GSI ENVIRONMENTAL

1 February 2016
GSI Job No. G-3990

Ms. Jennifer Clancey
City of Houston MSD Program
1002 Washington, 3rd Floor
Houston, Texas 77002

Via Courier

Re: MSD Application
Northwest Pipe Company
6307 Toledo Street
TCEQ VCP No. 2665

Dear Ms. Clancey:

On behalf of Northwest Pipe Company, GSI Environmental Inc. (GSI) is hereby submitting a Municipal Settings Designation (MSD) application for the Northwest Pipe Company Site located at 6307 Toledo Street in Houston, Texas (TCEQ VCP No. 2665). Two copies of the application and a check for the application fee are enclosed.

Please contact me at (713) 522-6300 or via email at tmmcguire@gsi-net.com to discuss the application. We look forward to working with you to obtain the MSD.

Sincerely,

Travis McGuire, P.E.
Senior Engineer

TMM/tmm
w/ enclosures

cc: Ms. Stephanie Heldt-Sheller, CHMM, SHeldtSheller@nwpipe.com, Northwest Pipe Company
Ms. Claudia Powers, ckp@aterwynne.com, Ater Wyne LLP

G-3990

City of Houston Municipal Setting Designation Application

Northwest Pipe Company
6307 Toledo Street
TCEQ VCP ID No. 2665

Issued: 1 February 2016

Prepared for: Northwest Pipe Company

GSI Environmental Inc.
2211 Norfolk, Suite 1000, Houston, Texas 77098-4054 tel. 713.522.6300

Municipal Setting Designation
Application Instructions

Pre-Application Meeting: While a pre-application meeting is not mandatory, it is strongly encouraged to discuss the specific details of the site. Please note: the City of Houston will not support a Municipal Settings Designation (MSD) application unless a Professional Geologist (P.G.) or Professional Engineer (P.E.) has certified that the groundwater plume is stable or decreasing, fully delineated, and the source has been removed. This statement should be supported with historical groundwater monitoring data showing the plume as stable or declining, and fully delineated.

Please contact Jennifer Clancey at (832) 394-9005, Jennifer.Clancey@houstontx.gov to schedule a pre-application meeting. Meetings will be held at 1002 Washington, Houston, TX 77002

Application Form: For the application to be complete please submit the following:

1) Two (2) hard copies of the application (the well logs are not necessary for the hard copies but should be included in the electronic copy). Please separate the application appendices with divider sheets that are tabbed.
2) An electronic portable digital file (pdf) of the application including all supporting material
3) An electronic Excel file with mailing addresses for water well owners and property owners. (Templates can be found on the MSD website, www.houstonmsd.org)

The MSD application process is governed by Chapter 47, Article XIII of the City of Houston's Code of Ordinances (ordinance number 2007-959, and amended by ordinance number 2010-556). Failure to use this application form may result in denial of the application.

Please note, the City ordinance requires the Professional Engineer (P.E.) or Professional Geologist (P.G.) who signed the application, or someone that is familiar with the application, and the applicant or their legal representative (attorney) to be present at public meeting and public hearing. Failure of the required parties in attendance at the public meeting and public hearing will result in having to schedule a new meeting or hearing.

The application should be clear, complete, concise, correct, contain only relevant information and be organized to facilitate analysis. Supporting documentation should be submitted as a separate appendix to the application, as noted (Label "Appendix__ ") for each numbered item.

Submittal: Submit the application form and all supporting information, along with an application fee of $3,400.00 (payable to City of Houston) to the address below. The applicant must also pay the cost of producing and mailing notices, (approximately $6.50 per certified mail and $1.50 per first-class mail), and any applicable venue costs (costs vary by location). Mailings are done through the U.S. Post Office's Click2Mail system. At the time of the mail outs, staff will require a credit card number to pay for processing and mailing the notices.

Jennifer Clancey
City of Houston MSD Program
1002 Washington, 3rd Floor
Houston, Texas 77002

CITY OF HOUSTON

PUBLIC WORKS AND ENGINEERING
PLANNING & DEVELOPMENT DIVISION

Application for Approval of Municipal Setting Designation

APPLICANT INFORMATION

Applicant's Name: Northwest Pipe Company

☐Individual ☒Private Entity ☐Public Entity ☐Non-Profit Entity ☐Other _____

Address: 5721 SE Columbia Way | Vancouver | Washington | 98661
(Street) (City) (State) (Zip)

Phone No.: 503-382-2324 Fax No.: 503-382-2327

Email: SHeldtSheller@nwpipe.com

Contact Information

Name of Contact: Stephanie Heldt-Sheller

Title: Corporate Environmental Manager

Address: 12005 N. Burgard Rd. | Portland | Oregon | 97203
(Street) (City) (State) (Zip)

Phone No.: 503-382-2324 Fax No.: 503-382-2327

Email: SHeldtSheller@nwpipe.com

Application Preparation

Application Prepared by: Travis McGuire, P.E.

Company: GSI Environmental Inc.

Address: 211 Norfolk St, Ste 1000 | Houston | Texas | 77098
(Street) (City) (State) (Zip)

Phone No.: 713-522-6300 Fax No.: 713-522-8010

Email: tmmcguire@gsi-net.com

SITE INFORMATION

Site HCAD No(s): 0440820000266, 0440820000694

Site Name: Northwest Pipe Company

Site Size: 12.3622 acres

Site Address: 6307 Toledo Street | Houston | Texas | 77008
(Street) (City) (State) (Zip)

(List all owners – additional sheet is attached, if needed)

Owner: Northwest Pipe Company

Owner Address: 6307 Toledo Street | Houston | Texas | 77008
(Street) (City) (State) (Zip)

Name of Contact: Stephanie Heldt-Sheller

Title: Corporate Environmental Manager

Organization: Northwest Pipe Company

Phone No.: 503-382-2324 Fax No.: 503-382-2327

Email: SHeldtSheller@nwpipe.com

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

ITEM	COH Use
Executive Summary	
1. Provide a legal description of the boundaries of the designated property, including metes and bounds, and a copy of the deed for the property. A professional surveyor currently registered with the Texas Board of Professional Surveying must certify that all property descriptions with metes and bounds are accurate. ***Label "Appendix A"***	
2. A description of the current use and, to the extent known, the anticipated use(s) of the designated property and properties within 500 feet of the boundary of the designated property. ***Label "Appendix B"***	
3. A site map showing. a. The location of the designated property. b. The topography of the designated property as indicated on publicly available sources, which must note the watershed including the nearest surface water body and whether the designated property is located in a floodplain or floodway, as those terms are defined in Chapter 19 of the Code of Ordinances. c. The detected area of groundwater contamination. d. The location of all soil sampling locations and all groundwater monitoring wells. e. Groundwater gradients, to the extent known, and direction of groundwater flow. f. The ingestion protective concentration level exceedence zone for each contaminant of concern, to the extent known. g. Depth to groundwater for each affected zone. ***Label "Appendix C"***	
4. Provide for each contaminant of concern within the designated groundwater: a. A description of the ingestion protective concentration level exceedence zone and the non-ingestion protective concentration level exceedence zone, including a specification of the horizontal area and the minimum and maximum depth below ground surface. b. The level of contamination, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units. c. Its basic geochemical properties (e.g., whether the contaminant of concern migrates with groundwater, floats or is soluble in water). ***Label "Appendix D"***	
5. A table displaying the following information for each contaminant of concern, to the extent known: a. The maximum concentration level for soil and groundwater, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/kg for soils and mg/L for groundwater. b. The critical protective concentration level without the municipal setting designation, highlighting any exceedences. ***Label "Appendix E"***	

