ATTACHMENT 7 OF 7 TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S PROOF OF CLAIM #1

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT J PARCEL

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Property:

J Parcel Near the Intersection of Eagan Drive and 5th Street Frisco, Collin County, Texas

> February 26, 2013 SWG Project No. 0112079E

> > Prepared for:

The City of Frisco c/o Russell & Rodriguez, LLP 1633 Williams Drive Building 2, Suite 200 Georgetown, Texas, 78628 Attention: Mr. Kerry Russell

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The City of Frisco c/o Russell & Rodriguez, LLP 1633 Williams Drive Building 2, Suite 200 Georgetown, Texas, 78628 Attention: Mr. Kerry Russell

Re: Phase I Environmental Site Assessment

J Parcel

February 26, 2013

Near the Intersection of Eagan Drive and 5th Street

Frisco, Collin County, Texas SWG Project No. 0112079E

Southwest Geoscience (SWG) is pleased to submit results of this Phase I Environmental Site Assessment conducted on the property referenced above (the Site). This study was authorized on September 23, 2012 and performed in accordance with SWG's proposal dated September 23, 2012 (SWG Proposal No. P01121341).

This report contains information obtained from on-Site observations, a review of select historical documents, a review of select regulatory databases, interviews with key persons, the visual observation of adjacent properties from public vantage points, and our opinions regarding the potential existence of recognized environmental conditions (RECs), as defined by ASTM 1527-05, on and in the near vicinity of the Site.

Based on ASTM E 1527-05, the contents, opinions and findings of this report can be relied upon for up to one year from the date the information was collected or updated provided the information inquiries were conducted within 180 days of the acquisition or the intended date of transaction. The information inquiries subject to re-evaluation in 180 days are: the interview of past and present owners and occupants, recorded environmental cleanup lien search, government records review, and the visual inspection of the Site and adjoining properties. The information inquiries listed above must be re-evaluated by April 3, 2013 to maintain viability.

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. The undersigned Environmental Professionals prepared and/or reviewed this report for accuracy, content, and quality of presentation

SWG appreciates the opportunity to be of service on this project. If we can be of further assistance, please contact the undersigned.

Prepared by:

Tommy R. Kim

Environmental Professional

Rusty L. Simpson, P.G., C.P.G. Senior Technical Review

Reviewed



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EXECUTIVE SUMMARY

SWG conducted a Phase I Environmental Site Assessment (ESA) of the approximate I70-acre property located near the intersection of Eagan Drive and 5th Street in Frisco, Collin County, Texas (the "Site"). The Site consists of 13 irregular shaped tracts of vacant land with portions of Eagan Drive, a segment of Stewart Creek, tributaries of Stewart Creek, drainage features, portions of private roads, an intermittent pond, an intermittent natural spring, and two barn structures. For the purpose of the report, the different tracts will be differentiated as Tract A through M (See Appendix A). The Site encompasses adjacent areas surrounding the former Exide Technologies, Inc. (Exide) facility (7471 South 5th Street).

The Site is owned by Exide, an adjacent Resource Conservation Recovery Act (RCRA)permitted facility. The former Exide facility included a lead oxide manufacturer and secondary lead smelter that operated from 1964 to November 2012 when the facility ceased their industrial manufacturing operations. It should be noted that secondary lead smelting activities at the facility began in 1970. Historical business names that were predecessors to Exide include Burrs Metals; Gould, Inc.; and GNB, Inc. Since the 1980s, multiple investigations of surface and subsurface conditions along with remediation activities have taken place to address the environmental issues associated with the former Exide operations. In addition, regulatory inspections have identified violations associated with materials storage, disposal, processing activities, unauthorized discharges, spills, and administrative issues. As noted previously, the former Exide facility has ceased their manufacturing operations. However, the former Exide facility is undergoing investigation and remedial activities under the direction of the Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA). In addition to the remediation activities, the decontamination and demolition activities associated with the cessation of the plant will continue until regulatory concurrence/closure is issued; therefore, some of the facility permits will remain active. The former Exide facility entered the TCEQ Voluntary Cleanup Program (VCP) in 2012 and was assigned VCP. No. 2541. The former Exide facility is further discussed in the regulatory summary.

This Phase I ESA was based on a visual survey, off-Site reconnaissance of adjoining properties, interviews with owner/occupants about the Site, a regulatory record review and a review of Site use history. This Phase I ESA was authorized on September 23, 2012 (SWG Proposal No. P01121341). It should be noted that SWG previously prepared a DRAFT Phase I ESA in July 2012. The Site was previously identified as "Boundary 1" and "Boundary 2". Boundary 1 consisted of Tracts A through L. Boundary 2 consisted of Tract M. Information in this ESA report is a compilation of information obtained and reviewed during the July 2012 ESA. SWG updated information including, but not limited to, interviews, visual survey, off-Site reconnaissance, regulatory inquiries and records review, and environmental lien searches.

The ESA was performed in general accordance with the consensus document known as ASTM E 1527-05, a guide for conducting Phase I ESAs. The purpose of the ESA is to assist the client in developing information to identify recognized environmental conditions (RECs) in connection with the Site, as reflected by the scope of SWG's proposal.



