SITE INSPECTION REPORT

Globe-Union Battery
Garland, Dallas County, Texas
TXD980626642

REGION 6

Prepared in cooperation with the
U.S. Environmental Protection Agency

May 2020

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1111 S. Shiloh Rd
Dallas, Dallas County, Texas
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SIGNATURE PAGE

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1.0 INTRODUCTION

The Texas Commission on Environmental Quality (TCEQ) was tasked by the United States Environmental Protection Agency (EPA) Region 6 to conduct a Site Inspection (SI) at the Globe-Union, Inc. site in Garland, Texas. This SI was conducted under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The purpose of this investigation was to collect enough information about the site to assess the threat posed to human health and the environment; to determine the need for additional investigation under CERCLA or other authority; and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL).

2.0 SITE BACKGROUND

This section describes the background of the Globe-Union, Inc. site including location, description, ownership history, operations and source characteristics, previous investigations.

2.1 Site Location

Site Name:	Globe-Union, Inc.
SEMS ID No.:	TXD980626642
Location:	Garland, Dallas County, Texas 75042
Latitude:	32.902449° N
Longitude:	96.666202° W
Legal Description:	Globe Union Blk A Lt 1
Congressional District:	Texas's 5th US Congressional District
Site Owner:	Realm Management, LLC 1301 S. Shiloh Rd. Garland, Texas 75042 (214) 904-9000

2.2 Site Description

The former Globe-Union, Inc. battery facility (site) lies on two parcels totaling approximately 12.13 acres located at 1111 S. Shiloh Road in Garland, Texas (Figures 1 and 2; Ref. 5, pp. 1, 21, 22, 40). From the 1950s until 1995 this facility manufactured lead oxide batteries for the automobile market (Ref. 6, p. 1; Ref. 7, p. 1; Ref. 8, p. 9; Ref. 9, p. 1). A trucking company operated at the site from the late 1990s until approximately 2008, after which the site was vacant for five years before Copier Exporter, Inc. (CEI), an exporter of used photocopiers to foreign markets, began using a portion of the site as a warehouse (Ref. 5, pp. 7, 8, 11; Ref. 10, p. 1). CEI remains the principal business at the site (Ref. 11, p. 4). The building footprint at the facility expanded over the course of operations so that by 1979 the contiguous warehouse and office was greater than 225,000 square feet (Ref. 5, p. 2; Ref. 8, p. 9). A separate 4,800 square foot garage was constructed in the southern

portion of the property by 1968. As operations at the site expanded, so too did the amount of impervious concrete cover such that only a few narrow strips of vegetation along Shiloh Road remain unpaved (Ref. 5 pp. 1-4; Ref. 11, p. 7; Ref. 12, pp. 1-3; Ref. 13, pp. 5, 7-9, 13-16). The site is essentially flat with a slight slope to the west in the direction of a creek known as Stream 2C4, an intermittently flowing tributary to Ruppards Branch (Figures 1 through 3). Drainage is to the east on the east side of the property, where it flows into street drains. Runoff on the west and south sides of the facility drains to the west until immediately off site, then flows south along railroad tracks, passes through a culvert under Marquis Street, and continues along the railroad tracks until it enters Stream 2C4 (Figure 2; Ref. 11, p. 2; Ref. 14, p. 2). A stormwater retention pond west of the site and the railroad tracks receives water from points north and west. It drains into a large culvert under Marquis Street (west of the previously-mentioned culvert) and forms the beginning of Stream 2C4 (Figure 2; Ref. 12, p. 3; Ref. 14, pp. 2-3).

Commercial and industrial activities predominate to the north and west of the site, including a large Sherwin Williams facility to the north and a US Foods facility to the northeast (Ref. 13, p. 8). Smaller warehouses and office space lie to the west, and various retail entities operate to the south along Shiloh Road. A large residential neighborhood constructed through the 1950s and 1960s lies to the east and southeast (Figures 2 and 3; Ref. 5, pp. 41-49).

2.3 Ownership History

Globe-Union, Inc., the first known owner of record, built the facility in the mid-1950s on a 9.4-acre parcel east of Garland which was previously used for agricultural purposes (Ref. 6, p. 1). As the facility expanded to the south, Globe Union purchased an adjacent 2.7-acre property from the Emporia Building Company by 1960, thus forming the present property extent (Ref. 6, p. 1; Ref. 8, p. 9). Johnson Controls, Inc. (later, Johnson Controls Battery Group, Inc.) became the site owner in 1978 when it bought out Globe-Union (Ref. 5, pp. 9, 10, 29, 30; Ref. 15, p. 1). After battery production ceased in 1995, the property was sold

to Roderick Bell, president of Texas American Express, Inc., who operated a long-haul trucking business at the site through 2008 (Ref. 5, pp. 7, 8, 11, 27, 28, 31; Ref. 10, p. 1; Ref. 16, pp. 17-19). Mr. Bell sold the site to Grand Six LLC in 2011, which then sold the site to Dinesh and Manee Ralhan, owners of CEI, in 2013. Realm Management, which is owned by Dinesh Ralhan, became the owner name of record in 2017 (Ref. 5, pp. 6, 26; Ref. 16, pp. 1, 2).

