

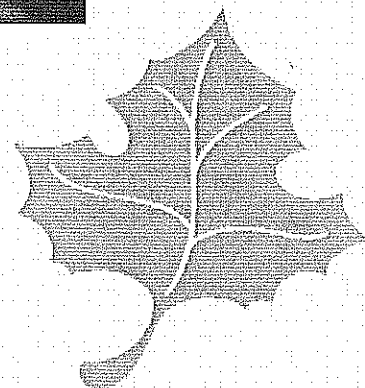
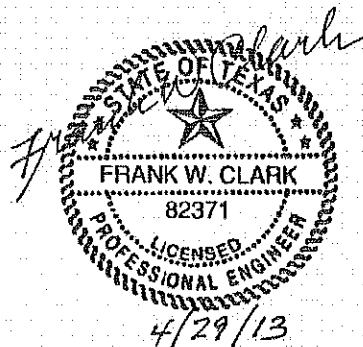
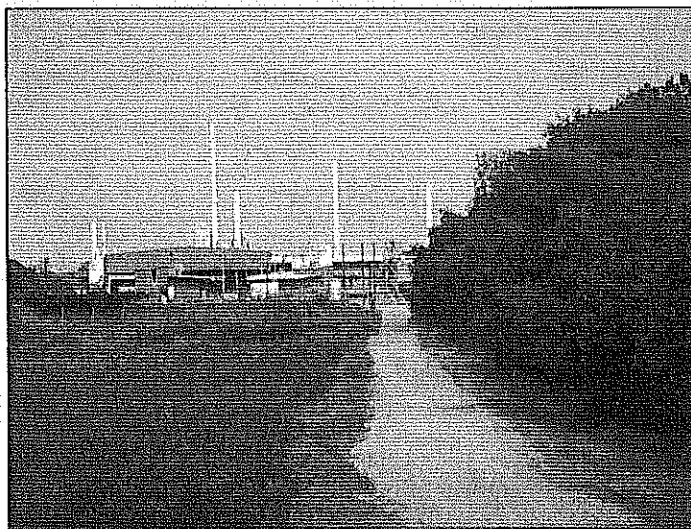
## **EXHIBIT “D”**



*Interim Action Work Plan  
Slag and Battery Case Fragment  
Removal and Disposal*

*Exide Frisco Recycling Facility  
Frisco, Texas*

*April 2013*





**INTERIM ACTION WORK PLAN  
SLAG AND BATTERY CASE FRAGMENT  
REMOVAL AND DISPOSAL**

**EXIDE FRISCO RECYCLING FACILITY  
7471 5<sup>TH</sup> STREET, FRISCO, TEXAS 75034-5047  
TCEQ SWR No. 30516  
TCEQ HAZARDOUS WASTE PERMIT No. HW-50206  
TCEQ AGREED ORDER DOCKET No. 2011-1712-IHW-E  
EPA ID No. TXD006451090  
CUSTOMER No. CN600129779  
REGULATED ENTITY No. RN100218643**

**April 29, 2013**

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**W&M Project No. 112.072**



***Texas Registered Engineering Firm No. F-8240***

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## 1.0 INTRODUCTION

W&M Environmental Group, Inc. (W&M) has prepared this Interim Action Work Plan (IAWP) detailing the proposed removal activities at the Exide Technologies, Inc. (Exide) facility located at 7471 South 5<sup>th</sup> Street in Frisco, Texas (Site, **Figure 1**). The IAWP relates to areas containing furnace slag fragments (slag) and battery case fragments exposed on the ground surface within the former facility operating area, around the operating Class 2 non-hazardous waste landfill in the northern portion of the Site, and in a wooded area between the two. The boundaries of the areas subject to this work plan are depicted on **Figure 2**.

The goal of the interim action is to identify and remove smaller concentrations of exposed slag and battery case fragments from the ground surface using hand shoveling and other manual methods and collect information regarding lead concentrations in areas where these materials are removed to determine if future larger scale remediation is warranted in any of these areas. Removal of impacted soil that has no slag or battery case fragments will not be part of this interim action.

This IAWP details the proposed removal actions, including the methodology for identification of the areas requiring removal, specific material handling and disposal procedures, dust suppression and control, air monitoring, post removal sampling, safety consideration, and laboratory quality assurance procedures.