We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Summary of Findings

SWG has prepared Figure 3 in Appendix A to depict the approximate locations of the on-Site monitoring wells that were identified in the regulatory files for the Exide facility. The figures can be used as a reference to determine the relationship (distances, etc.) between the Site and where maximum concentrations of chemicals of concern (COCs) During the previous investigations, the were identified during the investigations. analyses that were conducted were limited to "select COCs", primarily lead and cadmium; however, SWG's review of available regulatory information (e.g., inspections and notice of registrations) for the former Exide facility identified other petroleum products and/or hazardous substances such as hydraulic fluid, solvents, and fuel. Groundwater analytical results were not identified for all wells and it appears that the wells were sampled at various times by different consultants. SWG did not include other sampling points (e.g., surface soil, sediment, etc.) that were not converted into monitoring wells because of the amount of sampling activities that were conducted to evaluate potential impacts from the former Exide facility to the surrounding areas, including the Site. However, SWG Included excerpts (text and associated figures) from the previous investigation reports in Appendix F for reference.

it should also be noted that regulatory standards changed over time and the discussions below are related to regulatory standards at the time of the sampling events. Based on a Tier 2 Protective Concentration Level (PCL) calculation for total lead, assuming clayey soil, the Tier 2 PCL for lead would exceed 250 milligrams per kilogram (mg/Kg); therefore, the Residential Critical PCL for lead in surface soil will default to the cleanup goal of 250 mg/Kg that was established by the City of Frisco. Based on SWG's review of available regulatory files for the adjacent former Exide facility, it is presumed that the Site will meet the Class 3 groundwater resource classification. SWG compared the detected cadmium concentrations to the TCEQ TRRP (30 TAC Chapter 350) Tier 1 Residential Critical PCLs for a 30-acre source area considering a Class 3 groundwater designation. The Critical PCL for cadmium is the Tier I residential total soil combined (TOTAL Comb) PCL of 52 mg/Kg. If Class 3 groundwater designation is not supported by additional investigation results or if the TCEQ concurrence is not received, the applicable Tier 1 Residential Critical PCLs for lead and cadmium in surface soil are 250 mg/Kg and 52 mg/Kg, respectively.

Site Description:

The Site consists of 13 tracts of vacant land (Tract A through M) totaling approximately 170 acres. The Site generally consisted of vacant land with areas of dense vegetation, except Stewart Creek intersects the Site through Tracts C and D. Tributaries of Stewart Creek intersected the Site on the southwestern and northern portions. Drainage



features were noted in Tracts A, D, and E. A segment of Eagan Drive (a private driveway owned by the former Exide facility) is located on portions of Tract E and F. Additional on-Site features include an intermittent pond, an intermittent natural spring, two barn structures, and a segment of the former 5th Street. Parkwood Drive, a public right-of-way, intersects Tract C through H and is not part of the Site.

Surrounding Area:

The Site is located within a mixed residential, commercial and industrial area. With the exception of the central-adjacent former Exide facility, the north-adjacent Green Supply Co. (Green Supply), and the north-adjacent former Circuit Fab Corporation (Circuit Fab), the remaining surrounding properties do not present RECs in connection with the Site.

Site Observations:

During the visual survey, SWG did not observe evidence of existing/former underground storage tanks (USTs) and/or aboveground storage tanks (ASTs); hazardous substances and/or petroleum products; release indicators (e.g., spills, sumps, drums, staining, etc.); and/or wastewater/effluent discharges (e.g., oil/water separators, wells, septic tanks, exterior pipe discharges, etc.) except as follows:

- Undocumented fill material was noted in Tracts G and J. The fill material generally consisted of soil mixed with limited concrete and asphalt debris. SWG also identified the presence of scattered battery chips in the undocumented fill. Mr. Larry Eagan, the former Plant Manager of the former Exide facility, was interviewed during this assessment regarding the operational history of the Site and the adjacent former Exide facility. Mr. Eagan did not have knowledge of the origin of the fill. Review of the 1984 aerial photograph identified significant land disturbance activities in close proximity to the fill material in Tract G and Tract J. Based on the presence of an adjacent industrial facility and because scattered battery chips were noted, the undocumented fill presents a REC in connection with the Site.
- Berms were identified in Tracts A, E, L, M. No evidence of disposal of solid waste or debris was identified in the proximity of the berms. Recent environmental investigation activities by Pastor, Behling, & Wheeler, LLC (PBW) in March and May 2012 (Section 5.6) documented that the surface soils in some areas of the Site and nearby vicinity have been impacted with lead at concentrations exceeding the City of Frisco cleanup goal of 250 mg/Kg. However, SWG noted that the concentrations of lead detected in the surface soil samples collected in proximity of the on-Site berms were below the cleanup goal. It should be noted that the berms were constructed prior to recent investigation activities; therefore, it is possible that higher concentrations of the COCs may be present within the berm at deeper intervals, Based on the limited information, documented soil impact in the area, and the presence of an adjacent industrial facility, the on-Site berms present a potential environmental concern in connection with the Site.
- Undocumented fill material was noted in Tracts K and L. The fill material generally
 consisted of soil mixed with limited concrete and asphalt debris. No battery chips
 were identified in proximity of the fill material. Mr. Eagan did not have knowledge of
 the origin of the fill. Based on the presence of a nearby industrial facility, the



undocumented fill in Tracts K and L present a potential environmental concern in connection with the Site.

- Significant amounts of surface debris were noted on the northwestern portion of Tract C. The debris consisted of demolished residential building debris, old appliances, some tires, cans, jars, concrete debris, and wood debris. It is unclear how long the debris has been present, the origin of the debris, or what other materials are located beneath the debris. It should be noted that the operation history of the adjacent former Exide facility included four landfills. These landfills are further discussed in Section 6.1. Additionally, land disturbance possibly related to a former gravel pit was also noted in the 1938 aerial photograph in close proximity to the surface debris in Tract C. This land disturbance feature appeared leveled in subsequent photographs. Further discussion on the land disturbance is presented in Section 5.4. Based on the limited information regarding the history of the debris, the presence of nearby landfills, and land disturbance from the 1938 aerial photograph, the on-Site surface debris presents a potential environmental concern in connection with the Site.
- An abandoned cistern was identified near the southeastern corner of Tract B and appeared to have been filled in place. Based on the survey provided by the City of Frisco, the northern portion of the cistern is located on-Site. No evidence of unusual staining or odors was identified in proximity of the abandoned cistern. The abandoned cistern was not identified during review of available historical aerial photographs and topographic maps. No information on its history was identified during this assessment. Additionally, no information was found during this assessment to determine what was used to fill in the cistern. Based on the adjacent industrial history and unknown origin of fill material, the cistern presents a potential environmental concern in connection with the Site.