ITEM	COH Use Only
6. If the plume extends beyond the limits of property owners listed in this application, list the owners of the additional property beneath which the plume(s) extend(s), and a summary of interactions with those property owners about the plume(s) and this MSD application. Please Note: You are not required under this item to notify affected property owners, only to provide a summary of who affected property owners are, and if there have been any communications. "No contact" can be an acceptable answer. ***Label "Appendix F"***	
7. A statement as to whether the source of the plume has been removed, the plume of contamination is stable (i.e. no change) or contracting, and the plume is delineated, **with the basis for that statement**. Please include historical sampling data. ***Label "Appendix G"***	
8. A statement as to whether contamination on and off the designated property without a Municipal Setting Designation will exceed a residential assessment level as defined in the Texas Risk Reduction Program or analogous residential level set by EPA, if known, and the basis for that statement. ***Label "Appendix H"***	
9. A statement as to whether contamination on and off the designated property with a Municipal Setting Designation will exceed a residential assessment level as defined in the Texas Risk Reduction Program or analogous residential level set by EPA, if known, and the basis for that statement. ***Label "Appendix I"***	
10. Identification of the points of origin of the contamination, to the extent known. **Please list the Potentially Responsible Party (PRP), if unknown, state unknown. (*applications without the PRP listed will be deemed incomplete)*** ***Label "Appendix J"***	
11. Environmental regulatory actions, litigation, and plume identification. a. A description of any environmental regulatory actions that have been taken within the past five years in connection with the designated property, to the extent known. b. A description of any litigation that has taken place within the past five years in connection with the designated property, to the extent known. c. A statement as to whether there are any other remediation activities by the applicant, or any other party or agency, which are not listed in the application. *d.* A statement as to which contamination plume and groundwater zone the applicant is including in the MSD. ***Label "Appendix K"***	
12. A listing of all existing state or EPA registrations, permits, and identification numbers that applies to the designated property. ***Label "Appendix L"***	

ITEM	COH Use Only
13. Provide evidence that the designated property is currently or has previously been under the oversight of the TCEQ or the United States Environmental Protection Agency, as required by the Texas Health & Safety Code § 361.8065(c)(2)(A), and a description of the status of the designated property in the program (the program application number is sufficient evidence). Also, include the state or federal cleanup project manager's name. ***Label "Appendix M"***	
14. A summary of any environmental site assessment reports filed with TCEQ regarding any site investigations or response actions that are planned, ongoing or completed related to the designated property. ***Label "Appendix N"***	
15. A statement as to whether any public drinking water supply system exists that satisfies the requirements of Chapter 341 of the Texas Health and Safety Code and that supplies or is capable of supplying drinking water to the designated property and property within one-half mile of the designated property and the identity of each supply system. ***Label "Appendix O"***	
16. The name and address of each owner or operator of a water well registered or permitted by the state or the Houston-Galveston Subsidence District that is located within five miles of the boundary of the designated property, along with a map showing the location of each well and, to the extent known, a notation of whether each well is used for potable water. Well logs must be included in the electronic copy of the application, but should not be included in the hard copies. (An accompanying electronic excel file with mailing information should be included with your application.) ***Label "Appendix P"***	
17. The name and address of each retail public utility, as defined in section 13.002 of the Texas Water Code that owns or operates a groundwater supply well within five miles of the boundary of the designated property. ***Label "Appendix Q"***	
18. A listing of each municipality, other than the city of Houston, with a corporate limit within one-half mile of the boundary of the designated property. ***Label "Appendix R"***	
19. A listing of each municipality, other than the city of Houston, that owns or operates a groundwater supply well within five miles of the boundary of the designated property. ***Label "Appendix S"***	
20. A listing of owners of real property within 2,500 ft. of the boundary of the designated property as indicated by the most recent appraisal district records. Please Note: This requirement may include real property outside the City of Houston. Be sure to include **ALL** properties in the 2,500 ft. boundary. (An accompanying electronic excel file with mailing information should be included with your application.) ***Label "Appendix T"***	

ITEM	COH Use Only
21. Form U-2012-01 **signed and sealed** by a licensed professional engineer or licensed professional geoscientist authorized to practice in the State of Texas with expertise in environmental remediation. (Form U-2012-01 can be found at www.houstonmsd.org under the "Forms" section on the homepage.) Signing and sealing Form U-2012-01 certifies: a. The contaminants of concern from sources on the designated property or migrating from or through the designated property more likely than not [do exceed] OR [do not exceed] a non-ingestion protective concentration level on property beyond the boundaries of the designated property. (select the appropriate statement) b. All requirements of Section 47-762 of the Houston Code of Ordinances have been met, including demonstration that the groundwater contamination plume has been fully delineated and is stable or contracting in size ***Label "Appendix U"***	
22. If the licensed professional engineer or licensed professional geoscientist determines that contaminants of concern from sources on the designated property are migrating from or through the designated property more likely than not do exceed a non-ingestion protective concentration level on property beyond the boundary of the designated property, then the applicant must: a. Specify the name and address of the owner of each property. b. Send a copy of the application to the owner of the property with the notice of the public meeting. c. Provide documentation that the designated property has been included in a state or federal program that requires that the entire non-ingestion protective concentration level exceedence zone be addressed to the satisfaction of the agency administering the program, along with documentation of the estimated time period in which it is to be addressed. An example of such a program is the Texas Voluntary Cleanup Program (section 361.501 of the Texas Health and Safety Code, as may be amended from time to time). d. Provide documentation upon completion of the state or federal program showing that the non-ingestion protective concentration level exceedences have been addressed to the satisfaction of the agency administering the program. ***Label "Appendix V"***	
23. Form W-2012-01 **certified/signed** by the applicant and any authorized representatives of the applicant(s) listed in the application. (Form W-2012-01 is attached to the end of this application and can also be found at www.houstonmsd.org under the "Forms" section on the homepage.) ***Label "Appendix W"***	
24. Form X-2012-01 **signed** by the property owner or authorized agent (if an authorized agent, you must provide the legal authorization instrument). (Form W-2012-01 is attached to the end of this application and can also be found at www.houstonmsd.org under the "Forms" section on the homepage. ***Label "Appendix X"***	
25. A CD (or other devise) containing the pdf file of the application, Excel spreadsheet of water well owners and property owners for mailing notices, and the pdf file of the well log report. ***Label "Appendix Y"***	

EXECUTIVE SUMMARY

The Northwest Pipe Company property ("the designated property" or "the Site") is located at 6307 Toledo Street, Houston, Harris County, Texas. The designated property consists of approximately 12.3622-acres and is located in an area of mixed industrial/commercial and residential land use. The facility served as a steel pipe mill that was in operation from the early 1950s to 2014. A comprehensive environmental site assessment has been performed at the Site in accordance with the Texas Risk Reduction Program (TRRP; 30 Texas Administrative Code Chapter 350) administered by the Texas Commission on Environmental Quality (TCEQ). The facility is enrolled in the TCEQ Voluntary Cleanup Program (VCP) with VCP ID Number 2665. Based on the findings of the comprehensive site assessment, key site characteristics include the following:

- Shallow groundwater underlying the Site at approximately 20 to 30 feet below ground surface has been affected by the following constituents of concern (COCs) in concentrations that exceed the applicable ingestion-based Protective Concentration Levels (PCLs): 1,1-Dichloroethylene (1,1-DCE); Tetrachloroethylene (PCE); Trichloroethylene (TCE); cis-1,2-Dichloroethylene (cis-1,2-DCE); Vinyl chloride; and 1,2-Dichloroethane (1,2-DCA).
- The affected shallow groundwater-bearing zone has been designated by TCEQ as Class 2, with a sustainable well yield of approximately 650 gallons per day (less than 0.5 gallons per minute).
- The extent of affected groundwater has been delineated per TRRP requirements. The groundwater PCLE zone is located at, and in the vicinity of, the southern portion of the Northwest Pipe Company property (see Figure C.2)
- The affected shallow groundwater does not threaten water supply wells or other receptors located in the vicinity of the Site, and the City of Houston provides potable water to the Site vicinity.
- The groundwater plume is stable due to the historical nature of release, slow-moving groundwater, and natural attenuation of the COCs. Plume stability was confirmed through a lines-of-evidence evaluation that included historical COC concentration trends over time and distance, geochemical indicators of biodegradation, and fate and transport analysis using analytical groundwater modeling.
- Soil sampling results indicated that no constituents, with the exception of 1,1-DCE at a single location, reported exceedences of applicable ingestion (i.e., soil-to-groundwater) PCLs.
- COC concentrations in soil and groundwater do not exceed non-ingestion PCLs at any location.

The proposed response action for affected groundwater is a City of Houston Municipal Setting Designation (MSD), which would prohibit use of shallow groundwater underlying the designated property, thereby eliminating the potential for ingestion of affected groundwater.

