subtitle C (hazardous waste treatment, storage, or disposal facility)? ☐ Yes ☒ No
4. Does the release or threatened release fall under the jurisdiction of the Uranium Mill Tailings Radiation Control Act (UMTRCA)? ☐ Yes ☒ No
5. Does the release or threatened release fall under the jurisdiction of the Atomic Energy Act (AEA)? ☐ Yes ☒ No
6. Is the release or threatened release a result of a legal application of pesticides under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)? ☐ Yes ☒ No
7. Is the release or threatened release regulated under the Oil Pollution Act (OPA)? ☐ Yes ☒ No
8. Is the release or threatened release permitted under the Nuclear Regulatory Commission (NRC)? ☐ Yes ☒ No
9. Is the site a federal facility? ☐ Yes ☒ No
10. Is the site outside of U.S. boundaries? ☐ Yes ☒ No
11. Is the site outside of EPA, Region IX borders? ☐ Yes ☒ No
12. Is the site within Native American Tribal lands? ☐ Yes ☒ No
13. Is the site currently under the control and management of a state/local agency? If yes, which agencies? Describe below. ☐ Yes ☒ No
14. Is the site currently operating? ☐ Yes ☒ No
15. Is the site address valid? ☒ Yes ☐ No
16. Has the site been investigated under an alias? ☐ Yes ☒ No

Comments:

APPENDIX C
SITE RECONNAISSANCE / PHOTOGRAPHIC DOCUMENTATION

APPENDIX C
Site Reconnaissance and Observation Report

In September 2022, EPA Region 9 staff, Weston, GDIT and DTSC met in Vernon, Los Angeles County, California to visit the former Exide Technologies - Vernon facility. The facility was operational for 92 years as a car battery recycling facility. Past and current clean up on surrounding residential properties is focused on lead contaminated soil to a maximum of 18 inches deep. The onsite Wastewater Treatment Plant was visited with DTSC and was operational since 1980 up to the closure of the plant and discharged treated wastewater directly into the municipal sewage system. DTSC believe prior to the installation of the WWTP that wastewater drained directly into the municipal sewage system. DTSC stated that there are also 44 monitoring wells at the former Exide Technologies - Vernon facility that were sampled quarterly until 2019. Chlorinated volatile organic compounds (CVOCs), especially trichloroethylene (TCE), have been detected in monitoring wells screened in the perched groundwater zone.

DTSC stated that it does not have documentation of releases of CVOCs at the site, but suspects that these occurred, and it is researching further into the site history on this topic. Perched ground water is approximately 70 ft bgs while general water bearing is 140 ft bgs. The closest drinking water well is approximately 1.5 mile from the facility and municipal wells are screened between 500 to 1000 ft bgs. Group discussed ground water migration pathways may be worth evaluating if sufficient data is present. On-site surface water runoff retention basin was visited and explained that the structure was used for storing water that could not be processed by the WWTP.

Participants traveled to nearby residence that was under current soil remediation by DTSC. DTSC discussed what sample and removal procedures were accomplished at each site. DTSC also stated that metal concentrations in parkways (i.e., area of soil between roads and pedestrian walkways) did not correlate with results from properties these areas were adjacent from, measuring both higher and lower concentrations. DTSC was not sure as to the cause of the fluctuations and posited that leaded gasoline emissions may be a factor.

EPA, GDIT, and Weston then preformed reconnaissance for potential background sampling locations from the nearby Central Metal site, that could potentially serve as background for the Exide-Vernon facility. These locations included five parks and road verges.

In January 2023 EPA Region 9, ERT, and Weston performed additional reconnaissance at 10 parks within 4 miles of the Exide-Vernon facility to identify appropriate background sampling locations for the determination of project-specific concentrations that would reflect release sampling locations in their current and historical usage, soil depositional environments, and potential impacts from non-point sources (e.g., widespread airborne contaminants, leaded fuel emissions), but outside the area of influence of the former Exide-Vernon facility. The six best candidates (public parks) were selected for background sampling. These parks were generally located in opposing directions, as described in Section 3.2.2 of this SI Report.

In February 2023 HRS Background samples and ISM Background samples were collected concurrently and within the same DU background areas. The six selected DUs are shown in Table 6 and Figure 23 of the SI Report. The SU results were grouped by designated location type (i.e., adjacent to road or open center of the park). Each soil matrix sample was analyzed for CAM-16 metals by EPA Method 6010C (using ICP AES or equivalent) and for mercury by EPA Method 7473 (using CVAA) or equivalent. Table 7 of the SI Report shows the average lead concentrations for each SU.

To support the HRS characterization process and document an observed release at the Exide-Vernon facility, EPA determined that additional groundwater sampling from existing monitoring wells would be beneficial in determining the impacts from known historical sources of TCE and metals at the Exide-Vernon facility. In June 2023 EPA Region 9 and Weston staff collected groundwater depth-to-water measurements and total well depth measurements from 34 on-site monitoring wells and from 19 nearby monitoring wells. The purpose of elevation measurements was to confirm groundwater flow directions, establish upgradient and downgradient well locations, and evaluate overall trends in the regional groundwater levels.