Historical On-Site Characteristics:

The Site consisted of vacant/agricultural land, Stewart Creek, tributaries of Stewart Creek, an intermittent pond, an intermittent natural spring, and residential structures since at least 1938. Residential structures were generally located on the northern and central portion of the Site. The northern residential structures were gone by 1984. The structures in the central portion were identified during the visual survey and were noted to be either dilapidated or in poor condition. Significant features identified during review of historical records for the Site are discussed as follows:

• The 1938 aerial photograph depicted apparent stock ponds on the southwestern portion of the Site (Tract B). These ponds were no longer visible by the 1942 aerial photograph. An additional pond was noted in the 1968 aerial photograph in the northeastern portion of Tract B among vegetation. The location of this third pond corresponded to the location of an intermittent pond that was identified during the SWG's visual survey. It should be noted that the adjacent industrial activities associated with lead oxide manufacturing began in 1964. In 1970, secondary lead smelting activities began. As further discussed in Section 6.1, lead has been detected in areas surrounding the former Exide plant (including the Site), at concentrations in exceedance of the City of Frisco cleanup goal of 250 mg/Kg. The former and existing ponds are low lying areas where sediments could accumulate.



Based on the adjacent industrial history and documented impact in the area, the former and existing ponds may present a potential environmental concern in connection with the Site.

• During the TCEQ inspection in May/June 2011, the inspector observed a berm (approximately 5,000 cubic feet) on the eastern portion of Tract A (west side of Exide's South Disposal Area). The berm was reportedly used as a shooting range for several years by the City of Frisco Police Department and was no longer in use. The inspector observed large amounts of untreated slag and battery chips in the berm. According to the inspector, the untreated slag and battery chips appeared to have originated from the former Exide facility's adjacent South Disposal Area. It should be noted that the figures attached to this TCEQ May/June 2011 inspection report depicted an additional berm area to the south of the South Disposal Area (north adjacent of Tract B). This area is depicted in Figure 3 in Appendix A.

According to the regulatory files, several groundwater monitoring wells have been installed since 1990 in proximity of the shooting range berm and adjacent South Disposal Area (part of the former Exide facility). However, SWG noted that none of the wells were installed immediately down-gradient of the former shooting range berm. Based on information from the TCEQ inspection and adjacent industrial history, the on-Site former shooting range berm presents a REC in connection with the Site.

- A segment of South 5th Street has been present on-Site since at least 1938 and is currently an extension of Eagan Drive. The segment is located between Tract B and C. It is not known when this road was paved. SWG noted during the regulatory file review that during the TCEQ inspection in May/June 2011, Mr. James Messer, Environmental and Quality Control Manager for the former Exide facility, informed the TCEQ inspector that prior to promulgation of RCRA (1976), the City of Frisco used battery casings from the former Exide facility as road base throughout the City. However, according to Mr. Eagan, lead smelting did not begin until 1970 and South 5th Street was reportedly paved prior to 1970. In March and May 2012, PBW conducted surface soil sampling on-Site. The highest concentration of lead and cadmium detected was in Sample O-15, which was located along South 5th Street on Tract B. The detected lead and cadmium concentrations were 5,180 mg/kg and 28.6 mg/kg, respectively. Although cadmium was below the Residential Critical PCL, the detected lead concentration exceeded the City of Frisco cleanup goal of 250 mg/kg. Based on available information, the elevated concentration of lead detected along the 5th Street roadway presents a REC in connection with the Site.
- Based on available aerial photographs, land disturbance features were identified on Tracts B, C, and D of the Site. The 1938 aerial photograph depicted the land disturbance on Tracts C and D but it was no longer visible by 1958. The 1958 aerial photograph depicted land disturbance on the southwestern portion of Tract B and was no longer visible by the 1968 aerial photograph. The land disturbance areas were noted during the time that the former gravel pit on Tract A was visible in the aerial photographs. Additionally, the land disturbance features appeared consistent with the former gravel pit; therefore, it is possible that these land disturbance features were also former small borrow pits. No information was found during this



assessment to determine the materials used to fill in these land disturbance features. To date, no assessments have been conducted on-Site to address potential impact from the land disturbance features on Tracts B, C, and D. Based on limited information regarding the land disturbance, presence of undocumented fill, and adjacent industrial history, the land disturbance feature on Tracts B, C, and D presents a potential environmental concern in connection with the Site.

• The 1984 aerial photograph depicted significant land disturbance activities in Tracts F, G, and J of the Site. The reason for the land disturbance is not known; however, it is possible that filling activities also took place in this area. Landfilling activities associated with the adjacent former Exide facility were taking place approximately 300 feet west-southwest of this land disturbance during the same time. Additionally, as noted in Section 3.7, undocumented fill was identified during SWG's visual survey in Tracts G and J among vegetation. Scattered battery chips were identified in proximity of the undocumented fill. Mr. Eagan did not have knowledge of the fill's origin. No information was found during this assessment to determine the materials used to fill in these land disturbance features. To date, no assessments have been conducted on-Site to address potential impact from the land disturbance features on Tracts F, G, and J. Based on limited information regarding the land disturbance features on Tracts F, G, and J present a potential environmental concern in connection with the Site.

Historical Off-Site Characteristics:

No RECs in connection with the historical use of off-Site properties were identified
with the exception of the central-adjacent former Exide facility, the north-adjacent
Green Supply, and the north-adjacent former Circuit Fab. These facilities are
discussed in the regulatory summary below.