APPENDIX A

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

1. ***Provide a legal description of the boundaries of the designated property, including metes and bounds, and a copy of the deed for the property. A professional surveyor currently registered with the Texas Board of Professional Surveying must certify that all property descriptions with metes and bounds are accurate.***

ATTACHMENTS

Attachment A.1 Metes and Bounds Description and Plat Map

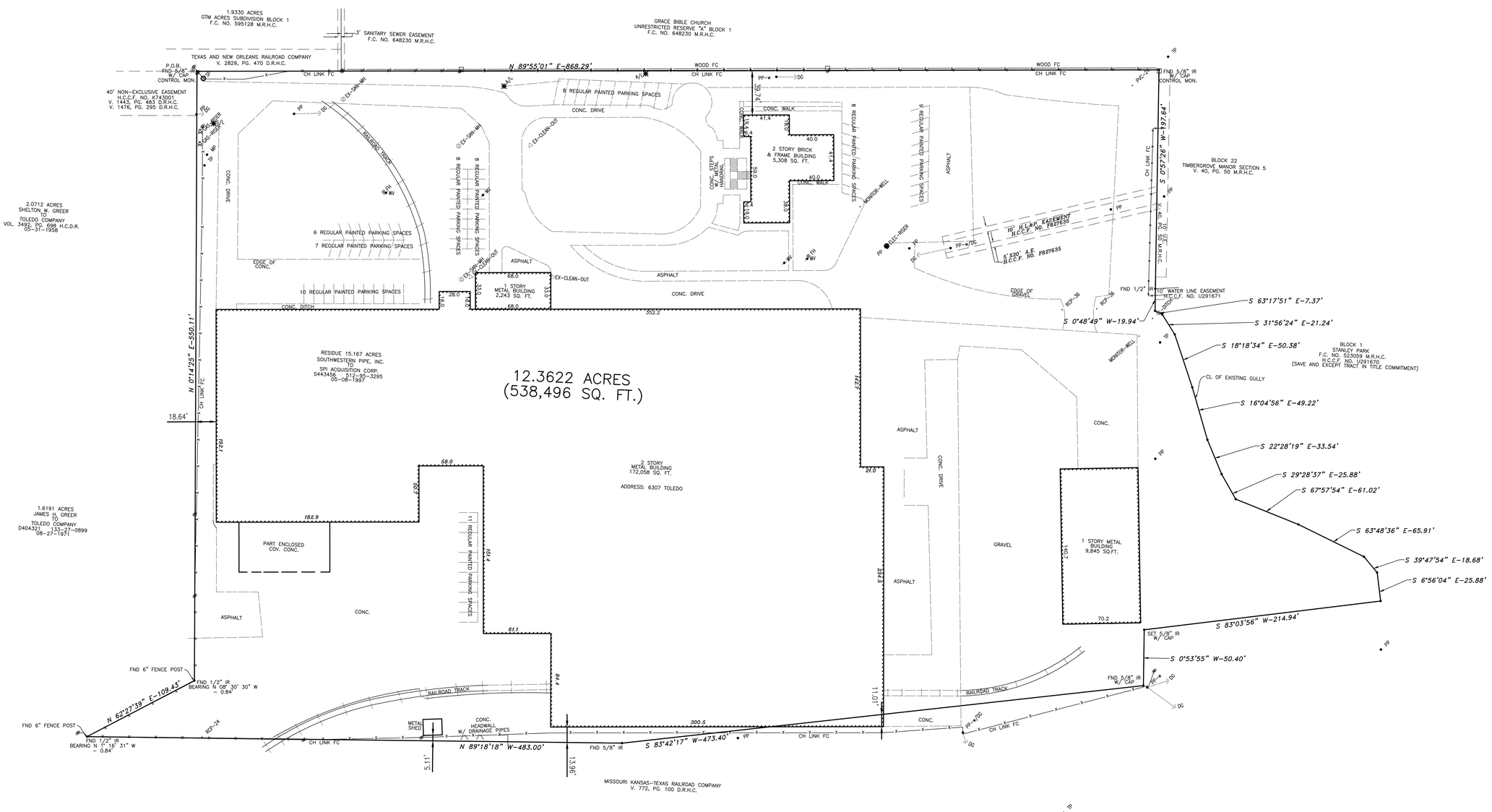
Attachment A.2 Deed of Subject Property

APPENDIX A

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment A.1

Metes and Bounds Description and Plat Map



TO: NORTHWEST PIPE COMPANY, FIDELITY NATIONAL TITLE INSURANCE COMPANY;

This is to certify that this map or plat and the survey on which it is based were made and in accordance with the "2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 11(a), 13, 14, 16, 17, 18 and 21 of Table A thereof. The field work was completed on 07-30-2015.

REGISTERED N. M. MATHIS 4517 PROFESSIONAL LAND SURVEYOR STATE OF TEXAS

11–20–2015	N. M. Mathis	4517
DATE	N. M. MATHIS	R.P.L.S. NO.

GENERAL NOTES

1. ALL BEARINGS ARE BASED ON THE WEST LINE TO BE N 0°14'25" E.
2. A PORTION OF THE SUBJECT SITE IS LOCATED WITHIN THE 100 YEAR SPECIAL FLOOD HAZARD AREA ACCORDING TO THE MOST REGENT OFFICIAL INSURANCE RATE MAP, DATED JUNE 09, 2014 MAP NUMBER 48201C0570M, ZONES X SHADED, AE PROMULGATED BY THE ADMINISTRATOR OF THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT OF THE UNITED STATES. ANY REFERENCE TO THE 100 YEAR FLOOD PLAIN OR FLOOD HAZARD ZONES, ARE AN ESTIMATE BASED ON DATA PROVIDED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE PROGRAM AND SHOULD NOT BE INTERPRETED AS A STUDY OR DETERMIN–ATION OF THE FLOODING PROPENSITIES OF THIS PROPERTY.
3. FUTURE REDEVELOPMENT OF SITE IS SUB–JECT TO CITY OF HOUSTON ORDINANCE NO. 85–1878, DATED OCTOBER 23, 1985 BY THE CITY OF HOUSTON, A CERTIFIED COPY OF WHICH WAS FILED AUGUST 1, 1991, CITY OF HOUSTON RELATING TO RULES, AND REGULATIONS, PROCEDURES AND DESIGN STANDARDS FOR DEVELOPING AND PLATTING AND PROVIDING FOR ESTABLISHING BUILDING SETBACK LINES.
4. FOR ADDITIONAL BUILDING RESTRICTION, SEE RESTRICTIVE COVENANTS.
5. UTILITIES SHOWN HEREON ARE BASED ON CITY OF HOUSTON AND UTILITY COMPANY DRAWINGS WITH FIELD TIES TO EXISTING SURFACE FIXTURES. ALL UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION. DUE TO A LACK OF HISTORICAL INFORMATION AND ONGOING CONSTRUCTION IN THE AREA UTILITY INFORMATION MAY BE INCOMPLETE OR SHOWN INCORRECTLY. SURVEYOR WILL REVISE THE DRAWING IF ADDITIONAL INFORMATION BECOMES AVAILABLE. ALL COMMUNICATION LINES SHOWN AS MARKED AT SURFACE ELEVATIONS. ALL WATER LINES GAS LINES AND BURIED ELECTRIC ARE ASSUMED TO HAVE 4' OF COVER.

LEGEND

- TRAFFIC SIGN
- COMMUNICATIONS MANHOLE
- TELEPHONE ENCLOSURE
- CHAIN LINK FENCE
- WOOD FENCE
- POWER POLE
- POWER POLE w/DOWN GUY
- STREET/AREA LIGHT
- GAS VALVE
- GAS METER
- STORM/SAN/CHILLWATER MANHOLE
- ROOF OVERHANG
- ELEC MANHOLE
- E — OVERHEAD ELECTRIC LINE
- 12" RCP — STORM SEWER WITH SIZE
- 2"G — BURIED GAS LINE WITH SIZE
- 12"WL — BURIED WATER LINE WITH SIZE
- // — CHAIN LINK FENCE
- CMP — CORRUGATED METAL PIPE
- IP — IRON PIPE
- IR — IRON ROD
- ℄ — CENTERLINE
- PTP — PINCH TOP PIPE
- PULL BOX
- NO PARKING SIGN
- CURB INLET
- SQUARE INLET
- TRAFFIC SIGNAL POLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SANITARY CLEAN OUT
- JUNCTION BOX
- GAS MANHOLE
- HANDICAP PARKING
- TELEPHONE
- SAMPLE WELL
- YD=YARD DRAIN

METES AND BOUNDS DESCRIPTION
12.3622 ACRES OF LAND OUT OF
JOHN REINERMAN SURVEY, A-642
HOUSTON, HARRIS COUNTY, TEXAS

All that certain 12.3622 acres of land out of the John Reinerman Survey, A-642, Houston, Harris County, Texas being the residue of that same called 15.167 acre tract described in a deed dated 05-08-1997 from Southwestern Pipe, Inc. to SPI Acquisition Corp. filed in the Official Public Records of Real Property of Harris County, Texas, at Clerk File No. S443456, Film Code No. 512-95-3295 and being more particularly described by metes and bounds as follows:

