

REMOVAL INVESTIGATION REPORT

LOBECO PRODUCTS REMOVAL INVESTIGATION LOBECO, BEAUFORT COUNTY, SOUTH CAROLINA NCD986205060

Revision 1

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CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 SITE BACKGROUND	2
2.1. SITE DESCRIPTION.....	2
2.2. SITE HISTORY	3
2.3. PREVIOUS INVESTIGATIONS.....	4
3.0 FIELD INVESTIGATION ACTIVITIES	5
3.1. AIR MONITORING.....	5
3.2. CONTAINER INVENTORY AND SAMPLING.....	5
3.3. WASTE WATER AND SLUDGE SAMPLING.....	6
3.4. ASBESTOS SAMPLING.....	7
4.0 FIELD INVESTIGATION RESULTS.....	7
4.1. AIR MONITORING.....	7
4.2. CONTAINER INVENTORY AND HAZARD CATEGORIZATION RESULTS	7
4.3. WASTE WATER AND SLUDGE ANALYTICAL RESULTS	8
4.4. BULK AND AIR SAMPLING RESULTS	9
5.0 SUMMARY	10
6.0 REFERENCES.....	11

APPENDICIES

APPENDIX A – FIGURES

- Figure 1- Topographic Map
- Figure 2- Aerial Map
- Figure 3- Debris Field and Tank Farm
- Figure 4- Waste Water Treatment Map and Sample Locations
- Figure 5- Waste Water Tank Farm

APPENDIX B – TABLES

- Table 1- Summary of Hazard Categorization Results
- Table 2- Summary of AST and Pond Volumes
- Table 3- Laboratory Building Chemical Inventory
- Table 4- Summary of Samples
- Table 5- Summary of Wastewater Sample Results
- Table 6- Summary of Sludge Sample Results

APPENDIX C – DRUM INVENTORY LOGS

APPENDIX D – FIELD LOGBOOK NOTES

APPENDIX E – LABORATORY ANALYTICAL REPORTS

APPENDIX F – PHOTOGRAPHIC LOG

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the Oneida Total Integrated Enterprises (OTIE) Superfund Technical Assessment and Response Team (START) to perform activities in support of a Removal Investigation at the Lobeco Products Removal Investigation site (the site) located in Lobeco, Beaufort County, South Carolina (SC), under Contract Number (No.) EP-W-05-053, Technical Direction Document (TDD) No. TNA-05-003-0154. The general purpose of a Removal Investigation is to collect information on current site conditions which will identify the nature and extent of contamination and determine the need for federal intervention under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Ref. 1).

Specifically, START was tasked to conduct the following activities:

- Develop a Health and Safety Plan (HASP) that includes site-specific health and safety measures for conducting field investigation activities designed to identify volatile organic compound (VOC), semi-volatile organic compound (SVOC), metals, pesticide, polychlorinated biphenyl (PCB), herbicide, and asbestos contamination at the site (Ref. 2);
- Develop and implement a Quality Assurance Project Plan (QAPP)/Site Sampling Plan (SSP) that includes site-specific sampling and analysis procedures and quality assurance measures for conducting an investigation designed to identify contamination at the site;
- Perform field investigation activities including waste sampling, field hazard categorization, and debris sampling for asbestos as outlined in the QAPP/SSP; and
- Provide photographic and written documentation of all field activities.

This comprehensive removal investigation report documents field investigation activities conducted January 17, 2012 to January 20, 2012 by START in execution of this TDD and summarizes the findings. All activities and procedures described in this report were performed in accordance with the Environmental Protection Agency (EPA), Science and Ecosystem Support Division (SESD), Region 4. *Field Branches Quality System and Technical Procedures* (FBQSTP), and the site-specific QAPP/SSP submitted to EPA on November 11, 2011 (Refs. 3, 4).

The following sections provide the details of this report:

Section 2 – Describes the site and previous investigations.

Section 3 – Describes the field investigation activities.

Section 4 – Describes the analytical results of field samples.

Section 5 – Provides the summary.

Figures are provided in Appendix A, tables are in Appendix B, hazardous characterization sheets are in Appendix C, field logbook notes are provide in Appendix D, laboratory analytical reports are in Appendix E, and a photographic log of site activities is located in Appendix F. References are cited throughout the Removal Investigation Report to substantiate site-specific statements.

2.0 SITE BACKGROUND

This section discusses the site characteristics, site history, and previous investigations conducted at the site.

2.1. SITE DESCRIPTION

The site is located at 23 John Meeks Way, Lobeco, Beaufort County, South Carolina (Appendix A, Figures 1 and 2). It is geographically located at latitude 32.555753 North and longitude -80.729317 West. The site includes 125 acres of land surrounded by agricultural, rural residential and undeveloped property.

The property ID is R700 037 000 0017 and the commercial property's legal description is listed as:

TRACT 1 DORMANT LAND ASSESSED BY SCDOR 607 00094 FILE#60700125 LOBECO PRODUCTS *SPLIT 10/90 4.93 AC 37/17B *CORPORATE NAME CHG DB1735 P579 *4/10 9.16 AC MERGED FROM 37/94 PB128 P16 *4/10 SPLIT 121.04 AC 37/181-186, 188 *4/10 SPLIT 33.49 AC 37/187 PB128 P21 DORMANT LAND ASSESSED BY SCDOR 607 00094 FILE#60700125 LOBECO PRODUCTS

The site is bordered on the North by Kean Neck Road, to the West by John Meeks Road, and to east by State Road S-7-301 and several single-family residences. To the south, the site is bordered by Morgan Road (also known as State Road S-7-301), which is immediately adjacent to the Huspa Creek tidal flats. The site is surrounded on all four sides by National Wetland Inventory identified freshwater forested/shrub wetlands. A school, Agape Christian Academy, is located on Kean Neck Road, approximately ¼- mile from the site.

According to topographic data, the site is located approximately 10 feet above mean sea level (msl). It is located on Federal Emergency Management Agency (FEMA) flood insurance map 4500250040D and is rated a Flood Zone C.

The site consists of three areas; the northern end of the property contains three smaller administrative buildings, one of which was a testing laboratory and a large warehouse building with office space at the front. Next to the warehouse is a debris field formed by the demolition of the three story reactor building; there is concern for asbestos in this demolition debris. Next to the debris field is a covered area housing smaller above ground storage tanks (ASTs) and piping (Appendix A, Figure 3). The middle area contains a tank farm with disintegrating totes of acid and work areas with drums scattered throughout and a second small laboratory area (Appendix A, Figure 5). The final section consists of aboveground storage tanks and ponds from a water treatment facility previously on site (Appendix A, Figure 4).

2.2. SITE HISTORY

The site's current owner is listed as Coastal Demolition and Construction (Coastal Demolition); however, several site features including the large parking lot, the most northeastern building, and the electronic gate are on property owned by the Community Development Corporation of Beaufort County. Based on county records and ownership history provided by American Color and Chemical Corporation (ACC), the property operated under Tenneco Products, a chemical company involved in polymers, resins, and Aroclor 1248 production from 1966 to 1974. From 1974 to 1982 ACC, a former manufacturer of chemicals, owned the facility. From 1982 to 1989 the property was owned by Venture Chemicals (a.k.a. Lobeco Products). Venture Chemicals historically worked with basic cellulose and lignite derivatives. From 1989 to 1998 the site was owned by Compagnie Francaise des Produits Industriels (CFPI), a manufacturer of agrochemicals, surfactants and other specialty industrial chemicals. One of the products manufactured by CFPI was a granulation aid and anti-caking agent for fertilizers - particularly ammonium nitrate. NuFarm acquired CFPI stock in 1998 and owned the facility from 1998 to 2005. NuFarm also worked with chemicals and chemical preparation, particularly pesticides, herbicides and fungicides. From 2005 to 2009 the facility was owned by ARR-MAZ Custom Chemicals Inc, (ARR-MAZ) known for pesticides and agricultural chemicals.

The facility was shut down and sold at auction to Coastal Demolition in 2010. Upon taking ownership, Coastal Demolition began removing all scrap and recoverable materials. In 2010, the South Carolina Department of Health and Environmental Controls (SCDHEC) issued an order to cease activity based on improper National Pollutant Discharge Elimination System (NPDES) discharges among other violations. Coastal Demolition made an attempt to correct the situation, but eventually abandoned the property.

The site has been abandoned since 2010 with no power and no maintenance of the systems performed. Most of the plumbing and electrical systems have been scrapped and there are signs of trespass and vandalism at the site.

2.3. PREVIOUS INVESTIGATIONS

In 1983 SCDHEC conducted an in-stream assessment of Campbell Creek and Whale Branch. A follow up SCDHEC study conducted in December 1984 revealed the presence of PCBs in the immediate vicinity of the Lobeco Products plant effluent discharge point. As a result of this finding, Davis & Floyd Engineering conducted groundwater testing and produced a groundwater monitoring report which revealed the presence of PCBs at the Lobeco Products plant.