Regulatory:

Review of the EPA and TCEQ environmental database records revealed several regulated facilities that were identified in the vicinity of the Site. One (1) CERCLIS NFRAP facility, one (1) RCRA Generator facility, two (2) RCRIS Treatment, Storage, and Disposal facilities, two (2) CORRACTS facilities, one (1) ERNS report, two (2) Solid Waste facilities, nine (9) Registered Storage Tank facilities (above- and underground), six (6) Registered Leaking Petroleum Storage Tank facilities, two (2) Industrial Flazardous Waste facilities, and one (1) Voluntary Cleanup Program facility were identified within specified search radius of the Site. Based on the Site geology, topographic gradient, distance from the Site, and/or the regulatory status details, these facilities do not constitute RECs in connection with the Site except as follows:

• The former Exide facility is centrally adjacent to the Site. According to historical records, prior to development the location of the former Exide plant was vacant/agricultural land since at least 1938. In addition to vacant/agricultural use, a segment of Stewart Creek intersected the facility and was located beneath the area currently occupied by the existing former Exide buildings. The former Exide property remained vacant/agricultural land with a segment of Stewart Creek until approximately 1964 when a single industrial building was built for the former Burrs



Metals (a division of GNB, Inc.). Burrs Metals was a lead oxide manufacturer. The previously mentioned intersecting segment of Stewart Creek appeared to have been re-routed to channel along the southern boundary of the plant during the development of the Burrs Metals facility. Additionally, a railroad spur extended from the St. Louis – San Francisco Railroad toward the Burrs Metals building. In approximately 1970, GNB began recycling lead acid batteries and became a secondary lead smelter. The production of lead smelting waste (e.g., slag and battery chips) reportedly began in 1970. In 2000, Exide Corporation acquired GNB and by 2001, the facility became known as Exide. The former Exide facility ceased operations in November 2012. The former Exide facility is undergoing investigation and remedial activities under the direction of the TCEQ and EPA. An Affected Property Assessment Report (APAR) is being performed under the direction of the TCEQ.

SWG's review of available aerial photographs from 1968 to 2006 depicted the expansion of the former Exide facility over the years. Expansion activities included the additions of four landfills (North Disposal Area, South Disposal Area, Slag Landfill, and the present day Class 2 Non-Hazardous Landfill), a stormwater retention pond, a Crystallizer plant, and multiple buildings associated with processing activities at the facility.

The former Exide facility was identified on multiple regulatory databases including the CERC-NFRAP, CORRACTS, LPST, and GCC. Based on its history and identification on the regulatory databases, SWG reviewed files at the City of Frisco and the EPA Region IV office. In addition, copies of the TCEQ files were made available by the Client for review. Information from the City of Frisco is summarized in Section 5.6 and 7.1. Information from the EPA is summarized in Section 7.3. The TCEQ files are summarized in Section 5.6 and 7.2.

Based on review of the historical and regulatory information, SWG identified multiple areas of concern associated with the former Exide facility. The areas of concern generally consisted of the former Exide's industrial activities, the former South Disposal Area, the former North Disposal Area, the former Slag Landfill, the existing Class 2 Non-Hazardous Landfill, the existing stormwater retention pond, the existing Crystallizer plant (inactive), the detected concentrations of COCs along the associated railroad, Crystallizer Road, and the potential presence of groundwater impact in the area. Discussions on these areas of concern are as follows:

o The adjacent former Exide facility conducted industrial activities associated with lead oxide manufacturing (1964 to 2012) and secondary lead smelting (1970 to 2012). The facility began with a single industrial building and an associated railroad spur off the St. Louis – San Francisco Railroad that was utilized for materials transportation. Improvements within the former Exide plant area include the truck/tire washing stations, maintenance shop, raw materials storage building (RMSB), reverberatory (reverb) furnace, blast furnace, covered storage area (CSA), battery breaker, slag treatment building, wastewater treatment plant, oxide building, battery storage building, bale stabilization area, and the office building. Previous regulatory inspections have identified various violations associated with the plant including improper storage and disposal of waste, evidence of leaks and spills, unauthorized discharges of wastes, cracks in the



foundation and flood wall, and administrative concerns. Multiple surface and subsurface investigations have taken place at the facility since the 1980s to evaluate the potential impacts from select COCs.

- The industrial activities were also sources of air emission of toxic substances such as lead and cadmium. Wet scrubbers were installed at the plant to help remove particulates from the furnace off-gases. Regulatory records included information pertaining to the facility's air permit and air emission testing, in addition, SWG was provided with the Annual Soil Sampling report dated March 1999 that was completed by Whitehead & Mueller, Inc. (WMI). The purpose of the investigation was to evaluate the concentrations of total lead in the surface soil around the facility. According to WMI, there are 10 locations around the Exide facility that are sampled annually. Based on the provided map, locations GNB-SS-01, GNB-SS-03, GNB-SS-04, GNB-SS-05, GNB-SS-06, GNB-SS-07, and GNB-SS-09 were located on-Site on Tracts M, G, E, D, C, B, and A, respectively. The mean lead concentrations for the on-Site sampling locations were 69.8 mg/kg (GNB-SS-01), 67.8 mg/kg (GNB-SS-03), 16 mg/kg (GNB-SS-04), 77.8 mg/kg (GNB-SS-05), 105.3 mg/kg (GNB-SS-06), 57.3 mg/kg (GNB-SS-07), and 32.8 mg/kg (GNB-SS-09). The WMI report also included analytical results from the previous six-years (1993 through 1998). WMI calculated a six-year average for each sampling point. The six-year average (1993 through 1998) lead concentrations were 134.6 mg/kg (GNB-SS-01), 134 mg/kg (GNB-SS-03), 61 mg/kg (GNB-SS-04), 96.4 mg/kg (GNB-SS-05), 178 mg/kg (GNB-SS-06), 106.8 mg/kg (GNB-SS-07), and 63 mg/Kg (GNB-SS-09). To further evaluate the aerial deposition of lead and cadmium, Exide contracted PBW to conduct a surface soil investigation in the areas surrounding the former Exide plant which included the Site. In March 2012, 117 sampling points were installed across the Site. Lead concentrations ranged from <1.96 mg/Kg (Sample N-10 in Tract B) to 5,180 mg/Kg (Sample O-15 in Tract B). Cadmium concentrations ranged from <0.86 mg/kg (Sample Q-13 in Tract B) to 28.6 mg/kg (Sample O-15 in Tract B). Of the 117 sample locations, 29 locations identified lead concentrations in exceedance of the City of Frisco cleanup goal of 250 mg/kg. The samples were located in Tracts A through H and Tract M. Further delineation of the surface soil by PBW in May of 2012 identified lead exceedances in Tracts B, C, D, and M.
- During the visual survey, SWG identified a drainage feature located adjacent and along the northern boundary of Tract A. Scattered battery chips were identified along the off-Site drainage feature. It should be noted that this drainage feature was located parallel and south-adjacent of Crystallizer Road where battery chips were also observed.
- The South Disposal Area, a closed pre-RCRA landfill, operated from 1970 to 1974 and was used for disposal of rubber chips and blast furnace slag. According to the RCRA Facility Investigation (RFI) by Lake (1991), the South Disposal Area was estimated to be approximately 0.9 acres. No municipal solid waste was identified by Lake during the investigation. The EPA Corrective Action inspection in 2009 identified exposed battery chips and slag which indicated that the cover of this landfill had some erosion. During the May/June 2011 TCEQ inspection, the inspector noted significant evidence of erosion which exposed battery chips along the slope.