2.4 Operations and Waste Characteristics

Lead acid battery production is the largest single use of lead in the United States (Ref. 17, p. 6) By the 1970s, Globe-Union had become the nation's largest manufacturer of lead acid automobile batteries (Ref. 18, p. 2). The Garland location was one of many Globe-Union facilities throughout the United States which manufactured batteries for Interstate and Sears DieHard brands (Ref. 8, pp. 20-21). Former employees have stated that 1,700 employees worked in three shifts at the height of site operations (Ref. 11, p. 4). Available records confirm that the facility was on a 24-hour schedule (presumably requiring three 8-hour shifts), and that at times the facility ran 6 days per week (Ref. 8, pp. 7, 8, 19).

Lead oxide was transported from Mexico via train or truck to the facility to be smelted and pressed into electrodes, or plates (Ref. 8, pp. 10, 14; Ref. 17, p. 14; Ref. 19, pp. 2, 10). The lead smelting process generates a variety of contaminants including lead particulate and sulfur dioxide. Particulate matter generated during the lead smelting process has been controlled since the early 1900s through the use of baghouses- large filters, often set up in an array (Ref. 20, pp. 1-3). In 1970 the Clean Air Act established limits on lead and particulate emissions from industrial facilities (Ref. 21, pp. 36-38). The Globe-Union facility in Garland had one baghouse present by 1973 (installation date unknown) when they requested and received approval from the Texas Air Control Board (TACB) to install a second baghouse to allow for an increase in production capacity while maintaining air emissions standards. A permitted central vacuum system, used to clean indoor air from the plant, was also routed to the baghouses (Ref. 8, pp. 10-12, 22-30). A drying tower was constructed in the late 1970s to reduce sulfur dioxide emissions (Ref. 7, pp. 2-3). TACB

files detail several additional air permits for various processes within the plant which were in place from the 1970s until the conclusion of operations in 1995 (Ref. 8, p. 5). Controls over site emissions inevitably changed through time as technology advanced and local, state, and federal regulations were imposed. A 1982 EPA Preliminary Assessment report notes that during this time the City of Garland was testing plant effluent on a monthly basis, noting that city officials were 'satisfied' with facility operations. The report recorded approximately 80,000 gallons per day of liquid waste (presumably the above-mentioned effluent) as well as 12.5 tons per month of solid waste including fly ash and defective lead plates as well as workers clothing. Drummed waste during this period was staged on the west side of the facility between the baghouses until manifested and disposed at a facility in Louisiana (Ref. 19, pp. 2, 6, 8). None of the entities which have operated at the former Globe-Union plant since 1995 conduct operations that fall under state or federal environmental regulations.

2.5 Previous Investigations

TACB records of site air emissions testing beginning in 1973 record particulate readings far below allowable limits. Early 1980s air emissions investigations by the City of Garland found that property line air testing was consistently below the permitted limit. TACB records note a lack of complaints or violations through the second half of the 1980s (Ref. 8, pp. 15, 16, 22). An EPA Preliminary Assessment from 1982 noted no apparent issues at the facility. Wastewater from the site- up to 80,000 gallons per day- was treated to control pH before disposal to the sanitary sewer. Up to 12.5 tons per month of solid waste was disposed, which included unusable battery plates, scrap, and clothing. Disposal records were available from the Globe-Union office at the time. Investigators ultimately noted that the company "runs a very clean operation" (Ref. 19, pp. 1-3). State personnel inspected the facility in June 1986, noting non-compliance on a variety of minor (non-environmental) issues which were subsequently resolved (Ref. 9, p. 1).

Two 10,000-gallon diesel tanks were removed from the southwest corner of the site in February 1989. Corrosion holes were observed in both tanks, and soil sampling indicated

total petroleum hydrocarbon (TPH) contamination in the tank hold area. Contaminated soil was removed and disposed (Ref. 22, pp. 1-10). A 20,000-gallon diesel tank installed shortly thereafter was also removed in March 1995 when the site ceased operations. Samples obtained from the tank hold, pipe chase, and dispenser island found nondetectable benzene, less than 30 µg/kg BTEX (benzene, toluene, ethylene, and xylene), and less than 70 mg/kg TPH. Stockpiled backfill with 388 mg/kg TPH and non-detectable benzene was returned to the former tank hold along with 165 additional yards of clean fill and concreted over. The State of Texas subsequently approved site closure (Ref. 22, pp. 11-29).

The Texas Department of State Health Services conducted a cancer cluster study in the vicinity of the site in 2018 at the request of concerned community members. Focusing on census tracts which encompass residences 1 mile to the east and approximately 1.6 miles to the south, the study found that there was no statistically significant increase in cancer rates among the nearby population (Ref. 23, pp. 1-9).

EPA and TCEQ personnel visited the site on April 3, 2019. The primary onsite business currently in operation is Copier Exporter, Inc. (CEI), a reseller of used photo copiers. They purchase used copiers in bulk, refurbish as necessary, and sell to foreign buyers (Ref. 11, p. 4). Copiers are housed predominantly in the central portion of the facility. As previous correspondence indicated, all equipment associated with battery production was removed when production ceased in 1995 (Ref. 24, p. 1). One room contains pallets of rolled material which is used as a water-saving yard application that belongs to Advanced Water Management. Remnants of a pallet painting area are evident in the northernmost section of the main warehouse (Ref. 10, p. 1; Ref. 11, p. 5). There is no evidence of residual contamination within the current facility or in the parking lot where the baghouses and waste staging area were formerly located (Ref. 13, pp. 9-15). Based on reports of potential drums discarded in the nearby creek, efforts were made to locate drums or identify any evidence of prior dumping or impaired or stressed vegetation (Ref. 25, p. 1). Although discarded tires were evident, the stormwater retention pond located immediately west of

the site and across the railroad tracks appeared to be unimpaired. A number of nesting ducks and other waterfowl were observed (Ref. 13, pp. 1-3).