### 1.1 Site Background

Exide Technologies' predecessors reportedly placed treated and untreated slag and battery case fragments from crushed lead-acid batteries in areas located on the north and south portions of the facility. The disposal areas no longer receive waste materials and are capped with soil and vegetative cover. In addition to these two general disposal areas, small and localized areas containing slag and battery casing fragments have been observed on the ground surface in other areas of the property beyond the limits of the disposal areas and in certain areas along Stewart Creek.

In 2011, Exide engaged W&M to identify and sample suspect slag in Stewart Creek, assess the condition of the soil cap in both the north disposal area (NDA) and the south disposal area (SDA), note areas of soil erosion and/or exposed waste materials in these areas, and note any waste materials located outside of the documented disposal areas. The results of that survey are summarized in a letter report *North and South Disposal Areas Evaluation* dated December 28, 2011. Locations of slag and battery case fragments identified by W&M in 2011 are presented in **Figures 3, 4, and 5**.

W&M's inspection identified minimal areas of slag or battery case fragments within the boundaries of the SDA, with some localized areas where material was brought to the surface by animal burrowing. Some exposed slag and battery case fragments were observed south and east of the designated SDA and on a former shooting range berm located immediately to the west. Intermittent and isolated observations of battery case fragments and small slag fragments were noted in areas to the north of the SDA, and within wooded and overgrown areas east of the SDA. These minor occurrences may be associated, at least in part, to historic erosion from the SDA areas. Areas of slag fragments were observed within the surface of the NDA, particularly near materials storage areas and within area of heavy vehicular traffic in the southern portions of the NDA. Slag fragments were also noted southeast of the NDA boundary and along the rail line.

For purposes of this IAWP, the interim action areas include all of the locations within the facility operating area, the operating Class 2 non-hazardous waste landfill and the wooded area between the two. However, the former shooting range berm is being addressed separately under an agreed Administrative Order with TCEQ.

## **2.0 AREA SURVEYS**

This Section of the IAWP details the objectives of the interim action and how removal action areas will be identified.

### **2.1 Interim Action Objectives**

The objective of the interim action is to identify locations of surficial slag and battery case fragments using methods previously developed and used by W&M in 2011, remove slag and battery case fragments identified only where possible using manual means, collect post removal soil samples, store excavated materials in less than 90-day containers within the confines of the operating area, and properly dispose of the removed material off-Site. The removal method has been designed to minimize the generation of dust that could contain elevated concentrations of lead and cadmium, and includes air monitoring.

### **2.2 Site Reconnaissance and Identification of Removal Action Areas**

In 2011 W&M developed methods for identifying slag and battery case fragments in the field by observing visual characteristics and collecting samples from suspect materials. A number of materials were identified and sampled along Stewart Creek to develop a protocol to distinguish slag materials from native rock or stone fragments. Sampling results indicated that probable slag generally has darker colors along with reddish hues whereas natural materials suspect of being slag tended to be lighter colored and more readily identifiable as limestone fragments.

Using this information W&M will complete a field survey to identify locations of slag and battery case fragments beyond the limits of the areas summarized in the December 2011 report. W&M staff will locate and identify slag and battery case fragments by traversing remaining portions of the interim measure area along transects spaced at intervals of 75 feet. The identification process will consist of visual, on the ground observations only and will not include physical digging or intrusive investigations. Exact locations where slag and/or battery case fragments are observed will be measured using a Trimble® GeoXT Global Positioning System (GPS) handheld receiver. Each feature will be post processed with Trimble® GPS Pathfinder® to verify accuracy, assigned a unique designation and number along with its geographic coordinates, and summarized in a spreadsheet table. Visual observations at each location identified will also be recorded.

### **3.0 INTERIM ACTIONS**

#### **3.1 Interim Actions**

The interim action at the Site will consist of the following steps. Details regarding the removal activity sequencing are provided in Sections 3.2.

- Identify and record the location of slag and battery case fragments using methods previously developed and used by W&M in 2011.
- Discretely remove the slag and battery case fragments with hand equipment only. A small amount of soil in direct contact and immediately surrounding the excavated fragments will also be removed during these activities.
- Analyze soils beneath the removed slag and battery case fragments for lead contamination with an X-ray fluorescence system (XRF) equipment. Collect confirmation samples from 10% of the XRF scanned soil.
- Store excavated materials in less than 90-day containers (55-gallon drums) within the confines of the operating area.
- Characterize the excavated materials for disposal purposes.
- Properly dispose of 55-gallon drums containing slag and battery case fragments at off-Site disposal facilities.