In addition, the inspector observed a berm (approximately 5,000 cubic feet) on the west side of the South Disposal Area. The berm reportedly was used as a shooting range for several years by the City of Frisco Police Department but was no longer in use. The inspector observed large amounts of untreated slag and battery chips in the berm. According to the inspector, the untreated slag and battery chips appeared to have originated from the South Disposal Area.

Several groundwater-monitoring wells have been installed in proximity of the South Disposal Area since 1990. The monitoring wells in these areas included B1, B1N, B1R, B1S, B2, B2R, B3, B3N, B3R, B4, and B4R. Of these, monitoring wells B1R, B2R, B3R, and B4R have not been decommissioned. The latest groundwater sampling event (January 2012) by PBW included B3R and B4R; however, monitoring well B3R was dry during the investigation. Monitoring wells B1R, B2R, and B3R have not been sampled since 1997. Lead and cadmium concentrations from the January 2012 sampling event were detected at 0.0761J- milligrams per liter (mg/L) and 0.00062J mg/L, respectively. Sulfate and TDS concentrations were 178 mg/L and 1,170 mg/L, respectively. Although low concentrations of COCs were present in groundwater, it should be noted that analyses were specifically for lead, cadmium, TDS and sulfate. Regulatory information on the former Exide facility indicated the use of petroleum products and other hazardous substances.

o The North Disposal Area, also a closed pre-RCRA landfill, operated from 1974 to 1978 and was used for disposal of rubber chips and blast furnace slag. Additionally, the North Disposal Area was used by the City of Frisco as a municipal solid waste landfill. According to the RFI by Lake (1991), the North Disposal Area was estimated to be approximately 5.2 acres, Landfill materials identified by Lake included construction debris, normal household and industrial trash. Lake noted that the cap on the North Disposal Area was thinning in several areas. Additionally, the EPA Corrective Action inspection in 2009 identified exposed battery chips and slag, which indicated that the cover of this landfill had some erosion.

It should be noted that in 1986, dredging activities associated with the cleanup of Stewart Creek resulted in the piling of dredged materials on the southwestern portion of the North Disposal Area. In 1989, Lake's closure plan for the Stewart Creek dredging piles were approved by the Texas Water Commission (TWC; predecessor to TCEQ). The dredged sediment was pre-characterized as Class I Non-Hazardous waste. The sediment materials were dispersed above a section of the North Disposal Area were compacted and capped with clay.

SWG noted that several groundwater-monitoring wells have been installed downgradlent of the North Disposal Area and Stewart Creek dredging pile area since 1990. The monitoring wells included B5, B5N, MW16, MW16S, and MW17. Monitoring well B5 has been decommissioned. The latest groundwater sampling event for the remaining wells was conducted in January of 2012 by PBW. The samples were analyzed for total and dissolved metals (specifically lead and cadmium), sulfate, and TDS. Relatively low concentrations of metals were detected. Sulfate concentrations ranged from 298 milligrams per liter (mg/L; in



MW16) to 1,590 mg/L (MW17). TDS concentrations ranged from 1,380 mg/L (MW16) to 7,980 mg/L (MW16S).

The former slag landfill was active from 1978 to 1996 and was used for disposal of blast furnace slag. It should be noted that the former Exide's "Boneyard" was located on top of the former slag landfill. Available regulatory files revealed that during the EPA corrective action inspection in December 2009, equipment containing process wastes was observed in the Boneyard. The equipment included a roller belt with battery chips, a kettle with refining dross, a "grizzly screen" containing slag pieces, a bail of untreated cardboard and shrink wrap, and several "supersacks" containing what appeared to be building insulation. In addition, hydraulic equipment including two full hydraulic tanks were observed to be leaking hydraulic fluid onto the ground was observed. In the National Pollutant Discharge Elimination System (NPDES) Compliance Inspection Report dated September 14, 2010, the inspector noted that numerous areas of slag, dross, batteries, fire extinguishers, and trash were observed in the Boneyard. In January 2012, PBW collected soil samples at three locations from the former slag landfill area. Soil samples were collected at various intervals up to 10 feet bgs. The maximum lead concentration detected was 7,970J mg/Kg at the two to four feet bgs interval. Cadmium was detected at a maximum concentration of 50,2 mg/kg at the two to four feet interval. In addition, PBW also collected five soil samples at the zero to two feet bgs interval from locations surrounding the Boneyard. The maximum lead and cadmium concentrations detected were 47,000 mg/kg and 65.9 mg/kg, respectively, which were located on the south side of the Boneyard.

