

**REPORT OF**  
**PHASE I**  
**ENVIRONMENTAL SITE ASSESSMENT**  
**FOR THE**  
**NEIGHBORHOOD SANITARY SEWER SYSTEM IMPROVEMENTS**  
**PACKAGE 2**  
**SUNSET BLVD., UNIVERSITY BLVD. AND WESTHEIMER ST.**  
**HOUSTON, HARRIS COUNTY, TEXAS 77005 & 77027**

**WBS NO. R-002011-0055-3**  
**CONSTRUCTION WBS NO. R-002011-0065-4**



**FOR:**

**AMANI ENGINEERING, INC.**  
**8313 SOUTHWEST FREEWAY, SUITE 350**  
**HOUSTON, TEXAS 77074**

**PREPARED BY:**

**ASSOCIATED TESTING LABORATORIES, INC.**  
**3143 YELLOWSTONE BLVD.**  
**HOUSTON, TEXAS 77054**

**REPORT NO. E14-100**  
**FEBRUARY 2014**



FEBRUARY 28, 2014

AMANI ENGINEERING, INC.  
8313 SOUTHWEST FREEWAY, SUITE 350  
HOUSTON, TEXAS 77074

ATTN: MR. MAHESH DUTTA, PE

**RE:**            **REPORT OF PHASE I ENVIRONMENTAL SITE ASSESSMENT**  
                  NEIGHBORHOOD SANITARY SEWER LINE IMPROVEMENTS PACKAGE 2  
                  SUNSET BLVD., UNIVERSITY BLVD. AND WESTHEIMER ST.  
                  HOUSTON, TEXAS  
                  WBS No. R-002011-0055-3

ATL REPORT No.: E14-100

GENTLEMEN:

**Associated Testing Laboratories (ATL)** is pleased to submit the following Phase I ESA report for the above-mentioned project.

We appreciate the opportunity in working with you on this project and look forward to serving you in the future for environmental consulting needs. Please do not hesitate to contact us if you need more information or have any questions. Thank you for considering ATL for this project.

Respectfully submitted,  
**Associated Testing Laboratories (TBPE Firm # 4560)**



**Tom Murphy**  
**Project Manager**

## **Table of Contents**

<b>1.0</b>	<b>EXECUTIVE SUMMARY.....</b>	<b>1</b>
<b>1.1</b>	<b>FINDINGS AND CONCLUSIONS .....</b>	<b>2</b>
<b>1.2</b>	<b>RECOMMENDATIONS .....</b>	<b>2</b>
<b>2.0</b>	<b>INTRODUCTION.....</b>	<b>3</b>
2.1	General .....	3
2.2	Purpose .....	3
2.3	Detailed Scope-of-Work .....	3
2.4	Disclaimer.....	3
<b>3.0</b>	<b>PROJECT ALIGNMENT RECONNAISSANCE.....</b>	<b>4</b>
3.1	Legal Description .....	4
3.2	Project Alignment Investigation .....	4
3.3	Project Alignment Description .....	4
3.4	Adjacent Properties Description .....	4
3.5	Hazardous Materials Identification .....	5
3.5.1	Storage Tanks .....	5
3.5.2	Oil & Gas Survey .....	5
3.5.3	Polychlorinated Biphenyl (PCB) Investigation.....	5
3.5.4	Disposal Practices .....	6
<b>4.0</b>	<b>PROJECT ALIGNMENT BACKGROUND .....</b>	<b>6</b>
4.1	Interviews.....	6
4.2	Current and Past Ownership of Project Alignment .....	6
4.3	Current Use of the Project Alignment .....	7
4.4	Past Use of the Project Alignment .....	7
4.5	Historical Records Review .....	7
4.3.1	Aerial Photographs .....	7
4.3.2	Fire Insurance Maps (Sanborn Maps).....	9
4.3.3	City Directories .....	10
<b>5.0</b>	<b>ENVIRONMENTAL SETTING.....</b>	<b>10</b>
5.1	Regional Geology .....	10
5.2	Soils.....	11
5.3	Groundwater .....	12
5.4	Flood-Prone Area.....	12
5.5	Property Topography.....	12
<b>6.0</b>	<b>REGULATORY AND GOVERNMENT RECORD SEARCH .....</b>	<b>12</b>
6.1	US EPA National Priorities List (NPL (Superfund)).....	13
6.2	US EPA RCRA Treatment, Storage, and Disposal Facilities (TSDF).....	13
6.3	State Superfund (TxSSF).....	13
6.4	US EPA Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS).....	13
6.5	US EPA CERCLIS Designated No Further Remedial Action Planned (NFRAP) .....	14
6.6	US EPA Resource Conservation and Recovery Act (RCRA) CORRACTS .....	14
6.7	EPA Emergency Response Notification System (ERNS).....	14
6.8	TCEQ Leaking Petroleum Storage Tank (LPST) .....	15



6.9 Solid Waste Landfill Site (SWL/LF).....16  
6.10 TCEQ Underground Storage Tank (UST) & Aboveground Storage Tank (AST).....16  
6.11 US EPA RCRA-Small Quantity Generator (SQG) & Large Quantity Generator (LQG).....17  
6.12 Texas Spills .....17  
6.13 TCEQ Voluntary Cleanup Program (VCP) .....18  
6.14 TCEQ Innocent Owner or Operator (IOP).....18  
6.15 Dry Cleaners .....19  
  
7.0 CONCLUSIONS..... 20  
  
8.0 RECOMMENDATIONS ..... 20  
  
9.0 QUALIFICATIONS OF INTERPRETATIONS ..... 21

**APPENDICES**

**APPENDIX - A**

*Site Photographs*  
*Project Area Map*

**APPENDIX - B**

*Historical and Recent Aerial Photographs*

**APPENDIX - C**

*Sanborn Fire Insurance Historical Maps*  
*Historical City Directories and/or Records Search*

**APPENDIX - D**

*Flood-Prone Area Map (FEMA Map)*  
*Topographic Maps*

**APPENDIX - E**

*Regulatory Database Search*

**APPENDIX - F**

*Professional Qualifications*



## 1.0 EXECUTIVE SUMMARY

**Associated Testing Laboratories, Inc. (ATL)** has performed a Phase I Environmental Site Assessment (ESA) in accordance with the scope of work as described in proposal EP13-1101 and limitations of ASTM E1527-05 standards as modified by the City of Houston Department of Public Works & Engineering, Infrastructure Design Manual Chapter 11, for the Neighborhood Sanitary Sewer System Improvements Bid Package 2 in Houston, Texas.

The project consists of a subsurface utility construction improvement to sanitary sewer lines. The project will typically be referred to as "project alignment(s)" in this document. The project alignments consists of portions of six streets in Houston, Texas. Five of the streets are located in the Rice University area and are situated to the south of US Highway 59-South (Southwest Freeway) between Kirby Drive and Morningside Drive (Sunset Blvd., Nottingham Rd., University Blvd. Shakespeare and Dryden Rds.). The sixth street is located in the Galleria Area (Westheimer Road intersecting W. Loop 610 S.). A few pole-mounted transformers were observed at select areas of the project alignment. No discoloration of vegetation or soil was observed along the project alignment.

The adjacent properties bordering the project alignments were observed to range from commercial (retail and service-related businesses) to single and multi-family residential uses.

A summary of the findings for the project alignments are provided below. Additional details are provided in the text of the report. The complete report should be reviewed to enable a comprehensive background and understanding of the Phase I ESA as it pertains to the Executive Summary.

The regulatory database search reported the following within the designated search range:

*Sunset Blvd./Nottingham Rd.*

- One (1) Texas Voluntary Cleanup Program (TxVCP) facility/site.
- Two (2) Texas Innocent Owner/Operator facilities/sites.
- One (1) Leaking Petroleum Storage Tank (LPST) facility.
- Two (2) registered petroleum Underground Storage Tank (UST) facilities.