Due to the anticipated small quantity of materials to be removed, it was determined that off-Site disposal of the materials to an appropriate landfill would be most efficient.

#### **3.2 Removal Activities**

Removal of slag and battery case fragments will be completed with hand tools such as shovels and trowels. The hand tool blades will consist of stainless steel or other inert material to reduce cross contamination between individual interim action areas. The soil in direct contact and immediately surrounding the slag or battery casing fragments will also be removed.

Only areas where slag and/or battery case fragments can be removed by use of hand tools will be completed as part of this interim action. Areas of slag and battery case fragments sufficiently large to require the use of mechanical excavation equipment will be identified in the field and addressed at a later date. Should slag or battery case fragments at any location extend to depth beyond six inches below grade, removal of this material will cease. Reasonable attempts will be made with hand tools available to determine the apparent boundaries of such areas can be quickly determined. The results of such attempts will be recorded.

The slag and battery case fragments will be loaded into 55-gallon drums. Each drum will be covered when material is not being actively added to the drum. The drum will be sealed at the end of each day and when it has reached its capacity. Each drum will be labeled to identify its contents (i.e., slag/battery case fragments). The label will also identify the drum as "Currently Being Analyzed" and the date of accumulation. The drum will be moved from location to location until it has reached its capacity. Once a drum has been filled, it will be transferred to a storage location on a paved area at the main plant. A composite sample will be collected from the drums and analyzed for TCLP lead and cadmium using EPA Method SW1311/6020. Additional analysis will be performed as required by the receiving facility. Based upon the results of the



waste characterization analysis, each 55-gallon drum will be labeled and transported to an appropriate off-site disposal facility within 90 days of removal. No onsite treatment or disposal of the drummed materials will be performed.

### **3.3 Post Removal Sampling**

A field portable XRF will be used to determine the lead concentration of soil beneath removed slag and battery case fragments. The equipment proposed is a Bruker Model S1 Titan Handheld XRF or equivalent. For very small areas (individual slag or battery casing locations), two XRF samples will be collected and analyzed in the field. For larger areas, a minimum of six XRF samples will be collected. Duplicate confirmation samples will be taken at a frequency of 10% and analyzed by XRF, and split samples will be collected at a frequency of 10% and analyzed by an accredited laboratory for total lead and cadmium. Each post removal sample will be collected in a small plastic bag. Soil in the bag will be homogenized and then a portion removed for scanning with the XRF. Split samples will be placed in in laboratory-supplied four-ounce sample jars, labeled with the sample number, date, and time of collection. The split soil samples will be couriered or hand delivered to the designated project laboratory for analysis of total lead and cadmium using EPA Method 6010/6020.

XRF devices generate X-rays by accelerating electrons through an electrical voltage potential and stopping them with a target. X-rays are a form of ionizing radiation and care must be taken to limit operator exposure to radiation. Therefore, only trained personnel will be allowed to use the XRF equipment. Additionally, only the XRF operator is to come within 5 feet of the equipment during use.

XRF results will be recorded and evaluated at a later date for potential additional investigation and/or corrective action. Regardless of XRF or laboratory results, no soil removal will be performed as part of this interim action. The sufficiency of soil removal cannot be determined at this time as critical PCLs for this portion of the Exide property have not yet been determined.

### **3.4 Dust Control and Air Monitoring**

Because removal activities will be limited to hand removal of slag and battery case fragments, the potential for appreciable dust generation is minimal. Dust suppression will be available at all times and implemented during removal activities to minimize emissions associated with removal activities. Dust suppression will consist of small portable pressurized sprayers used to wet the areas prior to and or during removing slag and battery case fragments. These sprayers typically hold between 5 gallons and 25 gallons of water. The use of water during dust suppression activities will be monitored to avoid application of excess water that could result in runoff from the work areas.

This work is anticipated to be completed during the response action at the Class 2 landfill. Therefore, the Perimeter Air Monitoring Plan, including the Stop Work and Take Action Levels being used during the landfill response action activities will ensure that engineering controls and work practices help minimize potential off site impacts. If the direction of the wind does not allow monitoring of these work activities, no work will be performed.

