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October 16, 2007

Mr. Keith Casanova, Administrator
 Louisiana Department of Environmental Quality
 Environmental Assessment Division
 P.O. Box 4314
 Baton Rouge, Louisiana 70821-4314

Re: Remedial Activities and Site Closure Report
 7700 Earhart Boulevard Facility
 New Orleans, Louisiana
 Agency Interest No.: 1275



Remediation Services Division
 Manager: *[Signature]*
 Team Leader: *[Signature]*
 AI #: 1275
 TEMPO Task #:
 Desk Copy File Room: 1275

Dear Mr. Casanova:

On behalf of T H Agriculture and Nutrition, L.L.C (THAN) and Elementis Chemicals, Inc. (Elementis), please find herein three (3) copies of the Remedial Activities and Site Closure Report for the above reference facility. Two (2) additional copies of the report are included for submittal to the New Orleans Repositories by the LDEQ. Two (2) copies of the report have also been delivered to the Louisiana Department of Agriculture and Forestry (LDAF) by Shaw.

If you require additional information, please do not hesitate to contact me at (225) 987-7326.

Sincerely,
 Shaw Environmental, Inc.

Kenneth P. Romero, P.G.
 Project Manager

Attachments

Remedial Activities and Site Closure Report

***7700 Earhart Boulevard Facility
New Orleans, Louisiana***

Agency Interest No. 1275

***Volume 1 of 2
Text, Tables, and Figures***

Prepared for:

**T H Agriculture & Nutrition, LLC
&
Elementis Chemicals, Inc.**

Prepared by:

**Shaw Environmental, Inc.
4171 Essen Lane
Baton Rouge, Louisiana 70809**

REMEDIAL ACTIVITIES AND SITE CLOSURE REPORT

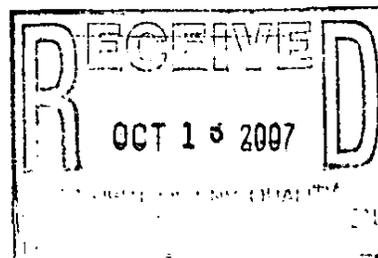
7700 Earhart Boulevard Facility

New Orleans, Louisiana

Agency Interest N.: 1275

October 2007

Project Number 123926



Remediation Services Division	
Manager:	<i>[Signature]</i>
Team Lead:	<i>[Signature]</i>
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TEMPO Task #:	
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Submitted to:

T H Agriculture & Nutrition, L.L.C.

&

Elementis Chemicals, Inc.

Submitted by:

Shaw Environmental, Inc.

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Baton Rouge, Louisiana 70809

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Acronyms and Abbreviations

ACM	Asbestos Containing Material
Adventus	Adventus Bioremediation Technologies, Inc.
Agreement	Cooperative Agreement
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
Arcadis	Arcadis U.S., Inc.
ASTM	American Society for Testing and Materials
ATSPK	Agency for Toxic Substances and Disease Registry
CO	Carbon Monoxide
Clean Harbors	Clean Harbors Environmental Services, Inc.
COPCs	Constituent of Potential Concern
Cfm	Cubic Feet Per Minute
DPT	Direct Push Technology
Elementis	Elementis Chemicals, Inc.
EPA	Environmental Protection Agency
ERAB	Enclosed Remedial Activities Building
Ft-bgs	Feet Below Ground Surface
FS	Feasibility Study
GQAP	Groundwater Quality Assessment Plan
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HDPE	High Density Polyethylene
ICI	Industrial Cleanup, Inc.
IDLH	Immediately Dangerous to Life and Health
Jesco	Jesco Environmental & Geotechnical Services
JSA	Job Safety Analysis
LDAF	Louisiana Department of Agriculture and Forestry
LDR	Land Disposal Restriction
LDEQ	Louisiana Department of Environmental Quality
LDOTD	Louisiana Department of Transportation and Development
LEL	Lower Explosive Limit
Lb/gal	pounds per gallon
LSD	Laboratory Services Division, LDEQ
Met	Meteorological
MRL	Minimal Risk Level
NCP	National Contingency Plan
NFA-ATT	No Further Action – At This Time
NIOSH	National Institute for Occupational Safety and Health
NOD	Notice of Deficiency
OCL	Organochlorine
OEP	Office of Emergency Preparedness
OSHA	Occupational Safety and Health Administration
PCE	Perchloroethylene/Tetrachloroethane

Acronyms and Abbreviations (continued)

PID	Photoionization Detector
ppm	Parts per Million
Pro-Tech	Professional Technical Services, Inc.
Pro-Waste	Pro Waste, Inc.
PSH	Phase Separated Hydrocarbons
P&A	Plug and Abandon.
QAPP	Quality Assurance Program Plan
QA/QC	Quality Assurance/Quality Control
RA	Risk Assessment
RD	Remedial Design
RALs	Remedial Action Level
RAP	Remedial Action Plan
RAR	Remedial Activities Report
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SEMS	Southern Environmental Management and Specialties, Inc.
Site	7700 Earhart Boulevard Facility
Shaw	Shaw Environmental & Infrastructure, Inc.
SPL	Southern Petroleum Labs, Inc.
Stranco	Stranco, Inc.
SWBNO	Sewerage and Water Board of New Orleans
T&D	Transportation and Disposal
THAN	T H Agriculture & Nutrition, L.L.C.
THCC	Thompson-Hayward Chemical Company
TS	Treatability Study
UST	Underground Storage Tanks
UV	Ultra Violet
Vinson	Vinson Guard Service
VOC	Volatile Organic Compound
2,4,5-T	2,4,5-trichlorophenoxy acidic acid
2,4,5-TP	2,4,5-trichlorophenoxy-propionic acid
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin

1.0 *Introduction*

1.1 *Purpose*

This Remedial Activities Report (RAR) was prepared for the 7700 Earhart Boulevard Site (Site) located in New Orleans, Louisiana on behalf of T H Agriculture & Nutrition, L.L.C. (THAN) and Elementis Chemicals, Inc. (Elementis) (formerly known as Harsco Chemicals, Inc.) by Shaw Environmental and Infrastructure, Inc. (Shaw). This RAR satisfies the requirements of the Section VI, Paragraph E of the Cooperative Agreement (Agreement) between THAN, Harsco Chemicals, Inc., the Inactive and Abandoned Sites Division of the Louisiana Department of Environmental Quality (LDEQ), and the Louisiana Department of Agriculture and Forestry (LDAF), which required the implementation of the Remedial Design. The purpose of this RAR is to provide a summary of activities performed in accordance with the Remedial Design Work Plan dated March 2, 2006 and approved by the LDEQ on July 11, 2006, and provide a mechanism to facilitate closure of environmental activities required by the Agreement. This document provides a summary of remedial actions performed during the period from October 2006 to August 2007, a description of previous remedial actions, and a description of how completion of the work satisfied the requirements set forth by the remedial action objectives (RAOs). The RAOs were as follows:

- To reduce or eliminate the potential for direct skin contact with, or ingestion of the site-related contaminants in soil and sediments that are above Remedial Action Levels (RALs) as calculated based on future use scenario,
- To eliminate the exposure scenario to storm drain maintenance workers by removing impacted sediments that exceed RALs, and
- To minimize the migration of contaminants, from specific sources into surrounding soil, groundwater, and the City's storm drains.

1.2 *Site Location and Description*

The Site is situated on an approximately 2.7 acre tract of land located in New Orleans, Louisiana. The facility lies within a residential and light industrial district in the city and is bounded by Earhart Boulevard, Burdette, Pine, and Colapissa Streets (Figure 1-1). The facility coordinates are approximately 29° 57' 32" north latitude and 90° 06' 42" west longitude. The facility is currently not occupied and is situated on land squares 461 and 462 as shown on Figure 1-1. A layout of the facility illustrating site conditions prior to remedial activities is presented on Figure 1-2.

1.3 *Report Organization*

This report has been divided into the following sections with the inclusion of this introduction:

- **Section 2.0 – Background** provides a description of the facility and summarizes the nature and extent of contamination. Furthermore, this section presents a summary of previously conducted remedial investigations and remedial actions.
- **Section 3.0 – Remedial Activities** identifies the media subject to remedial action and the means by which the remedial actions were implemented. The remedial activities implemented and described in section 3.0 include mobilization of onsite contractors, permit acquisition, building demolition, excavation activities, storm drain cleaning, on-site monitor well plugging and abandonment (P&A), confirmatory sampling, and the disposal of both hazardous and non-hazardous wastes.
- **Section 4.0 – Environmental Health and Safety** describes the components of the health and safety procedures implemented throughout the remedial activities, the air monitoring performed, and other activities completed to ensure the safety of on-site personnel and the surrounding community.
- **Section 5.0 - Restoration Activities** describes post-remediation measures implemented to restore the site to a condition that allows it to be used for some beneficial use. Restoration activities included backfill and vegetative cover placement, final site grading, sidewalk construction, and fence replacement. In addition, details regarding the state deed recordation or conveyance notification filed with the Orleans Parish Clerk of Court are also included.

2.0 *Background*

2.1 *Site History*

The site is currently owned by Elementis. Available records indicate Thompson-Hayward Chemical Company (THCC) first occupied the Facility as early as 1931. Operations in 1931 appeared to be restricted to the property identified by the former warehouse, land square 461. THCC purchased squares 461 and 462 from Gaylord Container Company in February of 1941. According to site records, pesticide-related operations were initiated at the site during the 1940's with small-scale dry formulation of pesticide products. Liquid formulation was added during the 1950's. The pesticide formulation operations continued through the 1960's until 1977 when all forms of pesticide formulation ended. From 1977 to 1988, industrial activities on the site consisted of the bagging of soda ash material and the warehousing and distribution of several industrial chemicals. These chemicals included dry cleaning fluids and commercial pest control products. All industrial/commercial activities ended at the site in 1988. Since then, the property has remained unoccupied.

2.2 *Previous Environmental Activities*

Environmental activities at the site began in 1987 with the detection of dry-cleaning related chemicals in the Sewerage and Water Board of New Orleans (SWBNO) drainage system. In March of 1988, the LDEQ issued a compliance order to the owners and operators of the site to address the detections of tetrachloroethane (PCE), trichloroethene, 1,1,1-trichloroethane, and 1,2-dichloroethene in the city's storm sewer system. A related environmental site assessment of the facility was also conducted in 1988 and it indicated impacts to on-site soil by past pesticide formulation activities as well as dry cleaning chemical storage activities. The facility's cooperation with LDEQ culminated in the issuance of a joint LDEQ and LDAF compliance order on May 8, 1989 to THAN and Elementis to implement a Remedial Action Plan (RAP) and a Groundwater Quality Assessment Plan (GQAP). These actions were implemented in 1989 and 1990. The resulting interim remedial action included:

- Removal and plugging of on-site storm drains and the plugging of sewer lines that leave the property;
- Demolition and off-site disposal of the mixing plant building located in the northwestern section of the site;
- Demolition and off-site disposal of all above ground tanks;
- Excavation of most of the soil areas and off-site disposal of generated debris and soil media;
- Backfilling of excavated areas with clean fill; and

- Placements of an asphalt cover over the property, including the backfilled areas.

Not all on-site soil was excavated during the interim remedial activity. A layout of the previously excavated areas is presented on Figure 1-2. The laboratory results of post excavation confirmatory samples collected during the 1990 remedial program are included in Appendix A.

In 1997, the LDEQ and LDAF entered into the Agreement with the responsible parties (i.e., THAN and Elementis) to conclude the remediation of the property. This agreement superseded the joint compliance order issued on May 8, 1989, and required THAN and Elementis to complete the following:

- A. Prepare and Implement a Sampling Plan to identify and justify the number of samples and sample locations to fill all data gaps identified from previous investigations.
- B. Prepare and submit a Risk Assessment for LDEQ review and Approval to identify and characterize the current and potential threats to human health and the environment from contamination at the site. The Risk Assessment shall utilize the most current publication of the U.S. Environmental Protection Agency (EPA) Risk Assessment Guidance for Superfund Volumes I and II for purposes of developing remedial action levels at the site.
- C. Prepare and submit a Feasibility Study (FS) identifying, evaluating and recommending remedial alternatives. Also, consideration should be given to the potential impacts to the surrounding community during implementation of the remedial action, such as air emissions and access to the site and immediate area.
- D. Prepare and submit a Remedial Design.
- E. Implement the Remedial Design after LDEQ approval.

2.3 Street Sampling Program

The Street Sampling Program completed in 1999 (IT November, 1999) satisfied the requirements of Section VI, Paragraph A of the Cooperative Agreement and was performed to evaluate the nature and extent of soil impacts adjacent to the property and below the asphalt/paved road surfaces. As part of the sampling activities, soil samples were collected from approximately 75 locations under Earhart Boulevard, Collapissa, Burdette, and Pine Streets; sediment samples were collected and analyzed from 15 storm drain manholes from the same streets; two on-site soil samples were collected and analyzed; and soil gas samples were collected to evaluate the potential for volatilization during soil disturbance activities that may arise as a result of potential future excavation. The data from this sampling event were combined with those from past sampling activities to determine the nature and extent of the remaining compounds on the property and surrounding areas.

2.4 *Previous Risk Assessments*

On June 6, 2002, the LDEQ approved the Human Health Risk Assessment (RA) (IT Corporation, October 2001) and the RA (Revision 1)/Addendum (IT Corporation, April 2002). The RA was prepared to meet the requirements outlined in Section VI.B of the Agreement. The RA used both existing and new data to generate an estimate of the potential risks and/or hazards that could be posed to different types of individuals by the constituents of potential concern (COPCs) present at the site and under surrounding streets. The assessment, which evaluated the individuals based on the property's current and potential future land uses, was designed to meet the following requirements:

- Identification of COPCs using all available sampling data;
- Documentation of current and future land uses;
- Documentation of nature and extent of site-related compounds in all media;
- Identification of exposure pathways and potential receptors;
- Performance of toxicity assessment and risk evaluations; and
- Generation of RALs for media requiring remediation.

The results of the sampling activities showed site media to be potentially impacted with certain metals and Organochlorine (OCL) pesticides, Herbicides, and Volatile Organic Compounds (VOCs). Utilizing these sampling data, the site media presenting a potential to pose unacceptable risks to human health and the environment were identified. These include the on-site surface soils (0 - 4.5 feet below ground surface (ft-bgs)), on-site subsurface soils (0 - 10 ft-bgs), storm drain sediments, and groundwater source-areas located in the former pesticide formulation areas.

Based on the results of these studies preliminary RALs were calculated. These RALs were then used to determine site-related media requiring remediation, as well as cleanup levels for each COPC. The RALs, which are presented in Table 2-1 became the Final Remedial Action Levels for the site upon LDEQ's approval.

2.5 *Feasibility Studies*

At the conclusion of the RA and determination of the RALs, THAN and Elementis proceeded with preparation of a FS to identify, evaluate, and recommend remedial alternatives for all on-site media subject to remedial action. The initial FS, prepared by Shaw in January 2003, was submitted to fulfill the requirements of Section VI.C of the Agreement. Through the FS, technology process options were identified and screened to eliminate those technologies that could not be implemented technically and administratively. The technology options passing the

initial screen were assembled into alternatives representing a range of treatment and disposal combinations, as appropriate. Each remedial alternative was evaluated for the following criteria:

- Protection of human health and the environment;
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs);
- Short term effectiveness;
- Long term effectiveness;
- Reduction of toxicity, mobility, and volume;
- Implementation ability; and
- Cost.

Based on the comparison of the evaluated remedial alternatives, on-site biological treatment combined with source removal was selected as the preferred alternative.

As presented in the initial FS, Adventus Remediation Technologies, Inc. (Adventus) was conducting a Treatability Study (TS) on soils from the Site when the initial FS was presented in early 2003. The TS evaluated the Adventus Daramend[®] technology which enhances and promotes natural biodegradation of target compounds. Results of the TS demonstrated a reduction in the levels of OCL pesticides, however, the reduction was not sufficient to meet the site-specific RALs for Aldrin and Dieldrin. Subsequently, Adventus added a secondary study to the TS which incorporated additional amendments designed to improve the physical characteristics of the soils from the Site. The final results of the Adventus TS were submitted to LDEQ and LDAF as Addendum No.1 to the initial FS in September, 2004. The final results of the Adventus TS did show a reduction in COPC concentrations to levels below the site specific RALs. However, due to increased public concerns related to an on-site biological treatment remedy that would have taken several years to implement and the need for evaluation of the RCRA classification of the waste streams at the Site, THAN and Elementis submitted the FS Addendum No.2 on December 24, 2004.