2.6 Sources

The former Globe-Union facility staged drummed waste in the parking lot on the west side of the main operations building for some unknown period of time. Although there is no past documentation of accidental releases in this area, the possibility remains that site runoff, which flows west away from site structures, may have transported contamination from the waste staging area to the site drainage pathway.

No specific sources associated with the site were identified during the April 3, 2019, site visit or during the February 2020 sampling event.

3.0 FIELD ACTIVITIES AND ANALYTICAL PROTOCOL

The Globe-Union, Inc. Site Inspection Work Plan ("the Work Plan") was developed by the TCEQ and approved by the EPA prior to field sampling (Appendix A). The Work Plan, together with the TCEQ Preliminary Assessment and Site Inspection Program Quality Assurance Project Plan QTRAK #19-402 (QAPP), describes the sampling strategy, sampling methodology, and analytical program used to investigate potential hazardous substance sources and potential receptors. The field activities were conducted in accordance with the approved Work Plan and the QAPP. Deviations from the Work Plan or the QAPP are described in section 4.1.

The field sampling event was conducted from February 17-18, 2020 (Ref. 26, pp. 1-45; Ref. 28, pp. 1-12). A total of twenty-six samples, including three background samples and three field duplicate samples, were collected during the sampling event. A list of all samples collected for laboratory analysis during this sampling event is contained in Table 3-1.

Sample types and methods of collection are described in Section 3.1. Alphanumeric identification numbers (e.g., SO-01) are used in the report as the sample location identifiers (IDs). EPA Sample Numbers, also known as Contract Laboratory Program (CLP) Numbers, are presented with the sample analytical results in Reference 27. Sample locations are provided in Figures 2 and 3. Photographic documentation of the field activities is included as Reference 28.

Table 3-1. Sample Locations and Rationale

Sample No. [CLP Number]	Location	Depth (in. bgs.)	Reference	Sample Rationale
SE-01 [MF3S00]	Northeast corner of retention pond west of the site	0-6	Ref. 26, p. 6; Ref. 28, p. 4	Establish release and determine exposure to receptors

Sample No. [CLP Number]	Location	Depth (in. bgs.)	Reference	Sample Rationale
SE-02 [MF3S01]	Southwest corner of retention pond west of the site	0-6	Ref. 26, p. 5; Ref. 28, p. 4	Establish release and determine exposure to receptors; QA/QC
SE-03 [MF3S03]	Stream 2C4 south of Marquis Dr. near abandoned drum	2-6	Ref. 26, p. 4; Ref. 28, p. 3	Establish release and determine exposure to receptors
SE-04 [MF3S04]	Stream 2C4 south of Marquis Dr.	1-6	Ref. 26, p. 4; Ref. 28, p. 3	Establish release and determine exposure to receptors
SE-05 [MF3S05]	Field Duplicate of SE-02	0-6	Ref. 26, p. 5; Ref. 28, p. 4	QA/QC
SO-01 [MF3S06]	Northwest corner of the site on facility fence line	4-7	Ref. 26, p. 2; Ref. 28, p. 1	Establish background soil concentrations for analytes of concern
SO-02 [MF3S07]	West side of facility fence line	4-7	Ref. 26, p. 1; Ref. 28, p. 1	Establish release and determine exposure to receptors
SO-03 [MF3S08]	West side of facility fence line	4-7	Ref. 26, p. 2; Ref. 28, p. 2	Establish release and determine exposure to receptors
SO-04 [MF3S09]	South west corner of facility fence line near drainage ditch	4-7	Ref. 26, p. 3; Ref. 28, p. 2	Establish release and determine exposure to receptors
SO-05 [MF3S10]	Field Duplicate of SO-02	4-7	Ref. 26, p. 1; Ref. 28, p. 1	QA/QC
SO-06 [MF3S11]	Stream 2C4 bank approx. 200 feet east of Shiloh Rd.	2-6	Ref. 26, p. 13; Ref. 28, p. 7	Establish release and determine exposure to receptors
SO-07 [MF3S12]	Stream 2C4 bank approx. 600 feet northeast of the intersection of	2-6	Ref. 26, p. 14; Ref. 28, p. 8	Establish release and determine exposure to receptors