Based on this information, Tenneco Products commissioned further testing in order to characterize the extent and location of the PCB problem at the Lobeco Products plant. Initial soil borings indicated the presence of PCBs in the abandoned lagoon.

In 1986 G & E Engineering, hired by SCDHEC, issued a preliminary investigation report pinpointing the location of the PCB contamination to the lagoon and burn site areas. In 1987, under the first of three SCDHEC consent orders, cleanup of the PCBs commenced. RMT of Greenville was chosen as the contractor for the remediation. An exact date of the completion of the dig and haul remediation was not found; however, the final report was produced in November 1991. Under the second consent order there was still a concern for PCB impact and the report cited a need to define the horizontal and vertical extent of groundwater contamination. A well survey of residential wells was performed and found no PCB contamination of groundwater existed in the neighboring wells. No further information could be found at this time.

The current investigation is focused on the remaining bulk wastes on site, both in storage containers and in surface impoundments, as well as on-site soil in operational areas of the site, specifically the now demolished reactor building.

3.0 FIELD INVESTIGATION ACTIVITIES

From January 17, 2012 to January 20, 2012 START conducted field investigation activities at the site to characterize site conditions. Specifically, multimedia sampling and analysis activities were conducted. The following sections describe air monitoring; hazard categorization, inventory, and sampling of drums and ASTs; and sludge, waste water, air, and bulk materials sampling conducted during the field investigation. All sample collection activities and procedures were performed in accordance with the EPA Region 4 FBQSTP and the site specific QAPP/SSP.

On January 17, 2012, EPA On Scene Coordinators (OSCs) Stilman and Berry arrived on site with START members Von Oldenburg, Stubbs, and Anglin. During the site walk, OSCs Stilman and Berry observed totes of suspected acid to be bulging and in generally poor condition. Based on the presence of containers of hazardous substances in poor condition and the lack of on-site facility personnel, OSC Stilman activated EPA's Emergency and Rapid Response Services (ERRS) contractor Environmental Restoration (ER) to provide heavy equipment and operators to assist with site stabilization activities.

3.1. AIR MONITORING

Real-time air monitoring was performed inside the buildings on site and around the unknown drums to determine the environmental health risks and the level of personal protection equipment (PPE) required to complete field investigation activities safely. START used several portable instruments to check the air quality in and around the work areas at the beginning of each workday and during all sampling activities. Specifically, START utilized a toxic vapor analyzer (TVA) 1000 equipped with a photo-ionization detector (PID)/flame ionization detector (FID) to measure organic vapor concentrations; a 5-gas Multi-Rae to measure for toxic vapors and oxygen content of the air, and a Ludlum for detection of radiation. These instruments were also used to check for potential containment releases and ensure adequate level of PPE when opening each closed container. The equipment was calibrated to the manufacturers' standards prior to use each day. The results of the air monitoring are discussed in section 4.1

3.2. CONTAINER INVENTORY AND SAMPLING

A total of 25 55-gallon drums, 10 5-gallon containers, six ASTs, four totes, and 17 smaller containers stored on site were inventoried and sampled for hazard categorization purposes. The containers were scattered throughout the site. Empty containers were sorted out by ERRS and the remainder were staged together based on container markings. Many of the drums were either unlabeled or poorly labeled. In

order to help identify the contents and any hazards associated with these containers, hazard categorization was conducted using a field hazard categorization kit. The hazard categorization kit is a portable chemistry lab used in the field to identify properties of an unknown or potentially hazardous waste material. The properties tested were air reactivity, radiation, water solubility, hexane solubility, peroxide detection, oxidation potential, chloride detection, flammability, and pH. A total of 62 containers were sampled and screened using the hazard characterization kit. Container hazard characterization results are summarized in Table 1 provided in Appendix B. A complete copy of the field hazard categorization logs are provided in Appendix C.

Prior to opening containers such as the 55-gallon drums, air monitoring, using the TVA 1000 and the 5-gas Multi Rae, was performed inside the warehouse and other buildings on site. Measurements were taken within the breathing zone of a typical person and in places likely to have trapped air pockets or dense air. No elevated readings were noted when opening any of the drums and none of the readings exceeded level D PPE thresholds identified in the site-specific HASP (Ref. 2).

START measured the ASTs in the tank farm and estimated the volume of material contained in each tank. Table 2 in Appendix B presents the measured capacities for the ASTs and ponds identified on-site.

During the investigation both the main laboratory building (Appendix A, Figure 3), located in the north portion on the site, and the small environmental laboratory adjacent to the tank farm (Appendix A, Figure 5) were investigated. Based on container labeling information, chemicals deemed as non-hazardous were bulked by ERRS under the direction of the OSC. The remaining chemicals were inventoried and placed on shelves or in the refrigerator located in the main laboratory. The chemicals in the flammable cabinet were inventoried and left in the flammable cabinet. Crystallization was observed around some chemical containers in the refrigerator; an effort was made not to disturb these containers more than absolutely necessary. Chemicals found in the smaller laboratory building and from the warehouse area were also inventoried and moved to the main laboratory building for lab packing purposes. Some labels were illegible and only partial information could be obtained for the chemical. An inventory of the laboratory chemicals identified is presented in Table 3 provided in Appendix B.

3.3. WASTE WATER AND SLUDGE SAMPLING

START collected waste water and sludge samples from the ASTs and settling ponds located in the southern portion of the property. Waste water samples were collected from six ASTs and two ponds in the former waste water treatment area of the site (Appendix A, Figure 4). One sludge sample and a

duplicate were collected from the historical equalization basin (Appendix A, Figure 4). A total of eight water samples and two sludge samples were submitted to GEL Laboratories in Charleston, South Carolina, for target analyte list (TAL) total metals analysis by SW846 Method 6010B/7470, chlorinated pesticides analysis by SW846 Method 8081B, herbicides analysis by SW846 Method 8151A, PCB analysis by SW846 Method 8082A, target compound list (TCL) SVOC by SW846 Method 8270B, and TCL VOC by SW846 Method 8260B. Analytical results are discussed further in Section 4.3. Table 4 provided in Appendix B presents a summary of the samples collected and submitted for laboratory analysis.

3.4. ASBESTOS SAMPLING

START collected six bulk and one air sample from the rubble field of the former reactor building for asbestos content analysis (Appendix A, Figure 3). The six bulk and one air sample were submitted to GEL Laboratories for asbestos content analysis by Polarized Light Microscopy (PLM) EPA Method 600/R-93/116 and Phase Contrast Microscopy (PCM) National Institute for Occupational Safety and Health (NIOSH) Method 7400. Analytical results are discussed further in Section 4.3. Table 4 provided in Appendix B presents a summary of the samples collected and submitted for laboratory analysis.

4.0 FIELD INVESTIGATION RESULTS

4.1. AIR MONITORING

The air monitoring readings collected from the breathing zone, in and around 55-gallon drums and other containers located on site were within acceptable range for Level D PPE. No deflections or aberrant readings were noted on any of the equipment used in monitoring.

4.2. CONTAINER INVENTORY AND HAZARD CATEGORIZATION RESULTS

Approximately 95 percent (%) of the smaller containers (those with capacities less than 300 gallons) were hazard categorized in the initial sampling round conducted in January 2012. Hazardous characterization results indicated that all samples were negative for radiation. One 5-gallon container (L-42) contained twine and no testing was performed on this container. Based on hazard categorization results, the containers were segregated into the following seven waste streams:

- Neutral – Water Soluble
- Neutral – Not Water Soluble
- Peroxides
- Flammable

- Base/Oxidizer
- Chlorides
- Acid

A total of 58% of the samples were water miscible and 42% were non-miscible. Table 1 provided in Appendix B presents a summary of the hazardous characterization results for all containers inventories and sampled. A complete copy of the container hazardous characterization logs are provided as Appendix C. ERRS consolidated some of the containers onsite by compatible waste stream. START collected representative aliquots of the consolidated containers and provided these to ERRS for laboratory analysis.

4.3. WASTE WATER AND SLUDGE ANALYTICAL RESULTS

START submitted eight water and two sludge samples, collected from onsite ASTs and ponds, to GEL Laboratories for VOC, SVOC, pesticide, PCB, herbicide, and metals analysis. The laboratory reported quality assurance/quality control (QA/QC) criteria in a complete package. Although START was not tasked to perform validation of the data, an informal cursory review (Level II validation) of several QA/QC criteria indicated there was not a significant problem with data quality. This review was not a complete assessment of all possible quality control parameters, nor was this review a complete assessment of each quality control parameter that was reviewed. The review, rather, was intended to identify and present those problems and quality control deficiencies that could be readily identified from the summary control data set available. A copy of the laboratory analytical report and Tier II validation memo are provided in Appendix E.