Prior to implementation of the initial on-site remedial action in 1989, a determination was made that environmental media (e.g. soil, groundwater, etc.) deemed to be a solid waste should conservatively be classified as a RCRA listed hazardous waste. This determination was based on the mere presence of a hazardous constituent in the waste, and assumptions regarding the origin of the constituent.

In light of the fact that the original classification was largely based on analytical testing alone, the original classification of all site wastes as listed hazardous waste was overly conservative. To more appropriately classify the environmental media at the site, a comprehensive review was performed of all relevant and available THCC New Orleans branch files, project files, and other documents (including statements of former THCC employees/site workers). It should be noted

that not all of these sources were available for review at the time that the original listed classification was made.

Based on this review it was concluded that there was no conclusive documentation which warranted the blanket classification of the constituents in the environmental media at the site as listed hazardous waste under 40 CFR Part 261, Subpart D; thus the original blanket listed waste classification was unnecessarily overly conservative. However, sufficient documentation does exist to indicate that a listed hazardous waste classification is potentially correct for four (4) chemical constituents, when confirmed by analytical testing to be present in environmental media. The four (4) constituents are as follows:

- Perchloroethylene (PCE) (U210)
- 2,4-D (U240)
- Dimethylamine (U092)
- Parathion (P089)

Since the impacted environmental media at the Site did not contain a RCRA F027 listed hazardous waste code, excavation and off-site treatment and disposal at a commercial facility was now a viable option for the site waste and was therefore selected by the LDEQ as the preferred remedial alternative. Although the original preferred remedial alternative of excavation and on-site biological treatment remained a viable remedial alternative, the time for completion of the remedy was expected to be lengthy. The new preferred remedial alternative of excavation and off-site disposal was more expensive than on-site biological treatment, but it reduced the schedule for implementation from 2 years to approximately 10 months. Additionally, a remedial alternative of excavation and off-site disposal posed less risk to the community and the environment during implementation because of the shorter schedule.

The selected remedy of excavation and off-site disposal was chosen by the LDEQ as the final remedy for the site and is documented in their document "*The Louisiana Department of Environmental Quality FINAL DECISION DOCUMENT for the Final Remedy of Thompson Hayward Site* (December 2005).

2.6 Remedial Design

The Remedial Design (RD) Workplan (Shaw, March 2006) approved by the LDEQ on July 11, 2006, satisfied the requirements of Section VI, Paragraph D of the Cooperative Agreement. The RD presented the procedures and methodologies to be implemented by the responsible parties for the safe and successful completion of the RAOs. Prior to the LDEQ approval of the RD, public meetings were held to inform citizens of the proposed remedial activities and allow their participation via submittal of written comments. Subsequently, the RD was revised to address public comments.

3.0 Remedial Activities

3.1 Project Overview

Remedial activities onsite began on March 2, 2006, with the submittal of the Remedial Design (RD) Work Plan to the LDEQ by Shaw. The following is a chronology of events leading up to the remediation and associated on-site activities:

- May 10, 2006 - Evaluation process to retain a remediation contractor to implement the RD Work Plan begins;
- May 26, 2006 - Notice of Deficiency (NOD) response to the RD Work Plan received from the LDEQ;
- June 26, 2006 - Response to LDEQ NOD submitted to the LDEQ by Shaw addressing all LDEQ comments;
- July 11, 2006 - Final LDEQ approval of the RD Work Plan was obtained;
- August 2006 - Southern Environmental Management and Specialties, Inc. (SEMS) of Baton Rouge, Louisiana and their subcontractor Industrial Cleanup, Inc. (ICI) were selected as the remediation contractor(s). Clean Harbors Environmental Services, Inc. (Clean Harbors) was selected as the transportation and disposal (T & D) contractor;
- October 2006 - SEMS began mobilizing equipment onsite for the implementation of the RD Work Plan;
- August 2007 - All on-site remedial activities were completed.

Photographs were taken throughout the on-site remedial activities to document work progress and completion of each phase of work. A representative group of photographs, through project completion, are included in Appendix B. The remedial activities were completed in accordance with procedures and technical specifications presented in the LDEQ approved RD. The work completed is presented in the paragraphs below.

3.2 Mobilization and Permitting

The following preliminary site mobilization and setup activities were conducted prior to the commencement of demolition or excavation: office trailers for the contractors as well as oversight personnel (Shaw and LDEQ) were mobilized to the site; utilities for the site were connected; 24-hour on-site security was established; the temporary site security fence was moved in key areas to facilitate excavation beyond the original fence line; a privacy screen was placed around the fence; new entrance and exit gates were constructed; a public announcement display board was placed near the site entrance; and a meteorological station was set up to document

weather conditions. Equipment to be utilized by SEMS during excavation activities including an excavator, a man-lift, a fork lift, a lockable tool storage unit, and truck scales to weigh each waste container prior to shipment off-site were also mobilized to the site.

Permits required for specific on-site activities were also obtained from several municipal entities prior to conducting remedial activities. Permits for the erection of the Enclosed Remedial Activities Building (ERAB) and airlock were issued by the New Orleans Fire Prevention Division on November 15, 2006, and December 19, 2006, respectively. A building permit was also obtained from the City of New Orleans Department of Safety and Permits specifically for the demolition of the warehouse. Copies of the permits obtained are included in Appendix C. The SWBNO was also notified of the work to be conducted on the sewer lines near the site. A permit was required by the SWBNO to cap any active line encountered on site. However, no lines requiring such action were encountered and therefore the permit was never obtained. In addition, where the potential for encountering subsurface utilities was present, Louisiana One-Call was also notified, as required by state law, prior to conducting any intrusive activities.

Also, as part of the mobilization and site setup phase of work, the Louisiana Office of Emergency Preparedness (OEP) was engaged to prepare an Emergency Evaluation Plan for the proposed remedial activities. The OEP Plan documented the methods and procedures to be followed for the notification and evacuation of nearby residents in the event that a release above approved action levels would occur. A copy of the OEP's plan is included in Appendix C.

3.3 Warehouse Demolition

The former warehouse building was located in the northeast corner of the site as shown on Figure 1-2. The warehouse covered nearly 40,000 square feet, was approximately 25 feet tall on the sides and had a flat roof with an elevated roof in the middle section. The building was constructed on an approximately four inch thick concrete slab with cinder block walls, supported by steel beams and had a wooden roof covered with rolled roofing, tar, and pea gravel.

During the previous remedial activities the former office space and all chemical products were removed from the warehouse building. Subsequently, the warehouse building was vacuumed of residual dust that may have been present in the interior rafters and building components and the entire interior and exterior of the building was pressure washed.

Warehouse demolition was the first major task initiated during the implementation of the remedial design. The warehouse demolition activities included: the removal and containerization of the roof pea gravel and dirt, encapsulating the remaining pea gravel adhering to the roof surface, removal of the roof and brick walls in small sections, and disposal of the associated debris. Additionally, the steel frame of the building was sent off site for recycling. Warehouse activities were conducted by ICI under subcontract to SEMS. General construction

and demolition debris generated during this phase of remedial activities was disposed of at River Birch, Inc. in Garyville, LA. Pea gravel and other material vacuumed from the roof were disposed of at Chemical Waste Management in Sulphur, Louisiana.

Warehouse activities spanned approximately seven weeks, from the middle of October until the end of November. Activities began with SEMS vacuuming pea gravel and dirt/sediment off of the roof into vacuum boxes. Vacuuming removed the bulk of the material but a significant amount of residual pea gravel remained. The ICI crew then swept the roof with industrial brooms to accumulate remaining loose material which was then vacuumed into closed waste containers. As a preventative measure, to avoid a potential dust release during demolition, latex paint was used to coat the roof surface encapsulating the remaining pea gravel and dust particles. Upon completion of the initial roof removal and encapsulating activities, SEMS first removed a section of the wall on the Burdette Street side to facilitate roof removal. In an effort to minimize dust emissions the warehouse roof was then taken down in pieces. The debris was collected in roll off boxes. After the roof had been completely removed, SEMS began taking down the brick walls. As with the roof material, once the walls were down, the debris was collected in roll off boxes. The concrete slab was left in place throughout the remediation activities and then removed and disposed during the final site grading. Also, throughout the demolition process, fire hoses supplied with potable city water were used to suppress dust particulates.

During the warehouse demolition process approximately 71 tons of roof pea gravel and dust were removed from the roof, 3,710 tons of construction debris was sent off-site for disposal, and 187 tons of steel was recycled. A summary of waste generated by the demolition of the warehouse building for off-site disposal is summarized in Table 3-1. Details of the construction and demolition debris transportation and disposal activities are further described in Section 3.7.

Throughout the warehouse demolition process, particulate air monitoring was conducted around the perimeter of the work area to ensure that remedial activities did not cause a nuisance to the surrounding community. The results of the particulate air monitoring are included as Appendix D.

3.4 *Monitor Well Plugging and Abandonment*

3.4.1 *Offsite Monitor Well P&A*

The plugging and abandonment (P&A) of 12 offsite monitor wells and 8 offsite piezometers (MW-P6 through MW-P13, MW-6D, MW-6I, MW-7D, MW-7I, MW-8D, MW-8I, MW-9D, MW-9I, MW-10I, MW-11I, MW-12D, and MW-12I) was conducted by Professional Technical Support Services, Inc. (Pro-Tech) in July 2005. The former offsite piezometer and monitoring well locations are shown on Figure 3-1. An unsuccessful attempt was made to remove the well casing from each location and LDEQ approval was granted to plug each well in place. The wells were grouted in place with a cement/bentonite mixture weighing approximately 13.8 pounds per

gallon (lb/gal) utilizing a tremie pipe in accordance with the Louisiana Department of Transportation and Development's (LDOTD) Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook. The completed LDOTD water well plugging and abandonment forms (DOTD-GW-2) were filed with the LDOTD. Copies of the LDOTD forms are included in Appendix E. Approval of the P&A of all offsite piezometers and monitoring wells was granted in LDEQ correspondence dated May 27, 2005, and is included in Appendix C.

3.4.2 Onsite Monitor Well P&A

The P&A of 8 onsite monitor wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3SR, MW-4SR, MW-102S, and MW-103S) was also conducted by Pro-Tech on December 7, 2006. The former onsite monitoring well locations are shown on Figure 3-1. An unsuccessful attempt was made to remove the well casing from monitor well locations MW-1S, MW-1I, MW-2I, and MW-102S. Based on prior LDEQ approval granted for the offsite monitor wells, these wells were plugged in place. The well casing was removed from the remaining monitor well locations MW-2S, MW-3SR, MW-4SR, and MW-103S. As with the offsite monitor wells, onsite monitor well locations were grouted with a cement/bentonite mixture weighing approximately 13.8 lb/gal utilizing a tremie pipe in accordance with the LDOTD guidelines. The completed LDOTD water well plugging and abandonment forms (DOTD-GW-2) were filed with the LDOTD. Copies of the LDOTD forms are included in Appendix E.

The subsequent removal of monitor well MW-5S, which was located within excavation Area I, was conducted by SEMS during excavation activities. The well casing and all associated well materials were removed and the soil surrounding the well location was removed to a depth of approximately 9.5 ft-bgs. The resulting excavation was backfilled with clean fill material along with the remaining open excavation. A copy of the LDOTD water well plugging and abandonment form for monitor well MW-5S (DOTD-GW-2) is also included in Appendix E. Waste generated during the P&A activities were disposed at Clean Harbors Lone Mountain Facility.

3.5 Off-Site Storm Drain Cleaning

Segments of the off-site storm drainage systems on Lowerline and Burdette Street's were cleaned and flushed as summarized below. The precise storm drain locations are shown on Figure 3-2. The methods used to clean and flush the storm drain systems were reviewed and approved by the SWBNO prior to starting the storm drain cleaning work.

Prior to initiating removal of sediments and flushing of each section of drain line, connecting drain lines entering each manhole were temporarily plugged using sandbags to isolate the lines being cleaned and to contain the fluids within the system being cleaned.

The sediments and debris in each manhole was removed and containerized for off-site disposal prior to flushing the drain lines. Flushing of the drain lines was accomplished by first fishing a steel cable through each section of line and then pulling rubber tires back through the lines thus moving any accumulated sediment or other material through the lines and collecting the materials at the manhole(s). The removal of sediments and other materials from the storm drain lines was conducted in a manner that minimized the use of water to the maximum extent possible as well as preventing damage to the storm drain lines themselves. Subsequently, the drain lines were then flushed with a high volume/pressure sewer cleaner until the sediments were removed. Sediments collected from this cleaning were containerized, stored on-site, and subsequently disposed of at Chemical Waste Management in Sulphur, LA. All fluids generated from the storm drain line cleaning operations were temporarily stored on-site pending transportation and off-site disposal at one of Clean Harbors' facilities as described in Section 3.7.4.

3.5.1 Lowerline Street System

The Lowerline Street System that was cleaned includes the storm drain lines between manholes STA-1 and STA-3 as shown on Figure 3-2. The storm drain main is 18-inches in diameter from ST-1 to the northbound lane of Earhart Boulevard, and 21-inches in diameter from Earhart Boulevard to STA-3. The 400-foot long drain line has four manholes in that transect. The manhole depths range from 6 to 8-ft-bgs.

3.5.2 Burdette Street System

The Burdette Street System that was cleaned includes the storm drain lines between manholes DM-1 and DM-32 as shown on Figure 3-2. The storm drain main is 10-inches in diameter from DM-1 to DM-2, 12-inches in diameter from DM-2 to DM-3, and 15-inches in diameter from DM-3 to DM-32. The 550-foot long drain line has six manholes in that transect. The manhole depths range from 3 to 4-ft-bgs.

3.6 Soil and Underground Facility Structure Remedial Activities

3.6.1 Overview

Four distinct areas (Areas I, II, III, and IV) requiring remediation remained onsite following the excavation activities conducted in 1990. For the purpose of describing the vertical and lateral extent of material to be excavated, surface soil on-site was defined as the soil located on the property (e.g., street curb to street curb) with a depth range from just below the original concrete cover to an approximate depth of 4.5 ft-bgs. Subsurface soil onsite was defined as soil located on the property (e.g., street curb to street curb) with a depth range from just below the original concrete cover to an approximated depth of 10 ft-bgs. The locations of the excavation areas are shown on Figure 1-2.

On January 5, 2007, excavation activities were initiated on site. An ERAB was assembled and used onsite for the excavation of Areas I, II, and IV to minimize the release of site-related chemicals to the outside environment and the surrounding neighborhood. With the exception of Area III and a small portion of Area I immediately adjacent to Colapissa Street, all soil excavation, underground facility structures, soil sampling, surveying of sample locations and excavation areas, and backfilling activities were conducted within the ERAB. The ERAB also minimized the accumulation of surface water runoff from rainfall events in each excavation. The main portion of the ERAB structure measured 65 feet in width by 85 feet in length with a maximum roof height of 28 feet and was constructed of a steel frame covered by a woven high density polyethylene (HDPE) fabric with a ultra-violet (UV) and fire retardant coating. The ERAB was a pre-manufactured structure that was assembled onsite. Roll-up doors were installed on two sides of the ERAB (three in total) to allow for equipment to be moved in and out of the structure. Four personnel doors were installed at each corner of the structure. The structure was mounted to I-beams to facilitate moving the structure to each excavation area. Figure 3-3 illustrates the excavation sequencing and documents the ERAB locations in phases to maintain environmental protection during the excavation activities.

An airlock (smaller version of the main structure with similar construction) was utilized further preventing the potential escape of site-related chemicals to the outside environment during the loading and transport of excavated materials out of the ERAB. The airlock was positioned next to the ERAB at one of the three roll-up door locations and allowed for equipment to be moved in or out of the main ERAB structure.

To further prevent the potential release of site-related chemicals to the outside environment, negative pressure was applied to the ERAB in the form of an electric blower or air handler. The air handling unit was capable of moving up to 5,000 cubic feet per minute (cfm) of air. The air was then treated by being passed through a 20,000 pound bed of activated carbon prior to being vented to the outside environment. A negative air pressure gauge was installed outside one of the personnel doors to monitor the air pressure difference between the ERAB and the outside air. The pressure within the ERAB averaged between 0.1 to 0.2 inches of water. In addition, smoke tests were also performed within the ERAB to insure that negative pressure was indeed being applied to the structure.

Continuous air monitoring was also conducted by Shaw personnel while excavation activities were being conducted. Details of the air monitoring conducted are included in Section 4.2.

3.6.2 Soil Excavation Activities

As detailed in the RD Work Plan and Section 2.0 of this report, four areas requiring further remedial action were designated as Areas I through IV (see Figure 1-2). With the exception of

Area III, where only the first two feet of soil required removal, all surface soil was removed from each excavation.