Due to the widely spread locations of slag and battery case fragments requiring removal, perimeter air monitoring will be completed using a mobile particulate monitoring coupled with a low volume air sampler.

The particulate monitor will be an E-BAM Particulate Monitor (or equivalent) equipped with a "PM<sub>10</sub>" impactor head, and will be situated in a downwind position from the work areas based upon wind direction measurements at the Exide weather station. The E-BAM equipment is currently employed to monitor dust during facility demolition and landfill remediation activities. Real-time data from the downwind particulate monitors is monitored remotely and evaluated in 30-minute and 60-minute averaged blocks to provide immediate comparison to Take Action and Stop Work Level criteria established for the Site.

Air samples for metals analyses (lead and cadmium) will be collected daily for the duration of each working shift (typically eight – ten hours) using a Gilian Model GilAir5 air sampling pump, or equal. Air samples will be collected by attaching laboratory-provided air sample filter cartridges (0.8- micrometer mixed cellulose ester membrane filter cartridge) to the pump, and setting the air inlet at a height of 4 to 5 feet above grade. The air sample pumps will be set at a flow rate of approximately 3 to 4 liters per minute.

Monitoring and protection of workers performing the response actions will also be implemented. Workers actively involved with the work will be required to wear NIOSH (National Institute for Occupational Safety and Health) approved dust respirator while slag and battery case fragments are being removed from the ground and handled. Additionally, personal air samples will be collected on one worker during each working shift (typically eight – ten hours) using procedures similar to those described above, and setting the air inlet at the breathing zone of the worker. The air sample pumps will be set at a flow rate of approximately two liters per minute in accordance with OSHA guidelines. Personal air sample results will be used to verify that the proper respiratory protection is being employed during field activities.

Following air sample collection (both downwind air and worker air, the air sample cartridges will be securely capped, labeled, and delivered with chain of custody documentation to ALS Laboratory Group, in Salt Lake City, Utah for analysis of lead and cadmium. ALS is accredited by the TCEQ for analysis of environmental samples and is accredited by the American Industrial Hygiene Association (AIHA) for analysis of air samples and lead in soil, dust, paint and air. Laboratory analyses on an expedited 24-hour turnaround will be requested. Metals will be analyzed using NIOSH Method 7303, a method specifically accredited by the AIHA. The resulting analytical data will be evaluated by W&M's Certified Industrial Hygienist (CIH).

### **3.5 Public Notifications**

A discussion of the interim action activities will be presented on the Exide website dedicated to disseminating information regarding the Site closure (<http://www.exidefriscoclosure.com>). This discussion will describe interim action activities and other operations to be completed at a later date.

### **3.6 Completion Schedule**

Work will commence within 45 days of posting the public notice on the Exide website. The proposed interim actions will be completed within 30 days or less from the start of field work, weather conditions permitting. A report documenting the results of the interim action will be submitted to the TCEQ within 30 days of the completion of interim action field activities.

#### 4.0 QUALITY ASSURANCE/QUALITY CONTROL

Primary quality assurance/quality control (QA/QC) procedures for the proposed response action are outlined in the *SAP/QAPP* in the *Facility Response Action Work Plan for Class 2 Non-Hazardous Waste Landfill (Rev. 1)*, dated January 31, 2013 (Updated March 1, 2013). These will include:

- Following written procedures for all sampling, sample handling and preservation.
- Recording all sampling and other field activities conducted at the Site in a field logbook.
- Collecting duplicate samples and split confirmation samples.
- Completing chain-of-custody documentation for all samples collected.
- Ensure that all laboratory sampling procedures and chemical analyses are performed in accordance with the latest versions of SW-846 "*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*".
- Reviewing QA/QC data package from the analytical laboratory.