For comparison purposes, waste water results were compared to the tap water screening levels and sludges to the Resource Conservation and Recovery Act (RCRA) Maximum Allowable Levels adjusted per the 'Rule of 20' and to soil screening levels. Although the waste water sampled is not intended for ingestion purposes, comparison to tap water criteria is the most conservative approach. Specifically, waste water results were first compared to tap water Regional Screening Levels (RSL). RSLs are conservative, long-term risk-based screening values developed by EPA to help identify contaminants of potential concern. If a contaminant exceeded an RSL, it was then compared to its Removal Action Level (RAL). RALs are risk-based screening values developed by EPA to determine whether sample concentrations are sufficiently elevated that they may warrant a removal action. Sludges were compared to both the RCRA Maximum Allowable Levels adjusted by 20 and the Worker Soil RALs. Tables 5 and 6 in Appendix B provide a summary of the waste water and sludge sampling results.

Analytical results for waste water samples did not indicate the presence of PCBs or pesticides above the sample quantitation limits. Of the compounds detected in waste water samples, only MCP, arsenic, iron, lead, manganese, and thallium were detected at concentrations exceeding the RSL and/or RAL for tap water; specifically in the samples collected from the water treatment area. MCP (methylchlorophenoxypropionic acid) was detected in two samples, L-SW-05 and L-SW-06, at concentration of 124 micrograms per liter ($\mu\text{g/L}$) and 218 $\mu\text{g/L}$, respectively, above the RAL of 86.4 $\mu\text{g/L}$. Arsenic was detected in one waste water sample, L-SW-07, at a concentration of 5.68 $\mu\text{g/L}$ exceeding the RAL of 4.48 $\mu\text{g/L}$. Iron was detected in all waste water samples at concentrations ranging from 306 $\mu\text{g/L}$ to 257,000 $\mu\text{g/L}$ and exceeded the RAL of 60,500 $\mu\text{g/L}$ in samples L-SW-01, L-SW-05, L-SW-06, and L-SW-07. Lead was detected in five samples at concentrations ranging from 6.99 $\mu\text{g/L}$ to 24.1 $\mu\text{g/L}$ exceeding the RAL of 15 $\mu\text{g/L}$ in sample L-SW-06. Manganese was detected in all waste water samples at concentrations ranging from 22.6 $\mu\text{g/L}$ to 5,250 $\mu\text{g/L}$ exceeding the RAL of 2,070 $\mu\text{g/L}$ in samples L-SW-01, L-SW-05, and L-SW-06. Thallium was detected in three samples at concentrations ranging from 5.69 $\mu\text{g/L}$ to 7.65 $\mu\text{g/L}$ exceeding the RAL of 5.6 $\mu\text{g/L}$ in all three samples (L-SW-05, L-SW-06, and L-SW-07). Sample L-SW-07 collected from the north aeration basin exhibited the highest concentrations of detected compounds.

The sludge sample analytical results did not indicate the presence of herbicides or PCBs, however, of the compounds detected, none of the organic and inorganic compounds were detected at concentrations above the associated RCRA D-listed analytes Maximum Allowable Levels adjusted by 20 or the Worker Soil RALs.

4.4. BULK AND AIR SAMPLING RESULTS

One air sample and six bulk samples collected from the rubble field at the site were submitted to GEL Laboratories for asbestos content analysis. Of the six bulk samples submitted for analysis, one sample, L-ACM-005, was reported containing 40% anthophyllite asbestos. This sample was a dark gray mottled with orange non-friable material found in the rubble pile (Appendix G, official photo number 7). None of the other bulk samples had any asbestos reported. The personal air sample collected during bulk sampling did not indicate the presence of asbestos fibers. A copy of the laboratory analytical results is provided in Appendix E.

5.0 SUMMARY

From January 17, 2012 to January 20, 2012, START conducted field investigation activities at the site to characterize site conditions. Specifically, START performed air monitoring; hazard categorization, inventory, and sampling of 62 containers on site; inventoried chemicals identified in both on site laboratories; and collected two sludge, six waste water, one air, and six bulk materials for laboratory analysis. The 62 containers on site were categorized into seven waste streams: Neutral – Water Soluble, Neutral – Not Water Soluble, Peroxides, Flammable, Base/Oxidizer, Chlorides, and Acid. START also performed composite testing on several containers allowing them to be consolidated. The aliquots of the consolidated containers were provided to ERSS for laboratory analysis.

This report summarizes relevant data and findings of field investigation activities conducted by START in January 2012 at the site and provides EPA information to determine whether criteria exists that will trigger a Removal Action. The decision to implement such an action will be determined by the EPA.

6.0 REFERENCES

1. CERCLA/SARA – United States Environmental Protection Agency
<http://www.epa.gov/superfund/policy/sara.htm>
2. OTIE Health and Safety Plan, Lobeco Product Removal, Lobeco, SC
3. U.S. Environmental Protection Agency (EPA), Science and Ecosystem Support Division (SESD), Region 4. *Field Branches Quality System and Technical Procedures* (FBQSTP). November 2007.
4. OTIE Quality Assurance Project Plan/Site Sampling Plan – Lobeco Products Removal Investigation, Lobeco, Beaufort County, South Carolina Revision 1.0

APPENDIX A

FIGURES

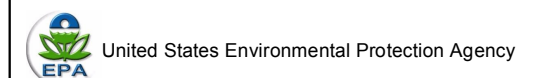
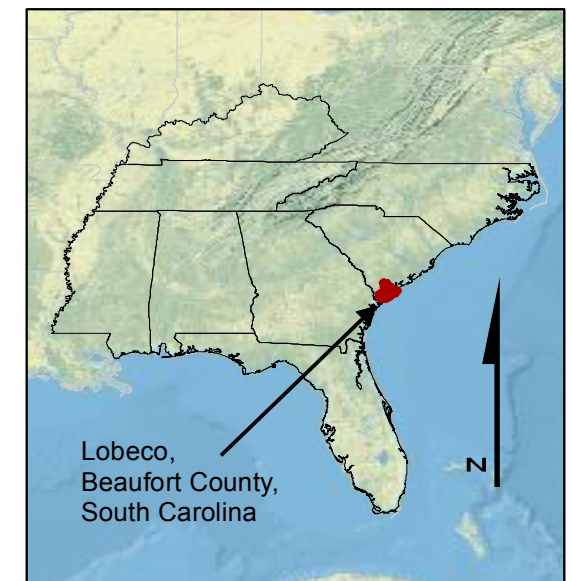


Legend

 Site Boundary

Topographical Reference:
USGS QD ID - 32080-E6
Quad Name - Dale

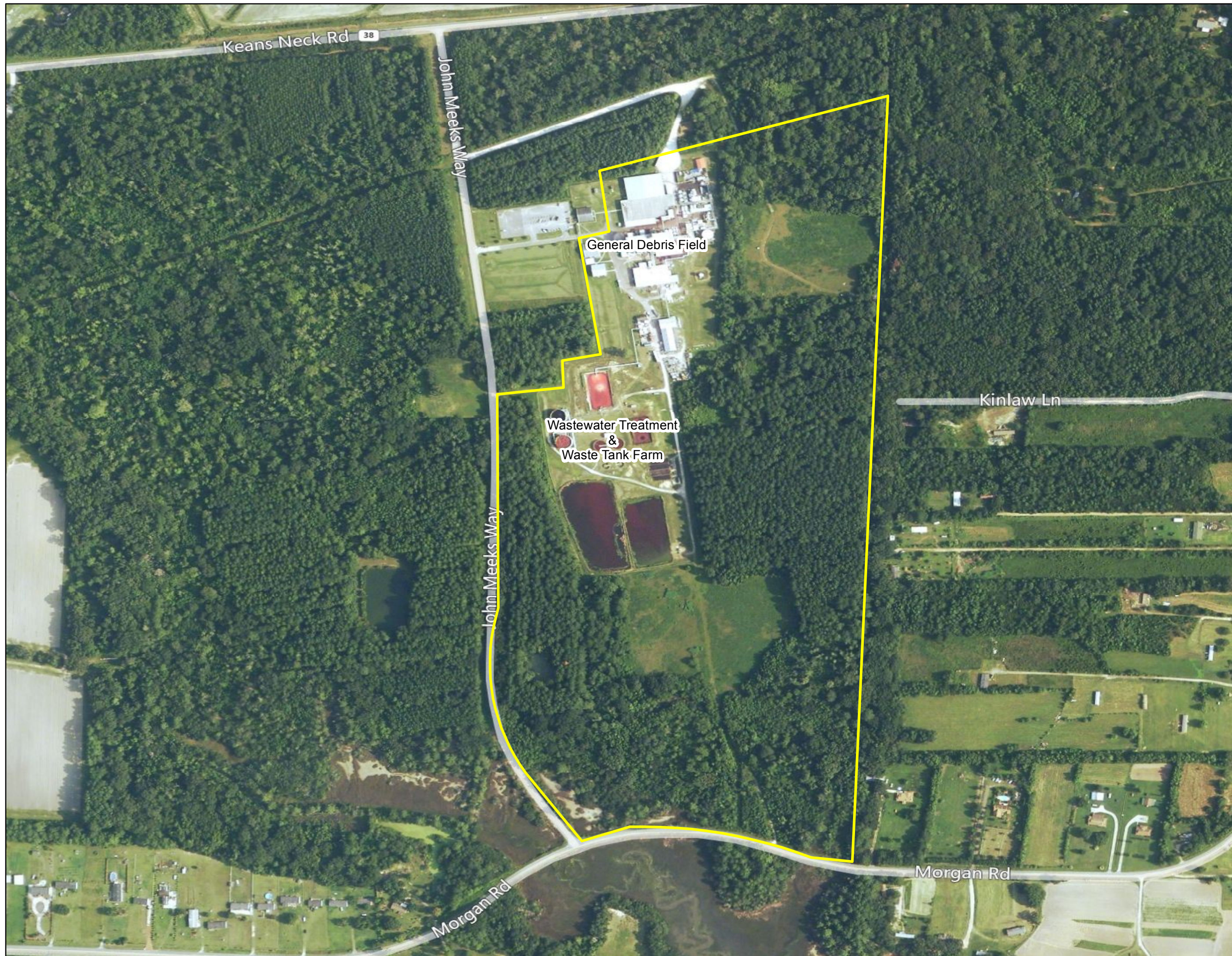
Feet
0 2,000 4,000



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LOBECO,
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SOUTH CAROLINA
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FIGURE 1
TOPOGRAPHICAL MAP