Several groundwater-monitoring wells have been installed down-gradient of the former slag area since 1990. The monitoring wells were B8, B8N, B8R, and MW18. The latest groundwater sampling event (January 2012) by PBW was limited to MW18. Monitoring wells B8, B8N, and B8R have not been sampled since 1997. The January 2012 analytical results for MW18 identified lead and cadmium concentrations (total and dissolved) below their respective detection limits. Sulfate and TDS concentrations were 453 mg/L and 1,040 mg/L. respectively. It should be noted that the analyses were limited to select metals and that the location of MW18 was cross-gradient of the former slag landfill. Additionally, the information from the regulatory files indicated that the activities associated with the Boneyard were uncontrolled and have included the placement of equipment containing process waste and hydraulic fluid in this area. Information from the regulatory database report referenced the use of parts solvent at this facility.

o The stormwater retention pond was constructed in the 1990s and is located adjacent to the Site (Tract A). Stormwater run-off from the manufacturing area of the plant flows into a storm sewer drain that is connected to the pond. The stormwater treatment includes pH adjustment, precipitation of dissolved solids, and filtration. In the past, treated stormwater was discharged into Stewart Creek. Dried sediment was collected and returned to the reverb furnace.

Although the retention pond is solely used for stormwater control, it should be noted that past regulatory inspections have identified evidence of improper



storage and spills at the facility. In a NPDES compliance inspection conducted in September 2010, the inspector noted that metallurgical coke was stored outside in an uncovered area and the runoff trailed to an open storm sewer curb inlet. During the May/June 2011 TCEQ inspection, the inspector noted white liquid and solid at the plant area. The liquid reported was flowing toward a stormwater pipe. A soil sample collected nearby contained elevated concentrations of lead and cadmium at 39,700 mg/kg and 574 mg/kg, respectively. In addition, according to the regulatory information, the manufacturing activities at the facility have included the use of other petroleum products and/or hazardous substances (i.e., solvents). As noted above, investigations of various media associated with the facility were limited to select COCs.

- The present day Class 2 Non-Hazardous Landfill consists of the landfill disposal area, a solar evaporation pond and a leachate collection system. The landfill, which is owned and operated by the former Exide facility, consists of nine cells, six of which were reported by the TCEQ to have been closed. Leachate from the landfill is collected into a leachate tank and is pumped out and processed in the facility's WWTP. Landfill contact water is pumped to the solar evaporation pond. Sediments from the pond are recycled in the reverb furnace or disposed at an off-site landfill. Based on the regulatory files, treated slag (with Enviroblend, Portland cement, etc.) is placed in this landfill. The treated slag is analyzed via Toxicity Characteristic Leaching Procedure (TCLP) extraction to meet the Class 2 Non-Hazardous criteria. However, according to the TCEQ inspection during May to June 2011, it was noted that the treated slag is disposed of in the landfill before the laboratory results are available. Exide's standard operating procedure is to excavate the failed batch from the landfill and retreat it until the TCLP extraction meets the Class 2 Non-Hazardous criteria. During the TCEO inspection, a sample of the treated slag and one sample of a material resembling mud that consisted of contact water and sediments were collected. Laboratory analytical results indicated hazardous concentrations of lead (up to 36,200 mg/Kg total and 25.52 mg/L TCLP) and cadmium (up to 437 mg/Kg total and 1.57 mg/L TCLP) were present in the Class 2 Non-Hazardous Landfill.
- o The Crystallizer plant is located east-adjacent and up-gradient of the Site (Tract A). The activities at the Crystallizer plant were the final phase of processing treated wastewater from the Exide facility. A by-product of the process was sodium sulfate, which was collected and sold to Cooper Industries for re-use in the production of fiberglass, or disposed of at DFW Recycling and Disposal, Information from the regulatory files has identified runoff, spills and battery chips in proximity of the Crystallizer plant.

During the EPA's corrective action inspection in December 2009, liquid was leaking from a frac tank at the Crystallizer unit. A visible drainage pathway was observed leading from the frac tank to the edge of a concrete ramp. The EPA noted that analytical results for the contents of the frac tank over the past year indicated that the contents of the tank were hazardous waste due to toxicity for selenium and cadmium on several occasions. In the NPDES Compliance Inspection Report dated September 14, 2010, the inspector observed uncontrolled salt laden runoff from the Crystallizer plant and also that the frac tank was leaking. In the May/June 2011 TCEQ inspection, the inspector



observed a white solid and several battery chips in a drainage swale west of the Crystallizer area. Additionally, dead vegetation and a white solid along a drainage pathway that began at the Crystallizer and ended at the culvert were observed. Water from this drainage reportedly discharges to the City of Frisco. However, it was not stated in the report whether the drainage discharged into the City's storm sewer or the sanitary sewer. One soil sample was collected at the opening of the culvert. Total lead and TCLP lead were detected at concentrations of 694 mg/Kg and 3.92 mg/L, respectively. detected at a concentration of 6,040 mg/kg. In addition to the regulatory inspections, SWG was provided with analytical results associated with the January 2012 facility investigation by PBW. Two soil samples were collected from the Crystallizer plant area and at the zero to two feet bgs interval. The soil samples were analyzed for various metals and reported the following maximum concentrations: <0.293R mg/Kg (antimony), 7.18J mg/Kg (arsenic), 50.8J mg/Kg (barium), 0.806 mg/Kg (beryllium), 0.466 mg/Kg (cadmium), 9.52J mg/Kg (chromium), 33.2 mg/Kg (lead), 12.4J mg/Kg (nickel), <0.328 mg/Kg (selenium), <0.15 mg/Kg (silver), 54.5J mg/Kg (zinc), and 8,190 mg/Kg (sulfates). The "R" notation reportedly indicates the result was rejected. The "J" notation indicates an estimated value. It should be noted that the sampling point locations were north of the driveway for the Crystallizer plant. No samples appeared to have been collected along the drainage swale associated with the Crystallizer plant. In addition, the previous investigations were limited to select COCs. Liquids have been noted to be leaking from the frac tank. The liquids originated from the plant where other potential COCs such as petroleum products and/or hazardous substances may have been used. To date, no groundwater assessments appear to have been conducted in the immediate vicinity of the Crystallizer plant.

