
Final Report

**HTRW PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

**17th STREET CANAL
JEFFERSON AND ORLEANS PARISHES
METAIRIE AND NEW ORLEANS, LOUISIANA**



November 29, 2006

**U.S. Army Corps of Engineers
New Orleans District
New Orleans, Louisiana**



**HTRW PHASE I
ENVIRONMENTAL SITE ASSESSMENT
FINAL REPORT**

**17th Street Canal
Jefferson and Orleans Parishes
Metairie and New Orleans, Louisiana**

Prepared for



**U.S. Army Corps of Engineers
New Orleans District
New Orleans, Louisiana**

Prepared by



Baton Rouge, Louisiana

November 29, 2006

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PHASE I REPORT

1.0 SUMMARY

On behalf of the U.S. Army Corps of Engineers – New Orleans District (USACE), Gulf Engineers and Consultants, Inc. (GEC) has completed a Hazardous, Toxic, and Radioactive Waste (HTRW) Phase I Environmental Site Assessment (ESA) for a portion of the 17th Street Canal in Jefferson and Orleans parishes, Louisiana. The 17th Street Canal is located in the cities of Metairie and New Orleans in Jefferson and Orleans parishes, and forms the boundary between both parishes and municipalities. The property contains the canal and adjacent levees and floodwalls. The existing Drainage Pumping Station Number 6, operated by the Sewerage and Water Board of New Orleans (SWBNO), is located within the project corridor. A temporary pumping station is currently under construction within the project corridor north of the Hammond Highway Bridge by the USACE. Three bridges transect the canal within the project corridor.

Pursuant to construction of a new permanent pumping station within the project corridor, the USACE has authorized the performance of an HTRW Phase I ESA of the property in accordance with applicable sections of USACE Regulation ER 1165-2-132, *Water Resources Policies and Authorities for Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects*, and American Society for Testing and Materials (ASTM) Standard E 1527-05 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* in order to identify recognized environmental conditions (REC) located in the vicinity of the property. In order to characterize environmental conditions for the project, GEC:

- Reviewed federal, state, and local environmental databases;
- Conducted historical research;
- Interviewed pertinent personnel; and
- Performed a site investigation.

GEC performed this HTRW Phase I ESA in accordance with the scope and limitations of ER 1165-2-132 and ASTM E 1527-05, where applicable and appropriate. Any exceptions to, or departures from, this practice are described in the report. Based on the review of federal, state, and local environmental databases, historical research, interviews, and site investigations, the assessment indicates the property warrants additional investigation. Figure 1 provides a summary map of potential REC sites in the vicinity of the project corridor identified by the environmental database review. Table 1 provides geographic coordinates for the sites listed in Figure 1. Additional information about these sites is presented in Sections 5.0 and 8.0 below.

2.0 INTRODUCTION

2.1 PURPOSE

The purpose of the assessment is to identify potential REC located in the vicinity of the project corridor that have, or may have in the past, adversely impacted environmental conditions at the property.



COAST GUARD BASE-NEW ORLEANS



MUNICIPAL YACHT HARBOR

SINTES BOAT WKS INC
(COCs- ignitable waste)

PAT FARRELL BICYCLES #3
(COCs- ignitable waste)

GARROLL

HARRY H PHILIBERT MD
(COCs- silver)

DUPRE TRANSPORT INC
(COCs- petroleum products)

LIVE OAK DISCOUNT ZONE LLC
(COCs- petroleum products)

TIME SAVER STORES INC #93
(COCs- petroleum products)

ALPHA GRAPHICS

DUPRE TRANSPORT INC

CIRCLE K #467

CIRCLE K #467

CHECK IN CHECK OUT

TRAHAN TEXACO

BELLSOUTH J2707

GEILING SVC INC

1ST CLASS AUTO
BODY RPR CORP

DIAMOND T AUTO RPR

FAUX PAS

BREITHOFF D RAYAGE

ERIC'S LAWN EQUIPMENT

ERIC'S POWER EQUIP INC

HARRY LABICHE
PLUMBING INC
(COCs- petroleum products)

ECOL #52

TEXACO

Jefferson Parish

ROPPOLO S SERVICE

SHELL #137461

EIU OF LA INC
(COCs- cadmium, dichlorobenzene,
benzene, tetrachloroethylene, lead,
trichloroethylene, and ignitable waste)

ORLEANS MARINA

CRESCENT CITY MARINE GROUP INC - SC

M G MAYER YACHT SVC INC

CRESCENT CITY MARINE GROUP INC - SC

SCHUBERTS MARINE

BOARD OF COMMISSIONERS ORLEANS LEVEE

SALUGA CHIROPRACTIC
E REHAB CENTER
(COCs- silver, silver cyanide)

TENNECO OIL CO #145-16
(COCs- petroleum products)

TENNECO OIL CO #145-16
(COCs- petroleum products)

TROOP B

LA STATE POLICE FORMER TROOP B

SUMMARY MAP

17th Street Canal

Jefferson/Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.



Figure 1

Project # 27309CZ02

November 2006

**Table 1. Geographic Coordinates of Potential REC Sites
Identified in the Environmental Database Review**

Site Name	Database	Latitude	Longitude
Bellsouth J2707	RCRAGN	30.00001600000	-90.12176300000
Board of Commissioners Orleans Levee	RCRAGN	30.02161700000	-90.11861700000
Schuberts Marine/Crescent City Marine Group	RCRAGN, LUST, RUST	30.02382600000	-90.11827000000
Municipal Yacht Harbor	RCRAGN	30.02508800000	-90.11778500000
M G Mayer Yacht Svc Inc	RCRAGN	30.02379900000	-90.11776600000
Diamond T Auto Repair	RCRAGN	29.99732100000	-90.12664500000
Eric's Power Equipment	RCRAGN	29.99692800000	-90.12666200000
Faux Pas	RCRAGN	29.99704200000	-90.12680900000
1 st Class Auto Body Rpr Corp	RCRAGN	29.99875300000	-90.12658100000
Eric's Lawn Equipment	RCRAGN	29.99685200000	-90.12682300000
Breithoff D Rayage	RUST	29.99693200000	-90.12682300000
EIU of LA Inc	RCRAGN	29.98806000000	-90.12544000000
Geiling Svc Inc	RCRAGN	29.99904400000	-90.12656700000
Circle K #467	LUST, RUST	30.00130300000	-90.12659500000
Dupre Transport Inc	HMIRS	30.00130300000	-90.12659500000
Alpha Graphics	RCRAGN	30.00130300000	-90.12659500000
Check In Check Out	RUST	30.00110000000	-90.12652200000
Roppolos Service	LUST	29.98484000000	-90.12897100000
Shell #137461	LUST	29.98484000000	-90.12897100000
Trahan Texaco	LUST	30.00155600000	-90.12769600000
Troop B	LUST	29.99989000000	-90.11607200000
Texaco	LUST	29.98821300000	-90.13078900000
LA State Police Former Troop B	LUST	29.99595200000	-90.11622900000
Orleans Marina	LUST	30.02477700000	-90.11307100000
Sintes Boat Works	RCRAGN	30.02338800000	-90.11933700000
Ecol #52	LUST	29.98901100000	-90.13175100000
Coast Guard Base- New Orleans	State Sites	30.02735000000	-90.10815000000
Harry Labiche Plumbing	RUST	29.99091900000	-90.12527900000
Pat Farrell Bicycles	RCRAGN	30.02280200000	-90.11917800000
Live Oak Discount Zone LLC/Time Savers #93	LUST (2), RUST	30.01750500000	-90.12315900000
Dupre Transport Inc	HMIRS	30.01750500000	-90.12315900000
Tenneco Oil Co #145-16	LUST (2), RUST	30.00013000000	-90.12454900000
Harry H Phillibert MD	RCRAGN	30.01815300000	-90.12319400000
Saluga Chiropractic Rehab Ctr	RCRAGN	30.00071300000	-90.12462400000
Carroll Oil Well	Oil & Gas Wells	30.01880000000	-90.13070000000

Note: Coordinates were not provided for all sites listed in the environmental database report.

Source: Banks, 2006.

2.2 SCOPE OF SERVICES

As outlined in its contract with the USACE, GEC is responsible for investigating the property in order to identify REC sites within and adjacent to the property. Investigation procedures are to comply with ER 1165-2-132 and ASTM E 1527-05, where applicable and appropriate, and the scope of services for this ESA includes the following:

- Research of available federal, state, and local environmental databases for potential REC sites on, or within a specified distance of, the property;
- Reviews of available historical aerial photographs, Sanborn Fire Insurance Maps, United States Geologic Survey (USGS) topographic maps, and/or published soils and geologic information;
- Interviews with state and local government agency representatives and/or persons knowledgeable of sites regarding documented inspections, violations, incidents, spill response, or past uses of the property;
- Visual observations of accessible portions of the property in order to identify current and historical REC sites. Visual observations of accessible portions of properties adjacent to the property were also conducted;
- Preparation of a written report that identifies whether the property contains potential REC and whether or not conditions warrant further investigation.

In accordance with the procedures outlined in ER 1165-2-132 and ASTM E 1527-05, an HTRW Phase I ESA typically does not include sampling and analysis of soil and/or groundwater. Additionally, an HTRW Phase I ESA typically does not include wetlands delineations or surveys for cultural or historic resources, threatened or endangered species, lead-based paint, asbestos-containing materials, or radon.

2.3 SIGNIFICANT ASSUMPTIONS

No significant assumptions were made in the preparation of this HTRW Phase I ESA.

2.4 LIMITATIONS AND EXCEPTIONS

GEC's review of record information and environmental databases included information that was reasonably ascertainable from standard sources. *Reasonably ascertainable* denotes (1) information that is publicly available, (2) information that is obtainable within reasonable time and cost constraints, and (3) information that is practically reviewable. GEC's review included information gathered directly from governmental and regulatory agencies as well as an electronic database search performed by Banks Information Solutions, Inc. (Banks). Much of this information was gathered from public records and sources maintained by third parties. Although reasonable care was taken to verify this information, GEC does not accept responsibility for errors, omissions or inaccurate information.

GEC interviewed available individuals identified as having current and historical knowledge of land use, commercial and residential development, and activities and incidents associated with the property. Available individuals include (1) persons with whom contact can be made within

reasonable time constraints, and (2) persons willing to share information with interviewers. These individuals were selected based on their employment in state and local government, association with, or proximity to, specific properties, or long-time residence in and knowledge of the area. Significant effort was made to identify and contact individuals possessing direct knowledge of sites; however, no guarantee is made or intended that all individuals with pertinent knowledge of sites were identified and interviewed. Additionally, GEC makes no guarantee that information provided during the interviews is free of errors, omissions, or inaccurate information.

Observations made during GEC's reconnaissance of the project were limited to (1) sites or portions of sites that were accessible to investigators, and (2) evidence that was visible to the investigators. Several areas had access limitations, including concrete floodwalls and unsafe conditions that impeded inspection of the entire area or specific portions or features of a site. Observations were based on evidence that was visible to inspectors while walking the site. No ground excavation, vegetation clearing, or physical relocation of obstacles was conducted during site investigations. Accordingly, no guarantee is made or intended that all site conditions were observed.

2.5 SPECIAL TERMS AND CONDITIONS

No special terms or conditions significant with respect to ER 1165-2-132 and ASTM E 1527-05 standards were made.