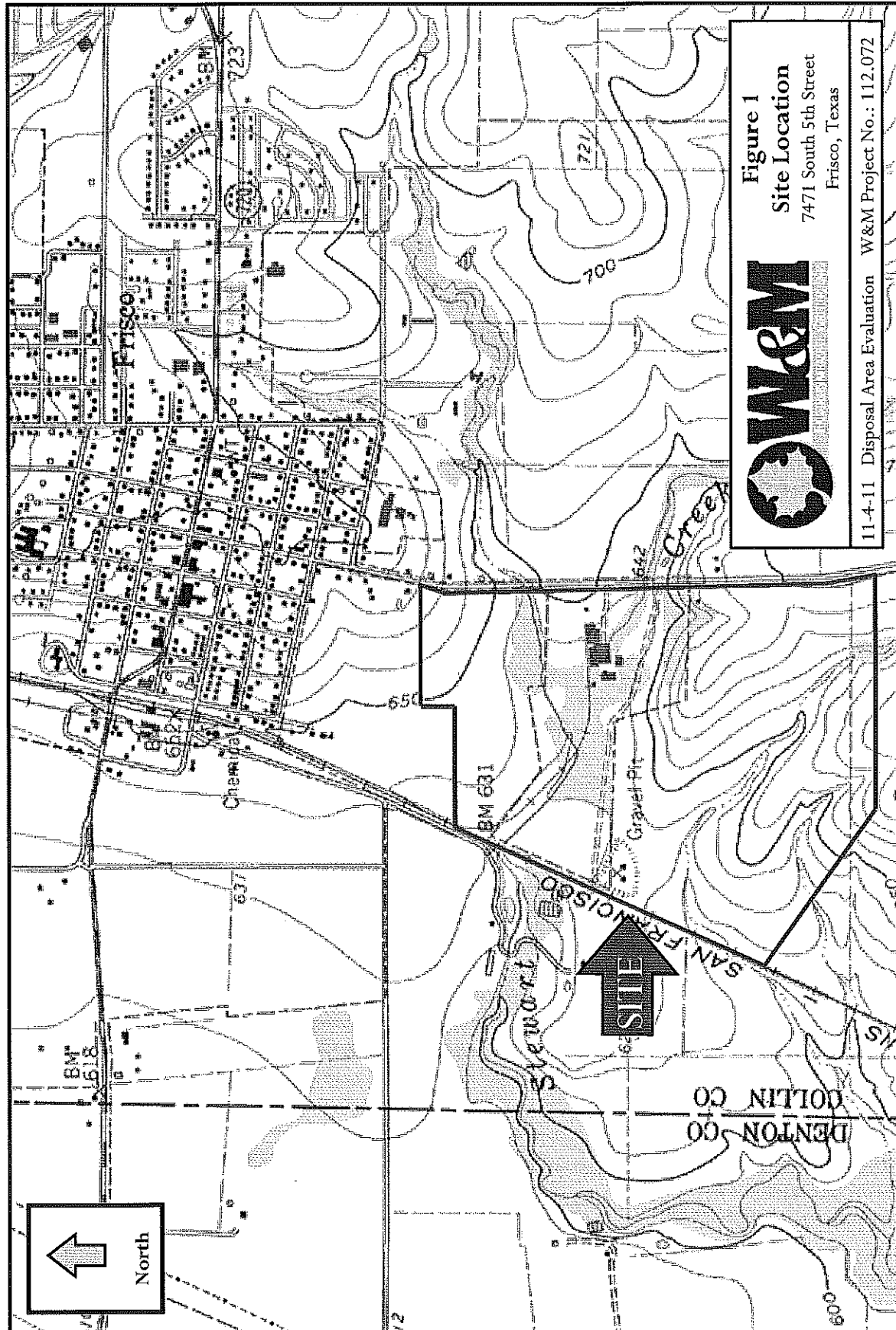
Field XRF procedures will be carried out in accordance with the manufacturer's instructions and equipment operating manual. Duplicate samples will be collected and analyzed using XRF at a rate of 10%.