Area I, located in the former pesticide blending area, contained five separate areas of excavation and/or ERAB setup locations (Areas I-A through I-E) and in total was the largest of the excavations. Approximately 2,911 cubic yards (yds³) of excavated material were removed from Area I. Several locations in Area I were excavated to depths in excess of 4.5 ft-bgs, including the location of former monitor well MW-5S, the soil around the location of previous sample B-4, and near underground facility structures (Tank 1, Tank 2 and Sample 6). These deeper subsurface soil excavations were excavated to a nominal depth of 10 ft-bgs. At one confirmatory sidewall soil sample collection location (S8) the excavation was also extended latterly. Once all COPC in confirmatory sidewall and bottom samples were reported below the appropriate RAL, the RAO for the area was considered to be completed. All of the source areas in Area I, including the potential groundwater source areas near MW5S and TWP-3, were excavated and removed. Therefore, the potential for discharge of COPC from source areas via the groundwater to surface water exposure pathway has been eliminated.

Area II, the former herbicide blending area, located south of the former warehouse near the property boundary adjacent to Pine Street, was removed in one excavation. Approximately 848 yds³ of excavated material was removed from Area II. Several locations in Area II were excavated to depths in excess of 4.5 ft-bgs including underground facility structures, and selected confirmatory soil sample collection locations. One underground facility structure and associated drain lines, and organic debris were encountered during the excavation of Area II and are further described in Section 3.6.3. Once all COPCs in confirmatory sidewall and bottom samples were reported below the appropriate RAL, the RAO for the area was considered to be completed.

Although observed PCE concentrations reported in post excavation confirmatory samples within Area II were reported below the established RAL, an oxidizing agent was used to mitigate the remaining PCE concentrations remaining within the excavation area. Approximately 450 pounds of potassium permanganate was manually applied (spread by hand) to the bottom and Pine Street side wall of excavation Area II (grid blocks 5 and 6) prior to backfilling the excavation area. In addition, the oxidizing agent was also applied between excavation Area II and Pine Street via hand auger borings. A total of four hand auger borings were installed near the telephone pole located east of Area II (grid block 5). Each hand auger boring was advanced to approximately 4 ft-bgs, filled with approximately 50 pounds of potassium permanganate, and backfilled from approximately 2 ft-bgs to ground surface.

Area III, located along the southern edge of the former warehouse building was excavated to a nominal depth of 3 ft-bgs. Approximately 184 yds³ of excavated material was removed from Area III. One confirmatory soil sample location in Area III was excavated to a nominal depth of

3.5 ft-bgs. The drain line along the south side of the former warehouse was encountered and removed as described in Section 3.6.3. Once all COPCs in confirmatory sidewall and bottom samples were reported below the appropriate RAL, the RAO for the area was considered to be completed.

The soil within Area IV was excavated in two separate areas of excavation (IV-A and IV-B). Area IV was located near the property boundary adjacent to Burdette Street. Approximately 54 yds³ of excavated material was removed from Area IV. Due to the proximity of overhead utilities and the known constituents within the excavation area, excavation activities for Area IV were conducted utilizing a smaller excavator within the airlock structure of the ERAB without the use of the negative air pressure system. One underground facility structure (an abandoned SWBNO water line) was encountered during the excavation of Area IV and is further described in Section 3.6.3. Once all COPCs in confirmatory sidewall and bottom samples were reported below the appropriate RAL, the RAO for the area was considered to be completed.

3.6.3 Removal of Underground Facility Structures

As the excavation areas were expanded, several underground facility structures, such as underground storage tanks (USTs), sumps, and drains were encountered and removed. Additionally, organic debris such as large tree root balls were encountered and removed.

Two USTs were known to exist in Area I beneath the former pesticide mixing tanks. The removal of the concrete cover atop the USTs was initiated by SEMS on January 23, 2007. The soil surrounding the USTs was removed along with the contents of each UST which was approximately 20,000 gallons of liquids. The USTs (actually former railcars) were constructed of ¼ inch riveted steel. The smaller of the two tanks measured 20 feet in length by 6 feet in width with a capacity of 8,000 gallons. The larger of the two tanks measured 30 feet in length by 6 feet in width with a capacity of 12,000 gallons. Prior to removal, the lower explosive limit (LEL) inside the USTs was monitored as the tanks were rendered inert with dry ice. Once the LEL was less than 5 %, the tanks were removed from the ground using a track-hoe. The USTs were subsequently cut into pieces less than 3 feet x 3 feet, loaded into an inter-modal container, and transported to Clean Harbors' disposal facility in Lone Mountain, OK for micro-encapsulation. The subsequent submittal of the required State of Louisiana UST removal documentation was submitted under separate cover to the attention of Mr. Don Brandin, with LDEQs UST Division and was dated June 21, 2007, and is included as Appendix F. The former tankhold was excavated to an approximate depth of 9.5 ft-bgs. Visible phase-separated hydrocarbons (PSH) were encountered in the former tankhold location prior to over-excavation. The sidewalls to the north and east were over-excavated removing large tree roots and stumps. Once over-excavation of the former tankhold was completed, PSH was no longer observed. As with all other excavation areas, sidewall and bottom samples were obtained from the former tankhold and screened to the

RALs. The former tankhold was subsequently backfilled after meeting the applicable RALs and surveying of the sample location and excavation limits.

Former Sumps 6 and 7 were located in excavation Areas I and II, respectively. As with the USTs, the soil surrounding each location was removed exposing the sumps. The sumps were both constructed of similar reinforced concrete pipe, measured approximately three feet in diameter, and were open on both ends.

Organic debris such as large tree stumps, logs, and roots were encountered primarily in excavations with depths greater than 6 ft-bgs. These removed materials were sent off site for disposal along with the other impacted media.

Several subsurface utilities were encountered during remedial activities. Known abandoned drain lines were frequently encountered and removed in all excavation areas. One active utility was encountered in Area I. A non-potable water line servicing the fire hydrant along Colapissa Street, thought to have been re-routed prior to the initiation of remedial activities, was encountered and unearthed in grid block 1 of excavation Area I-A. Once the line was unearthed and was relieved of overburden, a small hole in the cast iron pipe burst, quickly filling the excavation with water. The SWBNO installed a new fire hydrant on the south side of Colapissa Street near the intersection with Lowerline Street. Subsequently, the fire hydrant and subsurface water lines within the excavation area were removed. The water from the waterline leak was collected on-site in frac tanks and shipped off-site for disposal with other contact water.

3.6.4 Confirmatory Soil Sampling and Analysis

3.6.4.1 Shaw Confirmatory Soil Sampling

Confirmation of attainment of remedial objectives was determined through offsite laboratory analysis of collected soil samples. Soil sampling along with quality assurance/quality control (QA/QC) procedures were conducted in accordance with the Sampling and Analysis Plan (SAP) and Quality Assurance Program Plan (QAPP). Confirmatory samples were collected from each area once the excavation had been completed to a suitable depth specified by the RD Work Plan and the discretion of onsite Shaw personnel. Confirmatory soil samples were collected from the bottom and sidewalls of each excavation area, along with the appropriate field QA/QC samples. An approximate 400 ft² grid system was established in each excavation area. Actual grid sizes varied depending upon the positioning of the ERAB and shape of the excavation area to be sampled. One discrete bottom sample along with a discrete sidewall sample, as appropriate, was obtained from each grid square. The grids, confirmatory soil sample location, and survey locations are depicted in Figure 3-4. A summary of all post excavation confirmatory soil sample results is included in Appendix A.

Confirmatory soil samples collected by Shaw were collected in laboratory supplied containers and submitted to THAN's contract laboratory CompuChem, Inc. of Cary, NC for laboratory analysis of VOCs by EPA *Test Methods for Evaluating Solid Waste* SW-846 Method 8260B, Organochlorine Pesticides by EPA Method 8081A, and Metals (arsenic, beryllium, chromium, and mercury only) by EPA Methods 6010B/7471A. The confirmatory soil samples were submitted on an expedited turn-around time basis to the laboratory in order to minimize the length of time that each excavation remained open. Results of laboratory analysis can be found in Appendix G.

3.6.4.2 Analytical Results and RAL Comparisons

Remedial goals were considered to have been achieved once concentrations of COPCs in surface and subsurface soil were reported below their respective RAL. As discussed in Section 2.0, RALs were established for onsite constituents based on previously conducted studies and risk evaluations. Once confirmatory samples were collected, the excavation area remained open until preliminary analytical results were received and screened to the applicable RALs verifying that the remedial goals had been achieved. If further excavation was required, grid systems were expanded and/or added and confirmatory soil samples were again obtained from the expanded excavation area for verification. Tables summarizing surface and sub-surface confirmatory sample analytical results along with RAL comparisons are included as Tables 3-2 and 3-3, respectively. Copies of the analytical laboratory reports are included in Appendix G.

A comparison of the post-excavation confirmatory soil sample results to the respective surface and/or subsurface RALs, indicates that all constituents were reported below the RALs with the exceptions of beryllium and arsenic. Beryllium was reported above the RAL in seven samples with a maximum concentration of 1.4 mg/kg. The surface RAL for beryllium is 1.0 mg/kg. Beryllium is a naturally occurring metal and was observed at similar concentrations in the borrow material approved for use as backfill by the LDEQ during the 1990 remedial activities. Also, the maximum reported concentration of 1.4 mg/kg for beryllium is below the current RECAP Soil_SSi for beryllium which is 8 mg/kg. Arsenic is also naturally occurring and was reported in only two post excavation samples with concentrations above the surface soil RAL of 13.98 mg/kg. The two detections are only slightly above the RAL with concentrations of 14 and 15 mg/kg. Arsenic was detected in 50 surface soil samples and the site average of the detected concentration is 6.65 which is below the current RECAP Soil_SSi of 12 mg/kg.

3.6.4.3 Data Validation

The confirmatory soil sample and Summa canister air sample chemistry data collected by Shaw during the Remedial Activities were validated by Arcadis U.S., Inc. (Arcadis). Data validation was performed as outlined in the EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review Analyses (EPA, February 1994). The sample results were

evaluated for accuracy, precision, comparability and completeness at 100 percent. The raw data and raw data calculations were verified on 25 percent of the total number of samples collected including 7 sample delivery group (SDG) packages. Upon completion of the data validation efforts, appropriate data qualifiers were added to the soil and air chemistry data to reflect the results of the data validation process and the data was uploaded into the electronic database. Overall, the data were of good quality and can be used for their intended purposes. The data validation Technical Memoranda provided by Arcadis is provided in Appendix H.

3.6.4.4 LDEQ Confirmatory Soil Sampling

On June 21, 2007, Jesco Environmental and Geotechnical Services, Inc (Jesco) of Jennings, Louisiana, under subcontract to the LDEQ, installed 10 soil borings on site utilizing direct push technology (DPT) for the purpose of collecting confirmatory soil samples. The soil borings were advanced through backfill material to a maximum depth of 12 ft-bgs into the native soil beneath. The soil borings were installed in both 2007 and 1989 excavation areas.

Soil samples collected by the LDEQ for Herbicides and OCL Pesticides analysis were placed into laboratory supplied sample containers and submitted to Southern Petroleum Labs, Inc. (SPL) of Scott, Louisiana for analysis by EPA methods 815A and 8081A, respectively. Soil samples collected by the LDEQ for VOC analysis were collected utilizing EPA method 5035 (encore) for volatile soil sample collection and submitted to the LDEQ's Laboratory Services Division (LSD) for VOC analysis by the aforementioned method. Soil samples collected by the LDEQ for metal analysis were placed into laboratory supplied containers and submitted to the LSD for metal analysis by the aforementioned methods. Copies of the LDEQ confirmatory soil sample analytical laboratory reports are included in Appendix G. The results of the confirmatory soil samples collected by LDEQ are below established risk based levels for the COPCs within all areas of excavation.

3.6.5 Surveying

The site was initially surveyed prior to the start of remedial activities by licensed professional land surveyors employed by Shaw, utilizing a global positioning system (GPS) with sub-foot accuracy. Several control points were established onsite to provide reference inside the ERAB as it moved across the site. Post excavation surveying was conducted after each sampling event using GPS and/or optical methods. Sample collection points, horizontal and vertical extent of excavation boundaries, and ERAB locations were surveyed during each survey event. During the course of excavation activities, several locations were unable to be surveyed due to health and safety concerns such as shoring and unstable ground conditions near the excavation(s) boundaries. The surveyed limits of excavations are depicted on Figure 3-5. Summary data provided by the licensed Louisiana Land Surveyors is included in Appendix I.

3.6.6 Variances

The following variances from the original plans were approved and implemented throughout remedial activities:

- Usage of field preservative method for soil sampling was added. Encore samplers were also used.
- Discard geotechnical method ASTM D-2922 to validate soil compaction. Sufficient backfill compaction was conducted by ensuring that compaction equipment made an adequate number of passes over impacted areas.
- Encapsulation of the former warehouse roof material was conducted after vacuuming was completed to prevent the release of remaining pea gravel and dust during building demolition.
- Replacement of the perimeter fence, after initial removal for cap installation purposes, to restrict public access to the site.
- Use of an oxidizing agent in Area II to mitigate remaining PCE concentrations below RALs.

3.7 Transportation and Disposal

Waste removed from the site was handled in accordance with applicable transportation rules and regulations and the RD Work Plan. Approximately, 11,505 tons of solid waste and 106,000 gallons of liquid waste was removed from the site and sent to the appropriate waste facility as described in the following sections. Accumulated waste was loaded into roll-off containers or inter-modal containers varying from 12 to 18 tons in capacity supplied by the T&D Contractors. The filled waste containers were temporarily staged on-site in a designated area until transportation arrangements to the disposal facility could be made. A summary of the waste generated and sent off-site for disposal is provided in Table 3-1. Waste disposal tracking documentation is included in Appendix J.

3.7.1 Non-Hazardous Construction and Demolition Waste

Construction debris accumulated during remedial activities was managed by ICI under subcontract to SEMS. Material loaded and classified as construction debris included non-friable asbestos containing material (ACM) removed from the warehouse demolition, asphalt removed from paved areas of the site, limestone and gravel removed from beneath the asphalt in some areas, and the concrete foundation of the warehouse building. Construction debris was sent to River Birch Landfill in Jefferson Parish for disposal as non-hazardous waste. A table summarizing the disposal of construction and demolition debris is included as Table 3-1. A total

of 5,867 tons of construction and demolition waste was sent off-site to River Birch Landfill for disposal.

3.7.2 Hazardous Solids

3.7.2.1 Soil

Excavated soil impacted with known onsite hazardous constituents in Areas I through IV was loaded into inter-modal containers supplied by Clean Harbors. The T&D of hazardous material was managed by Clean Harbors. The lined inter-modal containers were loaded onto a truck, taken inside the ERAB, filled with material, tarped and then removed from the ERAB through the airlock. Prior to loading, a plastic liner was placed inside each container. Once the container was loaded to capacity, the liner was then wrapped over the material and a tarp placed over the container. Once the box was filled, it was removed from the ERAB, weighed with on-site truck scales, and staged onsite prior to transport to the disposal facility. The staged boxes were then transported by Stranco, Inc. (Stranco), a sub-contractor to Clean Harbors, to a railway staging yard located at 4000 France Road Parkway, New Orleans, Louisiana. The inter-modal containers were stacked upon the railcars and subsequently transported to the appropriate disposal facility. Soil excavated and classified as hazardous waste was sent by rail to Clean Harbors' authorized hazardous waste facilities in either Deer Park, Texas or Kimball, Nebraska for incineration. A waste disposal summary table is included as Table 3-1. A total of 4,830 tons of material was sent off-site for incineration as hazardous waste solids.

3.7.2.2 Hazardous Debris

Excavation debris encountered during remedial activities was defined as any material measuring more than three inches in diameter such as tree roots, abandoned subsurface utilities, concrete, and other material considered too large for incineration. The T&D of hazardous debris was also managed by Clean Harbors. Excavation debris was sent to a separate Clean Harbors authorized hazardous waste facility located in Lone Mountain, OK for micro-encapsulation. The waste was loaded into the Clean Harbors supplied containers and handled in much the same manor as was the soil. A waste disposal summary table is included as Table 3-1. A total of 723 tons of material was sent off-site for disposal by encapsulation as hazardous debris.

3.7.2.3 Carbon

Activated carbon used on-site for air filtration was shipped off-site by Pro Waste, Inc. (Pro Waste) for disposal. Approximately 14 tons of spent carbon was sent to Clean Harbors' authorized hazardous waste facility in Deer Park, Texas for incineration.