*University Blvd./Dryden Rd.*

- Three (3) Leaking Petroleum Storage Tank (LPST) facilities.
- Five (5) registered petroleum Underground Storage Tank (UST) facilities.
- One (1) Texas Voluntary Cleanup Program (TxVCP) facility/site.

*Westheimer Rd.*

- Three (3) Leaking Petroleum Storage Tank (LPST) facilities.
- Three (3) registered petroleum Underground Storage Tank (UST) facilities.
- Three (3) RCRA Generators facilities.

Please refer to *Section 6.0* Regulatory and Governmental Record Search for additional details concerning regulatory facilities and listings.

Information concerning the location of historical gasoline service stations was obtained from Sanborn Fire Insurance Maps (*Section 4.3.2 and Appendix C*).

## 1.1 FINDINGS AND CONCLUSIONS

Based on the project alignment reconnaissance, aerial photos interpretation, regulatory data search, USGS, Sanborn and other map reviews, historical city directories and information obtained during this Phase I ESA, the following is noted:

- Valero Corner Store/Former Diamond Shamrock No. 2609 (5415 Kirby Dr.). The facility has had a LPST event. The facility is situated at the western extent of the Sunset Boulevard alignment at the northeast corner of Sunset Boulevard and Kirby Drive.
- TCEQ Texas Innocent Owner/Operator Program facilities/sites, Deercos/Triangle Realty Co. (5600 Block of Kirby Dr./2600 Block of Nottingham) and Bank of Tanglewood, NA (5500 Block of Kirby Dr./2600 Block of Nottingham). The Deercos site was initially a TCEQ Texas Voluntary Cleanup Program facility/site and transferred to the TxIOP. It would be prudent to evaluate the western extent of Nottingham Road.
- Blue Hand (2403 University Blvd.) an LPST site. Based on the project layout, only the eastern extent of the project alignment at University is proposed for significant construction.
- TxVCP facility/site, 2500 Shakespeare (2500 Shakespeare). The western extent of Shakespeare Road should be evaluated.
- Former Exxon Station RAS No. 6-4075 (2821 S. Post Oak Blvd.). The western extent of Westheimer Road should be evaluated. The facility was formerly situated on the northeast corner Westheimer and S. Post Oak Roads. Three borings should be completed between S. Post Oak at Alabama. Two close to this corner and one close to the W. Loop north of the Shell Station.
- The Red Lion Hotel (2525 W. Loop S.). The facility applied to the TCEQ TxIOP and was rejected. The property is currently known as the Derek Hotel. The former Texaco Station to the south also will be evaluated at the sample location.

## 1.2 RECOMMENDATIONS

Based on the Phase I ESA study according to ASTM E1527-05 standards as modified by the City of Houston Department of Public Works & Engineering, Infrastructure Design Manual Chapter 11, Associated Testing Laboratories recommends performing subsurface sampling (Limited Phase II ESA) along the proposed sewer project alignment, near the LPST facilities and PST facilities, TxVCP or TxIOP facilities to determine the extent of contamination or impact these sites have had on the project alignment. The following facilities of potential recognized environmental conditions (RECs) were noted:

- Valero Corner Store/Former Diamond Shamrock No. 2609 (5415 Kirby Dr.). Laboratory analytical testing should include MTBE/BTEX and TPH analyses.
- TCEQ Texas Innocent Owner/Operator Program facilities/sites, Deercos/Triangle Realty Co. (5600 Block of Kirby Dr./2600 Block of Nottingham). Laboratory analytical testing should include VOC and TPH analyses. Please refer to Section 6.14 for additional details.
- Blue Hand (2403 University Blvd.). Laboratory analytical testing should include VOC and TPH analyses.
- TxVCP facility/site, 2500 Shakespeare (2500 Shakespeare). Laboratory analytical testing should include VOC and TPH analyses.
- The Red Lion Hotel (2525 W. Loop S.). Laboratory analytical testing should include VOC and TPH analyses.

## **2.0**    **INTRODUCTION**

### **2.1**    **General**

Mr. Mahesh Dutta, P.E. authorized this Phase I ESA, with the acceptance of ATL's proposal EP13-1101 dated December 11, 2013. Amani Engineering, Inc. provided locational details concerning the project alignment to ATL. This Phase I ESA includes: a project alignment reconnaissance, review of the available federal and state environmental databases, review of available historical aerial photographs, historical city directories, Sanborn maps, topographic maps, local soil, geology, flood plain information and other public records, interviews with the present occupants around the project alignment, and our conclusions and recommendations regarding the potential for environmental concerns along the project alignment and the need for further investigation.

### **2.2**    **Purpose**

The purpose of this assessment was to identify the presence or absence of any Recognized Environmental Conditions that may pose an environmental threat to the project alignment. The objective of the Phase I ESA was as follows:

- Identify Recognized Environmental Conditions (RECs);
- Identify the potential risk to the health and well being of the public and workers;
- Evaluate the need for additional investigation and/or testing.

### **2.3**    **Detailed Scope-of-Work**

The scope of our work follows the ASTM E1527-05 includes the following:

- Review the available federal and state environmental databases such as Federal National Priority List (NPL), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), CERCLIS facilities/sites designated as No Further Remedial Action Planned (NFRAP), Resource Conservation and Recovery Act (RCRA), Corrective Action Activity (CORRACTS) facilities/sites, Federal RCRA Treatment, Storage, and Disposal Facilities (TSDF) facilities, RCRA Generators, Emergency Response Notification System (ERNS) listings, Leakage Petroleum Storage Tanks (LPST) facilities, Voluntary Cleanup (VCP) facilities/sites, Underground Storage Tanks (UST) facilities/sites.
- Review of available historical aerial photographs and USGS maps dating back to at least 1940s, if available. Review of local soil, topography, geology, flood plain information, and other available public records (i.e. local Fire Department).
- Perform visual inspection of the project alignment area's condition and the vicinity for the purpose of identifying structures or other improvements, natural bodies of water, wastewater discharges, ASTs and USTs, evidence of hazardous substances including stained soil, dead or stressed vegetation, odors and other observations that may indicate chemical releases.
- Conduct interviews with the available individuals (present owners, tenants, and/or employees) with knowledge of the project alignment area. Also, conduct interviews or request information from individuals familiar with the project alignment area, and/or regulatory agency personnel.
- Provide one (1) copy and one (1) electronic copy of this Phase I ESA report according to the protocol suggested by the client and containing all the procedures utilized and findings.

### **2.4**    **Disclaimer**

This environmental assessment has been completed by ATL using commonly accepted professional practices and guidelines. However, no implicit or explicit warranty or guarantee can be given that its performance of the services according to the above scope will identify all violations or potential violations of federal, state, or local laws, regulations or ordinances that pertain to or may pertain to environmental protection matters. Investigation of subsurface soils and groundwater contamination is not considered part of this Phase I ESA.

### **3.0 PROJECT ALIGNMENT RECONNAISSANCE**

#### **3.1 Legal Description**

A legal description has not been provided to ATL. Due to the lack of a legal description, a legal description, metes and bounds and attachments (exhibits) are not provided.

#### **3.2 Project Alignment Investigation**

ATL's environmental professional conducted the project alignment reconnaissance on January 7, 2014. The visit includes conducting a vehicle and walking visual inspection of each project alignment for the presence of any hazardous substances on or along the project alignment(s). A reconnaissance of the adjacent land use was also conducted.

#### **3.3 Project Alignment Description**

The project consists of sanitary sewer line improvements to select portions of streets located in the Galleria/Post Oak area and the Rice University area as follows:

##### Galleria/Post Oak Area

Westheimer Road from Post Oak Boulevard to Westcreek Lane

##### \*Rice University Area

Sunset Boulevard from Kirby Drive to Morningside Drive

Nottingham Road from Kirby Drive to Morningside Drive

University Boulevard from Kirby Drive to Morningside Drive

Shakespeare Road Boulevard from Kirby Drive to Morningside Drive

Dryden Road from Kirby Drive to Morningside Drive

\*The project alignments are situated in a transition area between Rice University and West University Place (Rice Village). Project alignment maps and site photographs are presented in Appendix-A.