In October 2023, EPA Region 9 and Weston staff collected groundwater samples from the shallow perched zone (a mix of unsaturated/saturated subsurface soils) and from the regional Exposition aquifer. The purpose of the SI groundwater sampling was to collect current groundwater data and to assess impacts from a known historical release of TCE from the facility. The depth to groundwater measured by EPA in October 2023 from the Exposition aquifer wells ranged from 151.01 ft below the top of casing (TOC) in well MW-12D to 156.56 ft below the TOC in well MW-23D. The depth to water measured in the off-site Exposition aquifer wells ranged from 152.6 ft below the TOC in well MW-25D to 157.78 ft below the TOC in well MW-22D. Wells MW-12D (background) and MW-11D (downgradient) were identified as critical sample locations for meeting the project objectives. Based on this data, and consistent with previous measurements, the groundwater within the Exposition aquifer in the vicinity of the two critical wells flows toward the southwest. The Exposition aquifer groundwater elevations and contours are presented on Figure 20 of the SI Report. The depth to groundwater measured by EPA in October 2023 from the on-site perched zone wells ranged from 69.12 ft below the TOC in well MW-6R to 88.12 ft below the TOC in well MW-9. The perched zone groundwater elevations are presented on Figure 21 of the SI Report.

To determine site-specific background concentrations in accordance with the criteria defined in Section 4.2.3, of the SI Report, sampling was conducted at a well located upgradient of a known on-site source area. Well MW-12D was identified as the most appropriate well to be designated as the background well for the Exposition aquifer as this well should be representative of the non-Exide-impacted ambient conditions within the Exposition aquifer and has been identified as a critical sampling location for meeting the project objectives. Due to the discontinuous flow and sporadic availability of water found in the perched zone beneath the Exide-Vernon facility, it is not meaningful to calculate groundwater flow directions within this zone and, as such, background samples were not collected from the perched zone. Perched zone samples collected from well MW-12, which is situated in a general upgradient direction of the TCE source area, were used to provide supplemental and contextual information confirming that COPCs associated with source areas may be present in the perched zone.

To establish and document an observed release, groundwater release samples were collected from wells downgradient of the historical TCE source area and were compared to background samples collected from well MW-12D. Monitoring well MW-11D, located approximately 100 ft downgradient of the TCE source area and screened in the Exposition aquifer, was identified as a critical sampling location for meeting the project objectives. Additionally, monitoring well MW-25D, located approximately 125 ft south of well MW-11D and screened in the Exposition aquifer, is located downgradient of the TCE source area, and was also evaluated when establishing an observed release.

Groundwater samples were also collected from well MW-14, which is a perched-zone well located within the known historical TCE source area. Data collected from this well were used to provide supplemental information confirming that TCE associated with this source area is mobile and potentially migrating downward through the subsurface and into the Exposition aquifer.

APPENDIX C PHOTOGRAPH LOG

Project Name:	**Site Location:**	**Project No.:**
Exide Technologies - Vernon Facility SI	Vernon, California	20905.012.087.0199.00

Photo No. 1	**Date:** 09/20/2022

Description:

Front of former Exide Technologies -Vernon Techno facility

Photo No. 2	**Date:** 09/20/2022

Description:

Start of Exide Technologies-Vernon facility tour

Photo No. 3

Date: 09/20/2022

Description:

Exide Technologies – Vernon facility exterior

Photo No. 4

Date: 09/20/2022

Description:

Exide Technologies – Vernon facility remaining structures

Photo No. 5

Date: 09/20/2022

Description:

Exide Technologies – Vernon facility waste disposal location

Photo No. 6

Date: 09/20/2022

Description:

Exide Technologies – Vernon facility retention pond

Photo No. 7	Date: 09/20/2022

Description:

Exide Technologies – Vernon facility wastewater disposal area

Photo No. 8	Date: 09/20/2022

Description:

Exide Technologies – Vernon facility ongoing deconstruction

Photo No. 9

Date: 01/24/2023

Description:

Exide Technologies – Vernon facility tour prior to SI sampling

.