It should be noted that during the surrounding area reconnaissance, a fill mound was located off-Site between Tract A and the adjacent Crystallizer plant. Mr. Eagan stated that the origin of the fill is soil that was scraped from around the Crystallizer plant to create a drainage swale for routing surface water to the adjacent drainage feature (located along the northern boundary of Tract A). According to available regulatory information, several regulatory inspections from 2009 through 2011 (presented in Section 5.6) by the EPA and TCEQ have identified run-off of liquids and solids from the adjacent Crystallizer plant area to its surrounding area. In addition, soil samples collected near the Crystallizer plant by the regulatory agencies have identified COC concentrations in exceedance of the Residential Critical PCLs.

In the 1960s, a railroad spur off the west-adjacent St. Louis – San Francisco Railroad was built along the southern boundary of Tract M. This railroad spur appears to be a path for transportation of materials to and from the adjacent former Exide facility. During review of previous environmental reports (Section 5.6), SWG noted that in 1998, JD Consulting, L.P. (JDC) collected soil samples from four locations along a segment of this railroad for lead analysis. Although the sample locations were not located on-Site, laboratory analytical results reported elevated concentrations of lead at depths up to 48 inches bgs. The maximum lead concentration detected during the investigation was 30,200 mg/Kg at a depth of six to 12 inches bgs. In addition, in March 2012, PBW collected surface soil samples near the adjacent railroad spur. The detected lead



concentrations were below the City of Frisco cleanup goal of 250 mg/kg. The detected cadmium concentrations were below the Residential Critical PCL of 52 mg/kg. Although the detected lead and cadmium concentrations were below their respective PCLs during the March 2012 surface soil sampling event, it is possible that higher concentrations of the COCs may be present at deeper intervals based on the results from the 1998 soil sampling event. In addition, based on its historical use, materials may have spilled from the rail cars along the tracks.

- o The north-adjacent Crystallizer Road is associated with the former Exide operations. During the visual survey, SWG noted that scattered battery chips were present on this off-Site road. The segment of Crystallizer Road located north of Tract A (within 50 feet) was noted to be unpaved. Based on available historical information, Crystallizer Road was constructed sometime between 1968 and 1972.
- o Stewart Creek and its tributary have intersected the Exide plant since at least 1938. The creek and tributary were flowing during SWG's visual survey. The flow direction in these features is to the west. It should be noted that Stewart Creek and the tributary's original drainage paths appeared to have been altered over the years. Based on the aerial photographs, a segment of Stewart Creek was originally beneath the current location of the former Exide plant. Stewart Creek appeared to have been re-routed during construction of the original Burrs Metals. No information was found during this assessment as what materials were used to fill in the original segment of Stewart Creek that is currently located beneath the former Exide plant. The original segment of Stewart Creek is a preferential migration pathway for contaminants present in the vicinity of the former creek channel.

Regulatory information indicated that in 1973, the TWQB conducted an inspection at the former Exide facility. The inspector identified inadequate stormwater control at the facility. As a result, contaminated run-off from the battery plate storage area and the battery wrecking area entered Stewart Creek. The inspector also noted unauthorized cooling water discharge from the plant entering the creek. Additional information reviewed for the former Exide facility indicated that untreated slag and battery chips from the plant were used to line the creek banks to prevent erosion in the 1960s. In 2000, remediation activities along Stewart Creek were conducted by JDC and the results were presented in a Stewart Creek Corrective Measures Implementation Report. The focus of the remediation efforts was the segment of Stewart Creek located between South 5th Street and the adjacent railroad to the west. The assessment activities generally consisted of the removal of soils and slag from Stewart Creek followed by verification sampling. Approximately 16,025 tons of material were removed from Stewart Creek. Following analytical data confirming that the cleanup levels were met, the creek bottom was backfilled with clean soils and graded as necessary. Although remediation efforts have been taken, it should be noted that the focus of the 2000 investigation was limited to metals, specifically lead and cadmium. The Notice of Registration (NOR) for Exide included other petroleum products and/or hazardous substances such as benzene and tetrachloroethylene, addition, since 2000, there were regulatory inspections including a TCEO



inspection in May 2011 that identified "dead vegetation near a crack in the barrier wall (also known as the flood wall) where a liquid was discharging." The TCEQ staff collected a soil sample from the embankment where the dead vegetation was observed and analyzed it for lead (total and TCLP). The detected lead concentrations were 3,560 mg/Kg (total) and 2.86 mg/L (TCLP). The TCEQ staff also observed a staining along the wall where the stormwater pipe exited the wall (approximately 500 feet east-northeast of Tract A). The staff noted that the "pipe appeared to be leaking due to worn out gaskets." A sample of the soil and rock along the embankment beneath the pipe indicated lead and cadmium concentrations at 39,800 mg/Kg and 894 mg/Kg, respectively. It is unclear how long the seepage from the cracked wall or the pipe discharges had been occurring.

During the visual survey, groundwater-monitoring wells were identified on Tract E (known as MW20), Tract G (known as MW19), and Tract M (known as LMW1 Based on SWG's review of the regulatory files, multiple groundwater-monitoring wells have been installed across the area (including the Site) at various times to evaluate the subsurface conditions and the potential impact from the adjacent former Exide's activities. To date, a number of these groundwater-monitoring wells have been decommissioned. However, there remain numerous active groundwater-monitoring wells that are located on- and off-Site. Figure 3 depicts the approximate location of the wells that were found in the regulatory files. Groundwater analytical results were not identified for all wells and it appears that the wells were sampled at various times by different consultants. The on-Site monitoring wells MW19 and MW20 were last sampled in January 2012 by PBW. SWG noted that the investigations were conducted to evaluate select COCs. Information from the regulatory database and files associated with the adjacent Exide facility have documented other potential COCs such as petroleum products and/or hazardous substances (i.e., solvents) that were utilized or handled at the facility.