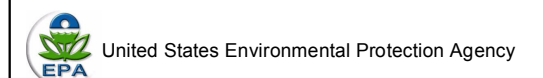
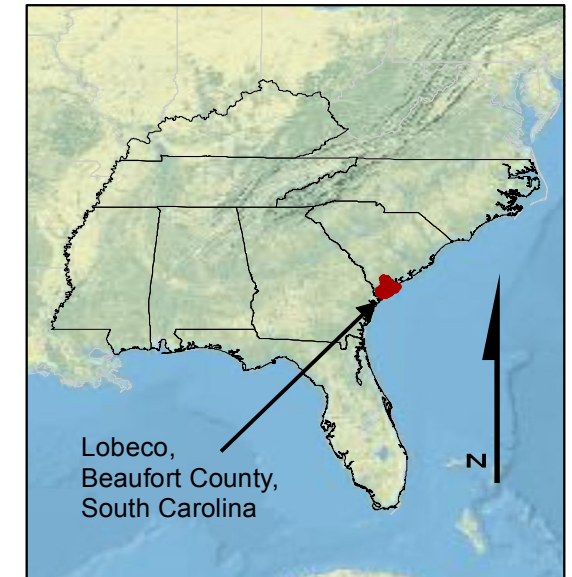
Aerial By: BING

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

Legend

 Site Boundary

Feet
0 400 800



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**FIGURE 2
AERIAL MAP**



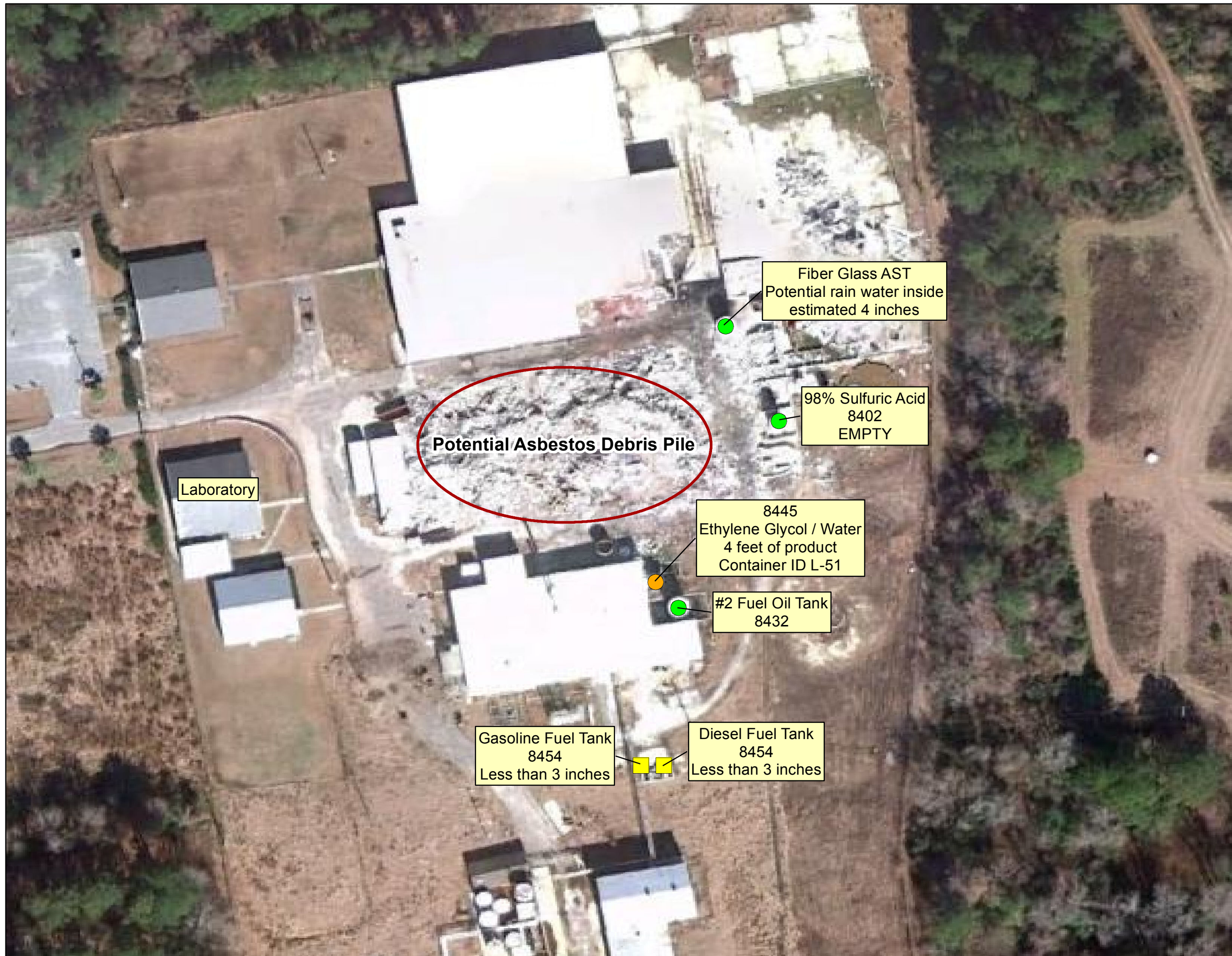


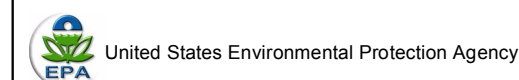
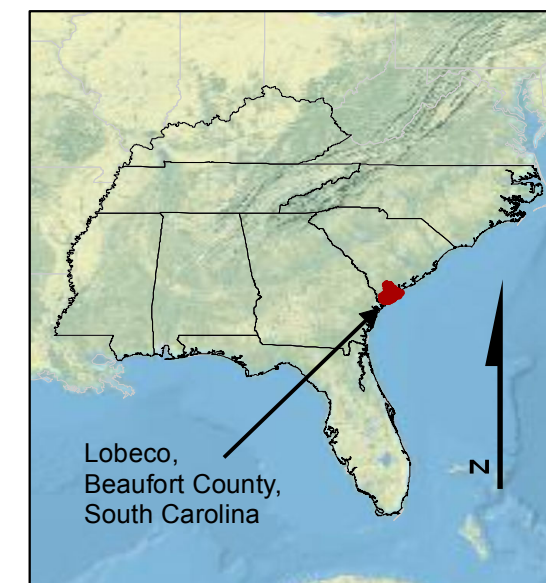
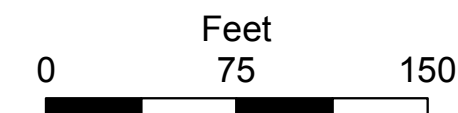
Image by: Google

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

Legend

- Tank with product
- Tank without product
- Fuel Tank

Notes:
AST - Above ground storage tank



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TDD No. TNA-05-003-0154

**FIGURE 3
DEBRIS FIELD AND
PROCESS TANK MAP**





E:\GIS Workspace\Lobeco Products Removal\003-0154-1365\Mxd\Fig 2 Aerial Map Lobeco Products Removal.mxd



Image by: Google

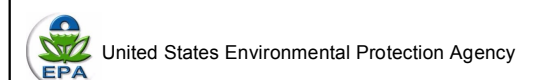
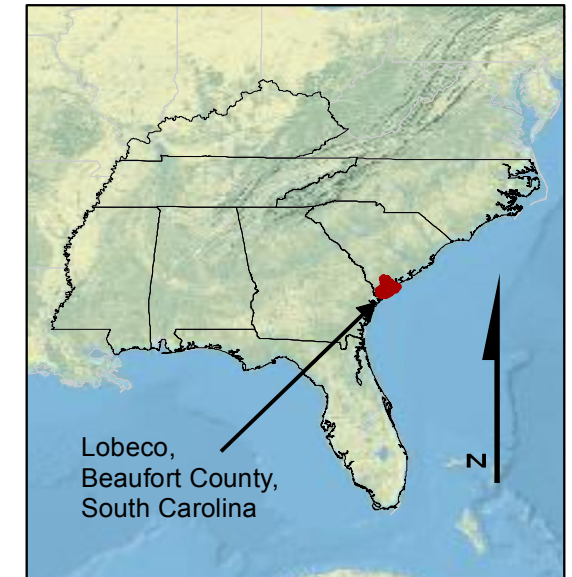
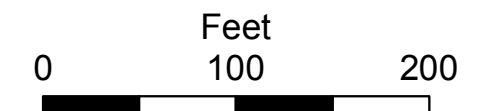
Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