#### **3.4 Adjacent Properties Description**

The project alignments are bordered by commercial uses (office buildings, retail and service- related businesses), single family residential and multi-family residential uses as follows:

*Sunset Boulevard:* The western extent of Sunset Boulevard is bordered by commercial buildings (Kirby Drive). The remainder of the street is bordered by commercial uses that are predominantly single family residences that have been remodeled/repurposed and converted to commercial enterprises.

*Nottingham Road:* From Kirby Drive to Kelvin Drive, the project alignment is bordered by a multi-story office building and converted residences used for commercial purposes. From Kelvin Drive to Morningside Drive, the project alignment is bordered by single family residential uses with some active residential redevelopment.

*University Boulevard:* Bordering land-use is commercial consisting of retail and service-related businesses (e.g. bank, restaurants and other commercial uses). There is a wide variety of range of the ages of the structures from old construction to recent construction.

*Shakespeare Road:* The alignment is bordered by multi-family residential uses with varying dates of development.

*Dryden Road:* The project alignment is bordered by single family residential uses.

Bordering land of the streets range from impervious cover (concrete, concrete sidewalk) or stabilized material (rock and/or paver) or vegetation. The bordering land's vegetation consists of St. Augustine, landscaping and trees. Storm water generally flows toward curb inlets located on project alignment streets, adjoining, adjacent and nearby streets. The

curb inlets connect to a below surface storm sewer system the eventually outfall to a Harris County Flood Control District drainage system. A few pole-mounted transformers were observed at select areas of the project alignment. No discoloration of vegetation or soil was observed along the project alignment.

### 3.5 **Hazardous Materials Identification**

#### 3.5.1 **Storage Tanks**

No physical evidence of Underground Storage Tanks such as vent pipes, pump dispensers, fill pipes, access manholes or ancillary equipment, generally representative of underground storage tanks, was observed on the project alignment. Two active gasoline service stations were observed along the project alignment(s). One gas station, Shell (2602 W. Loop S.) was adjacent to the project alignment at the southwest corner of Westheimer Road and US Interstate Highway W. Loop 610 S. frontage/service/feeder road. The second active gas station, Valero Corner Store (5415 Kirby Drive) adjoins the project alignment at the northeast corner of Sunset Blvd. and Kirby Dr.

Four historical gas stations (2540, 2416, 2407 and 2403 University) were identified to be present along University Blvd. Two historical gas stations also were determined to be present at the Westheimer project alignment area. An Exxon gas station (2521 S. Post Oak) was formerly situated on the northeast corner of Westheimer and Post Oak Rd. The property is now occupied by a service/retail-related building. A Texaco gasoline service station (2601 W. Loop) was formerly present on the southeast corner of Westheimer Road and the W. Loop. A CVS Pharmacy (4755 Westheimer Rd.) currently occupies a larger tract that appears to have included the former Texaco gas station facility.

Although reasonable efforts have been made within the scope of this Phase I ESA to identify the presence of above and Petroleum Storage Tanks and ancillary equipment, it is important that ATL's clients understand the following limitations to this report with regard to PST issues. "Reasonable efforts" are defined for purposes of this document as limited information gained by visual observation of unobstructed areas and recorded database information provided to ATL by subcontractors.

This practice is considered industrial standard and does not preclude the actual presence of subsurface equipment (including actual underground petroleum storage tanks) which are hidden from view due to the historical activity along the project site such as: paving, construction, ground vegetation or debris pile storage. This limitation is not intended to decrease the findings of this report but to make our clients aware of innate limitations of a Phase I ESA, which by definition is visual and limited in nature.

#### 3.5.2 **Oil & Gas Survey**

Oil & Gas Survey is a records search for current and/or historic oil and gas wells. No evidence of oil and gas wells were identified on available maps for the project alignment(s).

#### 3.5.3 **Polychlorinated Biphenyl (PCB) Investigation**

PCBs are toxic coolants or lubrication oils used in some electrical transformers, light ballast, electrical panels or other similar equipment. If present, transformers are inspected for obvious leaks and physical evidence such as stains or cracks indicating possible current or past leaks. The Environmental Protection Agency (EPA) under the Toxic Substance Control Act (TSCA) regulates PCB-containing or contaminated electrical equipment.

A few pole-mounted transformers were observed at select areas of the project alignment. No discoloration of vegetation or soil was observed along the project alignment.

#### **3.5.4 Disposal Practices**

No obvious major or minor disposal activities were observed at the project alignment at the time of our reconnaissance.

## **4.0 PROJECT ALIGNMENT BACKGROUND**

### **4.1 Interviews**

ATL's environmental professional interviewed Ms. Stephanie Webb with BBVA Compass Bank (2401 University Blvd., Houston TX). She indicated that to the best her knowledge, she was not aware of any environmental conditions at the property (Tel. 713-528-7498). She was not aware of the fact that two gas stations were formerly present at the location.

ATL's environmental professional interviewed Ms. Jennifer Richards with the Sunset Blvd. Animal Clinic (2525 Sunset Blvd., Houston TX). She indicated that to the best her knowledge, she was not aware of any environmental conditions at the business/property (Tel. 713-526-5881).

ATL's environmental professional interviewed Phillip with Tre Spa (2510 Sunset Blvd., Houston TX). He indicated that to the best his knowledge, he was not aware of any environmental conditions at the business/property (Tel. 713-523-7800).

ATL's environmental professional interviewed Kevin with Insight Optical (2406 Sunset Blvd., Houston TX). He indicated that to the best his knowledge, he was not aware of any environmental conditions at the business/property (Tel. 713-524-5354).

ATL's environmental professional interviewed Dr. Ms. Debra Haze, DDS of Haase Dentist (2522 Nottingham Rd., Houston TX). She indicated that to the best her knowledge, she was not aware of any environmental conditions at the business/property (Tel. 713-521-1202).

ATL's environmental professional attempted to contact Texas Petroleum Group, LLC, the owner/operator of the Shell Service Station (2602 Westheimer Rd., Houston TX). A voice message was left with Mr. Brandon Doika (Tel. 713-243-3486). Any pertinent information obtained will be forwarded, if and when received.

ATL's environmental professional attempted to contact Skipper Beverage Co, Inc., the owner/operator of the Valero Corner Store (5415 Kirby Drive at Sunset Blvd., Houston TX). The provided contact number was Tel. 210-345-2000. The local contact number of the store also was called and the phone was not answered (Tel. 713-528-7498).

ATL's environmental professional contacted the Terra Real Estate Services, the apparent building management company of the IBC Plaza building (5615 Kirby Drive at Nottingham Rd., Houston, TX) and a voice message was left with Mr. Kevin Tosky on January 16, 2014 (Tel. 713-965-2975). ATL is awaiting a response. Any pertinent information will be forwarded or noted, if and when received.

### **4.2 Current and Past Ownership of Project Alignment**

A fifty (50)-year chain-of-title was not obtained and reviewed for the project alignment and was not as part of the scope of this Phase I ESA. ATL will obtain this information from a third party at an additional cost at the request of the client. The client also must provide a legal description(s) and current owner(s) information to allow the information to be

obtained. Unless pre-requested by the client, historical ownership review is outside the scope of this Phase I ESA.

#### **4.3 Current Use of the Project Alignment**

The project alignment is proposed sanitary sewer line improvements.