3.7.3 Hazardous Liquids

Contact water requiring disposal was defined as any water that had potentially come in contact with onsite hazardous constituents. The T&D of hazardous liquids was managed by Clean

Harbors. The water generated during the storm drain flushing activities and the water that accumulated in open excavations due to groundwater infiltration, subsurface utility leakage, and/or rainfall events was considered contact water and removed and stored onsite in portable frac tanks pending transportation and off-site disposal. Contact water accumulated during remedial activities was sampled for waste disposal parameters and submitted to Clean Harbors for treatment and discharge at the Clean Harbor's facility in Baton Rouge, LA or incinerated in Deer Park, TX, depending on the analytical results for each respective load. A waste disposal summary table is included as Table 3-1. A total of 106,396 gallons of liquid was sent to Clean Harbors' (Deer Park and/or Baton Rouge) facilities for treatment and/or disposal.

4.0 Environmental Health & Safety

4.1 On-Site Health and Safety

4.1.1 General

The responsibility for developing and implementing the appropriate health and safety program throughout the duration of remedial activities was given to the on site contractor. An assigned health and safety officer was present on site during remedial activities. All on site personnel were required to have been properly trained for remedial activities. At a minimum, on site personnel were to have an Occupational Safety and Health Administration (OSHA) 40 hour hazardous waste operations and emergency response (HAZWOPER) certification. Personnel working within the ERAB to be equipped with Level B were required to have a medical clearance physical and a respirator fit test with the type of respirator to be used on site. Hazard communication of known site related constituents was also provided to all on site personnel.

4.1.2 Health and Safety Plan

A detailed Health and Safety Plan (HASP) was developed specifically for the implementation of remedial activities at the site. Health and safety requirements for all activities associated with remedial actions on site were included in the HASP in accordance with Shaw Policy HS052. The HASP was also included as Appendix G of the RD. The HASP prepared by Shaw described the minimum health and safety guidelines for the protection of on-site Shaw personnel from physical harm and exposure to materials and equipment on site. The HASP contained information on standard health and safety procedures, engineering controls and safe work practices, personal protective equipment, control zones, personnel and equipment decontamination, exposure monitoring, training, medical surveillance and mitigation of accidental spills and discharges.

As previously stated, SEMS was responsible for all health and safety activities during the completion of remedial activities. SEMS also developed a site specific HASP meeting the requirements of the appropriate OSHA regulations as well as Shaw policy and HASP.

4.1.3 Tailgate Safety Meetings and Job Safety Analysis

Each day before work on site began or whenever a new employee(s) arrived at the work site, the Shaw conducted a tailgate safety meeting as detailed in Shaw Policy HS051. The topics discussed at the tailgate safety meetings covered the work assignments for the day, the expected hazard(s) presented by the work and an explanation on how employees should protect themselves from those hazards.

These meetings were documented by the completion of a Tailgate Safety Meeting Form. Shaw assured that the form was properly completed and signed by all attendees. Completed forms are maintained in Shaw's project files.

The Job Safety Analysis (JSA) is an effective management technique for identifying hazardous conditions and unsafe acts in the workplace. A JSA is intended to analyze the individual steps or activities, which together create a job or specific work duty, and to detect any actual or potential hazards that may be present. This process can identify less obvious potential hazards that may go undetected during routine management observations or audits.

As detailed in Shaw Policy HS045, a new JSA was completed each day before commencement of any work activity. In addition JSAs were updated in the event of changing field conditions or an addition of a new task. Changing conditions requiring JSA modification may have included inclement weather, multiple contractors, and/or excavation changes. The JSAs were changed to reflect new conditions in the task being performed or new hazards not previously identified. Completed JSAs are maintained in Shaw's project files.

4.2 Air Monitoring

4.2.1 Air Monitoring Plan

The LDEQ approved Air Monitoring Plan, included as Appendix E of the RD plan, was prepared for the protection of on site workers and the surrounding community from site related constituents during remedial activities. The development of the Air Monitoring Plan was based on published occupational exposure limits, site conditions, scope of remedial activities, and the manner in which they were to be conducted. Based on residential exposure scenarios, a conservative threshold level of 5 parts per million (ppm) sustained above background concentrations was established outside the ERAB at the site perimeter. In the event of measured site constituents exceeding the threshold limit of 5 ppm, the following actions may have been implemented:

- Re-check background concentrations (upwind),
- Compare the re-measured background concentrations to the respective readings,
- Provide notice to the on site health and safety manager,
- Perform a source determination, including the utilization of colorimetric tubes,
- Determine appropriate corrective actions to reduce concentrations, and
- Re-measure perimeter concentrations.

In accordance with the Air Monitoring Plan, a review of the data collected by on site personnel by the project health and safety manager following the first week of intrusive activities to determine if modifications to the perimeter air monitoring frequency were necessary was conducted. A review of air data collected outside the ERAB indicated that a reduction in the frequency of perimeter air monitoring could be reduced. However, based on data collected within the ERAB during the initial week of remedial activities, a decision was made to continue perimeter air monitoring throughout the duration of the project.

4.2.2 Real Time Perimeter Air Monitoring

Real time perimeter air monitoring was performed around the perimeter of the site and ERAB to monitor and further prevent the escape of site related constituents from the site. Perimeter air monitoring also ensured that in place engineering controls utilized were adequate in maintaining airborne concentrations below the established threshold limit. Monitoring activities included the use of a Photoionization Detector (PID) to monitor eight predetermined locations around the outside perimeter of the ERAB as well as four locations around the perimeter (four corners) of the site. The eight locations around the perimeter of the ERAB included the exhaust of the air filtration system, the four personnel entry doors and the three equipment roll-up doors. The frequency of readings was based on site activities conducted at the time. Readings were collected on 30 minute intervals during intrusive activities and at 2-hour intervals once intrusive activities were completed and an excavation was left open prior to backfilling (awaiting analytical results). Each perimeter air monitoring event began with the collection of upwind (background) readings and then covering all subsequent locations around the ERAB and site. The on site air monitoring stations are depicted on Figure 4-1. The daily real time air monitoring readings are included in Appendix L.

In a few instances while excavating in the highly contaminated areas, air monitoring measurements of unsustained spikes, above the established threshold limit value of 5 ppm, were observed on site near the work zones (ERAB doors and/or waste staging areas). During these isolated events work was stopped and, engineering controls or measures were implemented immediately to reduce or eliminate the elevated and un-sustained (i.e., PID spike) measurements. In these cases, the following engineering control measures were implemented:

- Sealing of all non-essential personnel doors on the ERAB with caulking or insulation foam,
- Sealing of the bottom of the ERAB structure with additional fill material,
- Placement of a negative pressure gauge to ensure proper seal and proper airflow through activated carbon,

- Replacement of activated carbon nearing saturation, and
- The use of foaming agents within the excavation.
- Bringing the loaded waste container back into the ERAB and placing additional layers of plastic over excavated soil within the intermodal containers and applying foaming agents and/or sealants to loaded intermodal containers to be staged on site awaiting shipment.
- Ventilation of containers containing concrete and soil within the ERAB,

The implementation of the aforementioned engineering controls was successful in maintaining air monitoring measurements below the threshold limit of 5 ppm. A copy of the air monitoring field log is included as Appendix L.

4.2.3 Additional Air Monitoring

Although not a requirement of the RD plan or the Air Monitoring Plan, a real time air monitoring program was developed and implemented in the areas surrounding the site. The off site air monitoring stations are depicted on Figure 4-2. Real time air monitoring using a PID was performed at each station at a frequency of approximately once per week or more frequently as dictated by on-site activities.

There were no measurements above background concentrations observed in the surrounding area throughout the duration of the remedial activities. A copy of the air monitoring field log is included in Appendix K.

4.2.4 Work Zone Monitoring

Real time air monitoring for site related constituents was performed periodically during excavation activities for the protection of site personnel working on site and within the ERAB. Personnel working within the ERAB were equipped with Level B respiratory protection. Initial air monitoring (first week) was conducted hourly within the workers' breathing zone and source readings were obtained. Monitoring equipment consisted of a multi-function meter capable of monitoring several parameters including VOC, LEL, carbon monoxide (CO), and oxygen levels.

In accordance with the Air Monitoring Plan, the established action level for worker protection within the ERAB was based on the lowest Immediately Dangerous to Life and Health (IDLH) VOC constituent, with respect to the concentration and the potential for the accumulation within the ERAB. The lowest IDLH VOC constituent known to be present on site was established as PCE, with a National Institute for Safety and Health (NIOSH) IDLH exposure limit of 150 ppm. Therefore, the action level within the ERAB was conservatively established at 1/2 of the IDLH, or 75 ppm. Although VOC concentrations were observed within the ERAB in excess of 75 ppm,

PCE was never detected near the established action level based on the further identification of specific VOCs using colorimetric tubes. Furthermore, the concentrations in excess of the OSHA permissible exposure limit (PEL) of the specific VOCs, such as xylene, benzene, and ethylbenzene, were rarely observed.

At a minimum, one air sample was collected at each excavation location near the workers to determine the concentrations of site related constituents within the ERAB. Air samples were collected using laboratory supplied Summa canisters and analyzed for total VOCs by EPA Method 21 TO-14A or EPA Method 2 TO-15 mid-level. Air samples (Summa canisters) were also collected outside the ERAB during excavation activities. The Summa canister collection locations along with the dates of collection (outside ERAB) are depicted on Figure 4-3. As shown on Figure 4-3, a set of Summa canisters samples were collected from outside the ERAB at each ERAB setup location. The set of samples generally included one sample upwind to establish background and one or two other samples downwind on-site to evaluate site conditions. A table summarizing the Summa canister analytical results is presented as Table 4-1. To evaluate the Summa canister sample results collected outside the ERAB, the results were compared to Minimal Risk Levels (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR). According to ATSDR MRLs are intended to serve as a screening tool to help public health professionals decide where to look more closely. They may also be viewed as a mechanism to identify those hazardous waste sites that are not expected to cause adverse health effects. As shown on Table 4-1 there were no constituents detected in on-site (outside ERAB) Summa canister samples with concentrations reported above the respective MRL.

4.2.5 Weather Monitoring

A meteorological (Met) station was installed on site by Shaw to monitor weather conditions throughout the duration of remedial activities. Weather instrumentation capable of recording temperature, wind speed and wind direction was installed on the Met station along with a data logger which recorded weather conditions at 15 minute intervals. Weather conditions were observed and manually recorded prior to performing each air monitoring event. Recorded weather data is maintained in Shaw's project files.

4.2.6 Site Security

Twenty-four hour security was provided by Vinson Guard Services, Inc. (Vinson). A guard house was placed near the facility entrance gate to observe and document all site visitors and contractors. Only authorized personnel were allowed on site or near work zones.

5.0 Restoration Activities

5.1 Conveyance Notification

In accordance with the requirements of LAC 33:I, and the LDEQ approved RD Work Plan a conveyance notification shall be placed on all properties having residual constituent concentrations in soil that are greater than the acceptable exposure concentration defined for non-industrial (residential) land use. This legal instrument is to be recorded in the parish conveyance records for the subject property and shall clearly state the notice of restriction imposed on the site; the description of the site; and a scaled map showing the affected soil and groundwater zones. Future property owners are required to either maintain an industrial scenario onsite, or reevaluate the environmental media for residential use.

A conveyance notification will be filed with the Orleans Parish Clerk of Court for the 7700 Earhart Boulevard Facility by Elementis. This conveyance notification will ensure future property owners are aware of the remaining onsite environmental impact to subsurface media. The conveyance notice will provide a legal land description of the area of concern (AOC), a table depicting the constituent concentrations remaining onsite, and a site plan of the described AOC.

5.2 Backfill Selection and Placement

The backfill of excavated areas was conducted in accordance with technical specifications outlined in Appendix C of the RD work plan. Consistent with section C-11, the backfill material was substantially free of organic matter, placed in 12-inch lifts, and sloped to allow for the collection of precipitation and allow equipment access when necessary.

Backfill material used for the on-site excavations was obtained from Construction Aggregate's Harahan Pit. Geotechnical and chemical analyses were performed on the backfill source prior to the introduction of the material to the site. Analytical and geotechnical analysis results from the collected backfill samples can be found in Appendix L. The LDEQ approval of the backfill source used during the 1990 excavation is also included in Appendix L. Photographic documentation of backfill operations is included in the photo log included as Appendix B.

5.3 Cover Construction

The construction of the cover was conducted in accordance with technical specifications outlined in Appendix C of the RD work plan. Consistent with section C-11, the cap consisted of a seeded and fertilized approximate 1-foot topsoil layer placed above the backfill material. The cover has been graded to minimize standing water and facilitate drainage away from the site.

Material used for topsoil was obtained from the Bonne Carre Spillway and consisted primarily of a silt and clay mixture. Geotechnical and chemical analyses were performed on the topsoil source prior to the introduction of the material to the site. Analytical and geotechnical analysis results from the collected backfill samples can be found in Appendix L. Photographic documentation of topsoil and grading operations are included in the photo log included as Appendix B. A final grading as built map is included as Figure 5-1.

5.4 Sidewalk Replacement

Once final grading was completed, sidewalks were placed around the perimeter of the site; excluding the Earhart Boulevard side, which never contained a sidewalk. Final sidewalk locations are depicted on Figure 5-1. The sidewalks placed around the facility's perimeter were constructed in accordance with the City of New Orleans, Louisiana Department of Public Works *General Specification for Street Paving 1999 Edition (Revised 10/1/2001)*.

6.0 *Conclusions and Recommendations*

6.1 *Conclusions*

In conclusion, remediation of the 7700 Earhart Boulevard Facility has been completed in accordance with the approved RD Work Plan. A summary of the tasks performed included the following:

- The Warehouse building and concrete foundation was demolished and removed.
- The on-site and off-site monitoring wells were plugged and abandoned in accordance with the requirements of the LDOTD and LDEQ Handbook.
- The Sediments contained within the SWBNO Storm Drains located beneath Burdette and Lowerline Streets were removed and the lines were cleaned and flushed.
- The impacted soil and UFS which were considered to be potential source areas were excavated and removed.
- The Non Hazardous and Hazardous material was transported off-site and disposed in authorized facilities in accordance with applicable state and federal laws.
- Post Excavation Confirmatory sampling was performed by Shaw and the LDEQ to verify the constituent concentrations remaining in soil do not pose unacceptable risk.
- The open excavations were backfilled with clean borrow material, a vegetative cover was placed over the entire site, sidewalks were reconstructed and a security fence was installed.
- Throughout the duration of the project the integrity of the surrounding properties and the safety of the residents were considered. The engineering controls employed included; completion of the earthwork within the ERAB and venting the air through an air filtration system, vapor suppressing foam, real time ambient air monitoring in the work zone at the site perimeter and in the surrounding areas, collection and analysis of SUMMA canister samples, minimizing truck traffic within the neighborhoods, and the development of a Hurricane and Emergency Evacuation Contingency Plan.

In accordance with Paragraph E of Section VI of the Agreement, THAN and Elementis have satisfied the requirements set forth in the LDEQ approved Remedial Design Work Plan. The successful implementation of the work described above has accomplished the following RAOs:

- Reduced and/or eliminated the potential for direct skin contact with, or ingestion of the site related contaminants in soil and sediments that were above the RALs, as calculated based on future use scenarios.
- Eliminated the exposure scenario to storm drain maintenance workers by removing impacted sediments that exceeded RALs.
- Minimized the migration of contaminants from specific sources into surrounding soil, groundwater, and the city storm drains.

Furthermore, all of the source areas, including the potential groundwater source areas near MW55 and TWP-3, were excavated and removed. Therefore, the potential for discharge of COPC from source areas via the groundwater to surface water exposure pathway has been eliminated.

6.2 Recommendations

The following recommendations are proposed for the site:

Based on the achievement of the RAOs and the successful implementation of the LDEQ approved RD Work Plan, THAN and Elementis request a determination of No Further Action At this Time (NFA-ATT) for the 7700 Earhart Boulevard Facility.

Since constituent concentrations will remain in soil above the RECAP non-industrial (residential) Soil_{SSni}, a conveyance notification will be filed with the Orleans Parish Clerk of Court, for the 7700 Earhart Boulevard Facility.

Paragraphs A through E of the Agreement defined the Work to be performed by THAN and Elementis at the 7700 Earhart Boulevard Facility. Based on the successful implementation of the Remedial Design and the subsequent approval of the work by the LDEQ and concurrence by the LDAF, and the filing of the Conveyance Notification with the Orleans Parish Clerk of Court, THAN and Elementis will have satisfied the requirements of the Agreement. Therefore, in accordance with Section XXX "Termination and Satisfaction" of the Agreement, THAN and Elementis also request written notice of satisfaction and termination of this Agreement.