BEGINNING at a found 5/8" iron rod marking the northwest corner of said 15.167 acre tract;

THENCE N 89° 55' 01" E – 868.29', with the north line of said 15.167 acre tract to a found 5/8" iron rod with cap for corner;

THENCE S 0° 57' 26" E – 197.64', with the west line of Block 1 of the Stanley Park Subdivision, according to the plat thereof recorded in Harris County Clerk's File No. 523059, to a found 5/8" iron rod and being the centerline of an existing gully, the following bearings and distances;

S 0° 48' 49" W – 19.94', to a point for corner;
S 63° 17' 51" E – 7.37', to a point for corner;
S 31° 56' 24" E – 21.24', to a point for corner;
S 18° 18' 34" E – 50.38', to a point for corner;
S 16° 04' 56" E – 49.22', to a point for corner;
S 22° 28' 19" E – 33.54', to a point for corner;
S 29° 28' 37" E – 25.88', to a point for corner;
S 67° 57' 54" E – 61.02', to a point for corner;
S 63° 48' 36" E – 65.91', to a point for corner;
S 39° 47' 54" E – 18.68', to a point for corner;
S 06° 56' 04" E – 25.88', to a point for corner;

THENCE S 83° 03' 56" W – 214.94', with the south line of said 15.167 acre tract to a set 5/8" iron rod with cap for corner;

THENCE S 0° 53' 55" W – 50.40', with the south line of said 15.167 acre tract to a found 5/8" iron rod with cap for corner;

THENCE S 83° 42' 17" W – 473.40', with the north line of the MK & T Railroad to a found 5/8" iron rod for angle point;

THENCE N 89° 18' 18" E – 483.00', with the north line of said MK & T Railroad to a found 6" fence post for corner;

THENCE N 62° 27' 39" E – 109.43', with the east line of that certain called 1.6191 tract described in a deed dated 08-27-1971 from James H. Greer to the Toledo Company filed in the Official Public Records of Real Property of Harris County, Texas, at Clerk File No. D404321, Film Code No. 133-27-0899 to a found 6" fence post for corner;

THENCE N 0° 14' 25" E – 550.11' with the west line of said 15.167 tract to the POINT OF BEGINNING and containing 12.3622 acres (538,496 square feet) of land, more of less.

SCHEDULE B EXCEPTIONS

b. Easement 40 feet wide for road and as a way of ingress and egress and right and easement to construct, maintain and operate a railroad spur as set forth in the deed from Shelton W. Greer to Southwest Steel Products, dated June 22, 1946, recorded in Volume 1476, Page 295 of the Deed Records of Harris County, Texas.(PLOTTED)

c. Unrecorded easement from S. S. McClendon, Jr.,et al.,to Houston Lighting & Power Company, dated September 1, 1955, covering 2 feet by 2 feet to cover the location of one pole and an aerial easement 7.5 feet wide from a plane 30 feet above the ground as shown on Houston Lighting & Power Company's Sketch No. A•R-10555 H, and as excepted in the Deed from Southwest Steel Products to Armco Steel Corporation by deed dated June 30, 1960, recorded in Volume 4070, Page 448 (8198058) of the Deed Records of Harris County, Texas. (NO SKETCH AVAILABLE TO LOCATE)

d. Water meter easement (10' X 20') granted to the City of Houston by instrument recorded under Harris County Clerk's File No. 0572229, as corrected by E221641.(DOES NOT AFFECT)

e. An unobstructed ground easement ten (10) feet in width and 242 feet in length, together with an aerial easement twenty (20) feet wide from a plane twenty (20) feet above the ground upward with the same centerline as at ground level,granted to Houston Lighting & Power Company by instrument recorded under Harris County Clerk's File No. F827635, the location of the centerline of which is shown on Sketch No. 78-1334 attached thereto.(PLOTTED)

f. Water line easement 10 feet wide granted to Southwestern Pipe, Inc. by instrument recorded under Harris County Clerk's File No. U291671.(PLOTTED)

g. Water meter easement granted to the City of Houston by instrument recorded under Harris County Clerk's File No. W767365.(DOES NOT AFFECT)

h. Memorandum of Purchase Option Agreement dated March 31, 2014, by and between Northwest Pipe Company and Centric Pipe, LLC recorded under Harris County Clerk's File No. 20140131428.(NOT PLOTTED)

PREJEAN & COMPANY, INC.
surveying / mapping
9324 WESTVIEW DRIVE
HOUSTON, TX 77055
713–467–MAPS

ALTA/ACSM LAND TITLE SURVEY

12.3622 ACRES OUT OF THE

JOHN REINERMAN SURVEY, A–642

HOUSTON, HARRIS COUNTY, TEXAS

11–20–2015	1"=40'	JOB NO. 41–635
GF NO. 1033005853	FIDELITY NATIONAL TITLE INSURANCE COMPANY	

APPENDIX A

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment A.2
Deed of Subject Property

S443456

512-95-3295

SPECIAL WARRANTY DEED

05/08/97 200410422 S443456 $17.00

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF HARRIS §

THAT SOUTHWESTERN PIPE, INC. ("Grantor"), a Delaware corporation, for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration to it in hand paid by SPI ACQUISITION CORP. ("Grantee"), a Texas corporation, the receipt and sufficiency of which is hereby acknowledged and confessed, has GRANTED, SOLD and CONVEYED and by these presents does GRANT, SELL and CONVEY unto Grantee whose address is 6307 Toledo Street, Houston, Texas 77008, the real property (the "Property") located in Harris County, Texas described on Exhibit A attached hereto and made a part hereof for all purposes, together with all improvements thereon and appurtenances thereto.

This conveyance is made and accepted subject to (i) restrictive covenants affecting the Property; (ii) any discrepancies, conflicts or shortages in area or boundary lines, or any encroachments, if any overlapping of improvements; (iii) standby fees and taxes for the current and subsequent years, and subsequent assessments for prior years due to a change in land usage or ownership; (iv) existing building and zoning ordinances; (v) rights of parties in possession; (vi) covenants, restrictions, conditions, reservations, exceptions and easements; (vii) oil, gas, mineral and royalty conveyances, and leases of record, if any, in effect, shown of record in the county clerk's office where the Property, or any part thereof is located; and (viii) other conditions and encumbrances affecting title to the extent (but no further) that each such matter described or referred to in this sentence is valid and subsisting as of the date hereof and affects title to the Property (collectively, the "Existing Encumbrances").

TO HAVE AND TO HOLD the Property, together with all and singular the rights and appurtenances thereto in anywise belonging, unto Grantee, its successors and assigns, forever, subject to the Existing Encumbrances; and Grantor does hereby bind itself, its successors and assigns, to WARRANT and FOREVER DEFEND all and singular the Property, subject to the Existing Encumbrances, unto Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under Grantor, but not otherwise.

FILED
97 MAY -8 PM 4:30
COUNTY CLERK
HARRIS COUNTY, TEXAS

H1995A-132935.1
11257:0013

Vesting deed

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512-95-3296

IN TESTIMONY WHEREOF, this instrument is dated effective as of the 30th day of April, 1997.

SOUTHWESTERN PIPE, INC.

By: [signature]
Name: PHILIP LEWIS
Title: PRES

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

This instrument was acknowledged before me on this 30th day of April, 1997, by PHILIP LEWIS, PRESIDENT of Southwestern Pipe, Inc., a Delaware corporation, on behalf of said corporation.