#### **4.4 Past Use of the Project Alignment**

All the streets have been used for transportation purposes with some improvements throughout the years. Sunset Blvd., Nottingham and Dryden Roads have historically been bordered by single family residences. At the project alignment, the residences on Sunset Blvd have been remodeled/renovated for commercial uses over the years. The western portion of Nottingham also has converted residences uses (north side). East of Kelvin, the south side of Nottingham had some activity, but was somewhat vacant until the development of the existing commercial multi-story office building and parking garage. The eastern portion of Nottingham Road remains single family residential uses to date (east of Kelvin). Dryden Road also remains single residential uses to date. The bordering land-use of Shakespeare Road has been historically bordered by small apartment complexes and a recently developed larger apartment complex (Rice Village Apts.). University and Westheimer are bordered by commercial uses (retail and service-related businesses and office buildings). Westheimer Road at the project alignment location was formerly rural. The following reasearch activities established a historical background for the site:

#### **4.5 Historical Records Review**

##### **4.3.1 Aerial Photographs**

Aerial photographs of the project alignment for the following years were available for review: 1944, 1953, 1963, 1976, 1989, 1995, 2004 and 2012. The review of the aerial photographs was generally restricted to areas on and adjacent to the project alignments. The summary is presented below:

##### **1944 Aerial Photograph**

*Sunset Blvd., Nottingham Rd, University Blvd., Shakespeare Rd and Dryden Rd.:* Along Sunset Blvd., Nottingham and Dryden Roads, the adjoining land uses of the roads were either developed single-family residences or vacant residential lots. Shakespeare Rd. appeared to be adjoined by either residences that would be converted to apartments and/or small apartment buildings and vacant lots. University Blvd. was bordered by commercial uses.

*Westheimer Road:* An early Westheimer Rd. was present. An early South Post Oak was present at the western extent of the project alignment. At this time, this part of Houston was rural. Scattered rural residential, gentleman farms and/or ranches were visible in the area. The population density was low, but greater than most areas outside the future Loop 610 for this time period.

##### **1953 Aerial Photograph**

*Sunset Blvd. to Dryden Rd.:* Single-family residences predominantly adjoined Sunset, Nottingham and Dryden and the western extent of Sunset was still mostly vacant tracts or lots. Nottingham had some development along the south side of the road (apparent car dealership), but the property or properties were still mostly vacant. Commercial uses continued to develop along University and four historical gas stations were known to be present along the road. The adjoining land-use of Shakespeare appeared to have completely transitioned to multi-family (small apartment buildings). Rice Stadium had been constructed to the east. The area of project alignment(s) would be considered developed and somewhat urban.

*Westheimer Road:* Post Oak was being improved. Residential subdivision development was visible to the southeast. Some fairly limited commercial development and a drive-in theater can be seen in the area.

#### 1962 & 1966 Aerial Photograph

*Sunset Blvd. to Dryden Road:* The area remained predominantly the same. The car dealership at Kirby and Nottingham had expanded.

*Westheimer Road:* Significant development had occurred in the area. US IH West Loop 610 was present and would be improved in future years. Westheimer Road was being improved. A gas station (2602 W. Loop) and commercial structure (current Dillard's store) were present near the southwest corner of Westheimer and W. Loop 610. A shopping center structure and office building were present near the northwest corner Westheimer and W. Loop 610. Commercial uses were also present to the northwest. Two commercial structures and residences were present at the southeast corner of Westheimer and W. Loop 610. A suspect gasoline service station may have been present at this time (2601 W. Loop). The northeast corner of Westheimer and W. Loop 610 was predominantly vacant land. San Felipe Road was visible and present to the north.

#### 1976 Aerial Photograph

*Sunset Blvd. to Dryden Rd.:* Some activity was present at the western extent of Sunset. A commercial structure now was present on the south side of Nottingham west of Kelvin. Improvements to Rice Stadium had occurred. A track & field area had been added to the east side of Rice Stadium and the stadium would have additional improvements over time.

*Westheimer Road:* An office building (2500 W. Loop) and parking garage now adjoined the northwest corner of Westheimer and W. Loop 610. A commercial building addition was now present on the south side of the current Dillard's store structure. The Galleria shopping mall and related uses (Westin Oaks Hotel and other commercial uses) were present to the southwest. The southeast corner of Westheimer and W. Loop had evidence of some improvements. Some renovation had occurred at the apparent gasoline service station (2601 W. Loop). The northeast corner of Westheimer and W. Loop 610 was still mostly undeveloped and vacant. Office buildings (low-rise, mid-rise and high-rise) had developed in the area. The structures currently occupied by Le Peep and Sullivan's restaurants appeared to be present.

#### 1989 Aerial Photograph

*Sunset Blvd. to Dryden Rd.:* A gasoline service station now was present on the northeast corner of Sunset and Kirby. A multi-story office building had been developed along the south side of the western extent of Nottingham.

*Westheimer Road:* The gasoline service station (2602 W. Loop) on the southwest corner of Westheimer and W. Loop 610 had been rebuilt. The gas station (2521 S. Post Oak) at the northeast corner of Westheimer and Post Oak was present and dates back to 1979. The building currently occupied the Derek Hotel (2525 W. Loop) and parking garage was present on the northeast corner of Westheimer and W. Loop 610. Two commercial structures also were now present to the north of the above-mentioned hotel. Based on regulatory data, the apparent gasoline service station (2601 W. Loop) at the southeast corner of Westheimer and W. Loop was reported or known to be present.

Significant commercial development had occurred in the area with high-rise (e.g. former Transco bldg.) and mid-rise office buildings and commercial structures with retail and service related businesses (shopping centers). An addition had

been added to the south end of the shopping center at the northeast corner of Westheimer and Post Oak (current The Container Store). A few undeveloped tracts were noted, but the area would be considered urban at this time.

#### 1995 Aerial Photograph

*Sunset Blvd. to Dryden Rd.:* Commercial redevelopment was occurring along the parts of University.

*Westheimer Road:* The general area continued to develop. No other significant observations were made.

#### 2004 Aerial Photograph

*Sunset Blvd. to Dryden Rd.:* Commercial redevelopment continued along the parts of University.

*Westheimer Road:* The southeast corner at Westheimer Road and W. Loop had been redeveloped with a CVS Pharmacy (4755 Westheimer), retail center (4715-4725 Westheimer) and Extended Stay motel. The old or former Texaco station appeared to occupy a portion of this property. The Exxon gasoline station at the northeast corner of Westheimer and Post Oak was no longer present and had been redeveloped with a service-related building (Starbucks & Jamba Juice stores). Only one of the three gas stations now remained at the project alignment area (Shell). Additional office buildings and commercial structures had been constructed in the area.

#### 2012 Aerial Photographs

*Sunset Blvd. to Dryden Rd.:* The gasoline service station was now present on the northeast corner of Sunset and Kirby had been rebuilt.

*Westheimer Road:* Some additional development and redevelopment had occurred in the area.

#### Project Alignment Observations

No abnormalities or discrepant activities at or adjacent to the project alignment can be seen, according to available aerial photographs. However, one active and two historical gas stations were noted at the Westheimer Road project alignment. One active gas station was noted at Sunset Boulevard. Four historical gas stations were noted along University Boulevard project alignment.

Copies of the aerial photographs are presented in Appendix-B.

#### **4.3.2 Fire Insurance Maps (Sanborn Maps)**

In the late nineteenth century, private companies began preparing maps of central business districts for use by fire insurance companies. These maps were updated and expanded geographically periodically throughout the twentieth century. The maps often indicate construction materials of specific building structures and the location of gasoline storage tanks.

Sanborn Historical Maps were researched along the project alignment area. Sanborn Map coverage was not available for Westheimer Road. The following was noted for Sunset and Nottingham Roads, and University Boulevard:

#### *Sunset Boulevard*

The presence of the gasoline service station at the corner of Sunset Boulevard and Kirby Drive dates back to 1950, possibly earlier (1950 Sanborn 1123).

Volume 11).