Legend

-  Sample Water
-  Sample Sludge

Notes:

L - Lobeco
SW- Waste Water
SD - Sludge



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FIGURE 4
**WASTE WATER TREATMENT
AND SAMPLE LOCATION MAP**



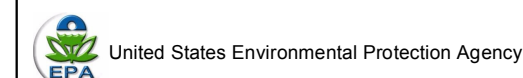
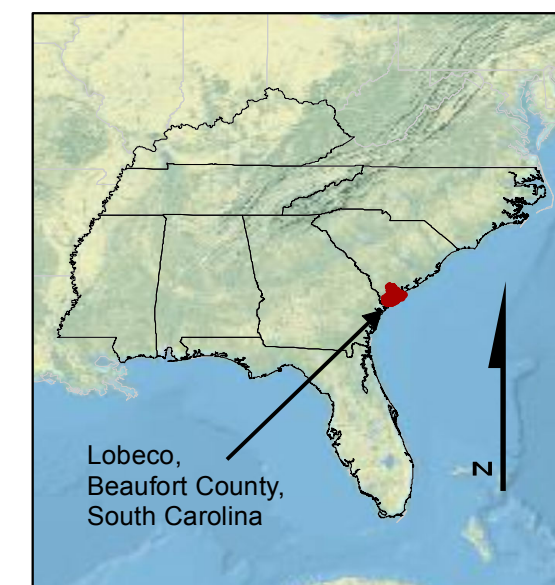


Image by: Google

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Legend

- Tank with product
- Tank without product
- Hydrochloric acid totes



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**FIGURE 5
WASTE WATER TANK FARM MAP**



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APPENDIX B

TABLES

TABLE 1
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF HAZARD CATEGORIZATION RESULTS

Container ID	Container Type	Construction	Size (gal)	Volume Contained	Container Contents	Physical State	Color(s) of product	Clarity	Peroxide (Y/N)	Oxidizer (Y/N)	pH	Classification	Water Reactive (Y/N)	Water Solubility (S/P/I)	Organic Solubility (S/P/I)	Flammable (Y/N)	Chlorides (Y/N)	Specific Notes
L-1	Drum	Steel	55	1/4	N/A	Liquid	Clear	Clear	N	N	5	Neutral	N	S	I	N	N	Consolidated
L-2	Drum	Steel	55	<1/4	N/A	Liquid	Black	Clear	N	N	5	Neutral	N	I	S	N	N	Consolidated
L-3	Drum	Poly	55	1/4	N/A	Liquid	Clear	Clear	N	N	7	Neutral	n	S	I	N	N	Consolidated
L-4	Drum	Poly	55	1/4	N/A	Solid	white	Opaque	N	N	7	Neutral	N	P	I	N	N	Alumina
L-5	Drum	Poly	55	3/4	N/A	Liquid/ Sludge	Clear/Gray	Clear/ opaque	N/N	N/N	7/7	Neutral	N/N	S/P	I/I	N/N	N/N	Bottom layer has lots of small rocks
L-6	Drum	Steel	55	1/4	N/A	Liquid	Black	Opaque	N	N	7	Chloride	N	N	S	N	Y	
L-7	Drum	Poly	55	1/2	N/A	Liquid	Clear	Clear	N	N	13	Base/ Oxidizer	N	S	I	N	N	
L-8	Drum	Poly	55	1/4	N/A	Liquid	Clear	Clear	N	N	<2	Acid	N	S	i	N	N	
L-9	Drum	Steel	55	1/4	N/A	Liquid	Clear	Clear	N	N	7	Chloride	N	I	S	N	Y	
L-10	Drum	Poly	35	Full	N/A	Liquid	Dark	Opaque	N	N	7	Neutral	N	S	I	N	N	
L-11	Drum	Steel	55	1/4	N/A	Liquid	Clear	Clear	N	N	5	Flammable	N	I	P	Y	N	
L-12	Drum	Steel	55	3/4	N/A	Liquid	Red	Clear	N	N	7	Neutral	N	I	S	N	N	Viscous
L-13	Drum	Steel	55	Full	N/A	Liquid	Clear	Clear	N	N	7	Neutral	N	I	S	N	N	
L-14	Drum	Poly	55	Full	N/A	Solid	White	Opaque	N	N	7	Neutral	N	I	I	N	na	Alumina
L-15	Drum	Steel	55	Full	N/A	Liquid	Clear	Clear	N	N	5	Neutral	N	S	I	N	N	
L-16	Drum	Poly	55	1/4	N/A	Liquid	Clear	Clear	N	N	13	Base	N	S	I	N	N	
L-17	Drum	Poly	55	<1/4	N/A	Liquid	Pink	Clear	N	N	<1	Acid/ Chloride	N	S	I	N	Y	
L-18	Drum	Poly	55	<1/4	N/A	Liquid	Clear	Clear	N	N	14	Base	N	S	I	N	N	
L-19	Drum	Poly	55	3/4	Dodecylbenzene Sulfonic Acid	Gel	Brown	Clear	N	N	<2	Acid/ Chloride	N	P	I	N	Y	
L-20	Drum	Poly	55	Full	Phosphoric Acid	Liquid	Clear	Clear	N	N	4	Acid	N	S	I	N	N	
L-21	Drum	Poly	55	1/4	Phosphoric Acid	Liquid	Clear	Clear	N	N	4	Acid	N	S	I	N	N	
L-22	Bucket	Poly	5	1/2	N/A	Liquid	Clear	Clear	N	N	10	Neutral	N	S	I	N	N	Consolidated
L-23	Drum	N/A	55	3/4	N/A	Liquid	Black	Clear	N	N	7	Neutral	N	I	S	N	N	oil & debris
L-24	Bucket	steel	5	1/4	N/A	Liquid	Yellow	Clear	N	N	5	Chloride	N	I	S	N	Y	Consolidated
L-25	Bucket	Poly	5	1/4	N/A	Liquid	Yellow	Clear	N	N	5	Neutral	N	I	S	N	N	Consolidated
L-26	Bucket	Poly	5	1/4	N/A	Liquid	Red	Clear	N	N	9	Neutral	N	S	I	N	N	Consolidated
L-27	Bucket	Poly	5	1/4	N/A	Liquid	Amber	Clear	N	N	5	Neutral	N	I	S	N	N	Consolidated
L-28	Bucket	Poly	5	1/4	N/A	Liquid	Black	Clear	N	N	7	Neutral	N	I	S	N	N	Consolidated
L-29	Bucket	Steel	5	1/2	Citron Lithium Grease							Neutral						Consolidated
L-30	Bucket	Poly	5	1/2	Chevron Heavy Duty Motor Oil	Liquid	Black	Opaque				Neutral						Consolidated
L-31	Bucket	Poly	5	1/4	Chevron Heavy Duty Motor Oil	Liquid	Black	Opaque				Neutral						Consolidated
L-32	Bucket	Poly	5	Full	blue dye	Solid	Blue	Opaque	n	N	4	Neutral	N	P	S	N	N	Blue Dye
L-33	Tote	Poly	200	Full	2 each	Solid	Teal	Opaque	N	N	2	Acid	N	S	I	N	N	4x4x2.5
L-34	Drum	Steel	55	Full	4 each carbon scrubber	Solid	Black	Opaque	N	N	5	Neutral	N	I	I	N	N	Carbon Pellets
L-35	Tote	Poly	300	Full	2 totes	Solid	Tan	Opaque	N	N	4	Neutral	N	I	S	N	N	
L-36	Tote	Poly	300	Full	heat transfer oil	Liquid	Black	Opaque	N	N	7	Neutral	N	I	S	N	N	

TABLE 1
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF HAZARD CATEGORIZATION RESULTS