Sample No. [CLP Number]	Location	Depth (in. bgs.)	Reference	Sample Rationale
	Shiloh Rd. and W. Miller Rd.			
SO-08 [MF3S13]	Stream 2C4 bank behind Parkcrest Elem. School	2-6	Ref. 26, p. 7; Ref. 28, p. 5	Establish release and determine exposure to receptors
SO-09 [MF3S14]	Stream 2C4 bank behind Parkcrest Elem. School	2-6	Ref. 26, p. 8; Ref. 28, p. 5	Establish release and determine exposure to receptors
SO-10 [MF3S15]	Stream 2C4 bank behind Parkcrest Elem. School	2-6	Ref. 26, p. 9; Ref. 28, p. 6	Establish release and determine exposure to receptors
SO-11 [MF3S16]	Stream 2C4 bank adjacent to [redacted] Ridgecrest Drive	2-6	Ref. 26, p. 12; Ref. 28, p. 7	Establish release and determine exposure to receptors
SO-12 [MF3S17]	Field Duplicate of SO-13	2-6	Ref. 26, p. 11; Ref. 28, p. 6	QA/QC
SO-13 [MF3S18]	Stream 2C4 bank adjacent to [redacted] Ridgecrest Drive	2-6	Ref. 26, p. 11; Ref. 28, p. 6	Establish release and determine exposure to receptors
SO-14 [MF3S19]	Stream 2C4 bank on the west side of Sunnybrooke Dr. bridge	2-6	Ref. 26, p. 15; Ref. 28, p. 8	Establish release and determine exposure to receptors
So-15 [MF3S20]	Stream 2C4 bank on the east side of the railroad tracks which run along S Garland Ave.	2-6	Ref. 26, p. 17; Ref. 28, p. 9	Establish release and determine exposure to receptors
SO-16 [MF3S21]	Stream 2C4 bank immediately prior to confluence with Ruppards Branch	2-6	Ref. 26, p. 16; Ref. 28, p. 9	Establish release and determine exposure to receptors

Sample No. [CLP Number]	Location	Depth (in. bgs.)	Reference	Sample Rationale
SO-17 [MF3S22]	Ruppards Branch bank approx. 750 feet upstream from the confluence of Ruppards Branch and Stream 2C4	2-6	Ref. 26, p. 18; Ref. 28, p. 10	Establish background soil concentrations for analytes of concern
SO-18 [MF3S23]	Ruppards Branch bank east of the confluence with Stream 2C4	2-6	Ref. 26, p. 19; Ref. 28, p. 10	Establish release and determine exposure to receptors
SO-19 [MF3S24]	Duck Creek bank on the west side of Rick Oden Park	0-6	Ref. 26, p. 20; Ref. 28, p. 11	Establish background soil concentrations for analytes of concern
SO-20 [MF3S25]	Duck Creek bank south of Ruppards Branch and Duck Creek confluence, and located within Wynne Park	2-6	Ref. 26, p. 21; Ref. 28, p. 11	Establish release and determine exposure to receptors
SO-21 [MF3S25]	Duck Creek bank in Wynne Park	2-6	Ref. 26, p. 22; Ref. 28, p. 12	Establish release and determine exposure to receptors; QA/QC

3.1 Sampling Methodology

Sampling methods used for each sample type are described in the subsections below.

3.1.1 Soil Sampling

A total of 21 soil samples, including 3 background samples and 2 duplicate samples, were collected according to the methods described in the Work Plan and TCEQ Standard

Operating Procedure (SOP) 6.2 (Homogenization of Soil Samples) and 10.1 (Soil Sampling Using a Trowel). Samples were collected between 0-6 and 6-12 in. bgs. depending on the soil resistance and surface appearance (scoured or stained vs. recent deposition).

3.1.2 Sediment Sampling

A total of five sediment samples, including one duplicate sample were collected according to the methods described in the Work Plan and TCEQ SOP 9.1 (Sediment Sampling). Samples were collected from 0-6 in. bgs.

3.2 Analytical Protocol

Analytical protocols applied to the SI samples included off-site fixed laboratory analysis of total metals and mercury. Metals and mercury were analyzed by the methods defined in the CLP Statement of Work ISM02.3. The following samples were submitted to Bonner Analytical Testing Company in Hattiesburg, Mississippi for analysis:

- **Total Metals and Mercury:** Twenty-one soil samples, including two field duplicates, and five sediment samples, including one field duplicate.

3.3 Global Positioning System

Latitude and longitude coordinates of SI sample locations and other site features were obtained by an iPhone (Ref. 26, pp. 1-22). Coordinates of sample locations are included in Table 3-2.

Table 3-2. GPS Coordinates of Sample Locations

Sample ID	Latitude	Longitude
SE-01	32.9022	96.6678
SE-02 / SO-05	32.9012	-96.6685
SE-03	32.9009	-96.6682
SE-04	32.9005	-96.6677

SO-01	32.9042	-96.6673
SO-02 / SO-05	32.9025	-96.6675
SO-03	32.9019	-96.6674
SO-04	32.9014	-96.6674
SO-06	32.8962	-96.6652
SO-07	32.8947	-96.6634
SO-08	32.8924	-96.6621
SO-09	32.8923	-96.6613
SO-10	32.8922	-96.6605
SO-11	[redacted]	[redacted]
SO-12 / SO-13	[redacted]	[redacted]
SO-14	32.89	-96.6547
SO-15	32.8879	-96.652
SO-16	32.8877	-96.6511
SO-17	32.8867	-96.6533
SO-18	32.8873	-96.6508
SO-19	32.8892	-96.642
SO-20	32.8725	-96.6342
SO-21	32.8716	-96.6333

3.4 Investigation-Derived Waste

No investigation-derived waste (IDW) was generated during the SI sampling event.