#### *Nottingham Road*

A Sam Montgomery car dealership (suspect Oldsmobile) was observed to have been formerly present at the southeast corner of Nottingham Road and Kirby Drive (1969 Sanborn 1123, Volume 11). Based on aerials, a portion of the facility appears to have been present by 1953 (smaller operation). This facility may be the source environmental condition related to the Texas Innocent Owner Operator Regulatory listings at this area.

#### *University Boulevard*

The locations of the historical gas stations located along the streets have been provided on the Sanborn map (2403, 2407, 2416 and 2450 University). Gas station (2450 University) was located at the northeast corner of University Blvd. and Kirby Dr. The gas station, (2416 University) was located on the north side of University somewhat centered between Kelvin and Morningside Roads. Gas station (2407 University) was directly south of 2416 University on the south side of University Blvd. Gas station (2403 University) was located on the southwest corner of University Blvd. and Morningside Rd. A laundry (2405 University) that may have conducted dry cleaning also was noted between the gas stations. By 1969, the structure (2405 University) was noted to be used for car repair activities (1950 & 1969 Sanborn 1124, Volume 11). The property area is currently completely occupied by BBVA Compass Bank (2401 University).

Reproductions of any and all documents related to Sanborn Historical Maps are presented in Appendix-C.

#### **4.3.3** *City Directories*

Polk and Cole and other historical city directories were researched by TelALL Corporation (TelAll) for the project alignment. Business directories including city, cross-reference and telephone directories were reviewed, if available, in approximately five-year intervals. A review of the city directories revealed that there are commercial facilities, residential bordering the project alignments. The city directory information and historical EDR information was crosschecked for limitations. A copy of the city directories is presented in the Appendix-C. Based on the TelAll data, the following was noted:

- No additional facilities with the potential for recognized environmental conditions were observed.

## **5.0** *ENVIRONMENTAL SETTING*

### **5.1** *Regional Geology*

Harris County is in the Western Gulf section of the Coastal Plain. The uppermost formations, from which the parent materials of soils in the county weathered, are Pliocene, Pleistocene, and Holocene (Recent) age. These formations were deposited in fluvial, deltaic, coastal marsh, and lagoonal soil materials and shallow sea environments. Among the geologic and geomorphic features in the county are sedimentary deposits broken by normal faults, salt domes, pimple mounds, un-drained depressions and scarps.

The sedimentary deposits slope gently toward the Gulf of Mexico. They are broken by normal faults most of which dip toward the Gulf and extend downward many thousands of feet. The earth movements that caused these faults took place within the last 50,000 years.

As Harris County has become urbanized, some of the faults have become reactivated, resulting in damage to pavement and to houses. Also, as pumping has withdrawn large amounts of groundwater and lowered the artesian pressure in aquifers, the clay layer that once enclosed the aquifers has dried and compacted, which can cause subsidence.

The local geology of the project alignment area is underlain by the Beaumont Formation of Pleistocene age. This formation consists of clays, silt, and sand. The sedimentary composition of the Beaumont formation consists of series of coalescing alluvial, deltaic, and coastal inter-deltaic plains developed by the major rivers and coastal processes during high standing sea level of the inter-glacial stage. The general thickness of Beaumont Formation is approximately 100 feet.

## 5.2 Soils

According to the United States Department of Agriculture (USDA), Soil Conservation Services (SCS), State Soil Geographic (STATSGO) data, the soil component at the project alignment consists of the Bernard-Urban land complex (Bg), Lake Charles-Urban land complex (Lu) and Urban Land (Ur). Details of the soil strata are given bellow respectively.

The Bernard-Urban land complex (Bg) soil is described as nearly level (low relief) and located in broad areas. The areas range from forty (40) to several hundred acres in size. The slope is 0 to 1 percent, but average at 0.5 percent. The Bernard soil is considered to consist of thirty percent (30%) to eighty percent (80%) of the complex. The Urban soil consists of ten percent (10%) to seventy percent (70%) of the complex. Both soils are mixed and integrated and not easily mapped on a large scale. The Bernard soil is friable, neutral, dark gray clay from surface to six (6") inches in depth. The next layer from six (6") inches to approximately forty-eight (48") inches is firm, neutral, very dark gray clay in the upper section of the layer and very firm and moderately alkaline, gray clay in the lower section of the layer. The Urban soils are generally not classified due to extensive land-use activities have made soil classification impractical. The soils are described as soils with extensive impervious cover, structures, buildings, roads, trenching, thus making the soil disturbed and difficult to classify. This soil group has high shrink-swell potential and corrosivity to un-protected metals. Soils are sticky when wet and are not recommended for septic drainage fields

The Lake Charles-Urban land complex (Lu) soil is described as nearly level (low relief), located in broad areas and irregular areas that range from twenty approximately (20) to eighteen hundred (1,800) acres in size. The slopes are mainly 0 to 1 percent, but range from 0 to 3 percent. The Lake Charles soil is considered to consist of twenty percent (20%) to eighty five percent (85%) of the complex. The Urban soils consist of ten percent (10%) to seventy five (75%) and other soils are fifteen percent (15%) of the complex. Both soils are mixed and integrated and not easily mapped on a large scale. The Lake Charles soil surface layer is from surface to thirty-six (36") inches in depth. The upper section of the layer is firm, neutral, black clay (surface to twenty-two (22") inches in depth). The lower portion of the layer is very firm, moderately alkaline, dark gray clay that has intersecting slickenslides (twenty-two (22") to thirty-six (36") inches in depth). The next layer from thirty-six (36") inches to approximately seventy-four (74") inches is very firm, moderately alkaline, gray clay that has mottles of olive-brown and yellowish-brown. The Urban soils are generally not classified due to extensive land-use activities have made soil classification impractical. The soils are described as soils with extensive impervious cover, structures, buildings, roads, trenching, thus making the soil disturbed and difficult to classify. This soil group has high shrink-swell. Soils are sticky when wet and are not recommended for septic drainage fields. The Urban soils (Ur) is classification is noted with the text of the two other soil types.

### 5.3 Groundwater

The hydrologic units that underlie Harris County are the Evangeline and the Chicot aquifers. In general, the groundwater gradient of these two aquifers is toward the southeast. The Evangeline aquifer is composed of Goliad sand and the Fleming formation has been identified as Pliocene and upper Miocene in age. This aquifer is the major source of groundwater in the Houston area. However, in Galveston and southern Harris County, it becomes saline and is not used. The top of the aquifer ranges in depth from 100 feet above mean sea level (MSL) in extreme northwest Harris County to 300 feet below MSL in the southwest Harris County. Maximum aquifer thickness is approximately 2,400 feet.

The Chicot aquifer (the youngest) includes all deposits from the land surface to the top of the Evangeline aquifer and is Pleistocene in age. It has been divided into an upper unit and lower unit. The upper unit is typically encountered in southern Harris County, and generally is not present in the northern section of the county. It is not considered a primary source of groundwater in Harris County. The lower unit of the Chicot aquifer is the main source of groundwater in Galveston and southern Harris County. Maximum thickness of the Chicot aquifer is approximately 600 feet.

In addition to the primary aquifers, groundwater occasionally occurs in shallow, discontinuous, or "perched" water-bearing units. Shallow groundwater is typically encountered at depths less than 20 feet for the Houston area. The shallow groundwater units are generally utilized for local agricultural use in rural areas. Flow direction in these units is highly variable but is generally toward the down gradient water body (lakes, creeks, and rivers) and can be approximated by surface topography. Recharge area for these perched aquifers are very local, and they can be influenced by surface development of impervious cover (buildings, parking lots, roads), major road construction (underpasses, utility trenches), and variations in rainfall. A subsurface investigation including the installation of a minimum of three monitoring wells would be required to accurately determine groundwater gradient in the project alignment.