2.6 USER RELIANCE

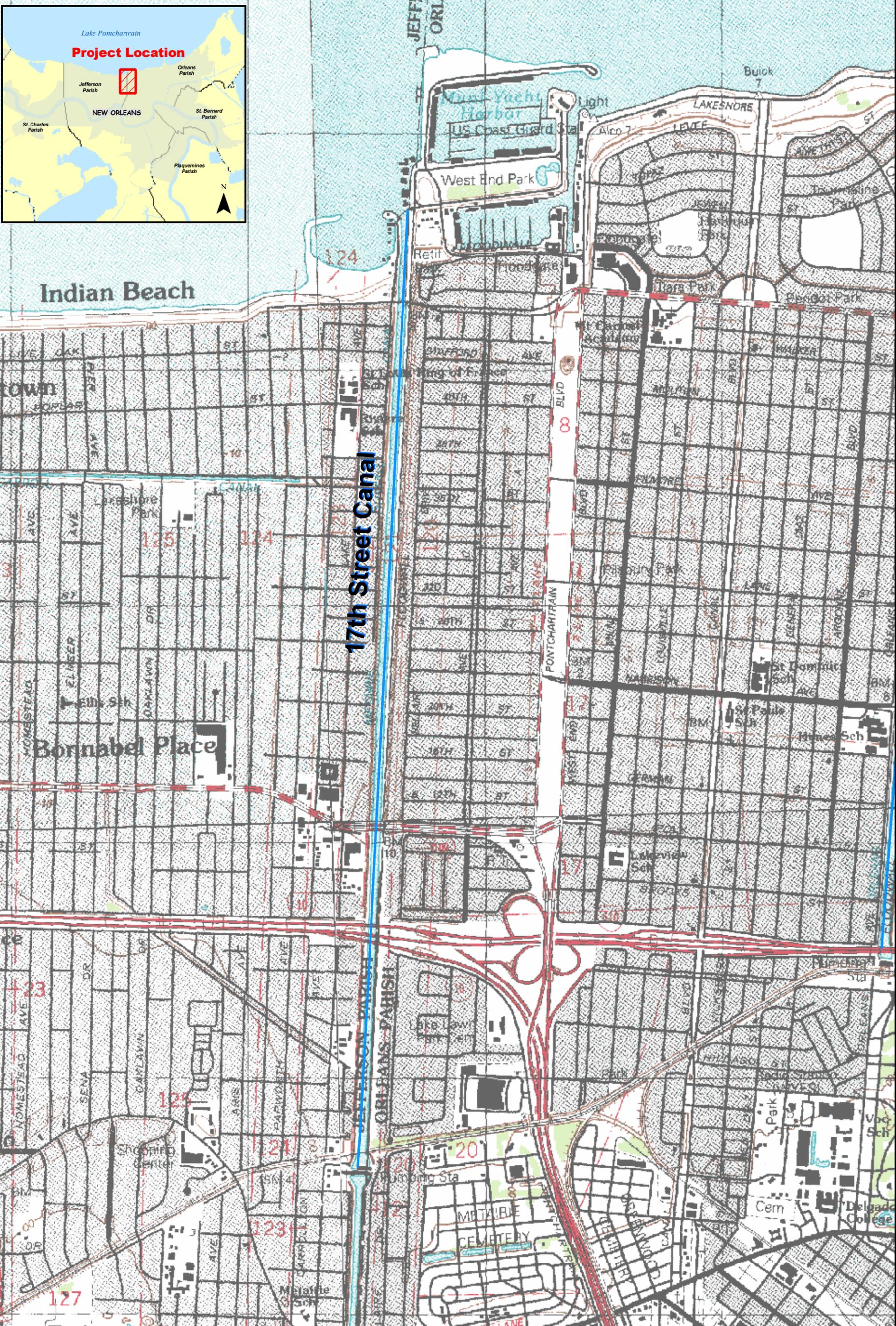
In accordance with ASTM E 1527-05 Section 7.5.2.1 "Reliance," GEC is not required to verify independently the information provided by various sources but may rely on the information unless there is actual knowledge that certain information is incorrect or unless it is obvious that certain information is incorrect based on other information obtained during the course of the investigation or otherwise actually known to the investigators conducting the assessment. However, GEC has no indications that the information provided by outside sources is incorrect.

3.0 SITE DESCRIPTION

The project corridor is comprised of the northern portion of the 17th Street Canal and its adjacent floodwalls in Metairie and New Orleans, Louisiana in Jefferson and Orleans parishes (Figure 2). The project corridor is bounded on the north by Lake Pontchartrain, on the south by Drainage Pumping Station Number 6, on the east by the foot of the eastern floodwall and levee complex, and on the west by the foot of the western floodwall and levee complex. The project corridor is located in the following sections:

Township 11 South, Range 11 East--Sections 120, 121, 122, 124.

The property contains the canal and adjacent levees and floodwalls. Drainage Pumping Station Number 6, operated by the SWBNO, and a temporary pumping station currently under construction by the USACE north of the Hammond Highway Bridge are located within the project corridor. Three bridges transect the canal within the project corridor. Land use within the project corridor is municipal drainage operations.



SITE LOCATION MAP

17th Street Canal

Jefferson/Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.

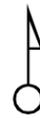
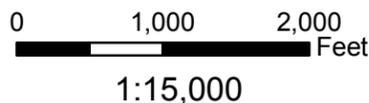


Figure 2

3.1 SITE VICINITY AND GENERAL CHARACTERISTICS

Land use in adjacent properties to the south and west of the project corridor is primarily residential with some light commercial facilities, particularly in the area between Veterans Memorial Boulevard and Interstate 10, and in the area immediately south of Hammond Highway. Land use in adjacent properties to the north is light commercial and recreational, primarily in support of the municipal yacht harbor on the shore of Lake Pontchartrain. Land use in the adjacent properties to the east is almost exclusively residential with the exception of several light commercial facilities in the vicinity of the municipal yacht harbor. Lake Pontchartrain borders the property to the north.

3.2 GEOLOGY, HYDROGEOLOGY, AND TOPOGRAPHY

3.2.1 Geology

The project corridor is located in the Coastal Plain province of southeastern Louisiana. The prominent landforms in this region are natural levees, freshwater and brackish swamp and marsh, and point bars. Subsurface sediments in the vicinity of the project corridor are typically composed of 60-100 feet of Holocene (0.1 million years ago [Ma] to present) sands and silts overlying Pleistocene (2.0-0.1 Ma) clays. Holocene sediments are thickest in point bar deposits on outside bends of the Mississippi River. Both the Pleistocene and Holocene sediments are typical of deltaic deposition, and represent a progradation over time from a coastal deltaic environment to a more inland coastal plain regime.

The project corridor has been the site of significant urban development in the historic period, and consequently surface sediments in the project corridor may not be representative of the typical surface sediments found in a river valley. Native surface sediments at the project site and the surrounding area are primarily composed of river alluvium deposited by the Mississippi River. The Mississippi River distributed significant amounts of sediment in the vicinity of the project corridor from prehistoric times until the early 20th century, when levee improvements brought a cessation to sediment renourishment.

Surface sediments are generally artificial fill ranging from gravel to sand. This fill was placed in the area in historic times to provide a more stable surface for urban expansion and improvement than the peat that occurred naturally throughout the Louisiana Coastal Plain province. Sediments within the canal channel were deposited naturally by waters discharging from the surrounding municipal areas and range from sand to clay.

3.2.2 Hydrogeology

The project transits the Chicot Equivalent Aquifer, a Pleistocene-aged aquifer found in the New Orleans area, the Baton Rouge area, and St. Tammany, Tangipahoa, and Washington parishes. The sedimentary sequences containing the aquifer system are subdivided into several aquifer units separated by confining beds. The aquifers are moderately well to well-sorted and consist of fine sand near the top, grading downward into coarse sand and gravel. The aquifers are typically confined by silt and clay layers.

The deposits that comprise the individual aquifers are not readily differentiated at the surface and act in effect as a single hydraulic system containing several hydrologic zones in the subsurface. The Mississippi River Valley is entrenched into the Pleistocene

strata in the western part of the system, resulting in water movement between the river and the aquifer system.

Recharge of the Chicot Equivalent Aquifer system occurs primarily by the direct infiltration of rainfall in interstream, upland outcrop areas, by the movement of water between aquifers, and between the aquifers and the Mississippi River. Hydraulic conductivity ranges from 10-200 feet/day.

The freshwater interval of the Chicot Equivalent Aquifer system has a thickness range of 50-1,100 feet. The maximum depths of freshwater occurrence in the system range from 350 feet above sea level to 1,100 feet below sea level. DOTD *Water Resources Special Report No. 15, Water Use in Louisiana, 2000* indicates that the primary use of groundwater in this aquifer is industrial, with secondary and tertiary uses for rural domestic and public supply, respectively.

The USGS has 25 monitoring wells emplaced in the Chicot Equivalent aquifer system. Well OR-61 is located near the western end of the project corridor. Table 2 provides water quality data from Well OR-61 presented Appendix 12 of the *2003 Triennial Summary Report for the Environmental Evaluation Division of the Louisiana Department of Environmental Quality (LDEQ)*.

Table 2. Water Quality Data for Well OR-61

Parameter	Value	
	Initial Sample	Resample
Water Quality Data		
pH	8.59	8.59
Salinity (ppt)	0.48	0.48
TDS (ppm)	562	562
Turbidity (NTU)	< 1.0	1.3
NH ₃ (ppm)	1.25	1.26
Inorganic Data (ppb)		
Antimony	< 5.0	< 5.0
Arsenic	< 5.0	< 5.0
Barium	83.3	82.8
Beryllium	< 1.0	< 1.0
Cadmium	< 1.0	< 1.0
Chromium	< 5.0	< 5.0
Copper	< 5.0	< 5.0
Iron	102	102
Lead	< 10.0	< 10.0
Mercury	< 0.05	< 0.05
Nickel	< 5.0	< 5.0
Selenium	< 5.0	< 5.0
Silver	< 1.0	< 1.0
Thallium	< 5.0	< 5.0
Zinc	10.5	<10.0

Source: USGS and LDEQ, 2003.

Both the Jasper Equivalent aquifer, a Miocene-aged (24-5 Ma) aquifer, and the Evangeline Equivalent aquifer, a Pliocene-aged (5-2 Ma) aquifer terminate in the vicinity of the project

corridor, but it is unlikely that these aquifers exhibit any hydrologic influence on the project corridor.

3.2.3 Topography

The property is located in an alluvial floodplain, an area of relatively uniform topography. The artificial levees along the waterfront comprise the only significant topographic high in the vicinity of the project corridor. Elevation in the general vicinity of the project corridor is approximately zero feet above mean sea level (MSL). No significant topographic variation was noted in the surrounding property either in the historical records review or in the site reconnaissance.

3.3 CURRENT USE OF THE PROPERTY

The property is currently used for municipal drainage.

3.4 STRUCTURES, ROADS AND OTHER IMPROVEMENTS ON THE SITE

Structures present within the project corridor include Drainage Pumping Station Number 6 operated by the SWBNO, located at the southern terminus of the subject property, and a temporary pumping station currently under construction by the USACE, located immediately north of the Hammond Highway bridge.

Construction of Drainage Pumping Station Number 6 began in 1897. The pumping equipment at the station includes two 12-foot Wood screw pumps rated at 550 cubic feet per second (cfs), installed in 1916; four 14-foot Wood screw pumps rated at 1,000 cfs, installed in 1930; three Worthington 14-foot screw pumps, one rated at 1,000 cfs and two rated at 1,050 cfs, installed in 1986-1989; four vertical centrifugal constant pumps rated at 250 cfs, installed in 1985-1988; and two vertical centrifugal constant duty pumps rated at 90 cfs, installed around 1930. Associated with the Wood pumps are auxiliary equipment such as vacuum pumps for priming the main pumps and switchgear for starting and operating the main pumps. The Wood screw pumps operate on 25-cycle electrical current, which is generated by a central generating station. In emergency situations, a frequency converter station connected to Entergy generators can be utilized for current supply. The pumps in the station that were installed during the 1980s utilize a more modern 60-cycle current supply.

The Jefferson Parish Canal Street Pumping Station is also present on the western canal bank at the foot of Canal Street. The station contains four pumps each rated at 40 cfs and contains a 3,200 gallon diesel aboveground storage tank (AST) for generator operation.

The project corridor is bounded to the east and west by the canal's levee and floodwall complex. Floodwalls are constructed of concrete or steel throughout the project corridor. Three roads transect the project corridor by means of bridges. These roads, in order from north to south, include Hammond Highway, Veterans Memorial Boulevard, and Interstate 10.

3.5 CURRENT USE OF ADJOINING PROPERTIES

Lake Pontchartrain forms the northernmost boundary of the project corridor. The municipal yacht harbor adjoins the property to the east at the northern terminus of the project corridor. West End Park adjoins the property to the east adjacent to the municipal yacht harbor. The remainder of the adjoining property is primarily residential, with the exception of a few commercial properties along Orpheum Avenue and Veterans Memorial Boulevard. A review of

Jefferson and Orleans Parish zoning maps was performed in conjunction with a site reconnaissance to identify all nonresidential properties that adjoin the project corridor. Nonresidential properties (excluding parks and/or greenspaces) identified by these methods are presented in Table 3. Index maps for the project area are presented in Appendix A.