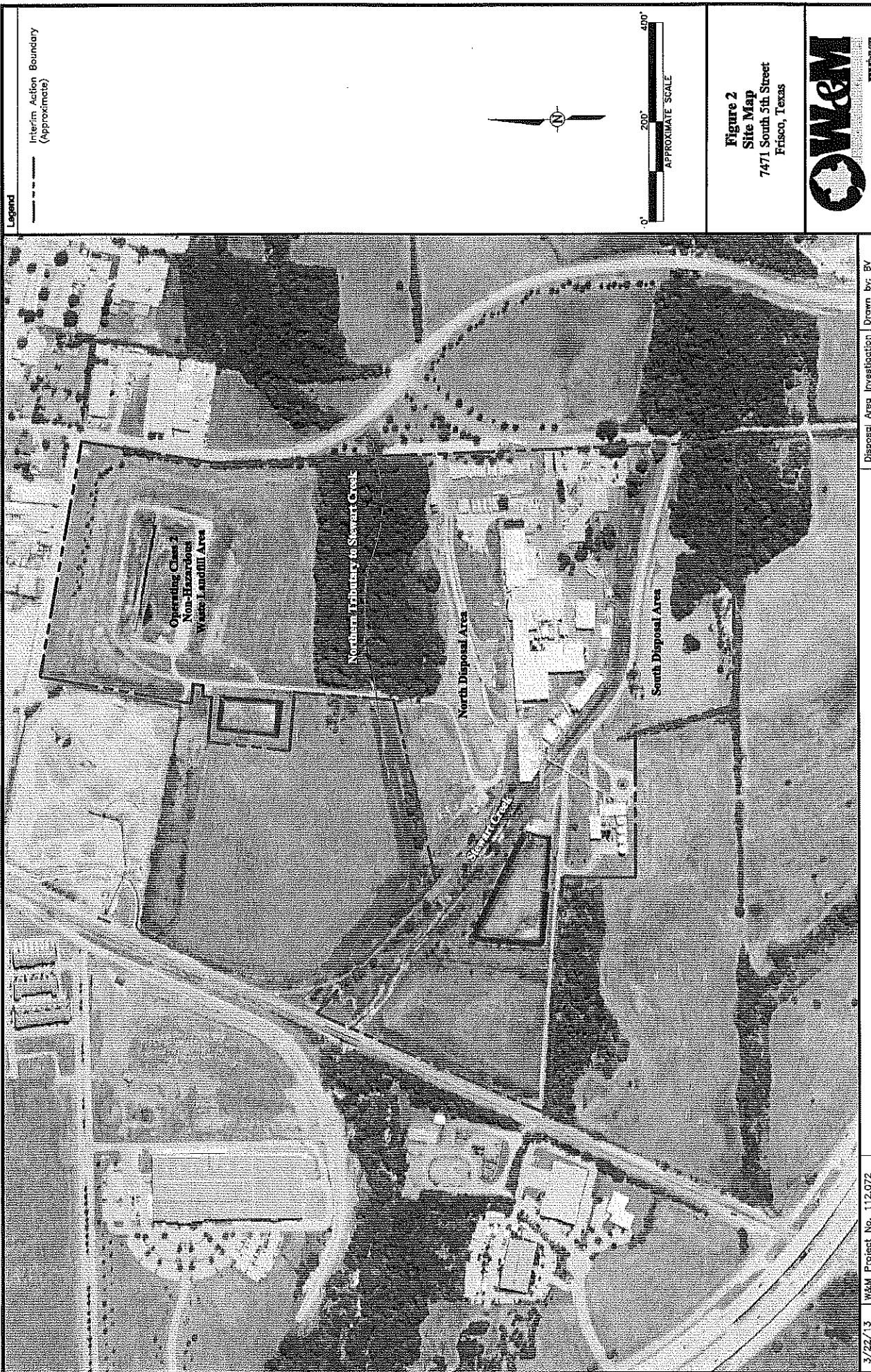
## **5.0 COMPLETION OF INTERIM ACTION**

Following completion of the removal activities and receipt of laboratory data reports, a report will be prepared and submitted to TCEQ detailing the activities performed under this IAWP and the results of the XRF screening and post removal sampling. This report will include a summary of completed activities, photographic log, post removal sampling results, and review of QA/QC data.