7.0 References

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Tables

Table 2-1
Remedial Action Levels
7700 Earhart Boulevard
New Orleans, Louisiana
Agency Interest No.: 1275

For Storm Drain Sediment			For Surface Soils				For Sub-Surface Soils				Lower of	
Constituent of Concern	CAS #	Target Cancer Risk Level of 1 x 10 ⁻⁵ (mg/kg)	Constituent of Concern	CAS #	Target Cancer Risk Level of 1 x 10 ⁻⁵ (mg/kg)	Target Non-Cancer Hazard 1.0 (mg/kg)	Lower of Cancer Risk Level 1 x 10 ⁻⁵ and Non-Cancer Hazard 1.0 (mg/kg)	Constituent of Concern	CAS #	Target Cancer Risk Level of 1 x 10 ⁻⁵ (mg/kg)	Target Non-Cancer Hazard 1.0 (mg/kg)	Lower of Cancer Risk Level 1 x 10 ⁻⁵ and Non-Cancer Hazard 1.0 (mg/kg)
4,4'-DDD	72-54-8	1285.36	ARSENIC	7440-38-2	13.98	269.70	13.98	BERYLLIUM	7440-41-7	124.68	1531.77	124.68
DIELDRIN	60-57-1	21.33	BERYLLIUM	7440-41-7	1.00	367.63	1.00	CHROMIUM	7440-47-3	N/A	11599.58	11599.58
GAMMA CHLORDANE	5103-74-2	1200.48	CHROMIUM	7440-47-3	N/A	2783.90	2783.90	4,4'-DDD	72-54-8	7712.14	1872.95	1872.95
4,4'-DDT	50-29-3	1285.36	4,4'-DDD	72-54-8	61.70	449.51	61.70	CHLORDANE	57-74-9	7202.86	1800.72	1800.72
ALPHA CHLORDANE	5103-71-9	1200.48	CHLORDANE	57-74-9	57.62	432.17	57.62	ALDRIN	309-00-2	120.43	87.74	87.74
ALDRIN	309-00-2	20.07	4,4'-DDE	72-55-9	61.70	449.51	61.70	DIELDRIN	60-57-1	127.95	146.23	127.95
HEPTACHLOR	76-44-8	75.83	ALDRIN	309-00-2	0.96	21.06	0.96	4,4'-DDT	50-29-3	7712.14	1872.95	7712.14
CHLORDANE	57-74-9	1200.48	DIELDRIN	60-57-1	1.02	35.10	1.02	ALPHA BHC	319-84-6	324.96	N/A	324.96
ALPHA BHC	319-84-6	54.16	4,4'-DDT	50-29-3	61.70	449.51	61.70	GAMMA BHC (LINDANE)	58-89-9	1574.83	877.40	877.40
GAMMA BHC (LINDANE)	58-89-9	262.47	ALPHA BHC	319-84-6	2.60	NA	2.60	TOXAPHENE	8001-35-2	1861.16	N/A	1861.16
TOXAPHENE	8001-35-2	310.19	GAMMA BHC (LINDANE)	58-89-9	12.60	210.58	12.60	ENDRIN	72-20-8	N/A	877.40	877.40
			TOXAPHENE	8001-35-2	14.89	N/A	17.89	HEPTACHLOR	76-44-8	454.95	1462.34	454.95
			ENDRIN	72-20-8	N/A	210.58	210.58	TETRACHLOROETHENE	127-18-4	39370.69	29246.79	29246.79
			HEPTACHLOR	76-44-8	3.64	350.96	3.64					
			HEPTACHLOR EPOXIDE	1024-57-3	1.80	9.13	1.80					

Notes:
N/A - Not Applicable/Not Available

Table 3-1
Waste Summary
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No.: 1275

Waste/Media Type	Total Material Disposed (tons/gals)	Facility	Disposal Method	Profile Number(s)
1) Recycled Material				
A. Warehouse Steel Support Beams	187	Southern Scrap and Recycling, Westwego, LA	Recycle	NA
2) Non-Hazardous Construction and Demolition Waste				
A. Non-Friable ACM Demolition Debris	1245	Riverbirch Landfill, Garyville, LA	Non-Hazardous Landfill	3883
B. Warehouse Concrete Slab	2465	Riverbirch Landfill, Garyville, LA	Non-Hazardous Landfill	3883
C. Asphalt and Limestone Cover	2157	Riverbirch Landfill, Garyville, LA	Non-Hazardous Landfill	3896
Total	5867			
3) Hazardous Solids				
A. Warehouse Roof Pea Gravel	71	Chemical Waste Management, Sulphur, LA	Hazardous Landfill	ZW645794
B. Soil & Sediment	4830	Clean Harbors, Deer Park, TX Clean Harbors Kimball, NE	Incineration	CH211201B
C. Debris (concrete, ufs, etc.)	723	Clean Harbors, Lone Mountain, OK	Micro-encapsulation	CH211201B
D. Carbon	14	Clean Harbors, Deer Park, Texas	Incineration	CH211201B
Total	5638			
4) Hazardous Liquid Waste				
A. Water	106,396	Clean Harbors, Deer Park, TX Clean Harbors, Baton Rouge, LA	Incineration Treatment and Discharge	CH211217B

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	B1-3A-2.0		B2-3A-3.0		B3-3A-2.0		B4-3A-2.5		B5-3A-2.5		GS1-1A-3.5		GS4-1A-3.5		GS5-1A-3.5		GS7-1A-3.5	
			Result (mg/kg)	Qual																
4,4-DDD	72-54-8	61.7	0.017	U	0.00077	J	0.016	J	0.0072	J	0.0028	J	0.015	J	0.036	J	0.045	J	0.27	
4,4-DDE	72-55-9	61.7	0.0063	J	0.0064	J	0.0093	J	0.0054	J	0.0021	J	0.0046	P	0.0059	J	0.0044	J	0.028	J
4,4-DDT	50-29-3	61.7	0.005	J	0.0019	J	0.0062	J	0.017	U	0.0027	J	0.0018	J	0.017	U	0.017	U	0.036	J
ALDRIN	309-00-2	0.96	0.0085	U	0.0017	U	0.0085	U	0.0085	U	0.00063	JP	0.0012	J	0.0034	J	0.0017	J	0.2	
ALPHA BHC	319-84-6	2.6	0.0085	U	0.0017	U	0.0085	U	0.0085	U	0.00023	J	0.0016	JP	0.0028	J	0.011	J	0.034	U
ARSENIC	7440-38-2	13.98	3.2	B	1.2	B	5.2	B	5.5	U	4.9	B	6.9	BN	6	BN	5.6	U	5.5	U
BERYLLIUM	7440-41-7	1	0.82	B	0.47	B	0.76	B	0.93	B	0.8	B	0.69	B	1	B	0.89	B	1.1	
CHLORDANE	57-74-9	57.62	0.14	U	0.027	U	0.14	U	0.27	U	0.27	U	0.027	U	0.14	U	0.14	U	0.54	U
CHROMIUM	7440-47-3	2783.9	17.8	B	12.9	B	17.1	B	1100	U	15.7	B	1110	UE	1110	UE	1110	U	1100	U
DIELDRIN	60-57-1	1.02	0.016	J	0.0017	J	0.013	J	0.017	U	0.0033	U	0.0031	J	0.0076	J	0.0046	J	0.013	J
ENDRIN	72-20-8	210.58	0.008	J	0.0015	J	0.0043	J	0.017	U	0.0033	U	0.004	P	0.012	J	0.0033	J	0.0095	J
GAMMA BHC (LINDANE)	58-89-9	12.6	0.0085	U	0.0017	U	0.0085	U	0.0085	U	0.0017	U	0.0013	JP	0.0085	U	0.0085	U	0.034	U
HEPTACHLOR	76-44-8	3.64	0.0085	U	0.0017	U	0.0047	JP	0.0085	U	0.0017	U	0.00054	J	0.0085	U	0.0085	U	0.034	U
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.0019	JP	0.00077	J	0.0094	P	0.0085	U	0.00093	J	0.0066	P	0.0018	J	0.0011	J	0.034	U
TOXAPHENE	8001-35-2	17.89	0.42	U	0.083	U	0.42	U	0.42	U	0.083	U	0.083	U	0.42	U	0.42	U	1.7	U

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL

**Table 3-2
Surface Soil Post Excavation Confirmation Sample Results**

7700 Earhart Boulevard
New Orleans, Louisiana
Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	S19-1C-3.5		S23-1C-3.5		S24-1D-3.5		S27-1D-3.5		S28-1D-3.5A		S29-1D-3.5		S2B-2A-3.5A	
			Result (mg/kg)	Qual												
4,4-DDD	72-54-8	61.7	0.0035		0.027		0.0054		0.33		0.0012		0.007		0.06	
4,4-DDE	72-55-9	61.7	0.0071		0.015	J	0.0013	JP	0.12	J	0.0055		0.0096	J	0.0094	JP
4,4-DDT	50-29-3	61.7	0.0011	J	0.017	U	0.0033	U	0.33	U	0.0033	U	0.017	U	0.017	U
ALDRIN	309-00-2	0.96	0.0046		0.024	U	0.0012	J	0.17	U	0.00043	J	0.0039	J	0.006	J
ALPHA BHC	319-84-6	2.6	0.0016	J	0.0079	JP	0.00077	JP	0.031	J	0.0017	U	0.0085	U	0.0017	J
ARSENIC	7440-38-2	13.98	5.1	BN	5.4	BN	5.3	U	10	BN	5.4	U	5.5	U	5.4	U
BERYLLIUM	7440-41-7	1	0.93	B	0.95	B	0.61	B	1		0.66	B	0.75	B	0.87	B
CHLORDANE	57-74-9	57.62	0.027	U	0.14	U	0.027	U	2.7	U	0.027	U	0.14	U	0.14	U
CHROMIUM	7440-47-3	2783.9	14.2	B	14.8	B	1050	UE	16.3	B	1080	UE	1100	UE	1080	UE
DIELDRIN	60-57-1	1.02	0.0039		0.013	JP	0.0011	J	0.13	J	0.0011	JP	0.0033	J	0.0054	JP
ENDRIN	72-20-8	210.58	0.0075		0.017	U	0.0027	JP	0.2	J	0.0033	U	0.017	U	0.017	U
GAMMA BHC (LINDANE)	58-89-9	12.6	0.001	J	0.015	U	0.0017	U	0.17	U	0.0017	U	0.0085	U	0.0085	U
HEPTACHLOR	76-44-8	3.64	0.0017	U	0.0026	J	0.0012	JP	0.17	U	0.0017	U	0.0085	U	0.0085	U
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.0014	JP	0.0046	JP	0.0025	P	0.17	U	0.0017	U	0.0085	U	0.0084	J
TOXAPHENE	8001-35-2	17.89	0.083	U	0.42	U	0.083	U	8.3	U	0.083	U	0.42	U	0.42	U

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL.

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	S2B-2A-3.5B		S30-ID-3.5		S31-ID-3.5A		S31-ID-3.5B		S4-2A-3.5B		S5-2A-3.5B		S5-2A-4.0B		S5A-2A-3.0A		S5A-2A-3.0B		
			Result (mg/kg)	Qual																	
4,4-DDD	72-54-8	61.7	0.0065	J	0.0018	J	0.0033	U	0.005	U	0.017	U	0.007	U	0.052		0.013		0.0051		
4,4-DDE	72-55-9	61.7	0.0083	J	0.0033	U	0.0033	U	0.018	U	0.002	J	0.0069	J	0.069		0.005		0.0098		
4,4-DDT	50-29-3	61.7	0.017	U	0.0033	U	0.0033	U	0.0019	J	0.017	U	0.001	J	0.017	U	0.0033	U	0.0033	U	
ALDRIN	309-00-2	0.96	0.0085	U	0.00063	JP	0.0017	U	0.00064	J	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.0017	U	
ALPHA BHC	319-84-6	2.6	0.0085	U	0.0017	U	0.0017	U	0.0035	J	0.0085	U	0.0033	JP	0.0085	U	0.00043	J	0.00019	J	
ARSENIC	7440-38-2	13.98	10	B	5.5	U	5.3	U	5.5	U	1.1	B	4.8	B	5.6	U	12.1	B	4.3	B	
BERYLLIUM	7440-41-7	1	0.53	B	0.76	B	0.8	B	1.1	B	0.69	B	0.71	B	0.69	B	0.58	B	0.77	B	
CHLORDANE	57-74-9	57.62	0.14	U	0.027	U	0.027	U	0.027	U	0.14	U	0.027	U	0.14	U	0.027	U	0.027	U	
CHROMIUM	7440-47-3	2783.9	15	B	1090	UE	1050	UE	1090	UE	13.6	B	16.4	B	1110	U	14	B	13.5	B	
DIELDRIN	60-57-1	1.02	0.017	U	0.0033	U	0.0033	U	0.0049	U	0.017	U	0.0012	J	0.0052	J	0.0022	J	0.0013	JP	
ENDRIN	72-20-8	210.58	0.017	U	0.0033	U	0.0033	U	0.0016	JP	0.017	U	0.00066	J	0.017	U	0.0033	U	0.0033	U	
GAMMA BHC (LINDANE)	58-89-9	12.6	0.0085	U	0.0017	U	0.0017	U	0.0017	U	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.0017	U	
HEPTACHLOR	76-44-8	3.64	0.0085	U	0.00032	JP	0.0017	U	0.0004	J	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.0017	U	
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.0015	J	0.0017	U	0.0017	U	0.0017	U	0.0085	U	0.0022	P	0.0085	U	0.0017	U	0.0061	P	
TOXAPHENE	8001-35-2	17.89	0.42	U	0.083	U	0.083	U	0.083	U	0.42	U	0.083	U	0.42	U	0.083	U	0.083	U	
Excavation Area			II	I-D		I-D		I-D		II-A											
Sample Date			04/20/07	03/27/07		03/27/07		03/27/07		04/13/07		04/20/07		04/27/07		05/03/07		05/03/07		05/03/07	
Sample Depth (ft-bgs)			3.5	3.5		3.5		3.5		3.5		3.5		4		3		3		3	
Depth Location			Sidewall	Sidewall		Sidewall															

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	Sample Location		S6-2A-4.0A		S6-2A-4.0B		S7-2A-4.0A		S7-2A-4.0B		S7-2A-4.0C		S8A-3.5-1B		EA-F-2		EA-F-3	
			Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual
4,4-DDD	72-54-8	61.7	0.01	J	0.0048	J	0.053	0.2	0.053	0.25	0.083	0.0033	U	0.05	U	0.05	U	0.05	U	7.3
4,4-DDDE	72-55-9	61.7	0.005	J	0.017	U	0.035	0.24	0.035	0.083	0.17	0.0033	U	0.05	U	0.05	U	0.05	U	0.1
4,4-DDT	50-29-3	61.7	0.017	U	0.017	U	0.017	0.17	0.017	0.17	0.085	0.0033	U	0.05	U	0.05	U	0.05	U	41
ALDRIN	309-00-2	0.96	0.0085	U	0.0085	U	0.0085	0.085	0.085	0.085	0.085	0.0017	U	0.05	U	0.05	U	0.05	U	0.1
ALPHA BHC	319-84-6	2.6	0.0085	U	0.0085	U	0.0029	0.085	0.085	0.085	0.085	0.0017	U	0.05	U	0.05	U	0.05	U	0.1
ARSENIC	7440-38-2	13.98	5.2	U	5.5	U	9.7	11.8	11.8	8	8	5.6	U	0.05	U	8.9	U	8.9	U	9.5
BERYLLIUM	7440-41-7	1	0.75	B	0.63	B	0.67	0.87	0.87	0.76	0.76	1.3	U	0.05	U	0.9	U	0.9	U	1
CHLORDANE	57-74-9	57.62	0.14	U	0.14	U	0.14	1.4	1.4	1.4	1.4	0.027	U	0.05	U	0.05	U	0.05	U	0.3
CHROMIUM	7440-47-3	2783.9	1040	U	1100	U	1020	1070	1070	1020	1020	1110	U	0.05	U	0.05	U	0.05	U	0.3
DIELDRIN	60-57-1	1.02	0.017	U	0.017	U	0.019	0.17	0.17	0.17	0.17	0.0033	U	0.05	U	0.05	U	0.05	U	0.1
ENDRIN	72-20-8	210.58	0.017	U	0.017	U	0.004	0.17	0.17	0.17	0.17	0.0033	U	0.05	U	0.05	U	0.05	U	0.1
GAMMA BHC (LINDANE)	58-89-9	12.6	0.0085	U	0.0085	U	0.0085	0.085	0.085	0.085	0.085	0.0017	U	0.05	U	0.05	U	0.05	U	0.1
HEPTACHLOR	76-44-8	3.64	0.0085	U	0.0085	U	0.0085	0.085	0.085	0.085	0.085	0.0017	U	0.05	U	0.02	U	0.02	U	0.1
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.0085	U	0.0085	U	0.009	0.085	0.085	0.085	0.085	0.0017	U	0.05	U	0.05	U	0.05	U	0.1
TOXAPHENE	8001-35-2	17.89	0.42	U	0.42	U	0.42	4.2	4.2	4.2	4.2	0.083	U	0.05	U	0.05	U	0.05	U	8.5

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL.