Table 3. Nonresidential Properties Adjoining the Project Corridor

Map	Block	Parcel	Facility Name
Western Canal Bank			
Jefferson 1	N/A	N/A	USCG Base
Jefferson 1	N/A	1	Tony's Restaurant
Jefferson 1	123	7	Land America
Jefferson 1	122	1	Graci Electric
Jefferson 1	122	8	Unknown (Appears Vacant)
Jefferson 1	122	9	Seal-Tight Insulation
Jefferson 1	122	10	Weld-It Inc.
Jefferson 2	69A	69A	Heritage Plaza
Jefferson 2	69A	69A	Progressive Car Rental
Jefferson 3	68	68	Rault Resources Inc.
	63	63A, 63B	
	62	62D	
Jefferson 3	33	1-4, 5A	EIU of Louisiana, Inc.
Eastern Canal Bank			
Orleans C-9		L1	Municipal Yacht Harbor
Orleans C-9		B-2	Sintes Boat Works
Orleans C-9		RM-2	Former Pat Farrell's Bicycles (Vacant Lot)

Source: Jefferson/Orleans Parish Zoning Maps, GEC, 2006.

Interviews were sought with owners and/or site managers for all of the abovementioned properties. Additional discussion of interviews is presented in Section 7.0 below.

4.0 USER PROVIDED INFORMATION

As defined in ASTM E 1527-05 Section 3.2.93 "User," the USACE is the user of this HTRW Phase I ESA. GEC conducted the assessment on behalf of the USACE.

4.1 TITLE RECORDS

In accordance with the project Scope of Work, a title record search was not conducted for the project corridor.

4.2 SPECIALIZED KNOWLEDGE

The user did not provide GEC with any specialized knowledge.

4.3 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The Sewer and Water Board of New Orleans (SWBNO) informed GEC that the project corridor has served as a drainage canal since the 1850s. The SWBNO further informed GEC that Drainage Pumping Station Number 6, which forms the southern terminus of the project corridor, is the oldest pumping station in the City of New Orleans and was constructed in 1897.

4.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No valuation reduction for environmental issues is proposed.

4.5 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The project corridor is owned by the State of Louisiana. Drainage Pumping Station Number 6 is owned by the City of New Orleans and is operated by the SWBNO on behalf of the city. No permanently occupied properties are present in the project corridor. The temporary pumping station currently under construction near the Hammond Highway Bridge will be operated by the SWBNO on behalf of the City of New Orleans.

4.6 REASON FOR PERFORMING PHASE I

On behalf of the USACE, GEC conducted this investigation and assessment to identify potential REC sites in the vicinity of the project that have, or may have in the past, adversely impacted environmental conditions of the property. The USACE intends to construct a permanent pumping station within the project corridor to assist in municipal drainage operations and to augment the capacity of Drainage Pumping Station Number 6, which was incapacitated during Hurricane Katrina.

5.0 RECORDS REVIEW

In accordance with ASTM E 1527-05 Section 8 “Records Review,” GEC conducted a thorough search of Federal, state, and local government environmental databases to obtain and review records and/or documents that would aid in the identification of known or potential REC sites on or near the project. ASTM E 1527-05 contains a list of records that should be reviewed and the approximate minimum search distance to use.

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

In accordance with the project Scope of Work and ASTM E 1527-05 Section 8.2.1 “Standard Environmental Record Sources,” a review of the following databases and was conducted at the proscribed search radii:

Federal NPL ¹ Site List	1.0 mi
Federal Delisted NPL Site List	0.5 mi
Federal CERCLIS ² List	0.5 mi
Federal CERCLIS-NFRAP ³ Site List	0.5 mi
Federal RCRA ⁴ CORRACTS ⁵ List	1.0 mi

¹ National Priority List

² Comprehensive Environmental Response, Compensation, and Liability Information System

³ CERCLIS-No Further Remedial Action Planned

Federal RCRA Non-CORRACTS TSD ⁶ Site List	0.5 mi
Federal RCRA LQG/SQG ⁷	target/adjoining property
Federal IC/EC ⁸ Registries	target property
Federal ERNS ⁹ List	target property
Federal HMIRS ¹⁰ List	
State-Equivalent NPL List	1.0 mi
State-Equivalent CERCLIS List	0.5 mi
State Landfill and/or Solid Waste Disposal Site Lists	0.5 mi
State Leaking UST ¹¹ Lists	0.5 mi
State-Registered UST Lists	target/adjoining property
State Oil and Gas Wells List	1.0 mi

Table 4 provides a summary of potential sites listed in Federal and state environmental databases identified by GEC and Banks during the environmental records review for the project corridor. In addition to plottable sites, Banks generated a list of orphan sites. Orphan sites are sites containing insufficient location information and can only be identified as being within the same zip code(s) as the project corridor. A map of all plottable sites identified by Banks is presented as Figure 3. The complete Banks report for the site is provided in Appendix B. The USACE identified the area within one-eighth mile of the canal centerline on either bank as a corridor for potential use in the construction of the proposed pumping station. Consequently, particular concern was given to sites located within this corridor.

5.1.1 National Priorities List (NPL) Database

The NPL is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the U.S. Department of Health and Human Services (HHS) and the EPA in order to become an NPL site.

Review of the EPA's NPL database, last updated in August 2006, indicates no such sites are located within one mile of the project corridor.

5.1.2 NPL Delisted Database

The NPL delisted database is the EPA's database of sites previously listed in the NPL database as hazardous waste sites identified for priority remedial actions under the Superfund program that have subsequently been removed from the NPL database because remedial actions have progressed to the point at which the site is no longer subject to priority remedial actions.

⁴ Resource Conservation and Recovery Act

⁵ Corrective Action Report

⁶ Treatment, Storage, and Disposal Facility

⁷ Large or Small Quantity Generator

⁸ Institutional Control/Engineering Control

⁹ Emergency Response Notification System

¹⁰ Hazardous Materials Incident Reporting System

¹¹ Underground Storage Tank

Table 4. Environmental Database Research Results Summary

Database	Search Radius						Orphan	Total
	Site	1/8 mile	1/4 mile	1/2 mile	>1/2 mile			
<i>Federal</i>								
NPL	---	---	---	---	---	---	---	
NPL Delisted	---	---	---	---		---	---	
CERCLIS	---	---	---	---		1	1	
NFRAP	---	---	---			---	---	
RCRA:								
TSD	---	---	---	---		---	---	
COR	---	---	---	---	---	---	---	
GEN	---	6	11			1	18	
IC/EC	---	---	---			2	2	
ERNS	---	---	---			1	1	
Tribal Lands	---	---	---	---	---	---	---	
<i>State/Tribal</i>								
State/Tribal Sites	---	---	---	---	1	1	2	
SWL	---	---	---	---		3	3	
LUST	---	4	1	9		---	14	
UST/AST	---	3	4			--	7	
HMIRS	---	1	1			3	5	
Oil & Gas Wells	---	---	---	---	1	---	1	
Total	---	14	17	9	2	12	54	
Notes: --- indicates no sites/items were found. LUST and UST values represent facilities, some of which contain multiple tanks. Shaded areas indicate search not required per ASTM E1527-05.								

Source: Banks Information Solutions, Inc., 2006.

Review of the EPA's NPL database, last updated in August 2006, indicates no such sites are located within one-half mile of the project corridor.

5.1.3 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) and No Further Remedial Action Planned (NFRAP) Databases

The CERCLIS database is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated or are currently under investigation by the EPA for the release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and may ultimately be placed on the NPL.

The NFRAP Report, also known as the CERCLIS Archive, contains information pertaining to sites that have been removed from the EPA's CERCLIS database. NFRAP sites may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or contamination was not serious enough to require Superfund action or NPL consideration.



COAST GUARD BASE-NEW ORLEANS

MUNICIPAL YACHT HARBOR
 SINTES BOAT WKS INC
 PAT FARRELL BICYCLES #3

ORLEANS MARINA
 CRESCENT CITY MARINE GROUP INC - SC
 M G MAYER YACHT SVC INC
 CRESCENT CITY MARINE GROUP INC - SC
 SCHUBERTS MARINE
 BOARD OF COMMISSIONERS ORLEANS LEVE

CARROLL
 HARRY H PHILIBERT MD
 DUPRE TRANSPORT INC
 LIVE OAK DISCOUNT ZONE LLC
 TIME SAVER STORES INC #93

17th Street Canal

Orleans Parish

ALPHA GRAPHICS
 DUPRE TRANSPORT INC
 CIRCLE K #467
 CIRCLE K #467

TRAHAN TEXACO
 CHECK IN CHECK OUT
 SALUGA CHIROPRACTIC
 E REHAB CENTER
 GEILING SVC INC
 1ST CLASS AUTO
 BODY RPR CORP
 DIAMOND T AUTO RPR
 FAUX PAS

BREITHOFF D RAYAGE
 ERICS LAWN EQUIPMENT
 ERICS POWER EQUIP INC

HARRY LABICHE
 PLUMBING INC

ECOL #52
 TEXACO
 EIU OF LA INC

ROPPOLO S SERVICE
 SHELL #137461

TENNECO OIL CO #145-16
 TENNECO OIL CO #145-16

BELLSOUTH J2707

TROOP B

LA STATE POLICE FORMER TROOP B

Potential REC Sites

- RCRAIN Database
- HMIRS Database
- LUST Database
- State Oil & Gas Wells Database
- State Sites Database
- RUST Database
- Interstate
- Canals

Jefferson Parish

POTENTIAL REC SITES

17th Street Canal

Jefferson/Orleans Parish, Louisiana

Note: Background image is post-Katrina USACE Aerial Photograph (September, 2005). Sites provided by Banks Information Solutions, Inc.

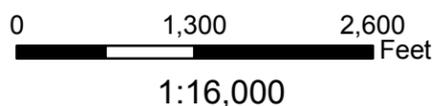


Figure 3

Review of the CERCLIS and NFRAP databases, last updated in September 2006, indicates that one orphan CERCLIS site potentially located within one-half mile of the project corridor. No NFRAP sites were listed within the ASTM-recommended search radius. Subsequent research was unable to determine if the orphan CERCLIS site is located within the ASTM-recommended search radius of the project corridor.

<u>Facility Name:</u>	Asbestos Release
<u>Facility Location:</u>	New Orleans
<u>Distance/Direction:</u>	Unknown

An asbestos release (EPA incident number LA0000605405) occurred at an unknown facility in New Orleans on 4 May 2000. No other information about the facility or incident is available in the CERCLIS database. The EPA Region 6 Office was contacted for additional information about the facility. A review of EPA Region 6 records indicated that the location of the incident and quantity of asbestos release was not recorded by the EPA. The location of the site with respect to the project corridor cannot be determined from the available information; however, no evidence of a large release of asbestos-containing material was observed in the vicinity of the project corridor during the site reconnaissance. Consequently, based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.1.4 Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Sites

RCRA TSDs are facilities that treat, store, and/or dispose of hazardous waste.

Review of the database, last updated in April 2006, indicates that no such sites are located within one-half mile of the project corridor.

5.1.5 Resource Conservation and Recovery Act (RCRA) CORRACTS Database

The EPA's RCRA database contains information concerning RCRA facilities that have conducted, or are currently conducting, a corrective action. A Corrective Action Order is issued pursuant to RCRA Section 3008(h) when a release of hazardous waste or constituents into the environment occurs from a RCRA facility. Corrective actions may also be imposed as a requirement of receiving and maintaining a transportation/storage/disposal facility (TSDF) permit.

Review of the EPA's RCRA CORRACTS database, last updated in April 2006, indicates no such sites are located within one mile of the project corridor.

5.1.6 RCRA Generator Database

The EPA's RCRA Generator Database provides a list of Large Quantity Generators and Small Quantity Generators. Large Quantity Generators are defined as facilities that generate at least 1,000 kilograms per month (kg/mo) of non-acutely hazardous waste or one kg/mo of acutely hazardous waste. Small Quantity Generators generate less than 1,000 kg/mo of non-acutely hazardous waste.

Review of the EPA's Generator database, last updated in April 2006, indicates 17 potential REC sites are located within one-quarter mile of the project corridor and one orphan site potentially

located within one-quarter mile of the project corridor. Subsequent research indicates that the orphan site is not located within the ASTM-recommended search radius of the project corridor. One of the facilities is cross-listed in multiple databases.