### 5.4 Flood-Prone Area

According to the Federal Insurance Rate Map (FIRM), panel 665 of 1150 of Map Numbers 48201C0665L, dated June 18, 2007, the project alignment was not reported to be located in the 100-year and/or 500-year flood plain zone (Appendix D).

**Non-Shaded Zone X:** Areas determined to be outside the 0.2% (500-year) annual chance floodplain.

### 5.5 Property Topography

The United States Geological Survey (USGS) Maps of Bellaire, Texas quadrangle reveals that this project alignment is approximately 52 to 56 and 82 feet above sea level. A review of the 1915, 1947, 1967, 1970, 1982, 1995 and 2009 USGS maps was performed. No variations in elevations or disturbances were observed. Copies of the USGS Topographical Maps are presented in the Appendix D.

## 6.0 REGULATORY AND GOVERNMENT RECORD SEARCH

***TelALL Corporation (TelAll)*** performed a search of available regulatory and governmental agency listings including the most recent:

- US EPA NPL (National Priority List)
- US EPA RCRA TSD (RCRA Treatment, Storage & Disposal facilities)
- US EPA CORRACTS (RCRA Corrective Actions)
- US EPA CERCLIS/NFRAP (CERCLIS reviewed by the US EPA)

- US EPA ERNS (Emergency Response Notification System) & TEXAS SPILLS
- US EPA RCRA LQG (Large Quantity Generator of hazardous or regulated waste)
- US EPA RCRA SQG (Small Quantity Generator)
- TXSSF (Texas State Superfund)
- TCEQ SWLF or CLI and/or LFUN (Solid Waste Landfills, Incinerators, or Transfer Stations, Grand-fathered Closed Landfill Inventory or Non-permitted Waste Sites)
- TCEQ LPSTs (Leaking Petroleum Storage Tanks)
- TCEQ ASTs (Aboveground Storage Tanks)
- TCEQ USTs (Underground Storage Tanks)
- TCEQ TX VCP (Texas Voluntary Cleanup Program)
- TCEQ TX IOP (Texas Innocent Owner/Operator Program)
- TCEQ IHW (Industrial and Hazardous Waste)
- TCEQ Dry Cleaner (Dry Cleaner or Dry Cleaning-Related)
- BROWNFIELD

The following summarizes the results of the database search for environmental risks to the project alignment.

**6.1 US EPA National Priorities List (NPL (Superfund))**

The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. NPL is a list of uncontrolled or abandoned waste sites identified by the Federal Government (EPA) as having a priority for clean up under the Superfund Program. The NPL list appears in the Code of Federal Regulation, CFR 40, Parts 190 to 399.

Review of the regulatory listing, as provided by TelAll, has revealed that there are no NPL facilities/sites located within a one-mile radius of the project alignment.

**6.2 US EPA RCRA Treatment, Storage, and Disposal Facilities (TSDF)**

The EPA's RCRA program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA list regulates hazardous waste generation, treatment, and storage or disposal activities specific to waste generators. Owners and operators of hazardous waste treatment, storage and disposal facilities must obtain a RCRA permit from EPA or an authorized State Agency and must comply with applicable regulations. The TSD facilities information is stored under the RCRIS database. The EPA's RCRIS serves to track the status of registrants, permits, reports, inspection, enforcement activities and violations of those facilities registered under RCRA.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no US EPA RCRIS TSD facilities/sites located within a one-mile radius of the project alignment.

**6.3 State Superfund (TxSSF)**

State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be sponsored for by potentially responsible party(ies).

Review of the regulatory listings, as provided by TelAll, has revealed that there are no TxSSF facilities/sites located within a one-mile radius of the project alignment.

**6.4 US EPA Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS)**

The Comprehensive Environmental Response, Compensation and Liability Act Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons,

pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendment and Reauthorization Acts of 1986 (SARA), deal with abandoned hazardous waste sites. CERCLIS contains sites that are either proposed to or on the National Priorities List (NPL) and sites that are in the screening and assessment phase for possible inclusion on the NPL.

The CERCLIS is a list compiled by the EPA of sites suspected of having violations involving hazardous, toxic, or regulated materials. In addition, the CERCLIS listing is a compilation of sites that the EPA has investigated or is currently investigating for a release or threatened release of hazardous substance. These sites are classified as "Active" if enforcement or clean-up actions are ongoing; "Pending" if the site is still under review.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no CERCLIS facilities/sites located within a one-mile radius of the project alignment.

#### **6.5 US EPA CERCLIS Designated No Further Remedial Action Planned (NFRAP)**

NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.

These sites are classified as "No Further Remedial Action Planned" if the site is closed (cleaned up or neutralized), or poses no environmental risk. The identification of a site from the CERCLIS does not necessarily indicate legal activity nor is it a confirmation that no actual health or Environmental risk exists. An active CERCLIS site, which is under remediation, may be added to the National Priorities List (NPL), or may be listed with the Federal or State Superfund Registry. Unclassified sites of "No Further Action" facilities generally appear only on the CERCLIS list.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no CERCLIS/NFRAP facilities/sites located within 0.094-mile radius of the project alignment.

#### **6.6 US EPA Resource Conservation and Recovery Act (RCRA) CORRACTS**

The EPA maintains this database of RCRA facilities, which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA Section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no CORRACTS facilities/sites located within a one-mile radius or within 0.094-mile of the project alignment.

#### **6.7 EPA Emergency Response Notification System (ERNS)**

The ERNS list is a national database used to collect records and store information on reported releases of oil and hazardous substances. The ERNS system is compiled from reports of emergency responses to spills or discharges of hazardous materials, answered either by the EPA or by local emergency personnel who later notified the EPA of the action. The sites are generally localized areas of temporary impact that have not been assigned to Superfund clean-up status, nor require National Priorities List (NPL) consideration. Typical listings include fuel spills associated with automobile accidents, or industrial spills of a limited nature (i.e., a single 55-gallon drum or smaller container of hazardous materials). The information provided fairly limited, but provides ATL with a

numbered report or case by which further information possibly can be obtained, if necessary.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no ERNS listings located within a 0.094-mile radius of the project alignment.

#### 6.8 **TCEQ Leaking Petroleum Storage Tank (LPST)**

TCEQ maintains a current list of LPST (Leaking Petroleum Storage Tank) sites and the list typically includes reported leaking petroleum storage tanks. Review of the regulatory listings, as provided by TelAll, has revealed that there are seven (7) LPST facilities located within 0.094-mile radius of the project alignment(s) as follows:

LPST Facility	General Information	Status
Sunset Blvd.		
Current Valero Corner Store/ Former Diamond Shamrock No. 2609 (5415 Kirby Dr.)  Adjoining	Groundwater was not reported to have been affected at the facility (LPST ID No. 117147). The facility is an active gas station.	Final Concurrence Issued, Case Closed, Pending Plugging & Abandonment of Monitoring Wells
University Blvd.		
Former Mobil Oil Corp. No. SS 2608 99 (2540 University Dr.)  Adjoining	Groundwater was reported to have been affected at the facility (LPST ID No. 95522). The facility is no longer active, been demolished/removed and is part of a redeveloped property.	Final Concurrence Issued, Case Closed
Vacant Lot (2416 University Blvd.)  Adjoining	The facility was reported to have soil contamination (LPST ID No. 107939). The facility is no longer active, been demolished/removed and is part of a redeveloped property.	Final Concurrence Issued, Case Closed
Blue Hand (2403 University Blvd.)  Adjoining	Groundwater was reported to have been affected at the facility (LPST ID No. 98278). The facility is no longer active, been demolished/removed and is part of a redeveloped property.	Final Concurrence Issued, Case Closed
Westheimer Rd.		
Former Exxon Station RAS No. 6-4075 (2821 S. Post Oak Blvd.)  Adjoining	Groundwater was reported to have been affected at the facility (LPST ID No. 91498). The facility is no longer active, been demolished/removed and the property had been redeveloped.	Final Concurrence Issued, Case Closed
Shell/TPG No. 265 05 (2602 W. Loop S.)  Adjoining	Groundwater was reported to have been affected at the facility (LPST ID No. 117708). The facility is active.	Final Concurrence Issued, Case Closed

<p>Former Texaco (2601 W. Loop S.)</p> <p>Adjoining</p>	<p>The facility was reported to have two LPST events. Groundwater was reported to have been affected at the facility for the first event (LPST ID No. 105103). The second event did not indicate groundwater impact (LPST ID No. 115693). The facility is no longer active, been demolished/ removed and is part of a redeveloped property.</p>	<p>Final Concurrence Issued, Case Closed</p>
---	---	--

Due to the proximity of the Valero Corner Store, Former Exxon Station RAS No. 6-4075 and Firmer Blue Hand facility to the project, additional work appears warranted. Based on ATLS understanding the construction layout, construction work appears to be limited to the eastern part of University Blvd. However, if project work is to be conducted at continuously or various locations throughout University Blvd., the Former Mobil Oil Corp. No. SS 2608 99 and vacant lot and other historic gas stations also should be evaluated.