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results

7700 Earhart Boulevard
New Orleans, Louisiana
Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	Sample Location		EA-H-1		EA-H-2		EA-H-3		EA-H-4		GB-1		H-7		S8-BOTTOM-1		S8-WALL-1		SS-A-1	
			Sample ID	Lab ID	Sample Date	Excavation Area																
			Sample Depth (ft-bgs)		3.5 - 3.7		3.5 - 3.7		3.6		4.0 - 4.3		0.8 - 1.0		0.0 - 1.0		4.0 - 4.5		2.0 - 2.5		0.0 - 4.0	
			Depth Location		3.5 - 3.7		3.5 - 3.7		3.6		4.0 - 4.3		0.8 - 1.0		0.0 - 1.0		4.0 - 4.5		2.0 - 2.5		0.0 - 4.0	
			Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual
4,4-DDD	72-54-8	61.7	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
4,4-DDDE	72-55-9	61.7	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
4,4-DDDT	50-29-3	61.7	0.05	U	0.05	U	0.71	U	0.05	U												
ALDRIN	309-00-2	0.96	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.09	U	0.05	U
ALPHA BHC	319-84-6	2.6	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
ARSENIC	7440-38-2	13.98	6.2	14	6.5	7.2	7.2	7.2	6.5	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
BERYLLIUM	7440-41-7	1	0.7	1.4	0.9	1	1	1	0.9	1	1	1	1	1	1	1	1	1	1	1	1	1
CHLORDANE	57-74-9	57.62	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
CHROMIUM	7440-47-3	2783.9																				
DIELDRIN	60-57-1	1.02	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
ENDRIN	72-20-8	210.58	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	12.6	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.27	U	0.05	U
HEPTACHLOR	76-44-8	3.64	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
TOXAPHENE	8001-35-2	17.89	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.16	U	0.05	U

mg/kg = milligrams per kilogram
RAL = Remedial Action Level
ft-bgs = feet below ground surface
Shaded cells indicate result exceeds RAL

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results

7700 Earhart Boulevard
New Orleans, Louisiana
Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	Sample Location SS-A-10		Sample Location SS-A-11		Sample Location SS-A-12		Sample Location SS-A-13		Sample Location SS-A-14		Sample Location SS-A-15		Sample Location SS-A-2		Sample Location SS-A-3		Sample Location SS-A-4	
			Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual										
4,4-DDD	72-54-8	61.7	0.05	U	0.05	U	0.05	U	0.05	U										
4,4-DDE	72-55-9	61.7	0.05	U	0.05	U	0.05	U	0.05	U										
4,4-DDT	50-29-3	61.7	0.05	U	0.05	U	0.05	U	0.38	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
ALDRIN	309-00-2	0.96	0.05	U	0.05	U	0.05	U	0.05	U										
ALPHA BHC	319-84-6	2.6	0.05	U	0.05	U	0.05	U	0.05	U										
ARSENIC	7440-38-2	13.98																		
BERYLLIUM	7440-41-7	1																		
CHLORDANE	57-74-9	57.62	0.05	U	0.05	U	0.05	U	0.05	U										
CHROMIUM	7440-47-3	2783.9																		
DIELDRIN	60-57-1	1.02	0.05	U	0.05	U	0.05	U	0.05	U										
ENDRIN	72-20-8	210.58	0.05	U	0.05	U	0.05	U	0.13	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	12.6	0.05	U	0.05	U	0.05	U	0.05	U										
HEPTACHLOR	76-44-8	3.64	0.02	U	0.02	U	0.02	U	0.02	U										
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.05	U	0.05	U	0.05	U	0.05	U										
TOXAPHENE	8001-35-2	17.89	0.05	U	0.05	U	0.05	U	0.5	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U

mg/kg = milligrams per kilogram
RAL = Remedial Action Level
ft-bgs = feet below ground surface
Shaded cells indicate result exceeds RAL

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	Sample Location		Excavation Area		Sample Date		Sample Depth (ft-bgs)		Depth Location		Result (mg/kg)	Qual								
			SS-EC-2	SS-F-5	SS-GC-1	SS-H-1	SS-H-2	SS-H-3	SS-HC-1	TWP-1	TWP-11A											
4,4-DDD	72-54-8	61.7	0.05	U	0.05	U	06/08/89	0.0 - 4.0	0.0 - 4.0	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
4,4-DDE	72-55-9	61.7	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
4,4-DDT	50-29-3	61.7	1.9	U	0.08	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
ALDRIN	309-00-2	0.96	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
ALPHA BHC	319-84-6	2.6	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
ARSENIC	7440-38-2	13.98																				
BERYLLIUM	7440-41-7	1																				
CHLORDANE	57-74-9	57.62	0.05	U	0.22	U				0.05	U	0.05	U	0.05	U	0.12	U	0.05	U	0.05	U	
CHROMIUM	7440-47-3	2783.9																				
DIELDRIN	60-57-1	1.02	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
ENDRIN	72-20-8	210.58	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
GAMMA BHC (LINDANE)	58-89-9	12.6	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
HEPTACHLOR	76-44-8	3.64	0.02	U	0.02	U				0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.05	U	0.05	U				0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	
TOXAPHENE	8001-35-2	17.89	0.87	U	0.57	U				10	U	0.05	U									

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL

Table 3-2
Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Surface RAL	Sample Location		Excavation Area	
			Result (mg/kg)	Qual	Result (mg/kg)	Qual
4,4-DDD	72-54-8	61.7		TWP-12	TWP-8	
4,4-DDE	72-55-9	61.7	0.05	TWP-12	TWP-8	U
4,4-DDT	50-29-3	61.7	0.05			U
ALDRIN	309-00-2	0.96	0.05			U
ALPHA BHC	319-84-6	2.6	0.05			U
ARSENIC	7440-38-2	13.98				
BERYLLIUM	7440-41-7	1				
CHLORDANE	57-74-9	57.62	0.05	U	0.05	U
CHROMIUM	7440-47-3	2783.9				
DIELDRIN	60-57-1	1.02	0.05	U	0.05	U
ENDRIN	72-20-8	210.58	0.05	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	12.6	0.05	U	0.05	U
HEPTACHLOR	76-44-8	3.64	0.02	U	0.02	U
HEPTACHLOR EPOXIDE	1024-57-3	1.8	0.05	U	0.05	U
TOXAPHENE	8001-35-2	17.89	0.05	U	0.05	U

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL

Table 3-3
Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	B18-1C-5.0		B19-1C-5.0		B19-1C-9.5		B21-1C-5.0		B22-1C-5.0		B23-1C-5.0		B24-1D-5.0		B25-1D-5.0	
			Result (mg/kg)	Qual														
4,4-DDD	72-54-8	1872.95	13		56		2.4		5.2		49		61		13		4.2	
4,4-DDT	50-29-3	7712.14	1.9	J	17	U	0.38	J	1.7	U	17	U	3.6	J	3		1.7	U
ALDRIN	309-00-2	87.74	8.8		37		1.7		1.7		9.6		58		0.1	J	0.49	J
ALPHA BHC	319-84-6	324.96	1.1	J	2.1	JP	0.34	U	1.6		3.6	JP	4.8	J	0.85	U	0.28	J
BERYLLIUM	7440-41-7	124.68	0.61	B	0.64	B	0.63	B	0.37	B	0.66	B	0.67	B	0.69	B	0.67	B
CHLORDANE	57-74-9	1800.72	27	U	140	U	5.4	U	14	U	140	U	140	U	14	U	14	U
CHROMIUM	7440-47-3	11599.58	15.1	B	14.7	B	12.7	B	9.5	B	13.6	B	14	B	1110	UE	15.6	B
DIELDRIN	60-57-1	127.95	2	J	8	J	0.25	J	0.95	J	8.3	J	12	J	0.28	J	0.52	J
ENDRIN	72-20-8	877.40	3.3		5.4	J	0.18	J	1.4	J	8.5	J	12	J	0.28	J	1.7	U
GAMMA BHC (LINDANE)	58-89-9	877.40	1.7	U	8.5	U	0.34	U	0.85	U	8.5	U	8.5	U	0.85	U	0.85	U
HEPTACHLOR	76-44-8	454.95	1.7	U	8.5	U	0.34	U	0.85	U	8.5	U	8.5	U	0.85	U	0.85	U
TETRACHLOROETHENE	127-18-4	29246.79	0.46	J	1.9	U	0.29	U	5.1	U	5.3	U	0.81	U	0.49	U	0.87	U
TOXAPHENE	8001-35-2	1861.16	83	U	420	U	17	U	42	U	420	U	420	U	42	U	42	U

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL

Table 3-3
Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	B33-1E-5.0		B4-2A-8.0		B5-2A-9.5		B6-2A-8.0		B7-2A-9.5		B8-5.0-1B		B9-5.0-1B		B9-9.5-1B		GB1-1A-5.0	
			Result (mg/kg)	Qual																
4,4-DDD	72-54-8	1872.95	0.0012	J	0.0075	J	0.01	U	0.017	U	0.0016	JP	6.2	U	20	U	0.11	J	0.02	U
4,4-DDT	50-29-3	7712.14	0.0033	U	0.017	U	0.0011	JP	0.017	U	0.0033	U	1.7	U	6.6	U	0.33	U	0.0033	U
ALDRIN	309-00-2	87.74	0.0017	U	0.0085	U	0.0016	JP	0.0085	U	0.0017	U	0.52	U	15	U	0.27	U	0.0057	U
ALPHA BHC	319-84-6	324.96	0.0017	U	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.31	JB	2.7	JB	0.17	U	0.0022	U
BERYLLIUM	7440-41-7	124.68	0.63	B	0.52	B	0.62	B	0.72	B	0.62	B	0.76	B	1.1	B	0.61	B	0.85	B
CHLORDANE	57-74-9	1800.72	0.027	U	0.14	U	0.027	U	0.14	U	0.027	U	14	U	54	U	2.7	U	0.027	U
CHROMIUM	7440-47-3	11599.58	13.7	B	1080	U	10.1	B	1060	U	9.8	B	1070	UN	1070	UN	1060	UN	1110	UE
DIELDRIN	60-57-1	127.95	0.0033	U	0.017	U	0.0022	JP	0.017	U	0.00066	J	0.79	JB	4.2	J	0.33	U	0.0041	P
ENDRIN	72-20-8	877.40	0.0033	U	0.017	U	0.0012	J	0.017	U	0.0033	U	0.58	JB	6.8	JB	0.33	U	0.0036	P
GAMMA BHC (LINDANE)	58-89-9	877.40	0.0017	U	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.85	U	3.4	U	0.17	U	0.0007	JP
HEPTACHLOR	76-44-8	454.95	0.0017	U	0.0085	U	0.0017	U	0.0085	U	0.0017	U	0.13	JB	3.4	JB	0.17	U	0.0017	U
TETRACHLOROETHENE	127-18-4	29246.79	0.005	U	1.2	J	2400	D	0.029	U	39	U	7	U	7.9	U	0.22	U	0.0047	U
TOXAPHENE	8001-35-2	1861.16	0.083	U	0.42	U	0.083	U	0.42	U	0.083	U	42	U	170	U	8.3	U	0.083	U

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL

Table 3-3
Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	S14-7B-1B		S19-1C-7A1		S19-1C-7B		S19-1C-7C		S19-1C-7D1		S20-1C-7.0		S26-1D-7A		S26-1D-7B		S26-1D-7C	
			Result (mg/kg)	Qual																
4,4-DDD	72-54-8	1872.95	50		3.1		18		5.6		11		1.9	P	9		6.4	J	24	
4,4-DDT	50-29-3	7712.14	17	U	1.7	U	1.9	J	3.3	U	1.9	J	0.33	U	4.3	JP	6.6	U	3.3	U
ALDRIN	309-00-2	87.74	50		1.5		10		7.4		12		0.21		9.9		0.6	J	12	
ALPHA BHC	319-84-6	324.96	4.3	JB	0.85	U	2.9		1.4	J	0.52	J	0.2		3.8		4.6		5	P
BERYLLIUM	7440-41-7	124.68	0.86	B	0.76	B	0.76	B	0.6	B	0.6	B	0.52	B	0.71	B	0.68	B	0.72	B
CHLORDANE	57-74-9	1800.72	140	U	14	U	27	U	27	U	27	U	2.7	U	54	U	54	U	27	U
CHROMIUM	7440-47-3	11599.58	1050	UN	12.4	B	11.6	B	9.5	B	9.1	B	12.2	B	12.1	B	11.8	B	12.1	B
DIELDRIN	60-57-1	127.95	8.4	JB	0.27	J	1.6	J	1.6	J	2.2	J	0.33	P	4.4	J	3.1	J	5.8	
ENDRIN	72-20-8	877.40	15	JB	1.7	U	4		1.4	J	2.5	J	0.33	U	5.3	J	2.3	J	3.3	U
GAMMA BHC (LINDANE)	58-89-9	877.40	8.5	U	0.85	U	3.8		0.75	J	1.7	U	0.17	U	5.4		4.5		0.8	JP
HEPTACHLOR	76-44-8	454.95	8.5	U	0.85	U	0.34	J	1.7	U	1.7	U	0.039	J	1.1	BJ	0.79	BJ	1.7	U
TETRACHLOROETHENE	127-18-4	29246.79	0.84		0.26	J	0.81	J	1.2	J	0.19	J	0.83	U	97		490		46	
TOXAPHENE	8001-35-2	1861.16	420	U	42	U	83	U	83	U	83	U	8.3	U	170	U	170	U	83	U

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL

Table 3-3
Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	S26-1D-7D		S5A-2A-6.0A		S5A-2A-6.0B		S9-7A-1B		S9-7B-1B		EA-D-2		GB-1		GB-1	
			Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual	Result (mg/kg)	Qual						
4,4-DDD	72-54-8	1872.95	0.55	P	0.17	P	0.0025	JP	0.51	0.51	4.6	4.6	20	20	0.05	U	0.05	U
4,4-DDT	50-29-3	7712.14	0.33	U	0.033	U	0.0033	U	0.33	0.33	1.7	1.7	109	109	0.05	U	0.05	U
ALDRIN	309-00-2	87.74	0.059	J	0.017	U	0.00047	J	0.69	0.69	2.4	2.4	20	20	0.05	U	0.05	U
ALPHA BHC	319-84-6	324.96	0.17	U	0.017	U	0.0006	J	0.029	0.029	1	1	1	1	0.05	U	0.05	U
BERYLLIUM	7440-41-7	124.68	0.61	B	0.75	B	0.65	B	0.84	0.84	0.65	0.65	0.9	0.9				
CHLORDANE	57-74-9	1800.72	2.7	U	0.27	U	0.027	U	2.7	2.7	14	14	7.4	7.4	0.14	U	0.05	U
CHROMIUM	7440-47-3	11599.58	11.4	B	13.5	B	12.7	B	1110	1110	1050	1050	19	19				
DIELDRIN	60-57-1	127.95	0.07	J	0.0089	J	0.00087	JP	0.076	0.076	0.79	0.79	3.4	3.4	0.05	U	0.05	U
ENDRIN	72-20-8	877.40	0.33	U	0.01	JP	0.0033	U	0.091	0.091	1.7	1.7	1	1	0.05	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	877.40	0.17	U	0.017	U	0.0017	U	0.17	0.17	0.16	0.16	1	1	0.05	U	0.05	U
HEPTACHLOR	76-44-8	454.95	0.17	U	0.017	U	0.0017	U	0.17	0.17	0.1	0.1	6.6	6.6	0.02	U	0.02	U
TETRACHLOROETHENE	127-18-4	29246.79	8.5	U	3600	D	430	D	0.23	0.23	0.21	0.21	330	330				
TOXAPHENE	8001-35-2	1861.16	8.3	U	0.83	U	0.083	U	8.3	8.3	42	42	64	64	0.05	U	0.05	U

mg/kg = milligrams per kilogram
 RAL = Remedial Action Level
 ft-bgs = feet below ground surface
 Shaded cells indicate result exceeds RAL