[signature]
Notary Public in and for
the State of Texas
Printed Name: Jeanette Lindsay
My Commission Expires:

JEANETTE LINDSAY
Notary Public, State of Texas
My Commission Expires
MARCH 23, 1998

0037596

111995A:132925-1
11257.0013

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512-95-3297

Exhibit A

FIELD NOTES of 15.167 Acres of land in the John Reinerman Survey, Abstract No. 642, Houston, Harris County, Texas, said 15.167 Acres being more particularly described as follows:

BEGINNING at a fence corner, the Southwest corner of Lot 11, Block 22 of Timbergrove Manor, a Subdivision recorded in Volume 40 at Page 50 of the Map Records of Harris County, Texas;

THENCE along the South lines of Blocks 22 and 21 of said Timbergrove Manor, North 83 degrees 40 minutes 42 seconds East 612.86 feet to a 1-1/4 inch iron pipe in a Gully;

THENCE along the Center-line of said Gully in a Southwesterly direction with all of its meanders approximately 450 feet to a point in the North line of the M.K.T. Railroad, Eureka Yards;

THENCE along the North line of said Eureka Yards, South 83 degrees 12 minutes 51 seconds West at 39.55 feet pass a 3/4 inch iron pipe and T Rail, in all 370.0 feet to an iron rod for corner whence the Southwest corner of Block 22, Timbergrove Manor bears North 01 degree 03 minutes 05 seconds East 337.25 feet;

THENCE South 01 degree 02 minutes 50 seconds West 50.40 feet to a fence corner for corner;

THENCE along the North line of said Eureka Yards, as follows:

South 83 degrees 56 minutes 58 seconds West 478.38 feet;

and North 83 degrees 06 minutes 26 seconds West 462.79 feet to a 6-inch iron post for corner;

H1995A 32925-1
11257:00.3

512-953-3298

THENCE North 62 degrees 40 minutes 57 seconds East 199.18 feet to a 6-inch iron post for corner;

THENCE North 00 degrees 25 minutes 52 seconds East 549.40 feet to a 6-inch iron post for corner;

THENCE South 89 degrees 56 minutes 15 seconds East 867.95 feet to a fence corner for corner;

THENCE along the West line of Block 22 of Timbergrove Manor, South 01 degree 11 minutes 01 second West 198.08 feet to the PLACE OF BEGINNING containing 15.167 Acres of land.

M. Lozano

H. Lozano, Public Surveyor
Texas Reg. No. 80

Map No. 1240-A

[illegible]
[illegible] THE
[illegible] ADEQUATE
[illegible]
[illegible]

512-95-3299

After recording, return to:

Mr. Kevin Peter
Liddell, Sapp, Zivley, Hill & LaBoon, L.L.P.
3400 Texas Commerce Tower
600 Travis Street
Houston, Texas 77002

ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW
THE STATE OF TEXAS
COUNTY OF HARRIS

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas

MAY 8 1997

COUNTY CLERK
HARRIS COUNTY TEXAS

APPENDIX B

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

2. Provide a description of the current use, and, to the extent known, the anticipated use(s), of the designated property and properties within 500 feet of the boundary of the designated property.

The Northwest Pipe Company property ("the designated property" or "the Site") is located in an area of mixed industrial/commercial and residential land use (see Figure B.1). The designated property to be included in the Municipal Setting Designation, as measured by the most recent survey dated 20 November 2015, is 12.3622 acres.

As shown on Figure B.1, the designated property is bounded to the north by Grace Bible Church and Southwaste Disposal LLC, to the east by residential properties and an undeveloped wooded tract owned by 5177 Builders Ltd., to the west by several commercial tracts owned by Greer Capital Corporation, and to the south by Union Pacific Railroad. There are residential neighborhoods located northeast and south of the designated property. The closest residence is located approximately 200 feet northeast of the affected groundwater plume.

Northwest Pipe Company plans to sell the property and no land use restrictions are anticipated on future use. There is no anticipated change in land use at the Union Pacific Railroad property to the south or the Grace Bible Church property to the north. According to records at the Harris County Appraisal District, the undeveloped land to the east that is owned by 5177 Builders Ltd. was platted for residential development in 2003, but to date no construction has occurred on that property.

The tracts to the west of the designated property are owned by Greer Capital Corporation and have commercial buildings. The Southwaste Disposal LLC facility is used to process oil and grease collected as part of commercial grease trap maintenance and transportation services. The tract of land located west adjacent to Southwaste Disposal LLC is currently undeveloped, but was formerly a peanut processing facility. There are no known anticipated changes to land use at either of these properties.

ATTACHMENTS

Figure B.1 Property Map

N

LEGEND

6307	Property address number
	MSD Designated Property
	Property boundary (from Houston GIMS)
	Neighboring VCP boundaries
	Municipal Setting Designation boundary
	Drainage ditch

Notes

Background Imagery: Microsoft Bing system via ESRI's ArcGIS Online premium services (http://maps.bing.com)

Feet
0 100 200

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

GSI ENVIRONMENTAL

PROPERTY MAP

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	JMS
Map ID:	012_11	Appv'd By:	TMM

FIGURE B.1

APPENDIX C

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

3. Provide a map showing:

- ***a. The location of the designated property.*** (See Figure C.1)
- ***b. The topography of the designated property as indicated on publicly available sources, which must note the watershed <u>including the nearest surface water body</u> and whether the designated property is located in a floodplain or floodway, as those terms are defined in Chapter 19 of the Code of Ordinances.*** (See Figure C.1)
- ***c. The detected area of groundwater contamination.*** (See Figures C.2 and C.3A through C.3H)
- ***d. The location of all soil sampling locations and all groundwater monitoring wells.*** (See Figure C.2)
- ***e. Groundwater gradients, to the extent known, and direction of groundwater flow.*** (See Figure C.4)
- ***f. The ingestion protective concentration level exceedance (PCLE) zone for each contaminant of concern, to the extent known.*** (See Figures C.2 and C.3A through C.3H)
- ***g. Depth to groundwater for each affected zone.*** (Figure C.4)

The Northwest Pipe Company property is located at 6307 Toledo Street in Houston, Harris County, Texas. Surface topography at the designated property is generally flat at an elevation of approximately 55 feet mean sea level (MSL; USGS, 2013). As shown on Figure C.1, the Site is located within the Buffalo Bayou watershed, but close to the boundary of the Whiteoak Bayou watershed (HCFCD, 2007). Buffalo Bayou is approximately 1.6 miles south, while Whiteoak Bayou is approximately 0.6 miles east of the designated property. The nearest surface water body is a drainage ditch located along the southern boundary of the target property. The Site is located within the 100 year floodplain (FEMA, 2014).

Soil and groundwater investigations have been conducted at the property since January 2014. Locations of soil borings and groundwater monitoring wells at the designated property are shown on Figure C.2. Results of the investigations indicate that the affected groundwater zone is stable and of limited extent (see Appendix G). The groundwater PCLE zone is generally located at, and in the vicinity of, the southern portion of the Northwest Pipe Company property.

APPENDIX C

Supplemental Information based on City of Houston Technical Review Comments

In a letter dated 9 June 2016, the City of Houston requested additional information as part of the technical review of the MSD application. The City of Houston request and the additional information related to Appendix C are provided below.

City of Houston Request, Appendix C: Figure C.2 illustrates that the plume extends beyond the southern boundary. Please provide discussion regarding the drainage ditch along the southern boundary of the target property. This discussion should include evidence that groundwater from the designated property is not entering the drainage ditch, potentially contaminating surface water.