Facility Name: Schuberts Marine/Crescent City Marine Group
Facility Location: 126 S Roadway St
Distance/Direction: 0.15 mi SE
Other Databases: LUST, RUST

Facility Name: Bellsouth J2707
Facility Location: 500 Veterans Blvd
Distance/Direction: 0.20 mi W

Facility Name: EIU of LA Inc.
Facility Location: 383 Lake Ave
Distance/Direction: 0.09 mi NW

Facility Name: Sintes Boat Works
Facility Location: 7385 W Roadway St
Distance/Direction: 0.09 mi SE

Facility Name: Pat Farrell Bicycles
Facility Location: 7354 W Roadway St
Distance/Direction: 0.10 mi SE

Facility Name: Saluga Chiropractic Rehab Center
Facility Location: 401 Veterans Blvd. 101
Distance/Direction: 0.17 mi SE

Facility Name: Harry H. Philibert MD
Facility Location: 213 Live Oak St
Distance/Direction: 0.12 mi NW

Facility Name: Board of Commissioners Orleans Levee District
Facility Location: 221 Lake Marina Dr
Distance/Direction: 0.14 mi NE

Facility Name: Municipal Yacht Harbor
Facility Location: 401 N Roadway St
Distance/Direction: 0.17 mi SE

Facility Name: MG Mayer Yacht Service Inc.
Facility Location: 424 S Roadway St
Distance/Direction: 0.18 mi SE

Facility Name: Eric's Power Equipment Inc.
Facility Location: 611 Papworth Ave
Distance/Direction: 0.21 mi NW

Facility Name: Diamond T Auto Repair
Facility Location: 633 Papworth Ave
Distance/Direction: 0.21 mi NW

Facility Name: Faux Pas
Facility Location: 620 Papworth Ave
Distance/Direction: 0.21 mi NW

Facility Name: 1st Class Auto Body Repair Corp.
Facility Location: 713 Papworth Ave
Distance/Direction: 0.22 mi NW

Facility Name: Eric's Lawn Equipment
Facility Location: 608 Papworth Ave
Distance/Direction: 0.22 mi NW

Facility Name: Geiling Service Inc.
Facility Location: 737 Papworth Ave
Distance/Direction: 0.21 mi NW

Facility Name: Alpha Graphics
Facility Location: 400 Veterans Blvd Ste B
Distance/Direction: 0.24 mi W

The Schuberts Marine facility is a conditionally exempt small quantity generator that generates less than 100 kilograms per month (kg/mo) of ignitable waste, tetrachloroethylene, lead, cadmium, benzene, methyl ethyl ketone, and trichloroethylene. Five 4,000 gallon diesel USTs, one 2,000 gallon diesel UST, and one 500 gallon new or used oil UST are listed for the facility. All of the USTs are listed as Active. Evidence of leaking USTs was reported at the facility in May 1986. No additional information regarding the status of the leaking USTs is available in the LUST database. No other violations are listed for the facility. A monitoring report filed for the facility on 30 June 2005 by Conestoga-Rovers and Associates (CRA) obtained from LDEQ headquarters site files indicates that the area of concern for contamination is limited to the facility site. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Bellsouth facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of mercury, lead, cadmium, and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The facility operated by EIU is located immediately adjacent to the western border of the project corridor. The facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of cadmium, 1,4-dichlorobenzene, benzene, tetrachloroethylene, lead, trichloroethylene, and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. A review of LDEQ headquarters site files indicates that the facility was formerly operated by Gulf South Laboratories (GSL). The site files indicate that LDEQ held a meeting with GSL managers on 1 February 1990 regarding a complaint that the facility had discharged 1,1,1-trichloroethane in the parking lot. A subsequent

investigation produced no evidence that such an incident had occurred; however, LDEQ personnel noted that two drums of spent solvent were stored on the site. LDEQ informed the facility managers that the spent solvent must be disposed of in a proper manner and could not remain on the site. The drums were subsequently removed by a waste disposal company. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The Sintes Boat Works facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. A review of LDEQ headquarters site files indicates that on 13 November 1996 LDEQ personnel investigated a complaint that the facility dumped paint and solvents in the marina. The investigation reported that no evidence supporting this accusation could be identified. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The Pat Farrell Bicycles facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. A review of LDEQ headquarters site files indicates that the facility ceased generating waste as of 31 April 1991. The facility site is currently vacant. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The Saluga Chiropractic Rehab Center is a conditionally exempt small quantity generator that generates less than 100 kg/mo of silver and silver cyanide. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The facility operated by Dr. Harry H. Philibert is a conditionally exempt small quantity generator that generates less than 100 kg/mo of silver. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The facility operated by the Orleans Levee District Board of Commissioners is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. One generator oversight violation was issued to the facility in January 1987 by LDEQ. Following this action, LDEQ issued a Final 3008(A) Compliance Order in March 1987. In February 1988 LDEQ determined that the original violation had been resolved. Because resolution of this single violation was achieved, and because no other violations or corrective actions are known to exist for the facility, it is believed that the facility has had little, if any, adverse impact on environmental conditions within the project corridor.

The Municipal Yacht Harbor facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The M.G. Mayer Yacht Service facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of spent halogenated solvents (including toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane), spent non-halogenated solvents (including xylene, acetone, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol), chromium, and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Eric's Power Equipment facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Diamond T Auto Repair facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of spent non-halogenated solvents (including xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol), spent halogenated solvents (including toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane), chromium, cadmium, lead, and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Faux Pas facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. A review of LDEQ headquarters site files indicates that LDEQ performed an inspection of the facility on 13 July 2004 to investigate a complaint that the facility had discharged dyes into the soil on the site. The investigation revealed no evidence that such an event had occurred. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The 1st Class Auto Body Repair facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of spent non-halogenated solvents (including xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol), spent halogenated solvents (including toluene, methyl ethyl ketone, carbon disulfide, isbutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane), and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Eric's Lawn Equipment facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Alpha Graphics facility is a conditionally exempt small quantity generator that generates less than 100 kg/mo of silver and ignitable waste. No violations are listed for the facility, and the facility does not appear to be listed in any corrective action database. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.1.7 Brownfields Management System Database

This EPA database was designed to assist in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield Grant Programs. The database contains a listing of all sites administered by the EPA under the various Brownfield grant programs.

Review of this database, last updated in September 2006, indicates two orphan sites potentially located within one-half mile of the project corridor. Subsequent research indicates that neither orphan site is located within the ASTM-recommended search radius of the project corridor.

5.1.8 Emergency Response Notification System (ERNS) Database

ERNS is a national database that is used to store information on the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS reporting system contains preliminary information on specific releases, including spill location, substance released, and responsible parties.

Review of the database, last updated in December 2005, indicates one orphan ERNS incident that potentially occurred within one-half mile of the project corridor. Subsequent research indicates that the orphan incidents did not occur within the ASTM-recommended search radius of the project corridor.

5.1.9 Tribal Lands

This database is maintained by the U.S. Department of the Interior and lists all areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the

Federal Government as territory in which American Indian tribes have primary governmental authority.

Review of this database, lasted updated in December 2005, indicates no such sites are located within one mile of the project corridor.

5.1.10 Hazardous Materials Incident Reporting System (HMIRS) Database

This database, maintained by the U.S. Department of Transportation, was established in 1971 to fulfill the requirements of the Federal hazardous materials transportation law. Part 171 of Title 49, Code of Federal Regulations (49 CFR) contains the incident reporting requirements of carriers of hazardous materials. The database contains a listing of all unintentional release of hazardous materials meeting the criteria set forth in Section 171.16, 49 CFR.

Review of this database, last updated in October 2006, indicates two potential REC incidents occurred within one-quarter mile of the project corridor and three orphan incidents potentially occurred within one-quarter mile of the project corridor. The two plottable sites are cross-listed in multiple databases. Subsequent research revealed that one of the orphan incidents did not occur within the ASTM-recommended search radius. The locations of the remaining two sites could not be identified.

Incident Name: Dupre Transport Inc./Time Savers
Incident Location: 200 Live Oak St
Distance/Direction: 0.11 mi NW
Other Databases: LUST (2), RUST

Incident Name: Dupre Transport Inc./Circle K
Facility Location: 400 Veterans Blvd
Distance/Direction: 0.24 mi W
Other Databases: LUST, RUST

Facility Name: New Orleans Public Belt Railroad
Facility Location: New Orleans
Distance/Direction: Unknown

Facility Name: Safety Kleen Corp.
Facility Location: Robert E. Lee Blvd
Distance/Direction: Unknown

An incident occurred at the Time Saver Service Station at 200 Live Oak Street on 15 September 1998 when a tanker truck operated by Dupre Transport Inc. overfilled a fuel tank. Approximately six gallons of product was discharged, and the New Orleans Fire Department was dispatched to clean up the site. Because only a small volume of product was discharged at the site, and because cleanup activities appear to have been completed successfully, it is believed that this incident has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

A second incident with involving Dupree Transport Inc. occurred at the Circle K facility at 400 Veterans Memorial Boulevard on 14 April 1999 when a tanker truck overfilled a fuel tank. Approximately seven gallons of product was discharged, and the New Orleans Fire Department was dispatched to clean up the site. Because only a small volume of product was discharged at the site, and because cleanup activities appear to have been completed successfully, it is believed that this incident has had little, if any, adverse impact on environmental conditions within the project corridor.

An incident occurred on the New Orleans Public Belt Railroad on 21 January 2003 when a loose vapor line plug on a tank car discharged approximately 0.13 cubic feet of trimethylamine into the surrounding atmosphere. The plug was subsequently tightened and the leak was stopped. Because only a small volume of product was discharged at the site, and because the product was gaseous and dispersed into the atmosphere, it is believed that this incident has had little, if any, adverse impact on environmental conditions within the project corridor.

An incident occurred at a Safety Kleen facility on Robert E. Lee Boulevard on 19 April 1995 when approximately 10 gallons of tetrachloroethylene were discharged from a leaking 15 gallon drum. No additional information regarding the incident is available in the database. It could not be determined whether this incident occurred within the ASTM-recommended search radius of the project corridor; however, because only a small volume of product was discharged, it is believed that this incident has had little, if any, impact on environmental conditions within the project corridor.

5.1.11 State Environmental Databases Reviewed

State Equivalent NPL (SCL) Database

This database, updated quarterly, is maintained by the LDEQ Inactive and Abandoned Sites Division in accordance with requirements contained in LA R.S. 30:2226H. The database provides a listing of all known potential and confirmed hazardous waste sites maintained by the Office of Waste Services - Inactive and Abandoned Sites Division.

Review of the SCL database indicates one potential REC site is located within one mile of the project corridor and one orphan site is potentially located within one mile of the project corridor. Subsequent research could not determine if the orphan site is located within the ASTM-recommended search radius of the project corridor.

<u>Facility Name:</u>	Coast Guard Base- New Orleans
<u>Facility Location:</u>	New Orleans
<u>Distance/Direction:</u>	0.72 mi SE

<u>Facility Name:</u>	Chevron- New Orleans Station
<u>Facility Location:</u>	New Orleans
<u>Distance/Direction:</u>	Unknown

No additional information is available for the facilities. The former Coast Guard Base site is located within Lakeshore Park. A site reconnaissance of this site identified no existing structures that appeared to constitute a potential REC concern, nor was any evidence of potential REC conditions (i.e., stressed vegetation, monitoring wells, etc.) observed in the vicinity of this site. Based on this information, and lacking any evidence to the contrary, it is

believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The location of the Chevron site with respect to the project corridor cannot be determined from the available information; however, no evidence of such a site was observed in the vicinity of the project corridor during the site reconnaissance. Consequently, based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

Solid Waste Landfill Facilities (SWL) Databases

The listing of permitted solid waste landfills maintained by the LDEQ Permits Division related to solid waste and landfill disposal facilities was reviewed.

Review of this database, last updated in January 1999, indicates three orphan sites are potentially located within one-half mile of the project corridor. Subsequent research indicates that none of the sites are located within the ASTM-recommended search radius of the project corridor.

Leaking Underground Storage Tank (LUST) Database

Initial queries of this LDEQ database, last updated February 2006, indicates nine potential REC sites (some with multiple listings) are located within one-half mile of the project corridor. Several of the facilities are cross-listed in multiple databases.