Table 3-3
Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	Sample Location		Sample ID		Lab ID	Sample Date	Excavation Area	Sample Depth (ft-bgs)	Depth Location		Result (mg/kg)	Qual	Result (mg/kg)	Qual											
			MW-102S(12-13)	MW-102S(8-10)	MW-103S(12-13)	MW-103S(8-10)					MW-3SR(12-13)	MW-3SR(8-10)													MW-4SR(12-14)	MW-4SR(8-10)	MW-3SR(12-13)
4,4-DDD	72-54-8	1872.95	0.0041	U	0.004	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.05	U
4,4-DDT	50-29-3	7712.14	0.004	U	0.004	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.05	U
ALDRIN	309-00-2	87.74	0.002	U	0.002	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/11/92	8.0 - 10.0	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U
ALPHA BHC	319-84-6	324.96	0.002	U	0.002	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U
BERYLLIUM	7440-41-7	124.68	0.5	U	0.56	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.5	U	0.61	U	0.5	U	0.5	U	0.57	U	0.0023	U	0.0023	U	1	U
CHLORDANE	57-74-9	1800.72	0.002	U	0.002	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U
CHROMIUM	7440-47-3	11599.58																									
DIELDRIN	60-57-1	127.95	0.004	U	0.004	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.05	U
ENDRIN	72-20-8	877.40	0.004	U	0.004	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	877.40	0.002	U	0.002	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U
HEPTACHLOR	76-44-8	454.95	0.002	U	0.002	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.02	U
TETRACHLOROETHENE	127-18-4	29246.79	0.005	U	0.005	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	10.9	U
TOXAPHENE	8001-35-2	1861.16	0.067	U	0.067	U	12/11/92	8.0 - 10.0	12.0 - 13.0	12/15/92	8.0 - 10.0	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U	0.05	U

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL

Table 3-3
 Sub Surface Soil Post Excavation Confirmation Sample Results
 7700 Earhart Boulevard
 New Orleans, Louisiana
 Agency Interest No. 1275

Parameter	CAS Number	Sub-Surface RAL	Sample Location		EA-C-1		EA-C-2		EA-D-3		EA-F-4		EA-F-5		EA-G-1		EA-G-2	
			Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID	Sample ID	Lab ID
4,4-DDD	72-54-8	1872.95	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
4,4-DDT	50-29-3	7712.14	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.08	U	0.08	U
ALDRIN	309-00-2	87.74	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.08	U	0.08	U
ALPHA BHC	319-84-6	324.96	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
BERYLLIUM	7440-41-7	124.68	0.9	U	1.1	U	1.1	U	0.8	U	1.1	U	1.1	U	1	U	1.1	U
CHLORDANE	57-74-9	1800.72	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
CHROMIUM	7440-47-3	11599.58	20.3	U	21.1	U	21.1	U	13.1	U	13.1	U	24	U	16.4	U	17.6	U
DIELDRIN	60-57-1	127.95	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.05	U	0.05	U
ENDRIN	72-20-8	877.40	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.05	U	0.05	U
GAMMA BHC (LINDANE)	58-89-9	877.40	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.2	U	0.05	U	0.05	U
HEPTACHLOR	76-44-8	454.95	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.1	U	0.02	U	0.02	U
TETRACHLOROETHENE	127-18-4	29246.79	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	3.9	U	4.2	U	0.6	U
TOXAPHENE	8001-35-2	1861.16	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	66	U	0.05	U	24	U
Excavation Area			Sample Date		Sample Date		Sample Date		Sample Date		Sample Date		Sample Date		Sample Date		Sample Date	
5.2 - 6.1			06/23/89		06/23/89		06/23/89		08/15/89		07/29/89		07/31/89		08/15/89		08/16/89	
Depth Location			5.4 - 5.6		5.4 - 6.1		4.6 - 5.8		6.7		6.0 - 7.2		5.7 - 7.2		6.2 - 6.7			

mg/kg = milligrams per kilogram

RAL = Remedial Action Level

ft-bgs = feet below ground surface

Shaded cells indicate result exceeds RAL

Figures



7700 EARHART BLVD. FACILITY
 NEW ORLEANS, LOUISIANA
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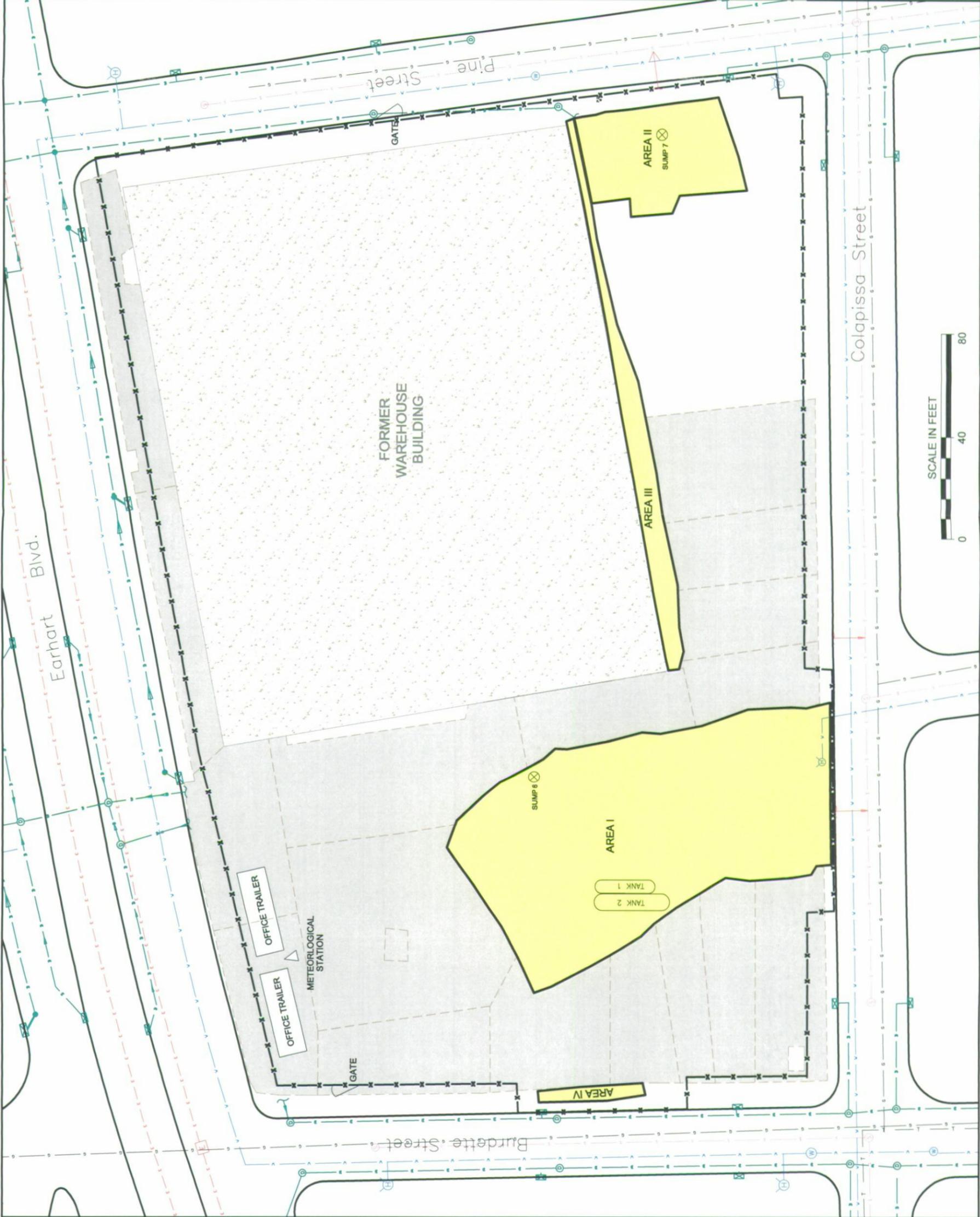
FIGURE 1-1

SITE LOCATION MAP

REMEDIAL ACTIVITIES REPORT

IMAGE	---	OFFICE	BTR	DRAWN BY	D. COMEAUX 03/27/07	CHECKED BY	SPD 10/11/07	APPROVED BY	KPR 10/11/07	DRAWING NUMBER	123926-B6
-------	-----	--------	-----	----------	---------------------	------------	--------------	-------------	--------------	----------------	-----------

IMAGE	X-REF	OFFICE	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	BTR	D. COMEAUX	03/27/07	SPD	10/11/07	123926-B7
						KPR	10/11/07



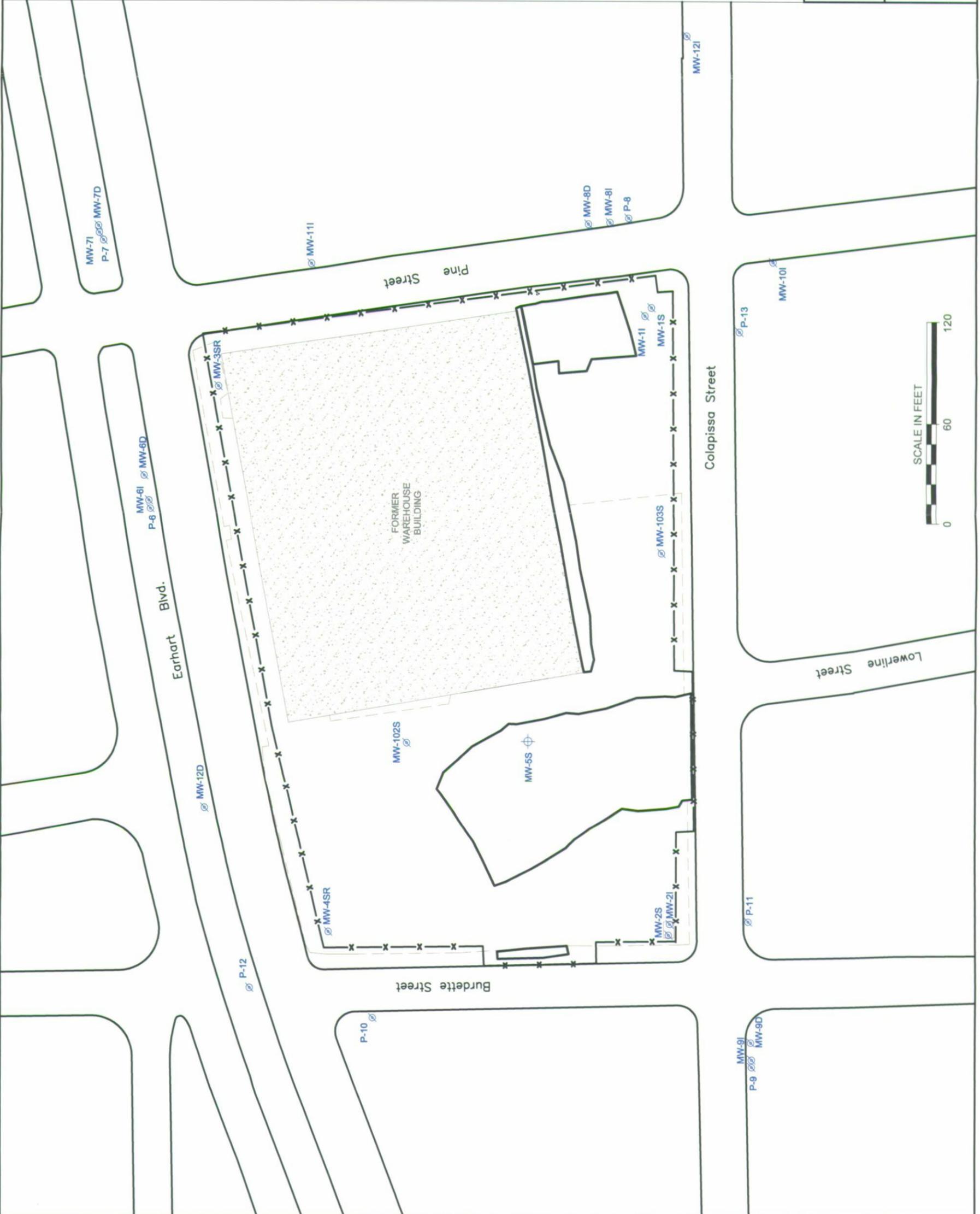
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 NEW ORLEANS, LOUISIANA
 AGENCY INTEREST NO. 1275

FIGURE 1-2

SITE LAYOUT MAP

REMEDIAL ACTIVITIES REPORT

IMAGE	---
X-REF	---
OFFICE	BTR
DRAWN BY	D. COMEAUX 03/27/07
CHECKED BY	SPD 10/11/07
APPROVED BY	KPR 10/11/07
DRAWING NUMBER	123926-B8



LEGEND

DECOMMISSIONED MONITOR AND/OR PIEZOMETER WELL LOCATIONS

EXCAVATED MONITOR WELL LOCATION



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FIGURE 3-1
PIEZOMETER AND WELL LOCATIONS MAP
 REMEDIAL ACTIVITIES REPORT

IMAGE	X-REF	OFFICE	BTR	DRAWN BY	D. COMEAUX	03/27/07	CHECKED BY	SPD	10/11/07	APPROVED BY	KPR	10/11/07	DRAWING NUMBER	123926-B9
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LEGEND

- DM-32 STORM DRAIN SAMPLE POINTS
- ELECTRICAL
- STORM DRAIN
- SEWER
- WATER
- X — FENCE
- GAS
- CLEANED AND FLUSHED STORM DRAIN LINES



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FIGURE 3-2
STORM DRAIN LOCATION MAP
 REMEDIAL ACTIVITIES REPORT



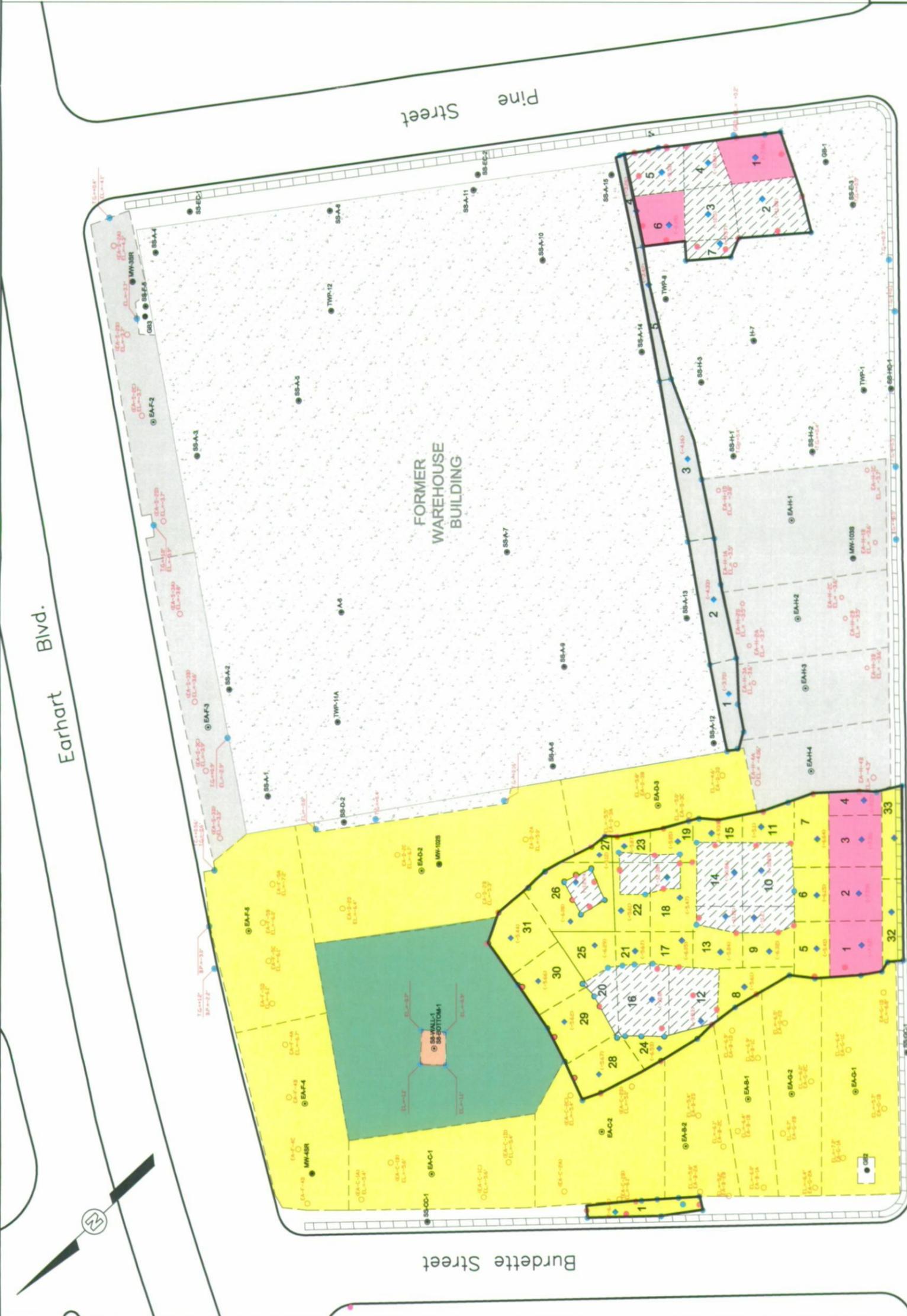
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 NEW ORLEANS, LOUISIANA
 AGENCY INTEREST NO. 1275