The former Exide facility began operation in 1964. From 1964 to 2012, the facility was a lead oxide manufacturer. Lead smelting operations began in 1970. Expansion activities since the 1960s included the addition of operation buildings at the plant, landfills, a retention pond and a Crystallizer plant. Based on an industrial history of more than 40 years, documented violations, limited analytical program utilized in past investigations, proximity to the Site, and information from previous regulatory inspections, the adjacent former Exide facility presents a REC in connection with the Site.

• The north-adjacent and up-gradient Green Supply has been in business since 1984. Regulatory information has identified a release associated with the facility that impacted areas beyond the facility's limits. According to available regulatory information, the facility has received regulatory closure. To date, no assessments have been conducted on-Site to address potential impact from the documented release and industrial activities associated with Green Supply. Based on the type of business, more than 20 years of industrial activities, documented release, upgradient and adjacent location, SWG's visual survey, and lack of subsurface assessments on-Site, Green Supply presents a REC in connection with the Site.



- The north-adjacent and up-gradient Circuit Fab was in business from 1984 to 1988. Regulatory information has identified a release associated with the facility that impacted areas beyond the facility's limits. The facility underwent a *Pre-CERCLIS Screening Assessment* that was conducted by the TCEQ and the facility was not recommended for further evaluation under CERCLA. To date, no assessments have been conducted on-Site to address potential impact from the documented release and industrial activities associated with Circuit Fab. Based on the type of business, industrial use, documented release, up-gradient and adjacent location, and lack of subsurface assessments on-Site, Circuit Fab presents a REC in connection with the Site.
- The north-adjacent Martin Marietta (also known as Boorhem-Fields) stone, sand and gravel yard located at 6601 Eubanks Street has been in operation since the late 1980s. Regulatory Information indicated one 10,000-gallon fuel UST was removed from the facility in 1989. Although no documented releases were reported, the exact location of the former UST in relation to the Site is unknown. No records of subsurface assessments were identified for the facility. Stormwater runoff from this facility appears to discharge into a drainage swale that appears to route the facility's stormwater onto the Site. To date, no assessments have been conducted on-Site to address potential impact from nearby and up-gradient facilities. Based on lack of information pertaining to the operational history, distance, up-gradient location, and SWG's observations, the north-adjacent Martin Marietta facility presents a potential environmental concern in connection with the Site.
- The Frisco RM facility was identified on the regulatory databases for having one 10,000-gallon UST containing diesel that was installed in 1983 and removed in 1996. The location of this former facility could not be determined during this assessment based on its address other than it was located along Eubanks Street which is up-gradient of the Site. However, based on the tank operation dates (1983 to 1996) and its ownership reference as a concrete ready-mix facility, it is likely that the Frisco RM facility was an apparent batch plant facility that was depicted in the 1984 and 1995 aerial photograph. Although no documented releases were reported, the exact location of the former UST in relation to the Site is unknown. No records of subsurface assessments were identified for the facility. To date, no assessments have been conducted on-Site to address potential impact from nearby and upgradient facilities. Based on the lack of information pertaining to the operational history, distance, and up-gradient location, the former Frisco RM facility to the north-northeast presents a potential environmental concern in connection with the Site.
- Xtreme Iron/Rodman facility appears to have been in operation since at least 1999 as a supplier of heavy equipment utilized for construction activities. Information from the TCEQ identified one 30,000-gallon duel compartment UST (gasoline and diesel) and a total of nine diesel ASTs with capacities ranging from 2,000- to 8,000-gallons for the facility. However, it should be noted that the TCEQ PST Registration database identified a total of 23 ASTs with similar capacities. Although no documented releases in connection with the UST or ASTs were identified during this assessment, the ASTs have been in operation for more than 10 years and it appears that several of the ASTs were installed in earthen dikes. Exterior storage of drums without secondary containment or under a covered area was noted during SWG's area reconnaissance. Stormwater runoff from this facility appears to discharge into



a drainage swale and appears to route the surface water onto the Site. To date, no assessments have been conducted on-Site to address potential impact from nearby and up-gradient facilities. Based on lack of information pertaining to the operational history, discrepancies between the TCEQ file and the PST registration database, distance, up-gradient location, and SWG's observations, the Xtreme Iron/Rodman facility presents a potential environmental concern in connection with the Site.

Conclusions

We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E-1527-05 of the approximate 170-acre property located near the intersection of Eagan Drive and 5th Street, the *property*. Any exceptions to, or deletions from, this practice are described in Section 1.1 of this report. This assessment revealed no evidence of RECs in connection with the property except for the following:

On-Site

- The undocumented fill in Tracts G and J;
- the former shooting range berm; and
- the elevated concentration of lead along the 5th Street roadway.

Off-Site

- · the central-adjacent former Exide facility;
- · the north-adjacent Green Supply; and
- · the north-adjacent former Circuit Fab;

In addition to the RECs identified above, SWG identified several issues that were considered to present potential environmental concerns in connection with the Site. Detailed discussions on these issues are presented in their respective sections of this report. These issues are as follows:

On-Site

- The berms located in Tracts A, E, L, and M (Section 3.7);
- the undocumented fill in Tracts K and L (Section 3.7);
- the surface debris (concrete, wood, tires, cans, jars, etc.) located in Tract C (Section 3.7):
- the abandoned cistern located in Tract B (Section 3.8);
- the former and existing ponds located in Tract B (Section 5.4); and
- the historical land disturbance features located on Tracts B, C, D, F, G, and J (Section 5.4).

Off-Site

- The Boorhem-Fields/Martin Marietta facility to the north (Section 6.1);
- the Frisco RM facility to the north (Section 6.1); and
- the Xtreme Iron/Rodman facility to the north (Section 6.1).