Facility Name: Schuberts Marine/Crescent City Marine Group
Facility Location: 126 S Roadway St
Distance/Direction: 0.15 mi SE
Other Databases: RCRAGN, RUST

Facility Name: Time Saver Stores Inc. (2 listings)
Facility Location: 200 Live Oak St
Distance/Direction: 0.11 mi NW
Other Databases: HMIRS, RUST

Facility Name: Tenneco Oil Co. #145-16 (2 listings)
Facility Location: 205 Veterans Blvd
Distance/Direction: 0.11 mi NW
Other Databases: RUST

Facility Name: Circle K #467
Facility Location: 400/330 Veterans Blvd
Distance/Direction: 0.24 mi W
Other Databases: HMIRS, RUST

Facility Name: Roppolo's Service (2 listings)
Facility Location: 468 Metairie Rd
Distance/Direction: 0.30 mi SW

Facility Name: Trahan Texaco
Facility Location: 521 Veterans Blvd
Distance/Direction: 0.31 mi W

Facility Name: LA State Police Troop B (2 listings)
Facility Location: 100 Veterans Blvd
Distance/Direction: 0.42 mi SE

Facility Name: Orleans Marina
Facility Location: 7590 Lakeshore Dr
Distance/Direction: 0.45 mi SE

Facility Name: Ecol #52
Facility Location: 933 Metairie Rd
Distance/Direction: 0.48 mi NW

The Schuberts Marine facility is discussed in Section 6.1.5 above. Based on the information presented in that section, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The former Time Savers Stores facility currently has one 8,000 gallon gasoline UST and one 10,000 gallon UST listed as Active. Two 6,000 gallon gasoline USTs and one 10,000 gallon gasoline UST are listed as Removed, and one 8,000 gallon gasoline UST and one 10,000 gallon UST are listed as Temporarily Out of Service. A line leak was discovered at the facility in October 1989. The leak was subsequently repaired and a contamination report was submitted. In July 1991 a fuel tank failed a tightness test, and phase product was subsequently reported in monitoring wells installed at the sight. A corrective action plan was submitted for the site by Southern Environmental Management in December 1998 and was subsequently approved by LDEQ. A non-automated skimmer was used biweekly for the removal of phase product. In October 1998 it was reported that phase was no longer present in any monitoring wells at the site, and remediation was terminated at the site in January 1999. A review of LDEQ headquarters site files indicates that a final inspection was conducted on the site on 13 April 2005 that resulted in a No Further Action determination. Because remediation activities appear to have been completed for the site, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

Three 10,000 gallon gasoline USTs were present at the former Tenneco facility. All three USTs are listed as Removed. Contamination was reported at the facility in February 1989 and August 1989. No additional information is available about the incidents or the facility. A site reconnaissance revealed that the facility has been demolished, and monitoring wells have been plugged and abandoned at the site. A review of LDEQ headquarters site files indicated that monitoring wells were plugged and abandoned at the site in 1994. Because remediation activities at the site appear to have been completed, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

Four 8,000 gallon gasoline USTs are present at the Circle K facility. All four USTs are listed as Active. No information about the identification of contamination at the facility is listed in the LUST database. The site reconnaissance revealed that two monitoring wells are present at the site and that remediation is ongoing and is being overseen by CRA. A review of LDEQ headquarters site files determined that a plan was submitted by CRA to further delineate the subsurface contaminant plume at the site. The information presented in this plan indicates that the area of concern for contamination is limited to the facility site and adjoining properties. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The remaining facilities are all located more than one-quarter mile from the project corridor. Although these facilities are located within the ASTM-recommended search radius, it is believed that these facilities are sufficiently distant from the project corridor to render unlikely the possibility of contaminant migration from any of these sites to the project corridor. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

Registered Underground Storage Tank (RUST) Database

Review of this LDEQ database, last updated February 2006, indicates seven potential REC sites located within one-quarter mile of the project corridor. Several of the facilities are cross-listed in multiple databases.

Facility Name: Schuberts Marine/Crescent City Marine Group
Facility Location: 126 S Roadway St
Distance/Direction: 0.15 mi SE
Other Databases: RCRAGN, LUST

Facility Name: Time Saver Stores Inc.
Facility Location: 200 Live Oak St
Distance/Direction: 0.11 mi NW
Other Databases: LUST (2)

Facility Name: Tenneco Oil Co. #145-16
Facility Location: 205 Veterans Blvd
Distance/Direction: 0.11 mi NW
Other Databases: LUST (2)

Facility Name: Circle K #467
Facility Location: 400/330 Veterans Blvd
Distance/Direction: 0.24 mi W
Other Databases: LUST

Facility Name: Harry Labiche Plumbing
Facility Location: 200 Canal St
Distance/Direction: 0.10 mi NW

Facility Name: Breithoff D Rayage
Facility Location: 610 Papworth Ave
Distance/Direction: 0.22 mi NW

Facility Name: Check In Check Out
Facility Location: 404 Veterans Blvd
Distance/Direction: 0.24 mi W

The Schuberts Marine facility is discussed in Section 6.1.5 above. Based on the information presented in that section, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Time Saver Stores, Tenneco Oil Company, and Circle K facilities are discussed in the LUST database subsection above. Based on the information presented in that subsection, it is believed that these sites have had little, if any, adverse impact on environmental conditions within the project corridor. The Time Saver and Tenneco sites would not normally qualify as REC sites. However, the sites are located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigations at this sites are warranted.

The Harry Labiche facility does not appear to be listed in the LUST database and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The remaining facilities do not appear to be listed in the LUST database and are located outside the corridor identified by the USACE for potential use in the construction of the proposed pumping station. No evidence of violations or corrective actions was determined for any of the remaining facilities. Based on this information, and lacking any evidence to the contrary, it is believed that these sites have had little, if any, adverse impact on environmental conditions within the project corridor.

Oil and Gas Well Database

This database contains a listing of all oil and gas wells within the state of Louisiana that have been registered with the Louisiana Department of Natural Resources.

Review of this database, last updated January 2001, indicates one oil well located within one mile of the project corridor.

Facility Name: Caroll Oil Well
Facility Location: Unnamed
Distance/Direction: 0.57 mi NW

The Caroll Oil Well is listed as Inactive. No additional information about the well is available in the database. However, no evidence of emergency response activities, violations, or corrective actions was identified for the well during the environmental database review. Based on this information, and lacking any evidence to the contrary, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

ASTM E 1527-05 Section 8.2.2 “Additional Environmental Record Sources” states that one or more additional state or local sources may be checked to enhance and supplement the Federal and state sources identified in ASTM E 1527-05 Section 8.2.1.

GEC performed additional research using historic city directories, LDEQ headquarters site files, the EPA National Pollutant Discharge Elimination System (NPDES) database, and previous sampling studies conducted within the subject property.

5.2.1 City Directory Search

A review of city directories published by R. L. Polk and Company was conducted to identify any former industrial sites in the project corridor and adjoining properties. City directories for the years 1940, 1947, 1952-1953, 1956, 1961, 1964, 1966, 1971, 1976, 1981, 1982, 1986, 1991, 1997, 2001, and 2006 were reviewed for nonresidential facilities on properties adjoining the project corridor. The results of this review are presented in Table 5. Relevant portions of the city directories reviewed are included in Appendix C.

Of the properties listed on the western canal bank, only Graci Hart Electric Company, Weld It Inc., and Seal-Tight Insulation appear to be currently operating as businesses. Interviews were conducted with the site manager of Graci Hart Electric Company and the owner of Weld It Inc. and are discussed in Section 7.0 below. An interview was attempted with the owner of Seal-Tight Insulation, but repeated attempts to contact the owner were unsuccessful. Facilities north of Hammond Highway (which includes all properties on the 1800 block of Orpheum Avenue) no longer exist. This property is currently occupied by the U.S. Coast Guard (USCG) Small Boat Station and the temporary pumping station under construction by the USACE north of the Hammond Highway Bridge. An interview was conducted with the site manager of the USCG Small Boat Station and is discussed in Section 7.0 below.

None of the abovementioned properties on the eastern canal bank exhibited any evidence of operating as a present or former industrial facility. A site reconnaissance of Bellaire Drive indicated that all structures on the street that adjoin the project corridor are residential. Most of these structures are currently unoccupied as a result of damage from Hurricane Katrina. It is believed that the abovementioned properties are residential structures that also functioned as administrative centers for offsite businesses.

5.2.2 EPA National Pollutant Discharge Elimination System Database

As authorized by the Clean Water Act, the EPA NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. These permitted facilities are stored within the NPDES permit database.

**Table 5. Nonresidential Sites Adjoining the Project Corridor
Identified in Historic Directory Search**

Facility Address	Facility Name	Description	Year
Western Canal Bank			
1534 Orpheum Ave.	Frank Rando	Commercial Fisherman	1964, 1966, 1971, 1976, 1982, 1986, 1991
1554 Orpheum Ave.	Wayne Spencer	Taxidermist	1971
1600 Orpheum Ave.	Bernard Crahan	Trucking	1961
1700 Orpheum Ave.	Larry's Marine & Auto Repairs	Boat/Vehicle Repair	1976
1700 Orpheum Ave.	Marine Power Inc.		1986
1702 Orpheum Ave.	Weld It Inc.	Welding	2006
1704 Orpheum Ave.	Seal Tight Insulation		2006
1706 Orpheum Ave.	Apple Jack Distributors/ Precision Metal		1997
1708 Orpheum Ave.	Deanie Seafood Wholesale		1986
1720 Orpheum Ave.	Graci Hart Electric Co.		1997, 2001, 2006
1728 Orpheum Ave.	C&L Seafood	Seafood Retailer	1971, 1976, 1982, 1986, 1991, 1997, 2001
1732 Orpheum Ave.	Video Ventures	Video/Film Equipment/ Production	1997, 2001
1732A Orpheum Ave.	Hair Design by Renny	Hair Salon	1986
1732B Orpheum Ave.	Peggy's Kitchen	Catering	1986
1732B,C Orpheum Ave.	Wayne Mack Advertising	Hair Salon	1991
1800 Orpheum Ave.	Leroy Schultz	Commercial Fisherman	1961
1800 Orpheum Ave.	Charles Turan	Seafood Retailer	1966
1823 Orpheum Ave.	Leroy Schultz	Commercial Fisherman	1964, 1966
1824 Orpheum Ave.	Ferdie's Seafood	Restaurant & Bar	1961, 1964
1824 Orpheum Ave.	Dee's	Restaurant & Bar	1966
1824 Orpheum Ave.	Buddy Fuchs'	Restaurant & Bar	1971
1824 Orpheum Ave.	Sid-Mars	Restaurant & Bar	1976, 1982, 1986, 1991, 2001
1828 Orpheum Ave.	Bernice's Grocery		1961, 1964, 1966, 1971
1828 Orpheum Ave.	Bernice's Seafood		1976, 1982, 1986, 1991
1829 Orpheum Ave.	Delta Fisheries	Commercial Fishery	1961, 1964
1829 Orpheum Ave.	Crescent Shrimp Co.	Commercial Fishery	1966
1829 Orpheum Ave.	Larry's Marine & Auto Repairs	Boat/Vehicle Repair	1982, 1986
1834 Orpheum Ave.	Rest-a-While Restaurant	Restaurant & Bar	1961, 1964, 1966, 1971, 1976
1836 Orpheum Ave.	Peter Bordes	Commercial Fisherman	1961, 1966
1836 Orpheum Ave.	Graham Communications	Telecommunications	1997
1836 Orpheum Ave.	Comm One Communications	Telecommunications	2001, 2006
1841 Orpheum Ave.	Dee's Shrimp & Crabs	Seafood Wholesaler	1961
1857 Orpheum Ave.	Harry Clann Boat Works	Boat Construction/Repair	1961, 1964, 1966
1857 Orpheum Ave.	Erickson Sails		1986
1870 Orpheum Ave.	Original Brunning's Restaurant	Restaurant & Bar	1971, 1976, 1982, 1986, 1991