Container ID	Container Type	Construction	Size (gal)	Volume Contained	Container Contents	Physical State	Color(s) of product	Clarity	Peroxide (Y/N)	Oxidizer (Y/N)	pH	Classification	Water Reactive (Y/N)	Water Solubility (S/P/I)	Organic Solubility (S/P/I)	Flammable (Y/N)	Chlorides (Y/N)	Specific Notes
L-37	Jug	Steel	1	Full	N/A	Liquid	Clear	Clear	N	N	6	Flammable	N	I	S	Y	N	Consolidated
L-38	Bucket	Steel	2	1/2	N/A	Liquid	Black	Opaque	N	N	6	Flammable	N	S	P	Y	N	Consolidated
L-39	Bucket	Poly	3	Full	N/A	Liquid	Milky White	Opaque	N	N	7	Neutral	N	I	P	N	N	Consolidated
L-40	Bucket	Poly	2	Full	N/A	Gel	Clear	Cloudy	N	N	5	Neutral	N	P	I	N	N	Consolidated
L-41	Jug	Poly	1	Full	N/A	Gel	Clear	Clear	N	N	6	Neutral	N	P	I	N	N	Consolidated
L-42	Bucket	Poly	5	N/A	Twine - no sample													
L-43	Bucket	Poly	2	1/2	N/A	Gel	Amber	Opaque	N	N	6	Neutral	N	S	P	N	N	Consolidated
L-44	Jug	Poly	1	Full	N/A	Liquid	Red	Opaque	N	N	6	Flammable	N	I	P	Y	N	Consolidated
L-45	Jug	Poly	1	1/2	N/A	Liquid	Amber	Clear	N	N	13	Base	N	S	I	N	N	Consolidated
L-46	Bucket	Poly	3	1/2	N/A	Liquid	Brown	Cloudy	N	N	6	Neutral	N	S	I	N	N	Consolidated
L-47	Jug	Poly	1	1/2	N/A	Liquid	Blue	Clear	N	N	7	Neutral	N	S	I	N	N	Consolidated
L-48	Bucket	Poly	5	1/2	N/A	Solid	Brown Beads	Opaque	N	N	7	Neutral	N	P	I	N	N	gravel
L-49	AST	Steel	325	Full	Ethylene Glycol/Water	Liquid	Clear	Clear	N	N	7	Neutral	N	S	I	N	N	
L-50	AST	Steel	600	Full	Defoamer FO-120	Liquid	White	Opaque	N	N	7	Neutral	N	S	I	N	N	
L-51	AST	Steel	450	<1/4	Mag-Ox-No-2 8443	Liquid	Clear	Clear	N	N	10	Neutral	N	S	I	N	N	
L-52	AST	Steel	60g solid	<1/4	Alkaline WasteTank	Solid	Dark Red	Opaque	N	N	12	Base	N	S	I	N	N	
L-53	Drum	Steel	55	3/4	Foamex n320	Liquid/ Liquid	Clear/ Orange	Clear/ Cloudy	N	N	4/4	Neutral	N	I/S	S/I	N/N	N/N	
L-54	Drum	Steel	2	1/2	N/A	Liquid	Orange	Cloudy	N	N	5	Flammable	N	I	S	Y	N	consolidated
L-55	Jug	Poly	1	Full	N/A	Liquid	Orange	Cloudy	N	N	5	Neutral	N	S	I	N	N	
L-56	Bucket	Steel	5	Full	Furfyl Alcohol UN2874	Sludge	Black	Opaque	N	N	6	Flammable	N	P	I	Y	N	
L-57	AST	Steel	40	<1/4	98% Sulfuric Acid 8402	Liquid	Clear	Clear	N	N	<0	Acidic	N	S	I	N	N	
L-58	Drum	Steel	55	1/2	FAME Drum	Liquid	Amber	Cloudy	N	N	5	Neutral	N	I	S	N	N	
L-59	Glass Jars	Poly	1	Full	Lab Mix of Product	Liquid	Mix/Dark	Opaque	N	N	2	Acidic	N	S	P	N	N	Lab Mix, Multiple jars
L-60	Jug	Poly	1	Full	Montaline SP1	Liquid	Clear	Clear	Y	N	5	Peroxide	N	P	I	N	N	Formed gel with Water
L-61	Jug	Poly	1	Full	Montaline AP575	Liquid	Clear	Clear	N	N	5	Neutral	N	P	I	N	N	
L-62	Jug	Poly	1	Full	Montaline AP6	Liquid	Brown	Opaque	N	N	10	Neutral	N	P	I	N	N	
L-63	Jug	Poly	1	Full	Montaline SPCV A3	Liquid	Amber	Cloudy	Y	N	4	Peroxide	N	P	I	N	N	

Notes:

- AST - Above ground storage tank
- gal - Gallons
- I - Insoluble
- N/A - Information not available
- N - No

TABLE 1
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF HAZARD CATEGORIZATION RESULTS

Container ID	Container Type	Construction	Size (gal)	Volume Contained	Container Contents	Physical State	Color(s) of product	Clarity	Peroxide (Y/N)	Oxidizer (Y/N)	pH	Classification	Water Reactive (Y/N)	Water Solubility (S/P/I)	Organic Solubility (S/P/I)	Flammable (Y/N)	Chlorides (Y/N)	Specific Notes
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P - Partially soluble

S - Soluble

Y - Yes

Not applicable

TABLE 2
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF AST AND POND VOLUMES

Tank ID	Diameter (ft)	Height (ft)	Depth (ft)	Estimated Volume (gallons)	Comments
Waste Water Treatment ASTs					
8438	10	14	N/A	Empty	
8409	12	26	N/A	300	Sulfuric Acid
8434	10.5	10	N/A	Empty	
L-52	12	12	N/A	450	Alkaline, 6 inches of Product, solid bottom
8437	10	14	N/A	Empty	Mag OX No 1
8443	10	14	N/A	3350	NFPA 1-0-0
Process Area ASTs					
Diesel Tank	15	14	N/A	1320	assuming 1 foot depth
Ethylene Glycol	10	10	N/A	2400	Ethylene Glycol/water fire suppressant plus 2 totes for total of approximately 3000 gallons
Sulfuric Acid	12	N/A	N/A	Empty	
Diesel Tank 2	6	10	N/A	30	Two Horizontal Tanks, assuming < 3 inches per tank approximately 30 gallons per tank
Unlabeled	14	N/A	N/A	385	assume less than 4 inches of product
Waste Water Process Tanks					
North Aeration Tank	60	25	N/A	148000	
South Aeration Tank	60	25	N/A	445000	
NW Clarifier Tank	50	10	N/A	125000	
NE Clarifier Tank	50	10	N/A	125000	
SW Clarifier Tank	30	10	N/A	470000	
SE Clarifier Tank	30	10	N/A	50200	
Waste Water Process Ponds					
Equalization Basin	160	85	3	305205	
Aerobic Digester Basin	110	60	3	148000	

Notes

AST - Above ground storage tank
ft - feet
N/A - Not available

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
FLAMMABLE CABINET				
Kerosene	4L Amber	1 L	1 Qt	
Ether	4L Can	1 L	1 Qt	
WoodStain	1Q Can	1 Qt	1 Qt	
Flammable Waste	Safety Can	10 L	2 Gal	
SHELVES				
Sodium Hydroxide Pellets	1kg Poly Bottle	1 Kg	2.2 lbs	
Ma (OH) ₂ Saturated Soln	1L Poly	400 mL	1 pint	
Honeywell AmSurf Turf Grade 90/10 Wax/L2V @1.5% (Solid)	1L Glass	250 g	0.5 lbs	
Honeywell AmSurf Turf Grade 80/20 Wax/ELV @1.5% (Solid)	1L Glass	250 g	0.5 lbs	
PCS Comercial Urea Coated with 2 coats EME-1 & 60/40xlink	250pl Glass	100 g	0.22 lbs	
Urea "Prils" G-29-73	30mL glass jar	100 g	0.22 lbs	
Urea "Prils" G-29-73	30mL glass jar	100 g	0.22 lbs	
Potassium Iodide 20% Soln.	500 mL Poly	500 mL	1 pint	
Potassium Iodide ACS	500 mL Glass	450 g	1 lbs	
Sodium Thiosulfate 99%	Poly	250 g	0.5 lbs	
Unknown-Pyranine DMPS NaCl Soln	Large Poly jar	3 L		
BaCl ₂ Solution	500 mL Poly	500 mL	1 pint	
Potassium Permanganate	glass jar	500 g	1 lbs	
Ammonia from Totes 28.3% Soln	500 mL glass jar	400 mL	1 pint	
Telomer BN Std	glass jar	200 mL	0.5 pint	
PTSA Soln FP Batch #44	500 mL glass jar	500 ml	1 Qt	
Unknown-DDBSA viscous Liquid	glass jar	1 L	1 Qt	
Unknown-Na, Lignosulfonate Solid	500 mL glass jar	600 g	1.5 lbs	
Unknown- Kga-200 Solid	500 mL glass jar	full	0.5 lbs	