4.0 QUALITY ASSURANCE/QUALITY CONTROL

This section describes the quality assurance/quality control (QA/QC) measures taken for the Globe-Union, Inc. SI. QA/QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of sampling equipment, glassware, and reagents. Specific QC requirements for laboratory analyses are incorporated into the CLP Statement of Work for Multi-Media, Multi-Concentration Inorganics Analysis (ISM02.4). These QC requirements were followed for analytical work on the SI.

4.1 Quality Assurance/Quality Control Samples

Three types of QA/QC samples were collected during the SI: field duplicate samples, matrix spike/matrix spike duplicates (MS/MSDs), and temperature blanks. QA/QC samples were all collected according to the SI Work Plan and QAPP, with the following exceptions:

- SE-05 - field duplicate sample was collected at the same location as SE-02 instead of SE-04, as indicated in the Work Plan.
- SO-05 - field duplicate sample was collected at the same location as SO-02 instead of SO-03, as indicated in the Work Plan.

One soil and one sediment sample were designated as MS/MSD samples. One temperature blank was included in each sample shipment cooler.

4.2 Laboratory Data and Analytical Results Review

All submitted laboratory data and analytical results were reviewed and validated by the EPA Region 6 Environmental Services Branch: Environmental Services Assistance Team (ESAT). Data qualifiers were applied as necessary according to the EPA Contract Laboratory Program National Functional Guidelines for Inorganic/Organic Superfund Data Review documents.

5.0 ANALYTICAL RESULTS REPORTING AND BACKGROUND SAMPLES

This section describes the reporting and methods applied to analytical results presented in Sections 6.0 and 7.0 of this report and discusses background sample locations and results for the Globe-Union, Inc. SI.

5.1 Analytical Results Evaluation Criteria

Samples were collected from potentially affected media in order to establish an observed release to migration/exposure pathways and/or receptors along those pathways. Background samples were collected from unaffected media in order to determine background concentrations of hazardous substances. The minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background concentration and attributable to the site. Significant concentrations are those concentrations that are:

- equal to or greater than the sample's Contract Required Quantitation Limit (CRQL); and
- equal to or greater than the background sample's CRQL when the background concentration was below the method detection limit (MDL); or
- at least three times greater than the background concentration when the background concentration equals or exceeds the MDL (Ref. 1).

Only the compounds detected at significant concentrations in source and pathway samples are discussed in this report. Laboratory analytical data sheets for all samples are provided in Reference 27.

5.2 Background Samples

Background samples were collected for one out of the two naturally occurring media from which samples were collected. It was not possible to obtain a background sample for sediment because the retention pond is formed by runoff from streets, parking areas, and grassy medians in the flat areas surrounding the pond which are too dissimilar to be considered representative of background conditions. Laboratory analytical data sheets for the soil background samples are provided in Reference 27.

5.2.1 Background Soil Samples

5.2.1.1 Background Soil Sample Locations

Background soil samples were collected to represent the soil types located in the site vicinity and upgradient of any suspected contamination. Background soil sample SO-01 was collected upgradient of the suspected potential contamination area for the site, though the sample location was still in an industrial area and could potentially be contaminated by other industrial runoff unrelated to on-site activities. Background soil sample SO-17 was collected on the bank of Ruppards Branch upstream of the intersection with Stream 2C4, and background soil sample SO-19 was collected on the bank of Duck Creek upstream of the intersection with Ruppards Branch to represent soil unimpacted by potential runoff from on-site contamination (Figure 3).

5.2.1.2 Background Soil Sample Results

To document an observed release through chemical analysis, a target sample must show contamination "significantly" above the background level (Ref. 1, Table 2-3, page 51589). Lead was detected at 134 mg/kg in background sample SO-01, therefore, three times this background value (per HRS Rule) is 402 mg/kg, just above the EPA Regional Screening Level (RSL) of 400 mg/kg (Ref. 29, p. 3).

6.0 POTENTIAL SOURCES

No specific sources associated with the site were identified during the April 2019 site visit or the February 2020 sampling event. The former on-site drum staging area was removed by 1995 after battery manufacturing ceased.

7.0 MIGRATION/EXPOSURE PATHWAYS AND RECEPTORS

This section describes those migration/exposure pathways and potential receptors within the site's range of influence sampled during the SI (Figures 2 and 3). This section discusses the surface water migration pathway as it was the only pathway evaluated during the SI.

7.1 Surface Water Migration Pathway

The surface water migration pathway TDL begins at the probable point to entry (PPE) of surface water runoff from the site to a perennial surface water body and extends downstream for 15 miles.

7.1.1 Overland Route

All runoff from the west side of the site flows west across the parking lot until reaching a grassy area adjacent to elevated railroad tracks, which force all runoff to the south. From the southwest corner of the site property, runoff continues to flow for approximately 300 feet until entering Stream 2C4, an intermittent creek (Figure 2; Ref. 14, p. 2). The overland route continues to the southeast for approximately 1.5 miles until Stream 2C4 joins Ruppards Branch, a perennial creek which is the probable point of entry (PPE).

The site is located outside the 100-year floodplain (Ref. 14, pp. 2-3). The two-year twenty-four-hour rainfall event has been calculated at 4 inches (Ref. 31, p. 2).