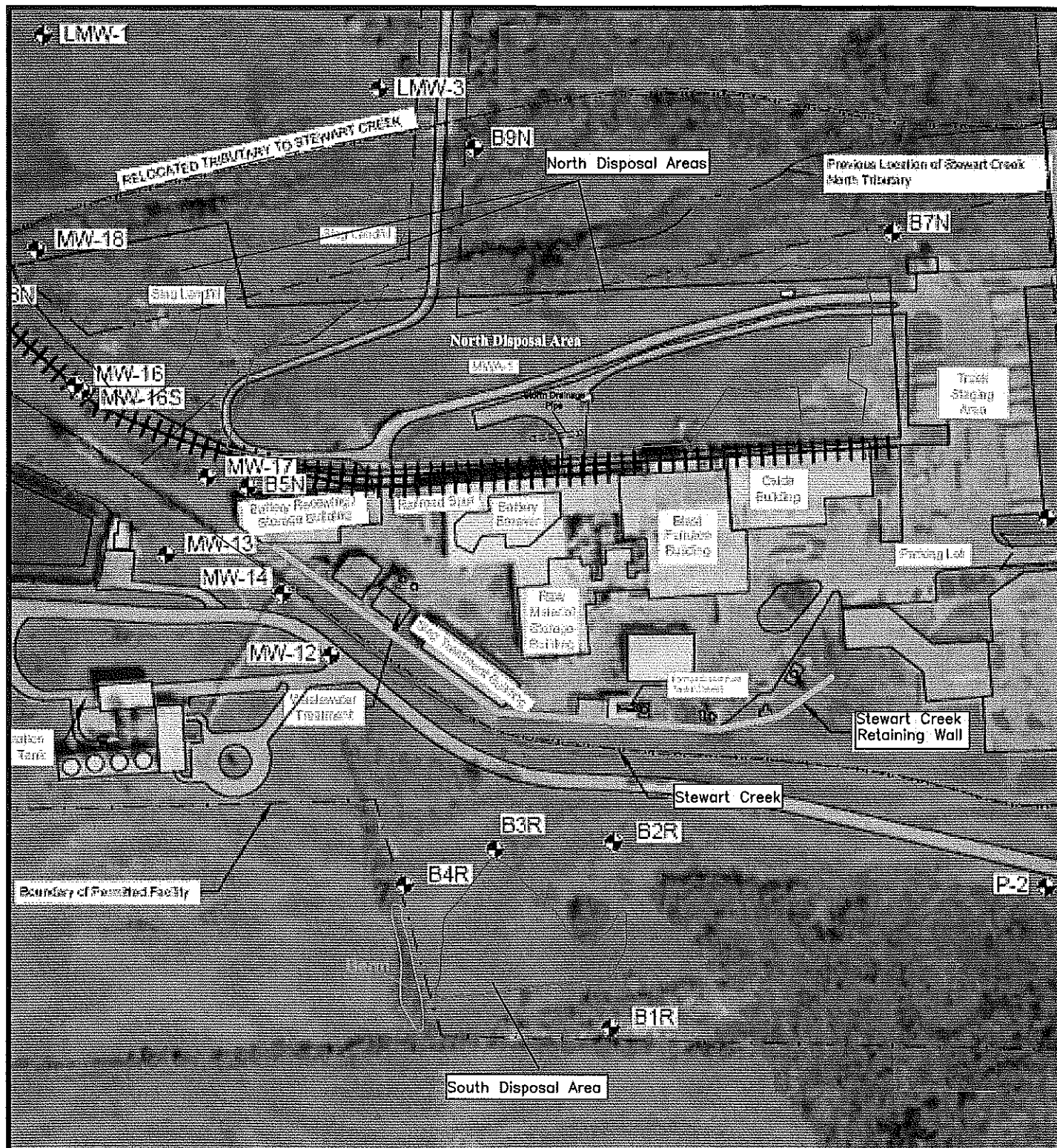


**FIGURES**









#### Legend



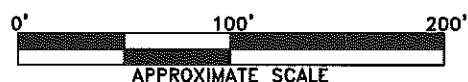
Mapped Disposal Area Boundaries per 1993 RFI



Slag Disposal Areas per Waste Summary of Investigations in Waste Management Areas - July 2011



Monitoring Well/Boring Locations from RFI



**Figure 3**  
**North and South Disposal Areas**  
 7471 South 5th Street  
 Frisco, Texas



10/25/11

W&M Project No. 112.072

Disposal Area Investigation

Drawn by: SDF

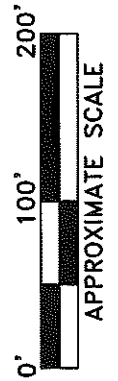




**Legend**

- ◊ Individual Fragments of Slag Material
- Individual/Small Clusters of Battery Case Fragments
- ◡ Clusters/Large Fragments of Slag Material
- Battery Case Fragments
- × Bullet