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
1-Benzoylamino-4-bromoanthraquinone	200mL jar	100 g	0.22 lbs	
Unknown-G22-139 ESO+EDA in PPG 1:1 Epoxide :Amine	500 mL jar	200 g	0.44 lbs	
Karl-Fisher Reagent	1L Amber	500 mL	1 pint	
Warner G Smith Nonionic T-9	1Qt Metal Can	0.5 Qt	1 pint	
Warner G Smith Blown Soya	1Qt Metal Can	0.5 Qt	1 pint	
2-nitro-p-Phenetidine (CAS 1096A-88-1)	poly over glass	13 g	0.03 lbs	
Tembec Chemical- Grade Formule S007	1L Poly	1 L	1 Qt	
Magnesium Hydroxide/Mag	Poly	500g	1.1 lbs	
Unknown- G-33-24 50/50 AT7251/AT 725	glass bottle	100 mL	0.21 pints	
Corsicana-Corsamate DCB (Diamino Dibenzoate)	glass bottle	250 mL	0.42 pints	
Unknown- Macol NP 9.5 Nonyl Phenol Polyester	glass bottle	250 mL	0.42 pints	
Unknown- EP533 BASF	glass bottle			
Unknown- LP981127 DAR	glass bottle	30 g	0.07 lbs	
Calcium Chloride 4-30 mess	glass bottle	500 g	1.10 lbs	
Unknown- EME- ? G33 Epoxide x 1/2 Fster	glass bottle	100ml	0.21 pint	
Ruetgers-Nease Naxan 220	Poly Bottle	500 mL	1 pint	
Ruetgers-Nease Naxan ABL	Poly Bottle	500 mL	1 pint	
AlcoChemiscals - Versa TL-4	Poly Bottle	500 mL	1 pint	
AlcoChemiscals - Versa TL-71	Poly Bottle	500 mL	1 pint	
AlcoChemiscals - Versa TL-73	Poly Bottle	500 mL	1 pint	
AlcoChemiscals - Versa TL-77	Poly Bottle	500 mL	1 pint	
AlcoChemiscals - Versa TL-125	Poly Bottle	500 mL	1 pint	

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
AlcoChemiscals - Versa TL-130	Poly Bottle	500 mL	1 pint	
Unknown-ArrMaz Infineum R-335	Glass bottle	500 mL	1 pint	
Unknown- G21-57 Solid	Glass bottle	200g	0.44 lbs	
Deforest- Low foam Wetting A Korylated Alcohol	Glass bottle	500 mL	1 pint	
Unknown- FD+334 PAM diluted to 40.6%	Glass bottle	500 mL	1 pint	
Unknown- KAO Cord SA PCH T-252 Fatty Amine	Glass bottle	500 mL	1 pint	
Unknown- Corsatrile DTN	Glass bottle	500 mL	1 pint	
Kenrich Petrochemical- Ken Reactant- KRTTS	poly	250 mL	0.5 pint	CAS numbers: 6147-49-0, 67-63-6, 3432-36-9
Kenrich Petrochemical- Ken Reactant- KR 5S	poly	250 mL	0.5 pint	CAS numbers: 6147-49-0, 67-63-6, 3432-36-9
Kenrich Petrochemical- Ken Reactant- Lica 12	poly	250 mL	0.5 pint	CAS numbers: 6147-49-0, 67-63-6, 3432-36-9
Kenrich Petrochemical- Ken Reactant- N2 12	poly	250 mL	0.5 pint	CAS numbers: 6147-49-0, 67-63-6, 3432-36-9
Sodium Hydroxide 0.25N	poly bottle	1 L	1 Qt	
Ammonia Hydroxide .5M	poly bottle	1 L	1 Qt	
Unknown- KGA-517	glass jar	500 mL	1 pint	
Unknown- AO-35M	glass jar	150 mL	0.3 pint	
Unknown- LS Paratine	glass jar	50ml	0.11 pint	
Unknown- G24-99	glass jar	50ml	0.11 pint	
Unknown- 2-322	glass jar	50ml	0.11 pint	
Unknown- EME-2 G-22-155	glass jar	50ml	0.11 pint	
Lobeco Products- Seppic Montaline SPCV A3 Lot 81041	glass jar	3-500 mL	1 pint	3 bottles

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
Lobeco Products- Seppic Montaline SPCV A3 Lot 72241	glass jar	500 mL	1 pint	
2N HCL	2L Carboy	1 L	1 Qt	
Sodium Thiosulfate .1N	4L Poly	3 L	3 Qt	
Unknown- Unlabeled Test Tube	glass	15 mL	0.03 pint	
Ultradoss 70DG	Glass	500 mL	1 pint	
BASF-Capro 1 treated with Galoryl (Solid)	Poly jar	400 g		
BASF-Capro 1 untreated (Solid)	Poly jar	400 g		
Sulfuric Acid Batch RM (Red)	1L poly	1 L	1 Qt	
Fisher Sulfuric Acid	2.5L Glass Bottle	2.5 L	2.6 Qt	
REFRIDGERATOR				
Polyamine 99%	250 mL glass	250 mL	0.5 pint	
2-Butanone Peroxide	250 mL glass	250 mL	0.5 pint	
Divinylbenzene	250 mL glass	250 mL	0.5 pint	
Trifluoroacetic ????	250 mL glass	250 mL	2 bottles	
Dimethylcarbonate	250 mL glass	250 mL	0.5 pint	
Tetrabutyl Peroxide	250 mL glass	250 mL	0.5 pint	
Phenol	250 mL glass	250 mL	0.5 pint	
?????naphthalenesulfonic	250 mL glass	250 mL	0.5 pint	
Propylamine	250 mL glass	250 mL	0.5 pint	
Wastewater Coliform Standard	2 vials	1 mL	0.03 ounces	
2,2-azobisisobutyro-nitrile		250 mL	0.5 pint	
Ammonium Acetate		250 mL	0.5 pint	
Ethylene Glycol	1L glass	1 L	1 qt	
Pottasium Permanganate Stock Soln .8914 g/L	glass	250 mL	0.5 pint	
Hydrogen peroxide, Aq 20-40%	glass	250 mL	0.5 pint	
Lyphilzed Microorganisms	3 containers	1 mL	0.03 ounces	

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
AT-740 Batch 75	8 drm vials	8x20 mL	5.5 ounces	
Bleach Soln- 12%	glass	250 ml	0.5 pint	
Divinylbenzene 80%	glass	250 ml	0.5 pint	
Glycidol 96% 2,3-Epoxy-1-propanol	glass	250 ml	0.5 pint	
ADDITIONAL ITEMS FROM WAREHOUSE TAKEN TO LABORATORY				
Witconate Ammonium AOS	1.5L	1.5 L	1.6 Qt	
Huntsman XSA 80 Batch 33882	Poly	500 mL	1 pint	Labeled Flammable and Corrosive
TexacoChemical- Jeffamine M-2005 Polyetheramine	Glass	500 mL	1 pint	
Rhodapon BOS (formerly Spirex BOS)	Glass	500 mL	1 pint	
Deforest Enterprises -Dephos HP-739	Glass	500 mL	1 pint	
Henkel- POE(3)triethalamine	Glass	500 mL	1 pint	
Ethoxy Chemicals-Ethoxy 1358 W421	glass	500 mL	1 pint	Labeled Danger Corrosive
American Cyanamide Co- Sodium Dioctylsulfosuccinate in Ethanol &water	glass	1L	1Qt	
ICI Americas Willinington DE- Product Code 11922	glass	1L	1 Qt	Warning Causes Eye irritation
Mazer Chemicals-102513 MAPEG CO16				
Castor Oil	glass	500 mL	1 pint	
Tridecyl Ether	500 mL	500 mL	1 pint	Cloudy at bottom of bottle
Lipocal L-4	Poly	500 mL	1 pint	
Unknown-Base X-4057 from 3,3,5-Trimethylhexane	glass	500 mL	1 pint	
Unknown-Base X-4057 from PPG 724	glass	500 mL	1 pint	
Unknown-Base X-4057 from 2-ethylhexanol	glass	500 mL	1 pint	
Unknown-Base X-4057 from PEG-200	glass	500 mL	1 pint	
Unknown-Base X-4057 from PEG 400	glass	500 mL	1 pint	

TABLE 3
LOBECO PRODUCTS REMOVAL INVESTIGATION
LABORATORY BUILDING CHEMICAL INVENTORY

Chemical Name	Container	Approximate Amount	English Conversion	other information
Unknown-Base X-4057 from PPG-425	glass	500 mL	1 pint	

TABLE 4
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF SAMPLES

Sample ID	Matrix	Location	Sample Date	Latitude	Longitude	Analysis Requested								
						VOC	SVOA	Pesticides	PCB	Herbicides	Metals	Mercury	PCM	PLM
L-SW-001	Waste Water	N. Aeration Tank	1/17/2012	32.553617	-80.730257	X	X	X	X	X	X	X		
L-SW-002	Waste Water	S. Aeration Tank	1/17/2012	32.553303	-80.730203	X	X	X	X	X	X	X		
L-SW-003	Waste Water	NW Clarifier	1/17/2012	32.553281	-80.729746	X	X	X	X	X	X	X		
L-SW-004	Waste Water	NE Clarifier	1/17/2012	32.553328	-80.729518	X	X	X	X	X	X	X		
L-SW-005	Waste Water	SW Clarifier	1/18/2012	32.553028	-80.729686	X	X	X	X	X	X	X		
L-SW-006	Waste Water	SE Clarifier	1/18/2012	32.553074	-80.729479	X	X	X	X	X	X	X		
L-SW-007	Waste Water	Aeration Pond	1/18/2012	32.553885	-80.729643	X	X	X	X	X	X	X		
L-SW-008	Waste Water	Digester Basin	1/18/2012	32.553488	-80.729282	X	X	X	X	X	X	X		
L-SD-001	Sludge	Digester Basin	1/18/2012	32.553388	-80.729254	X	X	X	X	X	X	X		
L-SD-002	Sludge	Digester Basin	1/18/2012	32.553388	-80.729254	X	X	X	X	X	X	X		
L-ACM-001	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-002	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-003	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-004	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-005	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-006	Bulk	Debris Field	1/18/2012	NA	NA									X
L-ACM-007	Air	Debris Field	1/18/2012	NA	NA								X	
L-ACM-008	Air	Blank	1/18/2012	NA	NA								X	