Impervious cover overlies most site soils except for narrow strips on the north property boundary and along Shiloh Road (and distant from the former operations area) which is

comprised of the Dalco-Urban land complex, a soil up to 40 inches in depth with a 0 to 3 percent slope. Offsite soils in the immediate surface water drainage pathway are comprised of the Houston Black-Urban land complex, a soil up to 80 inches in depth with a 0 to 4 percent slope (Ref. 32, pp. 1-4, 6).

7.1.1.1 Surface Water Migration Pathway Sample Locations

A total of twenty-one soil and five sediment samples were collected from the surface water migration pathway TDL from the site to Duck Creek. Two sediment samples (SE-03 and SE-04) and ten soil samples (SO-06 through SO-16) were collected along Stream 2C4, comprising approximately the first 1.8 miles of the pathway. The remainder of the samples (SO-17 through SO-21) were collected along Ruppards Branch and Duck Creek.

7.1.1.2 Surface Water Migration Pathway Sample Results

Sample results were reviewed and evaluated based on the EPA RSL for lead of 400 mg/kg for residential properties and 800 mg/kg for commercial/industrial properties (Ref. 29, p. 3). Nine soil sample locations exceeded their applicable value, including SO-03, SO-06, SO-08, and SO-11 through SO-16 (Ref. 27, pp. 9, 10, 16, 25, 26, 33). The highest detections were recorded in results from samples SO-11 through SO-13, which were sampled along the bank of Stream 2C4 adjacent to a residential yard (Ref. 27, pp. 28, 33). Table 7-1 details sample results for lead in the surface water migration pathway.

Arsenic was detected at low levels above the SCDM cancer risk benchmark in all SI samples; however, only sample SO-06 contained arsenic at a significant concentration above background. However, arsenic is not a chemical of concern for this SI and thus will not be evaluated any further in this report.

Table 7-1. Surface Water Migration Pathway Sample Results for Lead

Location	Result (mg/kg)	
SE-01	35.3	J
SE-02/SE-05*	78.2/25.8	J
SE-03	9.5	J
SE-04	8.5	J
SO-01	134	J
SO-02/SO-05*	732/718	J
SO-03	1,720	J
SO-04	172	J
SO-06	2,060	
SO-07	167	
SO-08	449	J
SO-09	109	J
SO-10	183	J
SO-11	61,200	
SO-13/SO-12*	14,900/30,200	
SO-14	1,180	
SO-15	409	
SO-16	404	
SO-17	14.8	
SO-18	35.6	
SO-19	22.5	
SO-20	39.5	
SO-21	33.6	

Shading indicates results above the applicable EPA RSL for lead.
*= Associated duplicate sample
J= Estimated value

8.0 SUMMARY AND CONCLUSIONS

The Globe-Union, Inc. site is a former lead acid battery manufacturer located at 1111 S. Shiloh Road in Garland, Dallas County, Texas. The facility manufactured lead oxide batteries for the automobile market from the 1950s until 1995. Globe-Union, Inc. was in operation for approximately 45 years and has been investigated by several state and federal agencies over the past 40 years. Globe-Union, Inc. was the original owner of the site and began work on building the facility in the mid- 1950s. The facility expanded to its full extent by 1960 and has experienced three ownership changes over the years. The site is currently owned by Realm Management, LLC and leased by Copier Exporter, Inc. (CEI), an exporter of used photocopiers to foreign markets. CEI remains the principal business at the site.

Field work for the SI was conducted February 17-18, 2020. TCEQ personnel collected a total of twenty-six samples, including three background samples and three field duplicate samples, to characterize a potential source, establish site attribution, and ascertain an observed release of contaminants to the surface water migration pathway. All samples were analyzed for total metals and mercury, and lead was the primary chemical of concern.

8.1 Sources

No remaining sources were identified at the site. The former location of the Globe-Union, Inc. facility is now almost fully covered in impervious concrete such that only a few narrow strips of vegetation along Shiloh Road remain unpaved. The former Globe-Union facility staged drummed waste in the parking lot on the west side of the main operations building for some unknown period of time. Although there is no past documentation of spillage in this area, the possibility remains that site runoff, which flows west away from site structures, may have transported contamination from the waste staging area south via overland flow following precipitation to Stream 2C4 and along the surface water migration pathway.