Photo No. 10

Date: 01/24/2023

Description:

Exide Technologies – Vernon facility residential area tour prior to SI sampling

Photo No. 11	Date: 2/14/2023
Description: Exide Technologies – Vernon facility background soil sampling location – Lueders Park (Compton)	

Photo No. 12	Date: 02/15/2023
Description: Exide Technologies – Vernon facility background soil sampling location – Burrell MacDonald Park (Compton)	

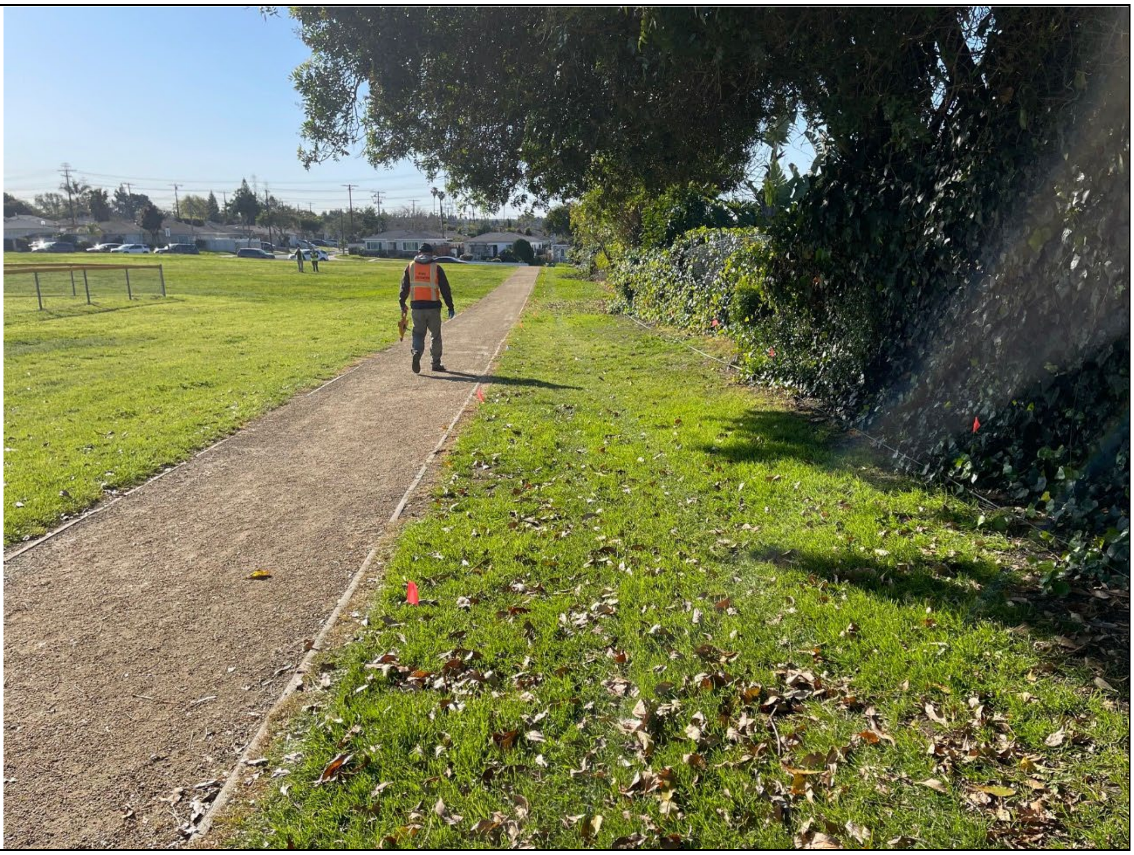

Photo No. 13	**Date:** 02/16/2023
Description: Exide Technologies – Vernon facility background soil sampling location – John Anson Ford Park (Bell Gardens)	

Photo No. 14	**Date:** 02/16/2023
Description: Exide Technologies – Vernon facility background soil sampling location – Hollenbeck Park (Los Angeles)	

Photo No. 15	Date: 06/20/2023
Description: Exide Technologies – Vernon facility depth-to-groundwater measurement collection	

Photo No. 16	Date: 06/21/2023
Description: Exide Technologies – Vernon facility offsite well location	

Photo No. 17	Date: 10/24/2023

Description:

Exide Technologies – Vernon facility SI groundwater sampling

Photo No. 18	Date: 10/24/2023

Description:

Exide Technologies – Vernon facility SI groundwater sampling

Photo No. 19

Date: 10/25/2023

Description:

Exide Technologies – Vernon facility SI groundwater sampling

Photo No. 20

Date: 10/26/2023

Description:

Former Honeywell Property (currently Baker Commodities) wells immediately east of Exide Technologies - Vernon

APPENDIX D
TRANSMITTAL LIST

APPENDIX D

TRANSMITTAL LIST

Date: June 2024
Site Name: Exide Technologies - Vernon
EPA ID No.: CAD097854541

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A copy of the Site Inspection (SI) Report for the above-referenced site should be sent to the following recipients:

California Department of Toxic Substances Control
c/o Mehdi Bettahar, PhD
Exide Division
5796 Corporate Avenue Cypress
California 90630

Vernon Environmental Response Trust
c/o Roberto Puga, P.G.
1 World Trade Center
8th Floor
Long Beach, CA 90105

U.S. Environmental Protection Agency, Superfund Records Center
c/o Matt Mitguard
USEPA - Superfund Division
75 Hawthorne Street, SFD-6-1
San Francisco, CA 94105