FIGURE 3-3
EXCAVATION SEQUENCING MAP
 REMEDIAL ACTIVITIES REPORT



IMAGE	---	OFFICE	BTR	DRAWN BY	D. COMEAUX	03/27/07	SPD	10/11/07	CHECKED BY	KPR	10/11/07	APPROVED BY	10/11/07	DRAWING NUMBER	123926-B12
-------	-----	--------	-----	----------	------------	----------	-----	----------	------------	-----	----------	-------------	----------	----------------	------------

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	BTR	D. COMEAUX 06/28/07	SPD 10/11/07	KPR 10/11/07	123926-B21



LEGEND

- DELINEATION SOIL SAMPLE
- POST EXCAVATION CONFIRMATORY COMPOSITE BOTTOM SAMPLE (1990)
- 1990 COMPOSITE ALLOCATE AND BOTTOM SURVEY POINT
- SIDEWALL SAMPLE AND SURVEY POINT
- ◆ BOTTOM SAMPLE SURVEY POINT
- SURVEY CONTROL POINT
- 1990 EXCAVATION BOUNDARY
- 2007 EXCAVATION BOUNDARY
- HORIZONTAL LIMITS OF 2007 EXCAVATION
- SAMPLE GRID BOUNDARY
- 1 EXCAVATION AREA GRID NUMBER
- NOMIAL 1 ft. bgs EXCAVATION
- NOMIAL 2.0 - 3.0 ft. bgs EXCAVATION
- NOMIAL 3.0 - 5.0 ft. bgs EXCAVATION
- NOMIAL 5.0 - 7.0 ft. bgs EXCAVATION
- NOMIAL 7.0 - 8.0 ft. bgs EXCAVATION
- NOMIAL 9.5 ft. bgs EXCAVATION
- CONCRETE REMOVAL ONLY
- SIDEWALK

NOTES:

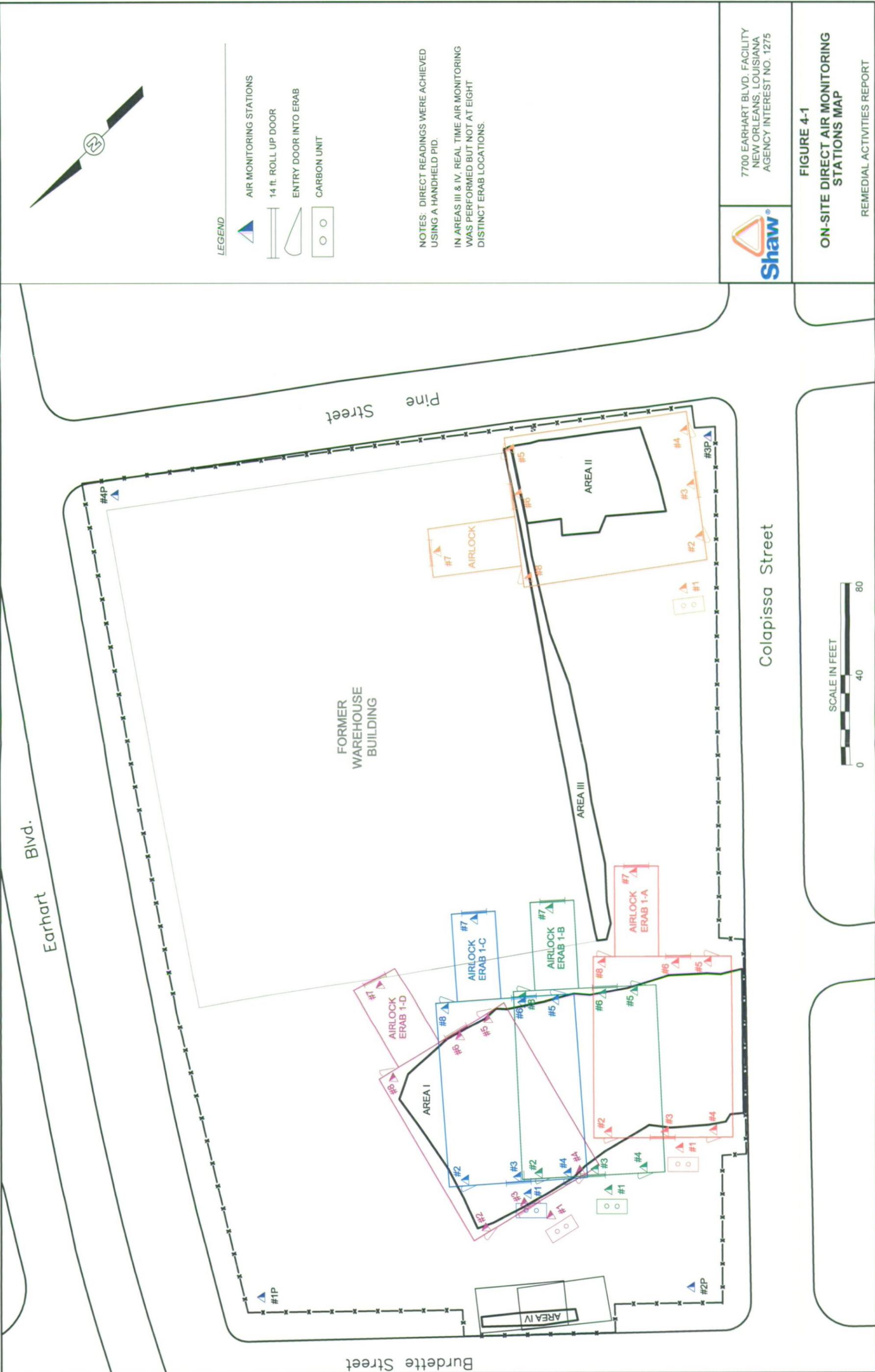
- 1) 1990 survey provided by John Bonneau & Assoc. 2007 survey provided by Shaw E&I
- 2) All survey locations/coordinates measured in Louisiana State Plane, NAD 83, Louisiana South Zone, feet
- 3) Vertical control: NAVD 88, feet
Survey Control Point: ●
N = 532816.085' (NAD 83)
E = 3667510.967' (NAD 83)
Elevation = -0.079' (NAVD 88)
- 4) Reference Benchmark:
Designation A 148
N = 543696.119' (NAD 83)
E = 3675283.443' (NAD 83)
Elevation = 5.81' (NAVD 88)



7700 EARHART BLVD. FACILITY
NEW ORLEANS, LOUISIANA
AGENCY INTEREST NO. 1275

FIGURE 3-5
SURVEYED LIMITS OF EXCAVATION
REMEDIAL ACTIVITIES REPORT

IMAGE	---
X-REF	---
OFFICE	BTR
DRAWN BY	D. COMEAU 03/27/07
CHECKED BY	SPD 10/11/07
APPROVED BY	KPR 10/11/07
DRAWING NUMBER	123926-B14





7700 EARHART BLVD. FACILITY
 NEW ORLEANS, LOUISIANA
 AGENCY INTEREST NO. 1275

FIGURE 4-2
OFF-SITE DIRECT AIR MONITORING STATIONS MAP
 REMEDIAL ACTIVITIES REPORT

IMAGE	---	OFFICE	BTR	DRAWN BY	D. COMAUX	03/27/07	CHECKED BY	SPD	10/11/07	APPROVED BY	KPR	10/11/07	DRAWING NUMBER	123926-B15
-------	-----	--------	-----	----------	-----------	----------	------------	-----	----------	-------------	-----	----------	----------------	------------

IMAGE	---
X-REF	---
OFFICE	BTR
DRAWN BY	D. COMEAUX 03/27/07
CHECKED BY	SPD 10/11/07
APPROVED BY	KPR 10/11/07
DRAWING NUMBER	123926-B16



LEGEND

-  SUMMA CANISTER LOCATION
- 3-14-07 SAMPLE DATE

NOTES: THESE AIR SAMPLING LOCATIONS ARE APPROXIMATE BUT REPRESENTATIVE OF EACH SAMPLING EVENT.
EACH SAMPLING EVENT ALSO INCLUDED THE COLLECTION OF A SAMPLE FROM WITHIN THE ERAB.



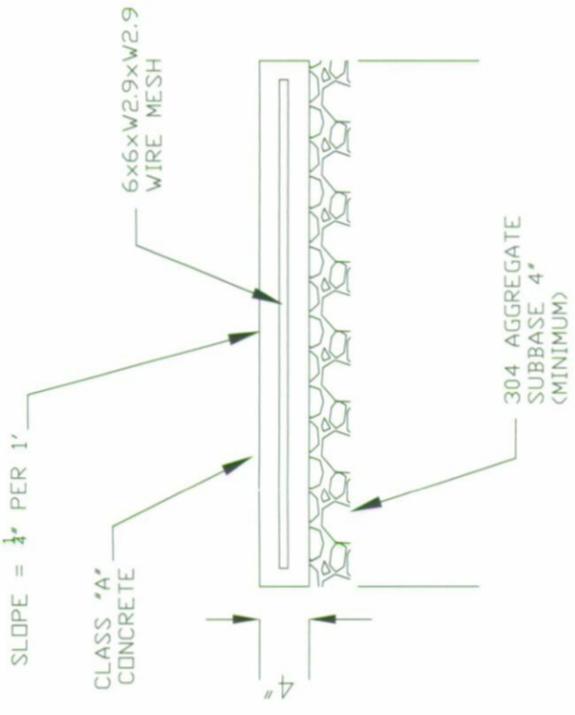
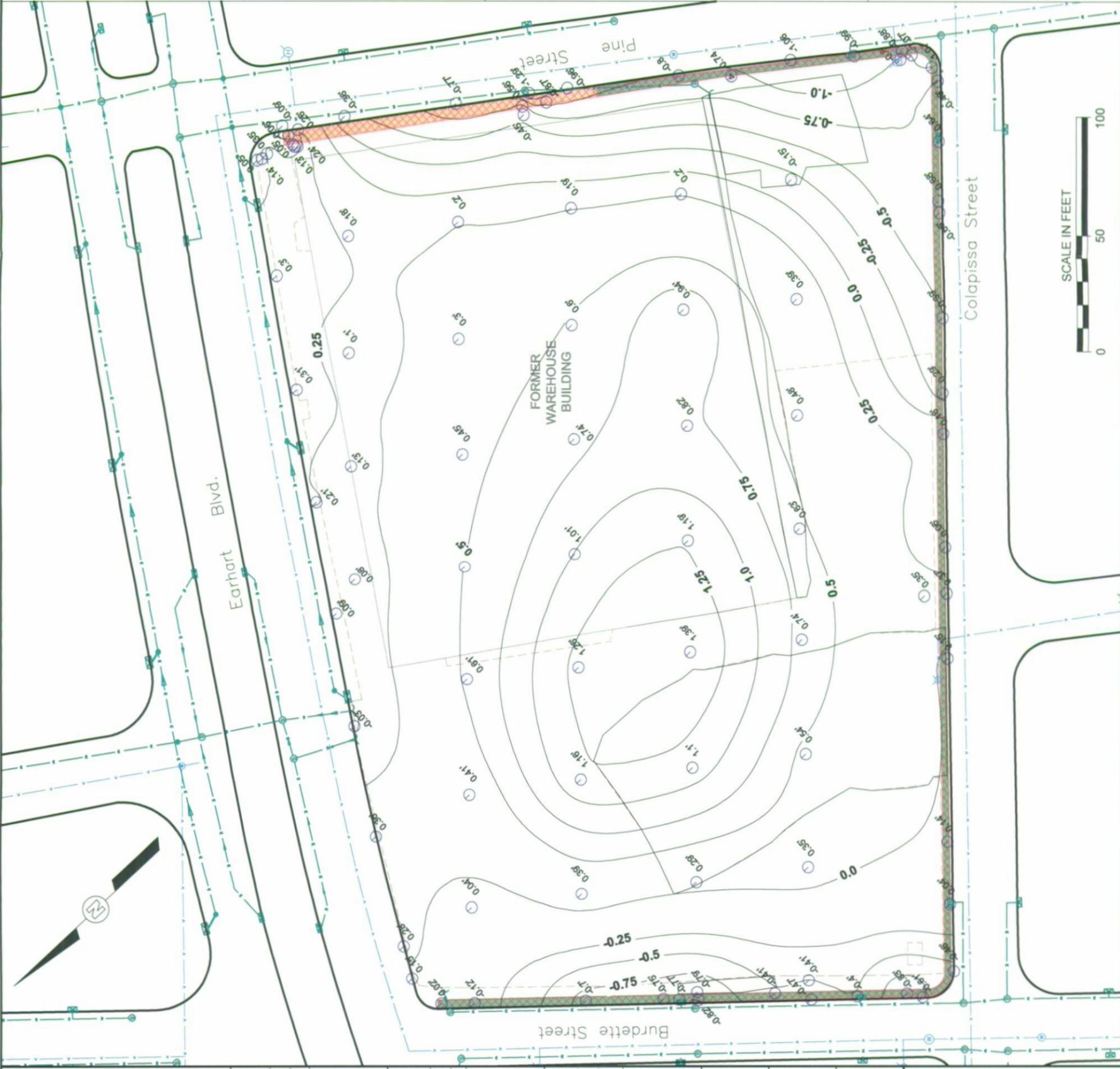
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FIGURE 4-3
SUMMA CANISTER SAMPLING
LOCATIONS MAP

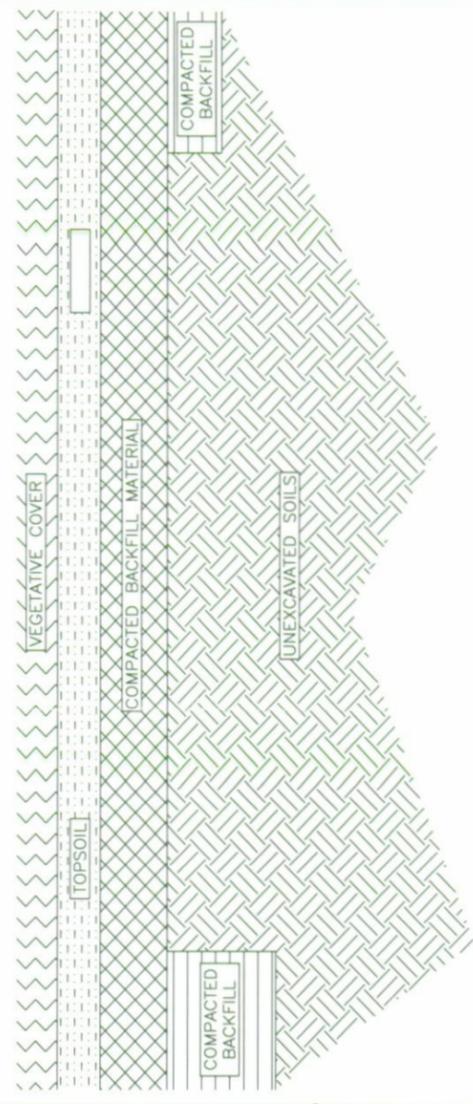
REMEDIAL ACTIVITIES REPORT



IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
		BTR	D. COMEAUX 03/27/07	SPD	KPR 10/11/07	123926-B13



TYPICAL SIDEWALK DETAIL



TYPICAL COVER DETAIL

LEGEND

	SURVEY POINT
	STORM DRAIN
	WATER
	EXISTING SIDEWALKS
	NEW SIDEWALKS INSTALLED
	2007 EXCAVATION BOUNDARY
	1980 EXCAVATION BOUNDARY
	1.0 CONTOUR INTERVAL, FT MSL



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FIGURE 5-1

FINAL GRADING AS BUILT MAP

REMEDIAL ACTIVITIES REPORT