**Table 5 (cont'd). Nonresidential Sites Adjoining the Project Corridor
Identified in Historic Directory Search**

Facility Address	Facility Name	Description	Year
Eastern Canal Bank			
5324 Bellaire Dr.	Seven TS	Real Estate	2001
5344 Bellaire Dr.	Mardi Gras Arabian Horses		1986, 1991
5456 Bellaire Dr.	Irwin Sanders	Legal Services	2001
5500 Bellaire Dr.	Bee Dee Interiors	Interior Design	1997, 2001
5524 Bellaire Dr.	Jerry St. Pierre M.D.	Physician	2001
5752 Bellaire Dr.	Bosworth Real Estate	Real Estate	2001
6026 Bellaire Dr.	La Bella Insulation Inc.		1971, 1976
6034 Bellaire Dr.	Kevin Mahoney Insurance		2001
6034 Bellaire Dr.	Mahoney-Wauters Insurance		2006
6066 Bellaire Dr.	Sparr Energy	Directional Drilling	2001
6260 Bellaire Dr.	Worldwide Diamond Corp.	Jewelers	1997
6268 Bellaire Dr.	A Sound Decision	Hearing Aid Supplies	2001
6340 Bellaire Dr.	David Babineaux	Jewelers	1997, 2001
6346 Bellaire Dr.	Mascari's Construction Co.		1997, 2001
6356 Bellaire Dr.	Bart's Office Furniture Repair		1997, 2001
6426 Bellaire Dr.	Weaver's PoBoy Sandwiches	Restaurant	2001
6432 Bellaire Dr.	N.O. Montessori School	School	1976, 1981, 1986, 1991, 2001
6521 Bellaire Dr.	Custom Water Gardens	Landscaping	1997, 2001
6560 Bellaire Dr.	Aqua Clean	Pool Maintenance & Svc.	1986
6588 Bellaire Dr.	Stanley Barnes	Vascular Technician	1991
6642 Bellaire Dr.	Due Process	Private Investigator	2001
6662 Bellaire Dr.	American Medical Computer Systems		1997
6714 Bellaire Dr.	Daniel Coci	Building Contractor	1981
6830 Bellaire Dr.	Buster Bears Day Care	Day Care	1981, 1986, 1991, 1997, 2001
6848 Bellaire Dr.	PB International	Catalogue Sales	1991
6926 Bellaire Dr.	Appraisal Network Ltd.	Auction Appraisal	2001
7000 Bellaire Dr.	Sea Service Marine Boat Cleaning	Boat Cleaning	1991
7000 Bellaire Dr.	Rite Way Electrical Contractors		2001
8112-14 Bellaire Dr.	Coci Brothers	Dredging Contractors	1952-1953, 1956

Source: R.L. Polk & Co., 1940-2006.

The NPDES permit database was reviewed with assistance from the EPA EnviroMapper™ program to identify any permitted dischargers within one-half mile of the project corridor. A review of the database indicated three such facilities within this radius of the project corridor. All three facilities are cross-listed in the environmental databases discussed in Section 5.1 above.

Facility Name: Schuberts Marine/Crescent City Marine Group
Facility Location: 126 S Roadway St
Distance/Direction: 0.15 mi SE
Other Databases: RCRAGN, LUST, RUST

Facility Name: Sintes Boat Works
Facility Location: 7385 W Roadway St
Distance/Direction: 0.09 mi SE
Other Databases: RCRAGN

Facility Name: MG Mayer Yacht Service Inc.
Facility Location: 424 S Roadway St
Distance/Direction: 0.18 mi SE
Other Databases: RCRAGN

The Schuberts Marine Facility was issued a five-year permit on 12 March 2004 for the discharge of exterior vehicle wash wastewater. Records from the LDEQ headquarters files indicate that wastewater from the facility is discharged into the municipal yacht harbor, where it then flows to Lake Pontchartrain via the New Basin Canal. Because the facility does not appear to discharge wastewater into the project corridor, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

The Sintes Boat Works facility was reissued a permit on 1 May 2006 for the discharge of stormwater associated with industrial activities. Records from the LDEQ headquarters files indicate that wastewater from the facility is discharged into the municipal yacht harbor, where it then flows to Lake Pontchartrain via the New Basin Canal. Because the facility does not appear to discharge wastewater into the project corridor, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor and would not normally qualify as a REC site. However, the site is located within the corridor (one-eighth mile from the canal centerline) identified by the USACE for potential use in the construction of the proposed pumping station. Consequently, additional investigation at this site is warranted.

The M.G. Mayer facility previously maintained a permit for the discharge of exterior vehicle wash wastewater. Records from the LDEQ headquarters files indicate that wastewater from the facility is discharged into the municipal yacht harbor, where it then flows to Lake Pontchartrain via the New Basin Canal. On 12 April 2006 the facility owner indicated in correspondence to LDEQ that the facility's wastewater had been routed into the municipal sewer system and formally requested a withdrawal of its NPDES permit. Because the facility does not appear to discharge wastewater into the project corridor, it is believed that the site has had little, if any, adverse impact on environmental conditions within the project corridor.

5.2.3 LDEQ Headquarters Site Files

Files at the LDEQ headquarters site were reviewed in an effort to identify any additional potential REC sites in the vicinity of the project corridor not identified in the environmental database review and to provide supplementary information on sites identified in the

environmental database review. Supplementary information on identified potential REC sites is presented with the discussion of the individual sites in Sections 5.1 and 5.2.2 above. No additional potential REC sites were identified in the vicinity of the project corridor from LDEQ headquarters site files.

5.2.4 Previous Sampling Studies

A Certified Industrial Hygienist (CIH) investigation was conducted on sediment samples within the 17th Street Canal between the canal mouth and Hammond Highway in February 2006 pursuant to construction of the temporary pumping station currently under construction north of the Hammond Highway Bridge. Sediments within this portion of the canal were analyzed for contaminants from urban stormwater runoff prior to the initiation of any dredging activities that may be required during construction. The USACE contracted GEC to collect and composite sediments from three locations along the canal, which were then analyzed for total and Toxicity Characteristic Leaching Procedure (TCLP) RCRA metals, total petroleum hydrocarbons (TPH), volatile and semi-volatile organics (including polynuclear aromatic hydrocarbons [PAHs]), pesticides, and dioxins.

Sediment samples were collected from the bottom of the canal with a backpack vibracore unit to a depth of approximately five feet below the surface sediments in three-inch aluminum barrels. Three samples were collected from each location: one near the edge of each bank and one from the center of the canal. The three samples from each location were consolidated into one composite sample for laboratory analysis. A map of the sampling locations is provided in Figure 4.

Laboratory analyses of the composite samples revealed the presence of contaminants in levels potential hazardous to human health at all three sampling locations. Sample 17th 1, the northernmost sampling location, contained concentrations exceeding LDEQ Risk Evaluation/Corrective Action Program (RECAP) screening standards for the following contaminants:

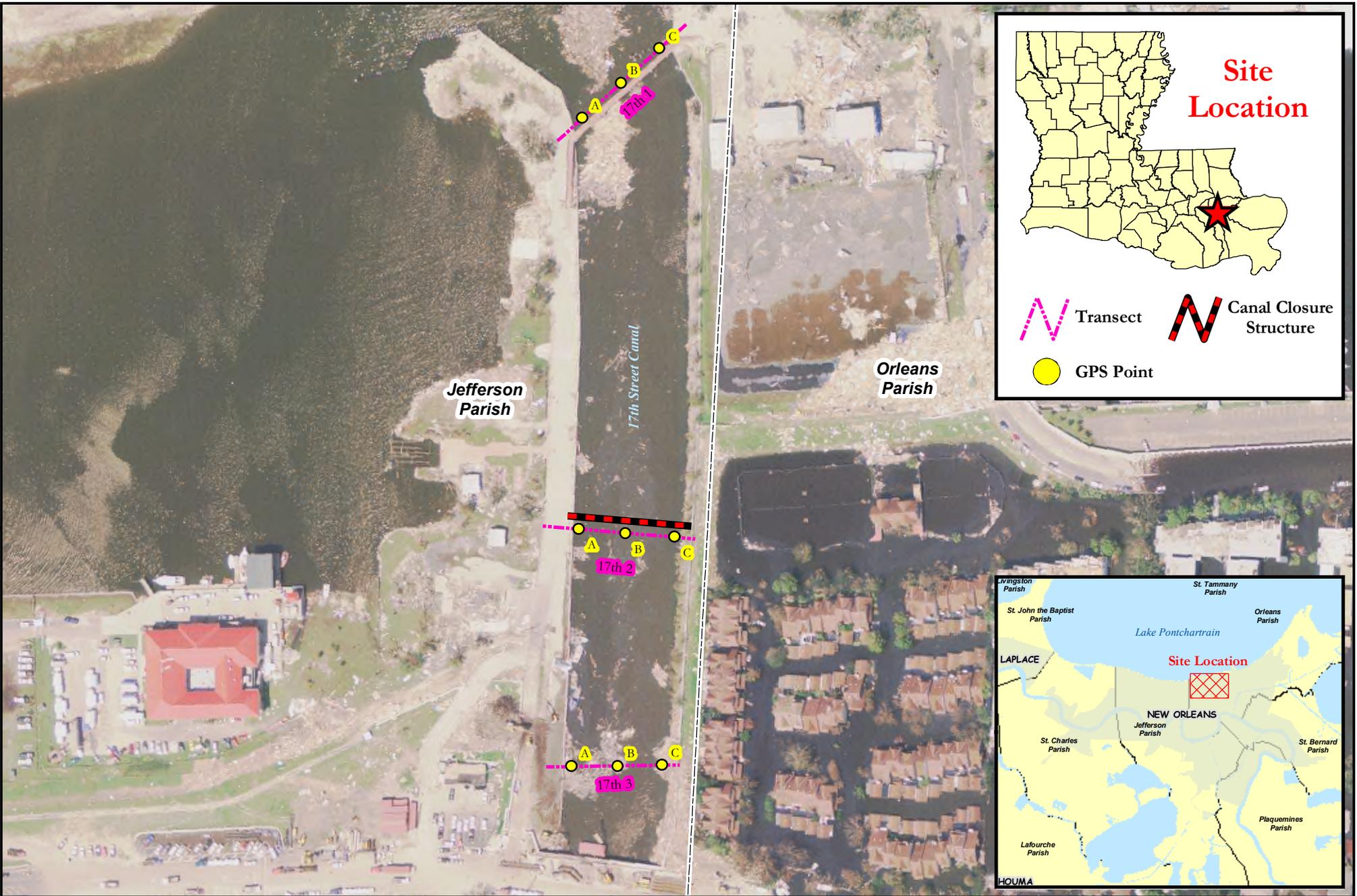
- benzo(a)anthracene by 0.69 mg/kg (111 percent);
- benzo(a)pyrene by 1.05 mg/kg (318 percent);
- benzo(b)fluoranthene by 1.23 mg/kg (198 percent);
- indeno(1,2,3,c,d)pyrene by 0.175 mg/kg (28 percent);
- TPH-DRO by 100 mg/kg (154 percent);
- TPH-ORO by 374 mg/kg (208 percent); and
- lead concentrations by 21 mg/kg (21 percent).

Sample 17th 2, the middle sampling location, exhibited the following RECAP exceedances:

- benzo(a)pyrene by 0.055 mg/kg (17 percent);
- TPH DRO by 143 (220 percent); and
- TPH-ORO by 377 mg/kg (209 percent).

Sample 17th 3, the southernmost sampling location, exhibited the following RECAP exceedances:

- benzo(a)anthracene by 0.269 mg/kg (43 percent);
- benzo(a)pyrene by 0.425 mg/kg (129 percent);

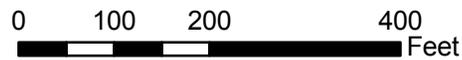


CIH INVESTIGATION SAMPLING LOCATIONS

17th Street Canal

Jefferson/Orleans Parish, Louisiana

Note: Post-Katrina Color Aerial Photography provided by 3001, Inc. through the USACE. Other data not derived from registered survey and should be considered approximate.



1:2,400



Figure 4

- benzo(b)fluoranthene by 0.36 mg/kg (58 percent);
- TPH-DRO by 64 mg/kg (98 percent); and
- TPH-ORO by 156 mg/kg (87 percent).

None of the analyzed compounds regulated by RCRA were present in the 17th Street Canal TCLP samples in concentrations exceeding RCRA standards. TPH-DRO was detected in the TCLP leachate in the 17TH 2 and 17TH three samples. TPH-GRO was also detected in all three samples, possibly due to volatile organic blank contamination.