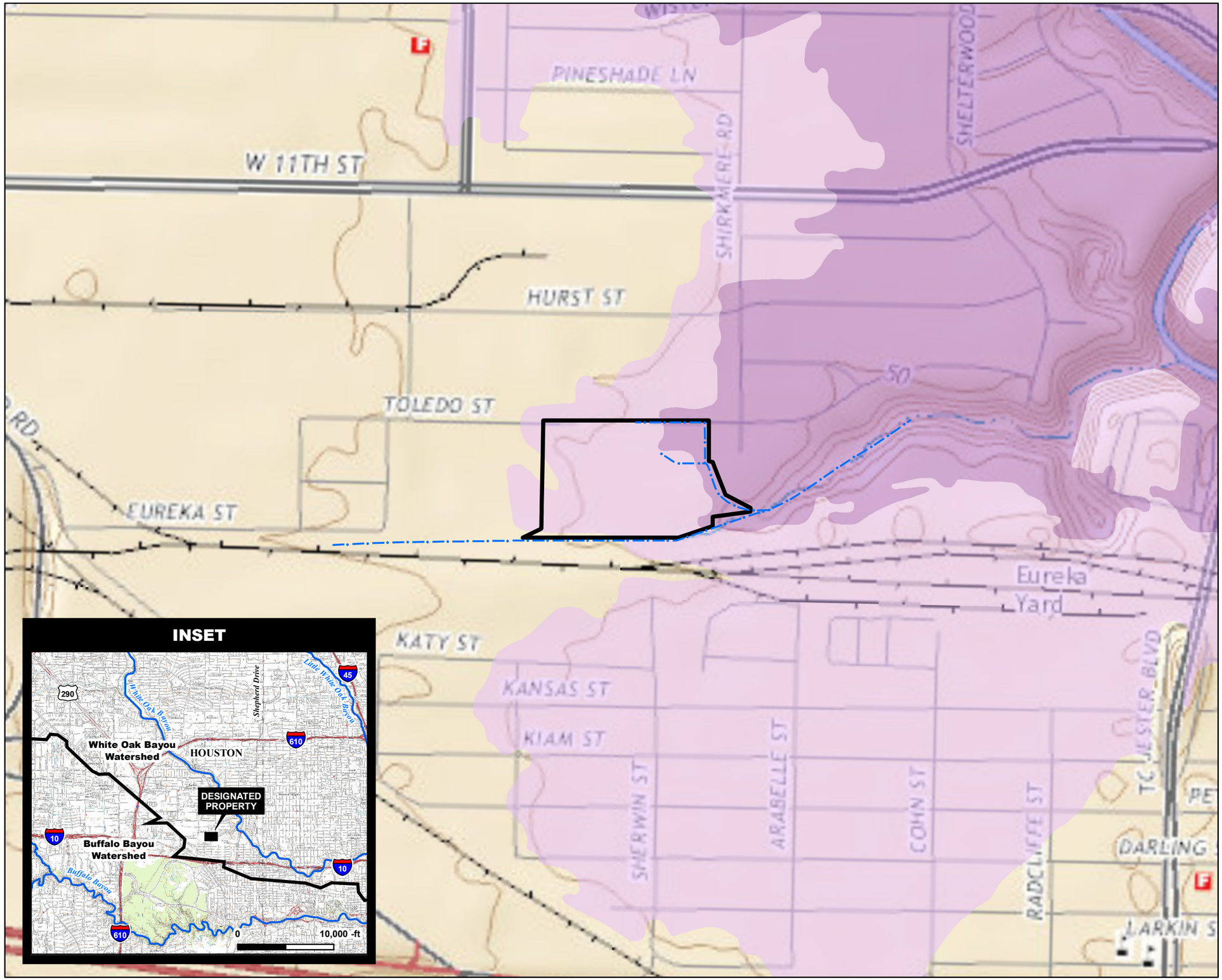
Response: The drainage ditch originates approximately 2,400 feet to the west of the site and carries rainfall runoff from adjacent properties to Whiteoak Bayou, which is located approximately 3,400 feet east of the site. The base of the drainage ditch is approximately 10 feet below ground surface (bgs) in the vicinity of the affected groundwater. Shallow groundwater does not discharge to the drainage ditch based on the groundwater gradient map (see Figure C.4) that includes groundwater elevation data from numerous wells on both the north and south sides of the drainage ditch.

The measured groundwater elevations demonstrate that groundwater flow is in an easterly direction in the vicinity of the drainage ditch (i.e., flow is parallel to the ditch as opposed to toward the ditch). Boring logs for monitoring wells installed near the ditch (e.g., MW-5, MW-10, MW-11, MW-12, and MW-13) also demonstrate that groundwater saturation is encountered at or below 17.5 feet bgs along the drainage ditch, with clay soil overlying the uppermost GWBU. As such, more than approximately 7.5 feet of clay separates the GWBU from the base of the drainage ditch.

This same information was also presented to the Texas Commission on Environmental Quality (TCEQ) in the Tier 1 Ecological Exclusion Checklist of the Affected Property Assessment Report (APAR). TCEQ, through their review and comment on the APAR, concurred with the finding that groundwater does not threaten the drainage ditch and did not require any further assessment of the drainage ditch.

ATTACHMENTS

Figure C.1	Site Location and Topographic Map
Figure C.2	Soil and Groundwater Sampling Location Map
Figure C.3A	Groundwater COC Concentration Map: VOCs
Figure C.3B	Groundwater COC Concentration Map: 1,1-Dichloroethylene
Figure C.3C	Groundwater COC Concentration Map: Tetrachloroethylene
Figure C.3D	Groundwater COC Concentration Map: Trichloroethylene
Figure C.3E	Groundwater COC Concentration Map: cis-1,2-Dichloroethylene
Figure C.3F	Groundwater COC Concentration Map: Vinyl chloride
Figure C.3G	Groundwater COC Concentration Map: 1,2-Dichloroethane
Figure C.4	Groundwater Gradient Map: 1 December 2015
Figure C.5	Geologic Cross-Section A-A': Northwest-Southeast Orientation



N

LEGEND

- MSD Designated Property
- Drainage ditch
- Railroad tracks and spurs
- Watershed boundary

Flood Zones:

- 0.2% annual chance flood
- 1.0% annual chance flood

Notes

1. Flood zones: FEMA, 2014. Flood Map Service Center, Federal Emergency Management Agency, https://msc.fema.gov/portal, accessed 26 October 2015.
2. Background Imagery: USGS, 2013. Houston Heights Quadrangle, Texas-Harris Co., 7.5-minute series, U.S. National Map. (Sources: https://msc.fema.gov/portal and http://www.arcgis.com/home/webmap).

Feet
0 250 500

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

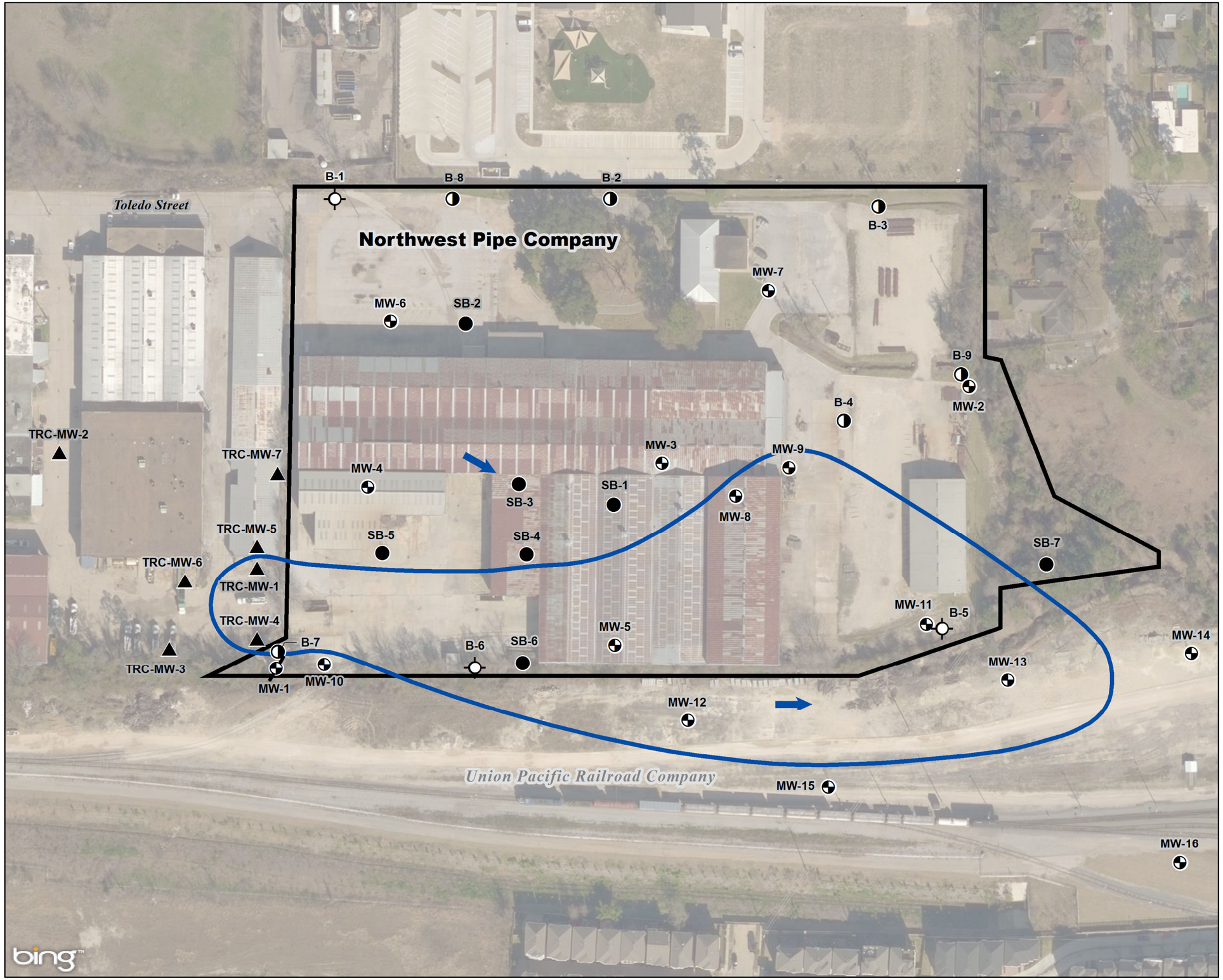
GSI ENVIRONMENTAL

SITE LOCATION AND TOPOGRAPHIC MAP

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	JMS
Map ID:	**012_13**	Appv'd By:	TMM