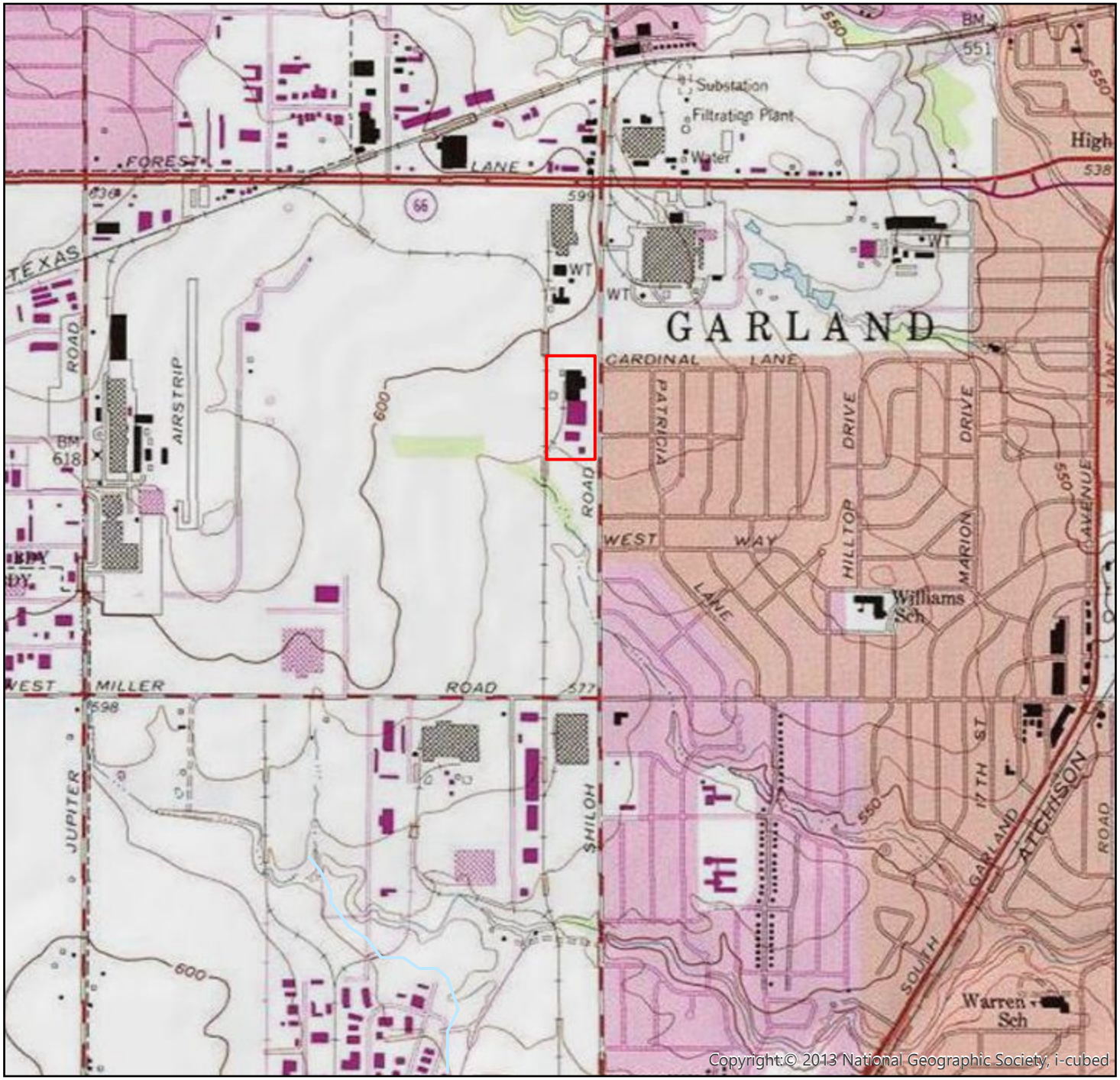
8.2 Receptors

The surface water migration pathway was the only pathway evaluated. The Globe-Union Battery site is located along a commercial thoroughfare, with industrial pursuits and warehouses to the north, west, and south, and a large residential neighborhood to the east and southeast. CEI has four full-time employees on site, and there are an unknown number of employees working at a truck tire service facility in the south portion of the site. Additionally, there are an unknown and variable number of individuals that lease parking space on site. Approximately 60 residences border on Stream 2C4 in the confirmed area of contamination. The back (north) property line of Parkland Elementary School comprises approximately 650 feet of the south bank of Stream 2C4.

8.3 Conclusions

Concentrations of lead in soil samples collected for the SI indicate an observed release to the surface water migration pathway. Source and extent of the contamination has not been determined.

Figure 1: Site Location Map



Site Inspection Report
May 2020

22

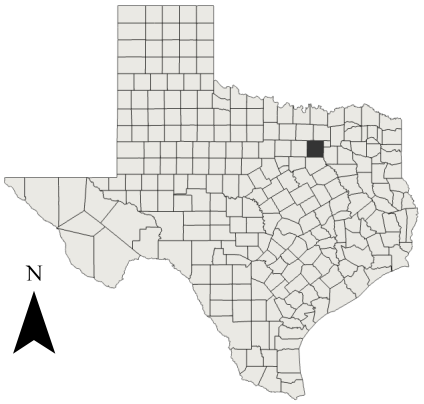
Globe-Union, Inc.
TXD980626642

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Globe-Union, Inc.

1111 S Shiloh Rd.
Garland, Dallas
County, Texas

Site Boundary



The base map is a USGS National Topo map published by USGS. Projection: Web Mercator Auxiliary Sphere. Coordinate system: WGS 1984. This map was generated by the Remediation Division of the Texas Commission on Environmental Quality. It is intended for illustrative or informational purposes only, and is not suitable for legal, engineering, or survey purposes. This map does not represent an on-the-ground survey conducted by or under the supervision of a registered professional land surveyor. For more information concerning this map, contact the Remediation Division at 800-633-9363. Map created in May2020.