The results of the laboratory analyses indicated that the material sampled from the Canal contained PAHs, lead, and total petroleum hydrocarbons in concentrations that are potentially hazardous to human health or the environment. Additionally, the laboratory analyses indicated that dioxins, while not present in concentrations exceeding standards set by the State of Louisiana, are present in the sediments at levels that may preclude certain disposal options.

The sampling analysis report recommended further evaluation of the sediment material analysis prior to consideration of ocean dumping or use of the material as borrow or fill. The report further recommended that prior to landfill disposal, the analysis of the sediment be evaluated in order to ensure its disposal in a landfill permitted to dispose of such material, and that personnel handling the sediment material should be outfitted in modified Level D personal protective equipment, including oil-resistant gloves and safety glasses. Additionally, the report stated that special actions associated with state environmental regulations regarding the handling, storage, disposal or ownership of contaminated sediments (as described in Louisiana Administrative Code Title 33:V) may be required.

5.3 HISTORICAL RECORDS REVIEW

For this project, GEC researched historical quadrangles for structures, mines, quarries, clearings, wells, and land use in order to: (1) ascertain development of the project corridor since the early 20th century; and (2) identify indications of possible items of environmental concern.

In accordance with ASTM E 1527-05, current USGS 7.5-Minute Topographic Maps were utilized as the primary physical setting source. Additional sources were utilized to ascertain the geologic, hydrogeologic, hydrologic, and topographic conditions of the project site. The sources include the following:

- USGS Groundwater Maps;
- LGS Bedrock Geology Maps; and
- LGS Surficial Geology Maps.

Information on the physical setting sources and historical use sources is included in Section 15.0 below.

5.3.1 Historical USGS Quadrangle Map Review

Historical USGS quadrangle maps were reviewed to determine if any development occurred on the subject property in the past. For historical use of the project corridor, GEC reviewed the following maps:

- New Orleans East, LA- 1998, 1992, 1989, 1979, 1966, 1951; and
- Spanish Fort, LA- 1999, 1992, 1979, 1972, 1965, 1951

The historical quadrangle maps reviewed for the project corridor indicate that construction of the 17th Street Canal and Drainage Pumping Station Number 6 occurred prior to 1951. Other structures present within or adjacent to the project corridor in the 1951 maps include the municipal yacht harbor northeast of the project corridor, Metairie Cemetery southeast of the project corridor, and the Southern Rail Road line near the southern terminus of the project corridor. The adjoining property east of the project corridor is largely undeveloped in the 1951 maps, and no indications of commercial, industrial, or municipal sites other than those noted above were noted on these maps.

Between 1951 and 1965 significant residential development occurred on the adjoining property to the east of the project corridor. Several structures that could indicate commercial buildings or apartment complexes are present on adjoining property to the west immediately north of present-day Cotton Street and immediately south of present-day Raspberry and Cherry streets.

Between 1965 and 1979 residential development occurred on adjoining property to the southwest (in the vicinity of Metairie Cemetery). Additional structures were added at the municipal yacht harbor during this period. The corrections on the 1979 map appear to indicate that the potential commercial or apartment facilities were demolished and replaced with residential development during this interval. These sites are not present on the 1989 or subsequent maps. No further industrial or commercial development is apparent in subsequent maps of the project corridor and adjacent properties.

Historic quadrangle maps reviewed for the project corridor are presented in Appendix D.

5.3.2 Historical Fire Insurance Map Review

From about 1860 to 1990, the Sanborn Fire Insurance Map Company created a series of highly detailed maps of urban areas indicating every man-made structure within the area mapped and included information on the use of structures and, if a structure housed a business, the type of business. Features such as petroleum products or hazardous materials used or stored, individual building uses, building materials utilized, size of structures and storage tanks, and many other details were also indicated. Particularly notable for their past use or storage would be such flammable materials as gasoline, kerosene, heating oils, paints, solvents, or any other chemicals that are today classified as hazardous materials and, in waste form, as hazardous wastes. Other concerns that may be indicated by the Sanborn maps include facilities such as landfill or wastewater treatment plants that may have operated at one time on or near the subject property.

GEC reviewed 10 Sanborn maps covering the period 1909-1951. These maps are presented in Appendix E. Sanborn coverage existed for only the northern portion of the project corridor (with the southernmost area of coverage extending to approximately the location of present-day 40th Street). The maps indicate that the 17th Street Canal was constructed prior to 1929 (the first year for which coverage exists of the area encompassed by the canal). No commercial structures were identified along the project corridor in the Sanborn maps reviewed. A number of recreational facilities were identified at the northern terminus of the project corridor in the vicinity of the current yacht club facilities. These recreational facilities included boat houses and recreational pavilions. No fuel tanks or other chemical containers were noted in any of the

recreational facilities. A railroad was observed in the 1909 maps along the New Orleans Navigation Canal (east of the project corridor between present-day Pontchartrain Boulevard and West End Boulevard). This railroad appears to have been used for the transport of passengers to the recreational facilities on the shore of Lake Pontchartrain. The railroad appears to have been removed prior to 1929. The area along the eastern border of the project corridor appears to be residential in all years for which coverage exists.

5.3.3 Historical Aerial Photograph Review

The Louisiana State University Cartographic Information Center (CIC), operated by the Department of Geography and Anthropology, maintains a library of historical aerial photographs collected by the U.S. Department of Agriculture (USDA). The CIC's inventory of historical USDA aerial photographs of the project corridor was reviewed to determine changes in land use during the period of record, and in particular, whether any sites or conditions that may constitute a REC are visible within the project corridor. Photographs from 1952, 1961, and 1976 were reviewed. The photographs reviewed for the project corridor are included in Appendix F.

Analysis of historical aerial photographs indicates that the western canal bank south of present-day Esplanade Avenue and the eastern canal bank south of present-day 32nd Street were virtually undeveloped in 1952. The municipal yacht club is visible in the 1952 photographs, as are a number of boat slips and structures in the Bucktown area. One multi-story structure is present on the western canal bank in the vicinity of present-day Cotton Street. The location of this structure is currently occupied by an apartment complex, and no storage tanks, heavy equipment, or other indications of industrial activity are visible in the photographs. A large recreational facility including a golf course is present on adjoining property on the eastern canal bank near the southern terminus of the project corridor. No other indications of commercial or industrial development are visible in these photographs.

The 1961 photographs reveal little development occurred along the western canal bank in the period from 1952-1961. Two additional structures are present along the western canal bank in these photographs, although no indications of industrial operations at these sites is apparent in the photographs. Considerable residential development is evident on the eastern canal bank in the 1962 photographs, and the abovementioned recreational facility is now separated from the eastern canal bank by residential development. No other indications of commercial or industrial development are visible in these photographs.

The 1976 photographs reveal significant development occurred along the western canal bank between 1961 and 1976. The western canal bank is completely developed in these photographs, and two large multistory buildings are apparent on the western canal bank on either side of Veterans Memorial Boulevard. These buildings occupy the current locations of the Heritage Plaza and Rault Resources Group complexes, and appear to have functioned as corporate office complexes. No other indications of commercial or industrial development are visible in these photographs.

6.0 SITE RECONNAISSANCE

In accordance with ASTM E 1527-05 Section 9 "Site Reconnaissance," field investigations were conducted in order to inspect the property and surrounding areas for structures, oil and gas exploration and production, land use, runoff patterns, and indications of environmental impacts. The investigation was conducted in November 2006. Photographs from these surveys are presented in Appendix G.

6.1 METHODOLOGY AND LIMITING CONDITIONS

The project was investigated in order to identify potential REC sites, current and historical, that have, or may have in the past, adversely impacted environmental conditions within the required right-of-way for the project. ASTM E 1527-05 Section 9 “Site Reconnaissance” addresses aspects of site field investigations. GEC, as described in this report, has investigated the property for potential REC sites based on information gathered during historical research, the environmental database review, interviews with pertinent personnel, and field reconnaissance in accordance with ASTM E 1527-05 standards, as applicable and appropriate.

Observations made during GEC’s reconnaissance of the property were limited to (1) sites or portions of sites that were accessible to investigators, and (2) evidence that was visible to the investigators. Limitations include concrete floodwalls and unsafe conditions that impeded inspection of the entire area or specific portions or features of a site. Observations were based on evidence that was visible to inspectors while walking the site. No ground excavation or physical relocation of obstacles was conducted during inspections. Accordingly, no guarantee is made or intended that all site conditions were observed.

6.2 GENERAL SITE SETTING

ASTM E 1527-05 Section 9.4.1 “General Site Setting” addresses current and past use of the property being assessed, adjoining properties, and surrounding area. The elevation of the site is approximately zero feet above MSL, and the project vicinity is urban. Predominantly residential buildings are found in the surrounding blocks of the project corridor to the east and west. Lake Pontchartrain forms the northernmost boundary of the project corridor. The municipal yacht harbor adjoins the property to the east at the northern terminus of the project corridor. West End Park adjoins the property to the east adjacent to the municipal yacht harbor. The remainder of the adjoining property is primarily residential, with the exception of a few commercial properties along Orpheum Avenue and Veterans Memorial Boulevard.

6.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS IN CONNECTION WITH IDENTIFIED USES

One 3,000 gallon AST with secondary containment was observed on either canal bank at the site of the temporary pumping station. A fuel station on a concrete island was observed at each of these ASTs. Four ASTs were observed at the staging area at the USCG Small Boat Station near the western canal bank. One 3,200 gallon AST with secondary containment was observed at the Jefferson Parish Canal Street Pumping Station. No evidence of discharge of petroleum products in the vicinity of the ASTs was observed during the site reconnaissance. No evidence of REC in conjunction with these ASTs was observed in the vicinity of these ASTs.

6.4 UNIDENTIFIED SUBSTANCE CONTAINERS

All observed substance containers were clearly labeled at the temporary pumping station and staging area. Cargo containers were observed in the parking lot of the municipal yacht harbor; however, no indication that these containers were used for anything other than bulk storage of non-hazardous materials was observed. No evidence of unidentified substance containers was detected during the reconnaissance.

6.5 POLYCHLORINATED BIPHENYLS (PCBs)

No electrical transformers were observed within the project corridor. At least 20 utility pole-mounted electrical transformers were observed on adjoining property to the west of the project corridor, and at least 45 pole-mounted transformers were observed on adjoining property to the east of the project corridor. A large electrical transformer mounted on a slab was observed on adjoining property to the at the Rault Resources facility. One pole-mounted transformer on the western canal bank (north of Cherry Street) and four pole-mounted transformers on the eastern canal bank (two near 36th Street and one each near Veterans Memorial Boulevard and Metairie Road) exhibited signs of corrosion. Electrical transformers may contain oil with PCBs as an additive. It is not known whether the transformers observed on the adjoining properties contain such PCBs, but no evidence of rupture was observed on any of the transformers.

6.6 EXTERIOR OBSERVATIONS

6.6.1 Pits, Ponds, or Lagoons

The project corridor contains an artificial canal for municipal drainage. No evidence of pits, ponds, or lagoons was observed within the project corridor or adjoining properties.

6.6.2 Stained Soil or Pavement

Pavement is not present on the property. No evidence of stained soil was observed on the property during the reconnaissance. Stained soil was observed at the staging areas for the temporary pumping station, located on the eastern canal bank south of the Hammond Highway Bridge and the west canal bank north of the bridge. This stained soil appeared to indicate the discharge of small amounts of hydrocarbons associated with the operation of construction equipment and does not appear to constitute a significant REC concern. Additionally, stained pavement was observed along roadways on adjoining properties. This stained pavement appeared to indicate the discharge of small amounts of hydrocarbons associated with the operation of motor vehicles and does not appear to constitute a significant REC concern.

6.6.3 Stressed Vegetation

No areas of stressed vegetation were observed on the property during the reconnaissance. Stressed vegetation was observed on some adjoining properties, particularly on residential properties adjoining the project corridor to the east. This stressed vegetation appeared to be the result of the effects of Hurricane Katrina and is not indicative of the presence of REC in the vicinity of the project corridor.

6.6.4 Solid Waste

No areas filled by fill of unknown origin, suggesting trash or other solid waste disposal, or mounds or depressions suggesting trash or other solid waste disposal, were observed during the site reconnaissance. Small quantities of flotsam and garbage were observed along the canal banks within the project corridor. These items appear to have been discarded by motorists or residents in the area and do not appear to be indicative of significant quantities of solid waste in the vicinity of the project corridor.

6.6.5 Waste Water

No evidence of wastewater discharging into a drain, ditch, or stream on or adjacent to the property was observed during the reconnaissance.