FIGURE C.1



N

LEGEND

- GSI monitoring well
- Phase II soil boring
- GSI soil boring
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- Extent of Affected Groundwater/PCLE Zone
- MSD Designated Property

Notes

Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

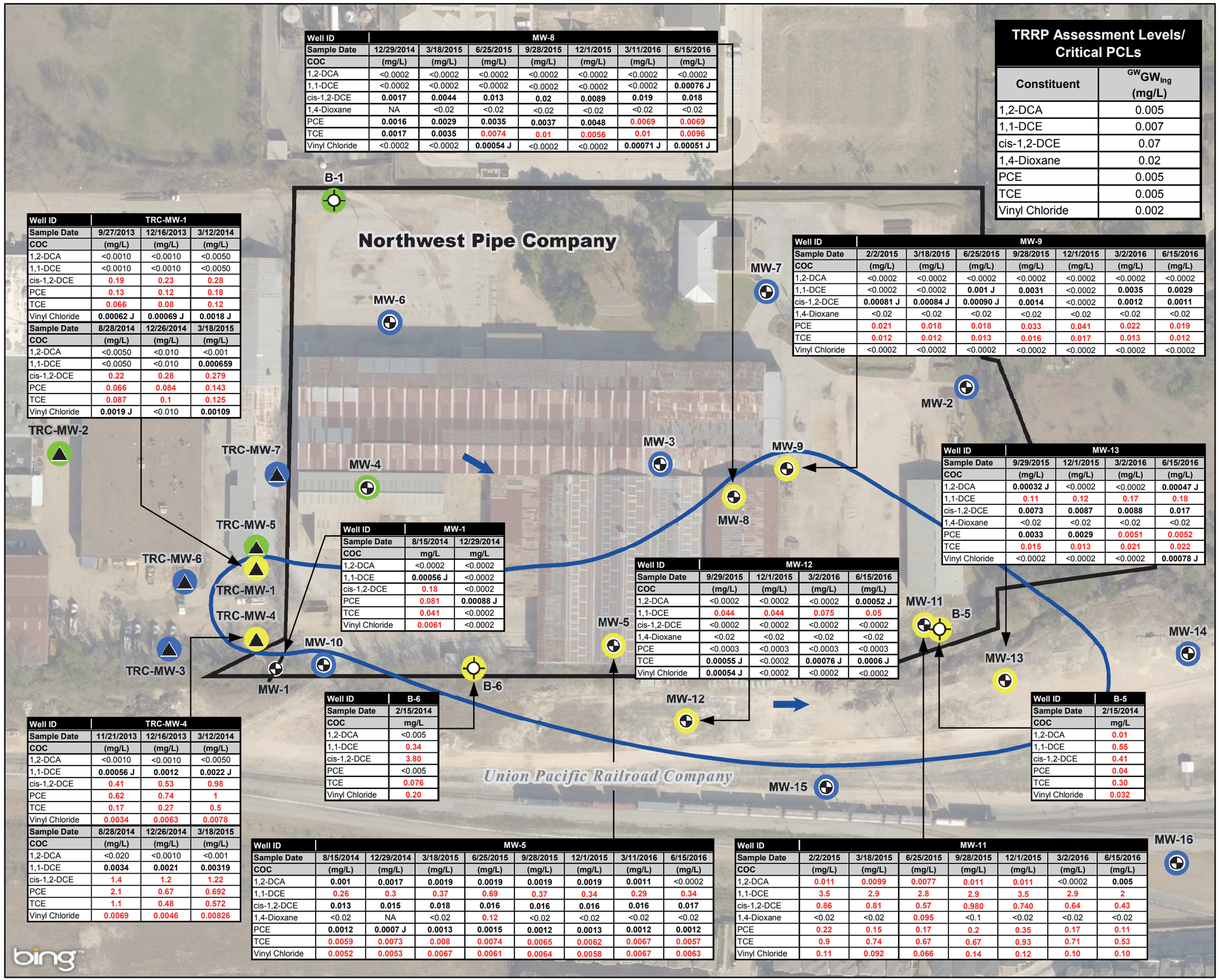
GSI ENVIRONMENTAL

SOIL AND GROUNDWATER SAMPLING LOCATION MAP

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	JMS
Map ID:	**012_12**	Appv'd By:	TMM

FIGURE C.2



Well ID	MW-8						
Sample Date	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015	3/11/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
1,1-DCE	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.00076 J**
cis-1,2-DCE	**0.0017**	**0.0044**	**0.013**	**0.02**	**0.0089**	**0.019**	**0.018**
1,4-Dioxane	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PCE	**0.0016**	**0.0029**	**0.0035**	**0.0037**	**0.0048**	**0.0069**	**0.0069**
TCE	**0.0017**	**0.0035**	**0.0074**	**0.01**	**0.0056**	**0.01**	**0.0096**
Vinyl Chloride	<0.0002	<0.0002	**0.00054 J**	<0.0002	<0.0002	**0.00071 J**	**0.00051 J**

TRRP Assessment Levels/ Critical PCLs	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
1,2-DCA	0.005
1,1-DCE	0.007
cis-1,2-DCE	0.07
1,4-Dioxane	0.02
PCE	0.005
TCE	0.005
Vinyl Chloride	0.002

Well ID	TRC-MW-1		
Sample Date	9/27/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0010	<0.0010	<0.0050
1,1-DCE	<0.0010	<0.0010	<0.0050
cis-1,2-DCE	**0.19**	**0.23**	**0.28**
PCE	**0.13**	**0.12**	**0.18**
TCE	**0.066**	**0.08**	**0.12**
Vinyl Chloride	**0.00062 J**	**0.00069 J**	**0.0018 J**
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0050	<0.010	<0.001
1,1-DCE	<0.0050	<0.010	**0.000659**
cis-1,2-DCE	**0.22**	**0.28**	**0.279**
PCE	**0.066**	**0.084**	**0.143**
TCE	**0.087**	**0.1**	**0.125**
Vinyl Chloride	**0.0019 J**	<0.010	**0.00109**

Well ID	MW-9						
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015	3/2/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
1,1-DCE	<0.0002	<0.0002	**0.001 J**	**0.0031**	<0.0002	**0.0035**	**0.0029**
cis-1,2-DCE	**0.00081 J**	**0.00084 J**	**0.00090 J**	**0.0014**	<0.0002	**0.0012**	**0.0011**
1,4-Dioxane	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PCE	**0.021**	**0.018**	**0.018**	**0.033**	**0.041**	**0.022**	**0.019**
TCE	**0.012**	**0.012**	**0.013**	**0.016**	**0.017**	**0.013**	**0.012**
Vinyl Chloride	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Well ID	MW-13			
Sample Date	9/29/2015	12/1/2015	3/2/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	**0.00032 J**	<0.0002	<0.0002	**0.00047 J**
1,1-DCE	**0.11**	**0.12**	**0.17**	**0.18**
cis-1,2-DCE	**0.0073**	**0.0087**	**0.0088**	**0.017**
1,4-Dioxane	<0.02	<0.02	<0.02	<0.02
PCE	**0.0033**	**0.0029**	**0.0051**	**0.0052**
TCE	**0.015**	**0.013**	**0.021**	**0.022**
Vinyl Chloride	<0.0002	<0.0002	<0.0002	**0.00078 J**

Well ID	MW-1	
Sample Date	8/15/2014	12/29/2014
COC	mg/L	mg/L
1,2-DCA	<0.0002	<0.0002
1,1-DCE	**0.00056 J**	<0.0002
cis-1,2-DCE	**0.18**	<0.0002
PCE	**0.081**	**0.00088 J**
TCE	**0.041**	<0.0002
Vinyl Chloride	**0.0061**	<0.0002

Well ID	MW-12			
Sample Date	9/29/2015	12/1/2015	3/2/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0002	<0.0002	<0.0002	**0.00052 J**
1,1-DCE	**0.044**	**0.044**	**0.075**	**0.05**
cis-1,2-DCE	<0.0002	<0.0002	<0.0002	<0.0002
1,4-Dioxane	<0.02	<0.02	<0.02	<0.02
PCE	<0.0003	<0.0003	<0.0003	<0.0003
TCE	**0.00055 J**	<0.0002	**0.00076 J**	**0.0006 J**
Vinyl Chloride	**0.00054 J**	<0.0002	<0.0002	<0.0002