#### 6.9 Solid Waste Landfill Site (SWL/LF)

The State of Texas maintains a list of permitted solid waste landfills, incinerators or transfer stations.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no SWL sites are located within 0.094-mile radius of the project alignment.

#### 6.10 TCEQ Underground Storage Tank (UST) & Aboveground Storage Tank (AST)

UST's are registered under Subtitle 1 of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST & AST program. TCEQ maintains a current list of UST sites and the list typically includes reported petroleum storage tanks.

Review of the regulatory listings, as provided by TelAll, has revealed that there are eight (8) registered petroleum UST facilities located within 0.094-mile mile radius of the project alignment.

The first UST facility, Valero Corner Store/former Diamond Shamrock No. 2609 (5415 Kirby Dr.) adjoins the project alignment at the northeast corner of Sunset Blvd and Kirby Dr. (Facility ID No. 35397). The facility is active. Two 12,000 gallon gasoline and one 12,000 gallon diesel fiberglass reinforced plastic (FRP) USTs are present at the facility. Recommendations concerning the facility were presented in the above LPST section (Section 6.8).

The second UST facility, Village Plumbing (5403 Kirby Dr.) is located within 0.094-mile of the western extent of Sunset (Fac. ID No. 93768). One 1,700 gallon gasoline steel UST has been permanently removed from the ground at the facility. Based on the status, lack of an LPST event and the fact the facility does not adjoin the project; the facility is not a recognized environmental condition to the project alignment.

The third UST facility, a vacant gas station (6209 Kirby Dr.) is located within 0.094-mile of the western extent of University Blvd. alignment (Fac. ID No. 52812). The facility is no longer active. One 6,000 gallon gasoline, two 4,000 gallon gasoline and one 500 gallon used oil steel USTs have been permanently removed from the ground at the facility. Based on the status, lack of an LPST event and the fact the facility does not adjoin the project, the facility is not a recognized environmental condition to the project alignment.

The fourth UST facility, Poor Man's Country Club (2407 University Blvd.) adjoined

University Blvd. alignment (Fac. ID No. 54114). The facility is no longer active and has been demolished/removed and the property has been redeveloped. Two 6,000 gallon new oil steel USTs have been permanently removed from the ground at the facility. Please refer to the next listing for additional details.

The fifth UST facility, Blue Hand (2403 University Blvd.) appears to be a duplicate listing of the fourth listed facility (Fac. ID No. 54114). However, please refer to the Sanborn section for additional details. Two 6,000 gallon and one 500 gallon new oil steel USTs have been permanently removed from the ground at the facility. Both facilities were noted to be historic gas stations (despite the indication of only used oil tanks present at the facilities). Recommendations concerning the facility were presented in the above LPST section.

The sixth UST facility, Exxon Co., USA RAS No. 6-4075 (2521 Post Oak Rd.) adjoined the Westheimer Rd. alignment (Fac. ID No. 26221) at the northeast corner of Westheimer Rd. and S. Post Oak Rd. The facility is no longer active and has been demolished/removed and the property has been redeveloped. The property appears to be now occupied by a Starbucks and Jamba Juice store. Two 10,000 gallon gasoline, one 8,000 gallon gasoline and one 1,000 gallon used oil FRP USTs have been permanently removed from the ground at the facility. Recommendations concerning the facility were presented in the above LPST section.

The seventh UST facility, TPG No. 265 05/Shell (2602 W. Loop S.) is adjacent and south of the Westheimer Rd. alignment at the southwest corner of Westheimer Rd. and the W. Loop (Fac. ID No. 33055). The facility is active. Three 10,000 gallon gasoline FRP USTs are present at the facility. This facility will be investigated along the Exxon RAS No. 6-4075.

The eighth UST facility, Texaco (2601 W. Loop S) is adjacent to the Westheimer Rd. alignment (Fac. ID No. 23069) at the southeast corner of Westheimer Rd. and the West Loop. The facility is no longer active and has been demolished/removed and the property has been redeveloped. The property appears to be now occupied by a CVS Pharmacy (4755 Westheimer Rd.). Three 10,000 gallon gasoline and one 550 gallon used oil FRP USTs have been permanently removed from the ground at the facility. This facility shall be investigated by proposed sampling at the current Derek Hotel property 2525 W. Loop S.

#### **6.11 US EPA RCRA-Small Quantity Generator (SQG) & Large Quantity Generator (LQG)**

Review of the latest RCRA - SQG and RCRIS-LQG listings, as provided by TelAll, revealed are three (3) SQG & LQG facilities are within 0.094-mile radius of the subject site. Dry Cleaners, Photographic Developers, and Producers/Transporters of Hazardous Waste (under monthly limit) are types of businesses that can be found within this review. Three (3) RCRA listings was reported at the Westheimer Road project alignment as follows:

- Oklahoma Installation Co. (4925 Westheimer at Post Oak). The facility is a conditionally-exempt small quantity generator (RCRA ID No. TXD98056180).
- Sephora USA Store No. 66 (5015 Westheimer, Ste. 2380). The facility is a conditionally-exempt small quantity generator (RCRA ID No. TXR000055517).
- CVS Pharmacy No. 2988 (4755 Westheimer Road). The facility is a conditionally-exempt small quantity generator (RCRA ID No. TXR000080709). The RCRA generators are not identified as a recognized environmental condition to the project alignment.

#### **6.12 Texas Spills**

The TCEQ Spill Response database is compiled from reports of emergency responses to

spills or discharges of hazardous materials, answered either by the Texas Commission on Environmental Quality or by local emergency personnel who later notified the TCEQ of the action. The sites are generally localized areas of temporary impact, which have not been assigned to ongoing cleanup status or require State Cleanup List or National Priorities List (NPL) consideration.

Review of the regulatory listings, as provided by TelAll, has revealed that there are no SPILLS listings located within 0.094-mile radius of the project alignment.

#### **6.13 TCEQ Voluntary Cleanup Program (VCP)**

The TCEQ Voluntary Cleanup program provides administrative, technical, and legal incentives to encourage the cleanup of contaminated sites in Texas. Also under the VCP, site cleanups follow a streamlined approach to reduce future human and environmental risk to safe levels. Any site not subject to an order or permit from the TCEQ is eligible to enter the VCP, except in cases where TCEQ enforcement action is pending. The VCP database represents dry cleaners, manufacturing facilities, shopping centers, warehouses, auto-related businesses, and other commercial and industrial enterprises.

Review of the regulatory listings, as provided by TelAll, has revealed that there are two (2) VCP facilities/sites located within 0.094-mile radius of the project alignment.