Mapped Disposal Area Boundary per 1993 RFI

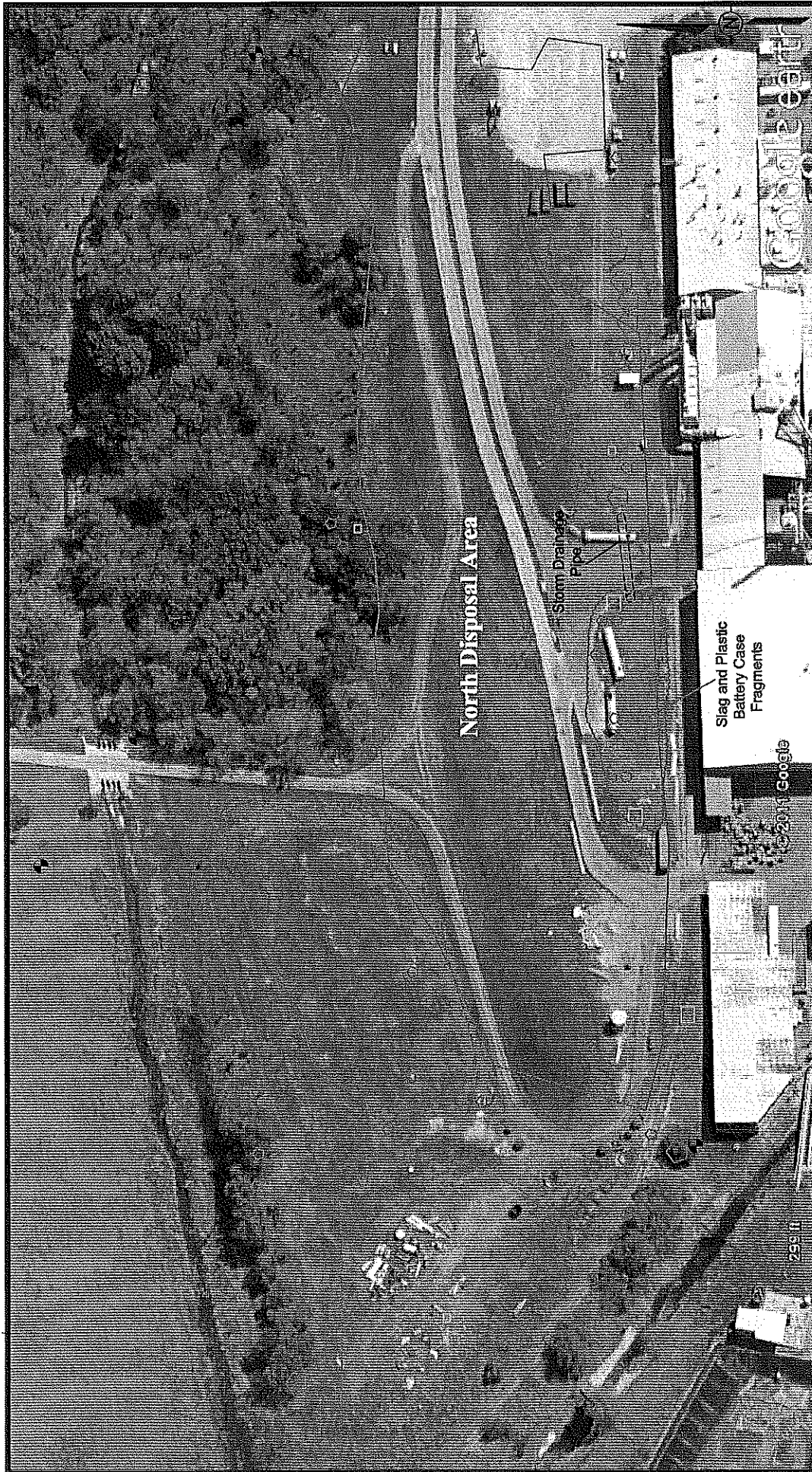


**Figure 4**  
**South Disposal Area**  
 7471 South 5th Street  
 Frisco, Texas



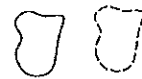
9/28/11 W&M Project No. 112.072

Drawn by: SF



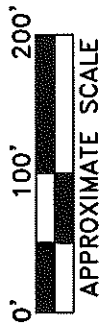
**Legend**

- ◊ Individual Fragments of Slag Material
- Individual/Small Clusters of Battery Case Fragments
- ◡ Clusters/Large Fragments of Slag Material
- Battery Case Fragments



Mapped Disposal Area Boundary per 1993 RFI

Slag Disposal Areas per Waste Summary of Investigations  
In Waste Management Areas - July 2011



**Figure 5**  
**North Disposal Area**  
7471 South 5th Street  
Frisco, Texas