Notes:

N - North	NA - Not Applicable
S - South	VOC - Volatile Organic Compounds
NW - Northwest	SVOC - Semi-volatile Organic Compounds
NE - Northeast	PCB - Polychlorinated Biphenyls
SW - Southwest	PCM - Phase Contrast Microscopy
SE - Southeast	PLM - Polarized Light Microscopy

TABLE 5
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF WASTEWATER SAMPLE RESULTS

Sample ID	RSL Tap Water	RAL Tap Water	L-SW-001	L-SW-002	L-SW-003	L-SW-004	L-SW-005
Location			North Aeration Tank	South Aeration Tank	NW Clarifier	NE Clarifier	SW Clarifier
Sample Type			Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Collection Date			1/17/2012	1/17/2012	1/17/2012	1/17/2012	1/18/2012
Matrix			Wastewater	Wastewater	Wastewater	Wastewater	Wastewater
Metals, Total (ug/L)							
Aluminum	37000	86400	5080	1970	68 U	68 U	5720
Antimony	15	34.6	3.5 U	11.3	3.5 U	3.5 U	3.5 U
Arsenic	0.045	4.48	5 U	5 U	5 U	5 U	5 U
Barium	7300	17300	13.8	49.2	14.6	15.3	153
Calcium	NL	NL	59900	74400	83400	85200	273000
Chromium	NL	NL	410	70.2	2.46	1.88	105
Cobalt	11	25.9	18.4	6.89	1 U	1 U	16.9
Copper	1500	1300	526	284	28.6	28.4	52.8
Iron	26000	60500	141000	10300	306	344	157000
Lead	NL	15	11.2	9.86	3.3 U	3.3 U	6.99
Magnesium	NL	NL	206000	157000	155000	160000	45400
Manganese	NL	2070	2220	520	141	120	4710
Nickel	730	1730	321	125	10.7	13.9	154
Potassium	NL	NL	17400	50400	47200	45800	19400
Selenium	180	432	47.6	9.35	7.86	6 U	46.1
Sodium	NL	NL	167000	132000	144000	146000	25200
Thallium	0.37	5.6	5 U	5 U	5 U	5 U	6.2
Vanadium	180	436	1 U	6.32	1 U	1 U	1 U
Zinc	11000	25900	639	501	349	1010	1050
Herbicides (ug/L)							
2,4,5-TP	3700	8640	0.25 U	2.5 U	2.5 U	2.5 U	0.25 U
MCP P	37	86.4	50 U	500 U	500 U	500 U	124
VOC (ug/L)							
Acetone	22000	55500	5 U	5 U	5 U	5.02	5.48
SVOC (ug/L)							
2-Methylnaphthalene	150	346	0.943 U	0.943 U	1 U	0.943 U	0.943 U
Pyrene	1100	2590	0.943 U	1.4	1 U	0.943 U	0.943 U

TABLE 5
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF WASTEWATER SAMPLE RESULTS

Sample ID	RSL Tap Water	RAL Tap Water	L-SW-006	L-SW-007	L-SW-008
Location			SE Clarifier	Aeration Pond	Digester Basin
Sample Type			Field Sample	Field Sample	Field Sample
Collection Date			1/18/2012	1/18/2012	1/18/2012
Matrix			Wastewater	Wastewater	Wastewater
Metals, Total (ug/L)					
Aluminum	37000	86400	5120	21000	68 U
Antimony	15	34.6	3.5 U	3.5 U	3.5 U
Arsenic	0.045	4.48	5 U	5.68	5 U
Barium	7300	17300	161	50.3	2.25
Calcium	NL	NL	222000	212000	92700
Chromium	NL	NL	32.6	170	2.27
Cobalt	11	25.9	24.1	9.95	1 U
Copper	1500	1300	24.2	804	24.3
Iron	26000	60500	257000	99900	327
Lead	NL	15	24.1	16.2	3.3 U
Magnesium	NL	NL	37600	369000	88300
Manganese	NL	2070	5250	1070	22.6
Nickel	730	1730	138	236	8.28
Potassium	NL	NL	15500	56200	69700
Selenium	180	432	73.6	33.6	7.23
Sodium	NL	NL	22500	93600	107000
Thallium	0.37	5.6	7.65	5.69	5 U
Vanadium	180	436	1 U	29	1 U
Zinc	11000	25900	6730	795	7.22
Herbicides (ug/L)					
2,4,5-TP	3700	8640	0.25 U	0.145 J	0.25 U
MCP P	37	86.4	218	50 U	50 U
VOC (ug/L)					
Acetone	22000	55500	5.56	16.8	5 U
SVOC (ug/L)					
2-Methylnaphthalene	150	346	0.943 U	1.22	0.943 U
Pyrene	1100	2590	0.943 U	3.19	0.943 U

Notes:

Shaded Black - Analyte concentration exceeds the associated RAL

Shaded Grey - Analyte concentration is greater than the associated RSL but less than the RAL

Bold - Analyte was detected above the sample quantitation limit

U - Analyte was not detected above the associated sample quantitation limit.

J - Value is estimated

NL - Comparison value is not established for analyte

RAL - Removal Action Level (April 2008)

RSL - Region 4 Regional Screening Level (June 2011)

SVOC - Semivolatile Organic Compounds

ug/L - Micrograms per liter

VOC - Volatile Organic Compounds

TABLE 6
LOBECO PRODUCTS REMOVAL INVESTIGATION
SUMMARY OF SLUDGE SAMPLE RESULTS

Sample ID	Adjusted RCRA TCLP (Rule of 20)	RAL Worker Soil	L-SD-001	L-SD-002
Location			Digester Basin	Digester Basin
Sample Type			Field Sample	Field Duplicate
Collection Date			1/18/2012	1/18/2012
Matrix			Sludge	Sludge
Metals, Total (mg/kg)				
Aluminum	NL	3290000	4120 J	6200
Antimony	NL	1360	1.85	1.76
Arsenic	100	177	2.78	4.26
Barium	2000	681000	1140	1890
Beryllium	NL	6700	0.328	0.51
Cadmium	20	2700	0.361	0.511
Calcium	NL	NL	23600	25900
Chromium	100	154000	136 J	255
Cobalt	NL	1010	3.14	5.32
Copper	NL	NL	1180	1460
Iron	NL	2380000	13500	23500
Lead	100	1200	28.3	33.3
Magnesium	NL	NL	82000 J	166000
Manganese	NL	75500	156 J	255
Nickel	NL	68100	66.5	116
Potassium	NL	NL	592	565
Selenium	20	17000	4.3	6.36
Silver	100	17000	0.251 U	0.376
Sodium	NL	NL	458	540
Thallium	NL	221	1.26 UJ	1.86
Vanadium	NL	17200	18.3	31.9
Zinc	NL	1020000	223 J	466
Mercury	1	93.1	0.322	0.367
Pesticides (ug/kg)				
delta-BHC	NL	NL	712	345
VOC (ug/kg)				
Ethylbenzene	NL	3180000	6060	6130
Toluene	NL	155000000	1830 J	2190 J
Xylenes (total)	NL	8570000	36900	37600
SVOC (ug/kg)				
2-Methylnaphthalene	NL	13600000	289000	203000
Naphthalene	NL	2180000	13200	10100 J
Pyrene	NL	55000000	310000	395000

Notes:

Shaded Black - Analyte concentration exceeds the associated Adjusted RCRA TCLP value and the RAL.

Shaded Grey - Analyte concentration is greater than the associated RAL

Bold - Analyte was detected above the sample quantitation limit

U - Analyte was not detected above the associated sample quantitation limit.

J - Value is estimated

mg/kg - Milligrams per kilogram

NL - Comparison value is not established for analyte

RAL - Removal Action Level (April 2008)

RCRA - Resource Conservation and Recovery Act

SVOC - Semivolatile Organic Compounds

TCLP - Toxicity Characteristic Leaching Procedure

ug/kg - Micrograms per kilograms

VOC - Volatile Organic Compounds

APPENDIX C
CONTAINER INVENTORY LOGS

APPENDIX D
FIELD LOGBOOK NOTES

APPENDIX E

LABORATORY ANALYTICAL REPORTS

APPENDIX G
PHOTOGRAPHIC LOG