Figure 2: Site Vicinity Sample Location Map

Globe-Union, Inc.
1111 S Shiloh Rd.
Garland, Dallas
County, Texas

Site
Railroad Tracks
Site Drainage Pathway

Sample Locations
Sediment
Soil

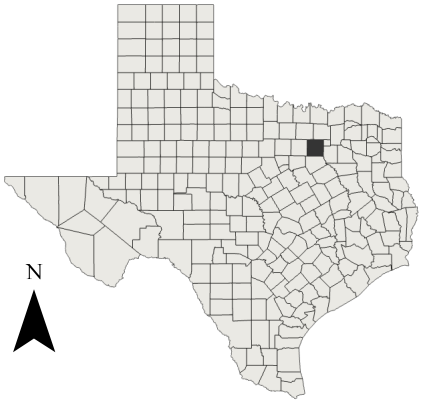


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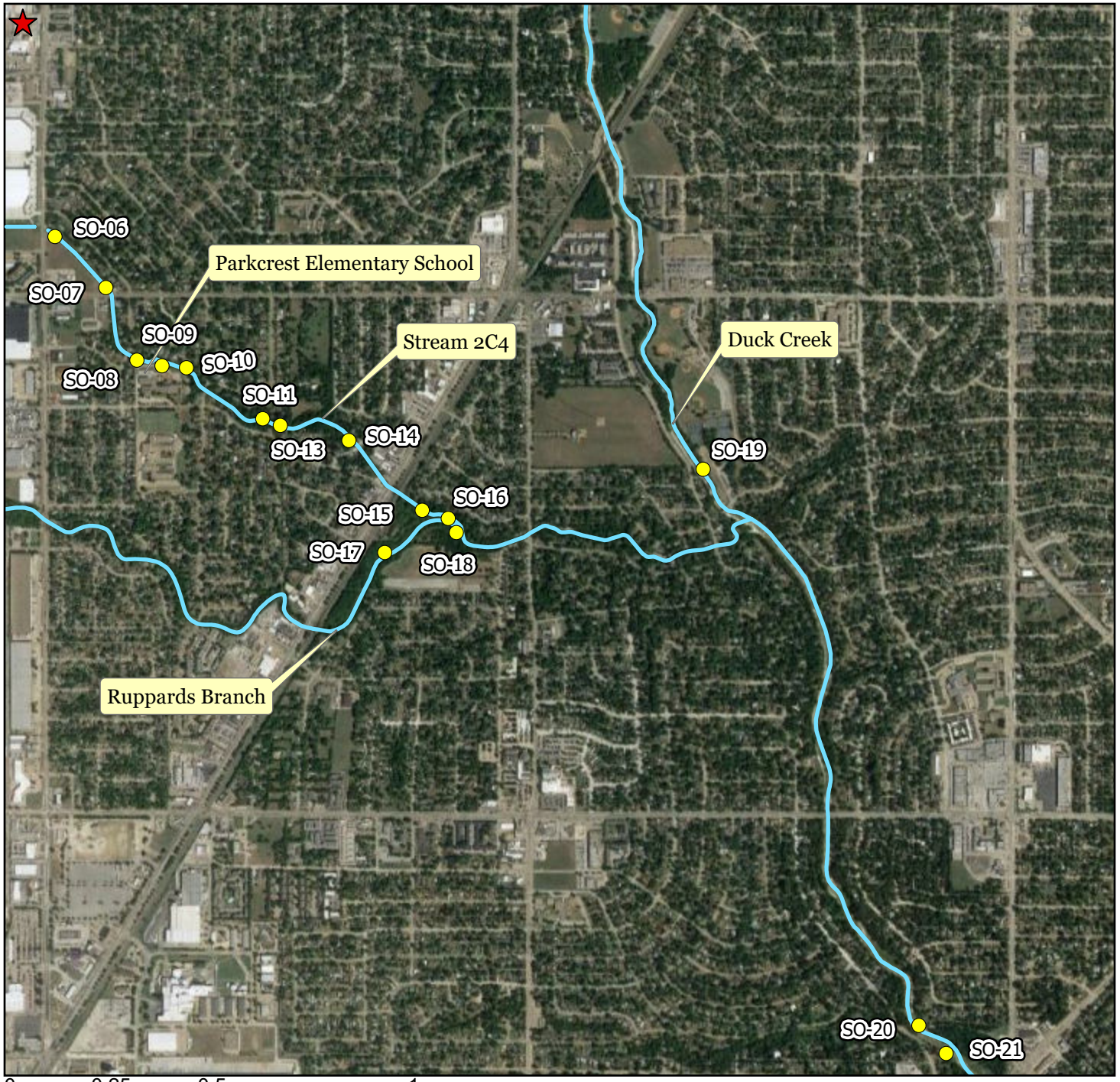
Figure 3: Off-Site Sample Location Map



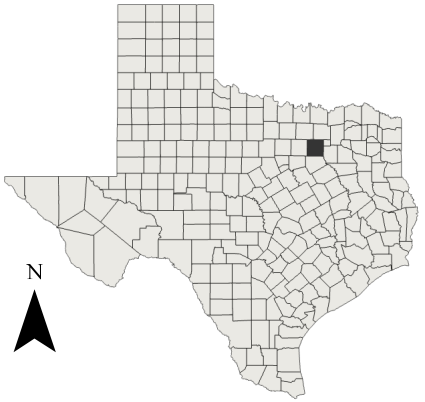
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Globe-Union, Inc.

1111 S Shiloh Rd.
Garland, Dallas
County, Texas

★ Site

● Soil Sample Location



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9.0 REFERENCES

All references attached to this report have been stamped with designated reference and page numbers. Only the cover pages of References 1 through 4 are included; the full documents are available from EPA.

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