6.6.6 Wells

No wells were observed on the property or adjoining properties during the reconnaissance.

6.6.7 Septic Systems

No indications of on-site septic systems or cesspools were observed on the property or adjoining properties during the reconnaissance.

6.6.8 Oil and Gas Drilling Activities

No evidence of oil and gas wells or drilling activity was noted on the property or adjoining properties during the site reconnaissance.

6.6.9 Storage Tanks

One 3,000 gallon AST was observed on either canal bank at the site of the temporary pumping station. A fuel station on a concrete island was observed at each of these ASTs. Four ASTs were observed at the staging area at the USCG Small Boat Station near the west canal bank. One 3,200 gallon AST was observed at the Jefferson Parish Canal Street Pumping Station. All ASTs possessed secondary containment, and no evidence of discharge of petroleum products in the vicinity of the ASTs was observed during the site reconnaissance. No evidence petroleum discharge was observed in the vicinity of either of these sites. No evidence of REC in conjunction with these ASTs was observed in the vicinity of these ASTs. No other ASTs or USTs were observed on the property during the reconnaissance. Additionally, no vent pipes, fill pipes or access ways indicating the presence of other USTs were observed during the reconnaissance.

6.6.10 Odors

No strong, pungent, or noxious odors were detected at the property during the reconnaissance.

6.6.11 Pools of Liquid

Isolated pools of standing surface water were observed on some adjoining properties during the reconnaissance. These pools appeared to represent minor accumulations of rain water from recent precipitation events and did not contain any evidence of contamination. No pools or sumps containing liquids likely to be hazardous substances or petroleum products were observed on the property during the reconnaissance.

6.6.12 Drums and Containers

Drums were observed at a construction staging area on the western canal bank immediately north of Interstate 10. These drums appeared to contain oil for the operation of construction equipment and did not exhibit any signs of corrosion or rupture. No other drums of hazardous substances or petroleum products were observed during the site reconnaissance.

6.7 INTERIOR OBSERVATIONS

6.7.1 Heating/Cooling

No heating or cooling system is currently present at the temporary pumping station currently under construction in the project corridor by the USACE.

6.7.2 Stains or Corrosion

Minor oil stains was observed on the premises of the temporary pumping station. Corrosion was observed on exposed steel structures at the station and on exposed floodwall bulkheads. The oil stains appeared to represent minor discharges associated with the operation of construction equipment, and the corrosion appeared to represent the natural effects of exposure to steel.

6.7.3 Drains and Sumps

No evidence of drains or sumps was observed at the temporary pumping station during the site reconnaissance.

7.0 INTERVIEWS

Interviews were conducted with local and state government officials as well as property owners and/or site managers for information regarding conditions and activities within the project corridor and adjoining nonresidential properties. Interview forms are presented in Appendix H.

Mr. Wayne Deselle, Staff Environmental Scientist for the LDEQ Southeast Regional Office Surveillance Division, was interviewed for knowledge of environmental conditions within the project corridor. Mr. Deselle stated that sampling was conducted on sediments in the 17th Street Canal in 1995, and that the results revealed elevated amounts of lead and oil and grease in the sediments. Although the levels of these contaminants was elevated with respect to background levels in canal sediments, Mr. Deselle stated that the levels were not atypical for urban drainage structures and did not constitute an immediate threat to human health and safety. Mr. Deselle stated that he is not aware of any incidents within the project corridor that may have adversely impacted environmental conditions therein. He further stated that LDEQ performed water quality and tissue analyses for Lake Pontchartrain waters and finfish in the vicinity of the canal shortly after Hurricane Katrina, and the results indicated only minimal increases in toxins in the area as a result of toxic releases associated with Hurricane Katrina.

Mr. Jack Huerkamp, Chief of Operations for the SWBNO, was interviewed for his knowledge of conditions and operations at Drainage Pumping Station Number 6 and the project corridor. Mr. Huerkamp stated that waste oil from the pump gearboxes is stored at Drainage Pumping Station Number 6, where it is removed by a waste oil company. Mr. Huerkamp stated that flotsam and debris are often dumped into the canal, but he is not aware of any hazardous waste dumping or discharges within the project corridor. Mr. Huerkamp further stated that sampling was performed on sediment that had collected in the pumping station's suction basins, but that he does not recall the results of the sampling analysis. Mr. Huerkamp stated that he is not aware of any incidents at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. Darren Austin, Mechanical Engineer for the Jefferson Parish Department of Water, was interviewed for his knowledge of conditions and operations at the Jefferson Parish Canal Street Pumping Station. Mr. Austin stated that one 3,200 gallon diesel AST is present at the station for generator operation, and that he is not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. Dennis Howe, the owner of EIU of Louisiana, was interviewed for his knowledge of conditions and operations at that facility. Mr. Howe stated that no petroleum products or chemicals are stored at the property, and that he is not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. John Hernandez, Asset Manager for Stirling Properties, Inc., was interviewed for his knowledge of conditions and operations at the Heritage Plaza property. Mr. Hernandez stated that cleaning chemicals are stored on the property, and a 300 gallon diesel generator is present on the property for generator operation. Mr. Hernandez stated that he is not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. Greg Guerin, the owner of Weld It Inc., was interviewed for his knowledge of conditions and operations at that facility. Mr. Guerin stated that acetylene tanks are stored on the property, and that he is not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

Mr. Jeff Prechter, Director of Human Resources for Graci Hart Electric, was interviewed for his knowledge of conditions and operations at that facility. Mr. Prechter stated that no petroleum products or chemicals are stored at the property, and that he is not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

Chief Machinery Technician (MKC) James Briest and Chief Warrant Officer (CWO) Carl Booth of the USCG Small Boat Station were interviewed for their knowledge of conditions and operations at the station. MKC Briest stated that the station operates a 3,000 gallon diesel AST, a 1,500 gallon gasoline AST, and a 390 gallon waste oil AST. MKC Briest also stated that he believed the property adjacent to the station contained a construction debris landfill. MKC Briest and CWO Booth stated that they are not aware of any incidents that have occurred at the facility that may have adversely impacted environmental conditions within the project corridor.

8.0 FINDINGS

As defined in ASTM E 1527-05 Section 1.1.1, REC means:

the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

Based on research of additional environmental record sources, the assessment confirms that REC exist at the subject property. The results of laboratory analyses conducted during the

February 2006 CIH Investigation of the northern portion of the 17th Street Canal (between the canal mouth and Hammond Highway) indicated that the material sampled from the canal contained PAHs, lead, and total petroleum hydrocarbons in concentrations that are potentially hazardous to human health or the environment. Additionally, the laboratory analyses indicated that dioxins, while not present in concentrations exceeding standards set by the State of Louisiana, are present in the sediments at levels that may preclude certain disposal options. Although this study did not examine sediments in the southern portion of the project corridor, the presence of contaminants in concentrations potentially hazardous to human health in the northern portion of the project corridor indicates that such contaminants are potentially present throughout the project corridor.

The USACE identified the area within one-eighth mile of the canal centerline on either bank as a corridor for potential use in the construction of the proposed pumping station. Consequently, particular concern was given to sites identified in the records review and site reconnaissance located within this corridor. Table 6 provides a listing of these sites and potential constituents of concern (COCs) associated with them and an assessment of the potential environmental risk posed by these sites.

Table 6. Sites of Concern Within One-Eighth Mile of the Canal Centerline

Site	Address	COCs	Environmental Risk Factor
EIU of LA Inc.	383 Lake Ave	cadmium, dichlorobenzene, benzene, tetrachloroethylene, lead, trichloroethylene, ignitable waste	Moderate
Sintes Boat Works	7385 W Roadway	ignitable waste	Moderate
Pat Farrell Bicycles #3	7354 W Roadway	ignitable waste	Moderate
Harry H. Philibert M.D.	213 Live Oak St	silver	Low
Time Saver Stores #93/ Live Oak Discount Zone LLC	200 Live Oak St	petroleum products	Moderate
Tenneco Oil Co. #145-16	205 Veterans Blvd	petroleum products	Moderate
Saluga Chiropractic Rehab Center	401 Veterans Blvd	silver, silver nitrate	Low
Harry Labiche Plumbing	200 Canal St	petroleum products	Low

Source: Banks, GEC, 2006.

Items such as radon, ACM, lead-based paint, and lead in drinking water are beyond the scope of ASTM E 1527-05 standards because these items are not included in CERCLA's definition of hazardous substances (42 U.S.C. § 9601(14)). However, parties undertaking a commercial real estate transaction may wish to assess these substances because in certain quantities and/or in certain conditions, the constituents may pose a threat of contamination.

9.0 OPINION

Of the potential REC sites that have, or may have had in the past, the potential to adversely impact conditions in the project's required right-of-way, it is determined that REC at the subject property require additional investigation. Further investigation of sediment conditions is necessary to determine if the property has been impacted by point- and nonpoint-source

pollution from urban runoff. Additionally, further investigation of subsurface conditions at the sites listed in Table 6 above may be necessary if the proposed permanent pumping station is to be constructed in the vicinity of these sites.

10.0 CONCLUSIONS

GEC has performed this HTRW Phase I ESA in conformance with the scope and limitations of ER 1165-2-132 and ASTM E 1527-05, as applicable and appropriate. Any exceptions to, or departures from, this practice are described in the report. Based on the site reconnaissance, records review, interviews, and best engineering judgment, this assessment has revealed evidence of recognized environmental conditions in connection with the project, and it is GEC's opinion that further investigation is warranted at the property.

Sediment samples within the proposed footprint of the proposed permanent pumping station within the project corridor should be analyzed for constituents of concern, including but not limited to, PAHs, lead, and total petroleum hydrocarbons. Additionally, should the footprint of the proposed permanent pumping station be constructed in the vicinity of any of the sites listed in Table 6, subsurface sampling should be performed in the vicinity of the site(s) to determine if any of COCs have adversely impacted environmental conditions within the proposed construction footprint.

11.0 DEVIATIONS

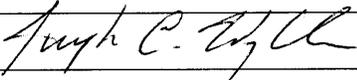
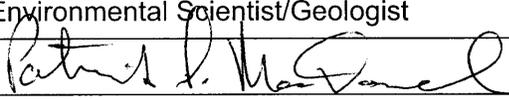
Based on the scope of the project, GEC believes an *appropriate inquiry* level was utilized for the assessment. GEC complied with the standards specified in ASTM E 1527-05, as applicable and appropriate, when *reasonably ascertainable*. As provided for in ASTM E 1527-05 Section 4.5.2 "Not Exhaustive," GEC did not perform an exhaustive assessment of observably clean portions of the property. In accordance with guidance from the project Scope of Work and USACE personnel, a title record search was not conducted, and interviews of knowledgeable personnel on adjoining properties was limited to identified nonresidential properties. Additionally, and as described in sections 4.0 and 6.0 of the report, certain observation limitations were encountered as noted.

12.0 ADDITIONAL SERVICES

GEC performed no additional services in conjunction with this Phase I ESA.

13.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

I certify that I have examined the property and, being familiar with the provisions of ASTM E 1527-00 and ASTM E 1528-00, attest that this ESA has been conducted in accordance with good environmental practices.

Signature	
Name	Joseph C. Wyble
Title	Environmental Scientist/Geologist
Signature	
Name	Patrick S. MacDanel
Title	Senior Environmental Scientist/Wildlife Biologist
Date	29 November 2006

14.0 QUALIFICATION OF ENVIRONMENTAL PROFESSIONALS

Mr. Wyble and Mr. MacDanel have project management and research experience in environmental, hydrological, and geotechnical projects throughout the United States. They provide planning, coordination, and consulting services on Federal and state regulatory compliance issues for numerous clients. Relevant environmental experience for Mr. Wyble and Mr. MacDanel includes:

Hazardous, Toxic, and Radioactive Waste (HTRW) Investigations – Risk liability studies of various properties in Louisiana. Investigations conducted in accordance with U.S. Army Corps of Engineers Regulation ER 1165-2-132, *Water Resources Policies and Authorities for Hazardous, Toxic, and Radioactive Waste For Civil Works Projects*, which requires identification and evaluation of potential environmental risks in Federal project corridors.

Environmental Site Assessments – Assessments for commercial and industrial clients to evaluate the presence of hazardous substances and petroleum products in accordance with American Society of Testing and Materials Standard E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

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