The first TxVCP facility/site, Deerco (5600 Block of Kirby Dr./2600 Block of Nottingham) has been transferred to the Texas Innocent Owner/Operator Program (TxVCP No. 655). The listing references 1.06 acres being reported as a parking lot area. No additional details were provided. Please refer to the following *Section 6.14* for additional information.

The second TxVCP facility/site, 2500 Shakespeare (2500 Shakespeare) appears to adjoin or be adjacent to the western extent of the Shakespeare alignment (TxVCP No. 2527). The listing references 0.18-acre being a reported as a parking lot area. Chlorinated solvents (VOC constituents) have affected soil and groundwater. InControl Technologies, Inc. is the environmental consultant. The facility/site was reported to be in the investigation phase. The TxVCP listing is considered to be a potential recognized environmental condition to the western extent of the Shakespeare.

#### **6.14 TCEQ Innocent Owner or Operator (IOP)**

An IOP is an innocent owner or operator whose property is contaminated as a result of release or migration of contaminants from a source or sources not located on the property, and they did not cause or contribute to the sources of contamination.

Review of the regulatory listings, as provided by TelAll, has revealed that there are three (3) IOP facilities/sites located within 0.094-mile radius of the project alignment.

The first TXIOP facility/site, Deerco/Triangle Realty Co. (5600 Block of Kirby Dr./2600 Block of Nottingham) is adjoining or adjacent to the western extent of the Nottingham project alignment (TxIOP No. 14). Soil and groundwater was reported to have been affected by petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) inclusive of BTEX. The source of the contamination was not indicated in the information provided. The facility was issued a certificate on July 28, 1998. Please refer to the recommendation below.

The second TxIOP facility/site, Bank of Tanglewood, NA (5500 Block of Kirby Dr./2600 Block of Nottingham) appears to be related to the above location is adjoining or adjacent to the western extent of the Nottingham project alignment (TxIOP No. 69). Soil and groundwater was reported to have been affected by petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) inclusive of BTEX and metals. The facility was

issued a certificate on April 26, 1999. Two listings are identified as a potential recognized environmental condition to the Nottingham project alignment. Sampling and analyses is considered warranted. Petroleum hydrocarbon testing can be accomplished by soil borings. However, proper sampling for metals in groundwater will require the installation of a groundwater monitoring well, adequate well development and stabilization, and low flow sampling protocol. If this is considered cost prohibitive, an alternative is sampling metals in the soil for metals at the vadose zone (soil/water interface) and at any discovered hydrocarbon-affected area during sampling. Otherwise, the groundwater should be assumed to be metals-affected until proven otherwise.

The third TxIOP facility/site, The Red Lion Hotel (2525 W. Loop S.) adjoins the project Westheimer project alignment (TxIOP No. 225). The Hotel Derek is the current occupant or named interest at the location. Groundwater was reported to have been affected by VOCs. The source of the contaminant may be dry cleaning activity at the hotel or some unspecified source. The TCEQ rejected the request of an IOP certificate. This is likely related to the fact that the hotel (business interest) could not demonstrate that the site has been affected by an off-site source. The TxIOP listing is considered to be a potential recognized environmental condition to the project alignment and warrants additional work.

#### **6.15 Dry Cleaners**

Dry cleaners and dry cleaning related enterprises are required to be registered. The database tracks and provides location details for the facilities. Registration fees also support remedial action on select dry cleaning facilities (dry cleaning remedial program).

Review of the regulatory listings, as provided by TelAll, has revealed that there are no registered dry cleaning-related facilities located within 0.094-mile radius of the project alignment. A copy of the regulatory listings provided by EDR is presented in Appendix-E.

## 7.0 CONCLUSIONS

Based on the project alignment reconnaissance, aerial photos interpretation, regulatory data search, USGS, Sanborn and other map reviews, historical city directories and information obtained during this Phase I ESA, the following is noted:

- Valero Corner Store/Former Diamond Shamrock No. 2609 (5415 Kirby Dr.). The facility has had a LPST event. The facility is situated at the western extent of the Sunset Boulevard alignment at the northeast corner of Sunset Boulevard and Kirby Drive.
- TCEQ Texas Innocent Owner/Operator Program facilities/sites, Deerco/Triangle Realty Co. (5600 Block of Kirby Dr./2600 Block of Nottingham) and Bank of Tanglewood, NA (5500 Block of Kirby Dr./2600 Block of Nottingham). The Deerco site was initially a TCEQ Texas Voluntary Cleanup Program facility/site and transferred to the TxIOP. It would be prudent to evaluate the western extent of Nottingham Road.
- Blue Hand (2403 University Blvd.). Based on the project layout, only the eastern extent of the project alignment at University is proposed for significant construction.
- TxVCP facility/site, 2500 Shakespeare (2500 Shakespeare). The western extent of Shakespeare Road should be evaluated.
- Former Exxon Station RAS No. 6-4075 (2821 South Post Oak Blvd.). The western extent of Westheimer Road should be evaluated. The facility was formerly situated on the northeast corner Westheimer and South Post Oak Roads. Three borings should be completed between South Post Oak and W. Loop. Two close to the corner and one close to the W. Loop north of the Shell Station.
- The Red Lion Hotel (2525 W. Loop S.). The facility applied to the TCEQ TxIOP and was rejected. The property is currently known as the Derek Hotel. The former Texaco Station to the south also will be evaluated at the sample location.

## 8.0 RECOMMENDATIONS

Based on the Phase I ESA study according to ASTM E1527-05 standards as modified by the City of Houston Department of Public Works & Engineering, Infrastructure Design Manual Chapter 11, Associated Testing Laboratories recommends performing subsurface sampling (Limited Phase II ESA) along the proposed sanitary storm sewer project alignment, near the LPST facilities and PST facilities, TxVCP or TxIOP facilities to determine the extent of contamination or impact these sites have had on the project alignment. The following facilities of potential recognized environmental conditions (RECs) were noted:

- Valero Corner Store/Former Diamond Shamrock No. 2609 (5415 Kirby Dr.). Laboratory analytical testing should include MTBE/BTEX and TPH analyses.
- TCEQ Texas Innocent Owner/Operator Program facilities/sites, Deerco/Triangle Realty Co. (5600 Block of Kirby Dr./2600 Block of Nottingham). Laboratory analytical testing should include VOC and TPH analyses. Please refer to Section 6.14 for additional details.
- Blue Hand (2403 University Blvd.). Laboratory analytical testing should include VOC and TPH analyses
- TxVCP facility/site, 2500 Shakespeare (2500 Shakespeare). Laboratory analytical testing should include VOC and TPH analyses.
- The Red Lion Hotel (2525 W. Loop S.). Laboratory analytical testing should include VOC and TPH analyses.

## **9.0 QUALIFICATIONS OF INTERPRETATIONS**

The methodology used in this investigation has been consistent with those normally employed for projects of this type. The report was prepared based on documented information and information obtained during the project area reconnaissance.

The interpretations provided are based in part on information provided to us and these only apply to the specific discussed in this report. If the information in this report needs to be updated or if additional information is available, you should convey the information to us and retain us to review our interpretations. We can then modify our interpretations after considering the updated information for this project.

Under no circumstances does Associated Testing Laboratories, Inc. accept responsibility for conditions at the subject property, whether those conditions are identified in this report or not.

We will be happy to discuss our findings with you and would welcome the opportunity to provide additional studies or services necessary to complete any future projects.

***APPENDIX - A***

*Site  
Photographs*

*Project Area  
Map*

***APPENDIX - B***

*Historical  
and Recent  
Aerial  
Photographs*

***APPENDIX - C***

*Sanborn Fire  
Insurance Historical  
Maps*

*City Directories  
and/or  
Records Search*

**APPENDIX - D**

*Flood-Prone  
Area Map  
(FEMA Map)*

*Topographic  
Maps*

**APPENDIX - E**

*Regulatory and  
Government  
Records Search*

## ***APPENDIX - F***

*Professional  
Qualifications*