Well ID	B-6
Sample Date	2/15/2014
COC	mg/L
1,2-DCA	<0.005
1,1-DCE	**0.34**
cis-1,2-DCE	**3.80**
PCE	<0.005
TCE	**0.076**
Vinyl Chloride	**0.20**

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
1,2-DCA	**0.01**
1,1-DCE	**0.55**
cis-1,2-DCE	**0.41**
PCE	**0.04**
TCE	**0.30**
Vinyl Chloride	**0.032**

Well ID	TRC-MW-4		
Sample Date	11/21/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.0010	<0.0010	<0.0050
1,1-DCE	**0.00056 J**	**0.0012**	**0.0022 J**
cis-1,2-DCE	**0.41**	**0.53**	**0.98**
PCE	**0.62**	**0.74**	**1**
TCE	**0.17**	**0.27**	**0.5**
Vinyl Chloride	**0.0034**	**0.0063**	**0.0078**
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	<0.020	<0.0010	<0.001
1,1-DCE	**0.0034**	**0.0021**	**0.00319**
cis-1,2-DCE	**1.4**	**1.2**	**1.22**
PCE	**2.1**	**0.67**	**0.692**
TCE	**1.1**	**0.48**	**0.572**
Vinyl Chloride	**0.0069**	**0.0046**	**0.00826**

Well ID	MW-5							
Sample Date	8/15/2014	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015	3/11/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	**0.001**	**0.0017**	**0.0019**	**0.0019**	**0.0019**	**0.0019**	**0.0011**	<0.0002
1,1-DCE	**0.26**	**0.3**	**0.37**	**0.69**	**0.37**	**0.34**	**0.29**	**0.34**
cis-1,2-DCE	**0.013**	**0.015**	**0.018**	**0.016**	**0.016**	**0.016**	**0.016**	**0.017**
1,4-Dioxane	<0.02	NA	<0.02	**0.12**	<0.02	<0.02	<0.02	<0.02
PCE	**0.0012**	**0.0007 J**	**0.0013**	**0.0015**	**0.0012**	**0.0013**	**0.0012**	**0.0012**
TCE	**0.0059**	**0.0073**	**0.008**	**0.0074**	**0.0065**	**0.0062**	**0.0067**	**0.0057**
Vinyl Chloride	**0.0052**	**0.0053**	**0.0067**	**0.0061**	**0.0064**	**0.0058**	**0.0067**	**0.0063**

Well ID	MW-11						
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015	3/2/2016	6/15/2016
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	**0.011**	**0.0099**	**0.0077**	**0.011**	**0.011**	<0.0002	**0.005**
1,1-DCE	**3.5**	**2.9**	**2.8**	**2.9**	**3.5**	**2.9**	**2**
cis-1,2-DCE	**0.86**	**0.81**	**0.57**	**0.980**	**0.740**	**0.64**	**0.43**
1,4-Dioxane	<0.02	<0.02	**0.095**	<0.1	<0.02	<0.02	<0.02
PCE	**0.22**	**0.15**	**0.17**	**0.2**	**0.35**	**0.17**	**0.11**
TCE	**0.9**	**0.74**	**0.67**	**0.67**	**0.93**	**0.71**	**0.53**
Vinyl Chloride	**0.11**	**0.092**	**0.066**	**0.14**	**0.12**	**0.10**	**0.10**

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- Extent of Affected Groundwater/PCLE Zone
- MSD Designated Property
- COCs not detected in most recent sample
- One or more COCs detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- One or more COCs detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. **Red** = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

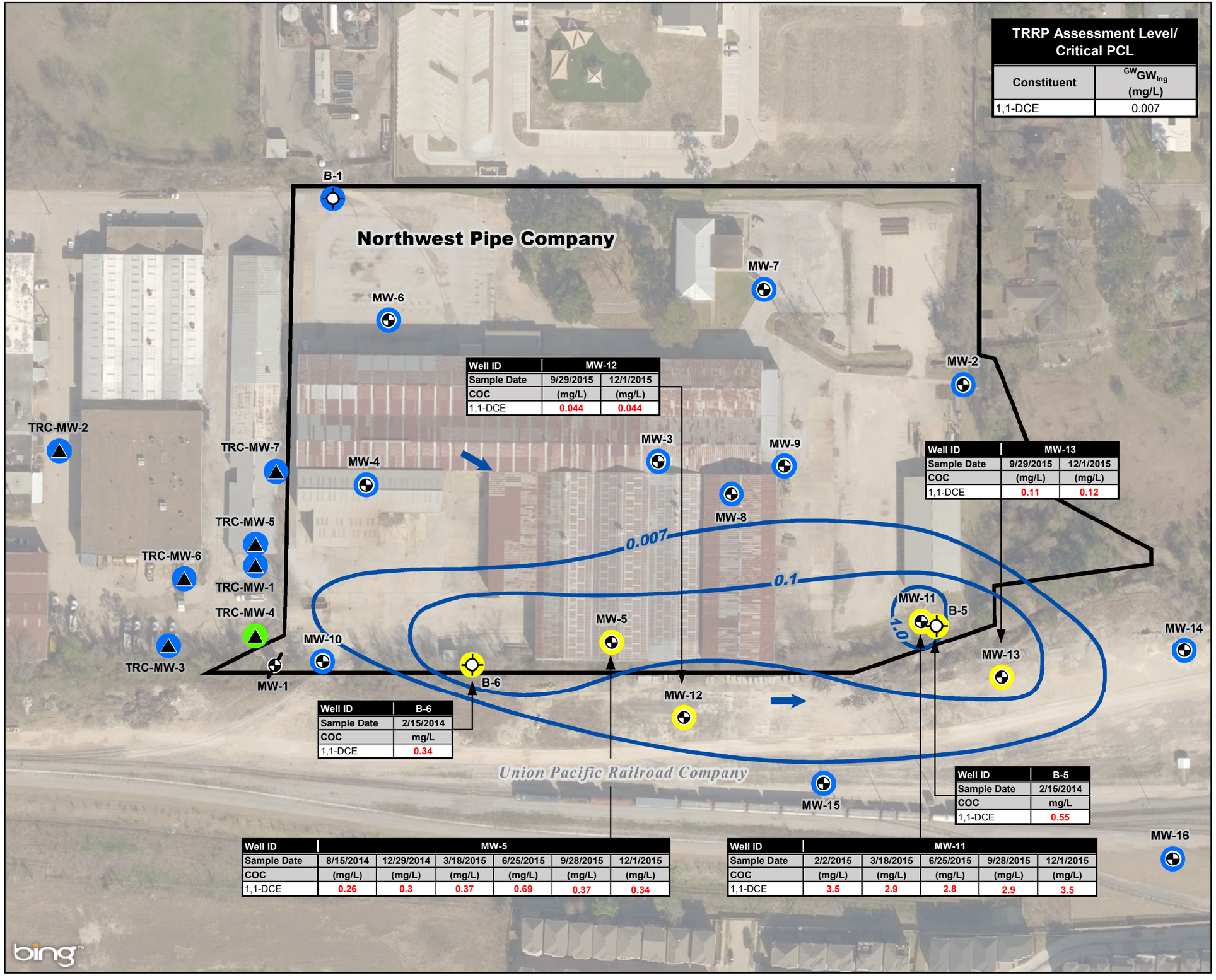
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: VOCs

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No. G-3990		Drawn By:	CDM
Issued: 1-Feb-2016	Revised: 9-Sep-2016	Chk'd By:	DCK
Map ID: 012_01		Appv'd By:	TMM

FIGURE C.3A



Well ID	MW-12	
Sample Date	9/29/2015	12/1/2015
COC	(mg/L)	(mg/L)
1,1-DCE	0.044	0.044

Well ID	MW-13	
Sample Date	9/29/2015	12/1/2015
COC	(mg/L)	(mg/L)
1,1-DCE	0.11	0.12

Well ID	B-6
Sample Date	2/15/2014
COC	mg/L
1,1-DCE	0.34

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
1,1-DCE	0.55

Well ID	MW-5					
Sample Date	8/15/2014	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,1-DCE	0.26	0.3	0.37	0.69	0.37	0.34

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,1-DCE	3.5	2.9	2.8	2.9	3.5

TRRP Assessment Level/ Critical PCL

Constituent	$^{GW}GW_{Ing}$ (mg/L)
1,1-DCE	0.007

N

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.1 COC concentration contour, mg/L
- MSD Designated Property
- 1,1-DCE not detected in most recent sample
- 1,1-DCE detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- 1,1-DCE detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. **Red** = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

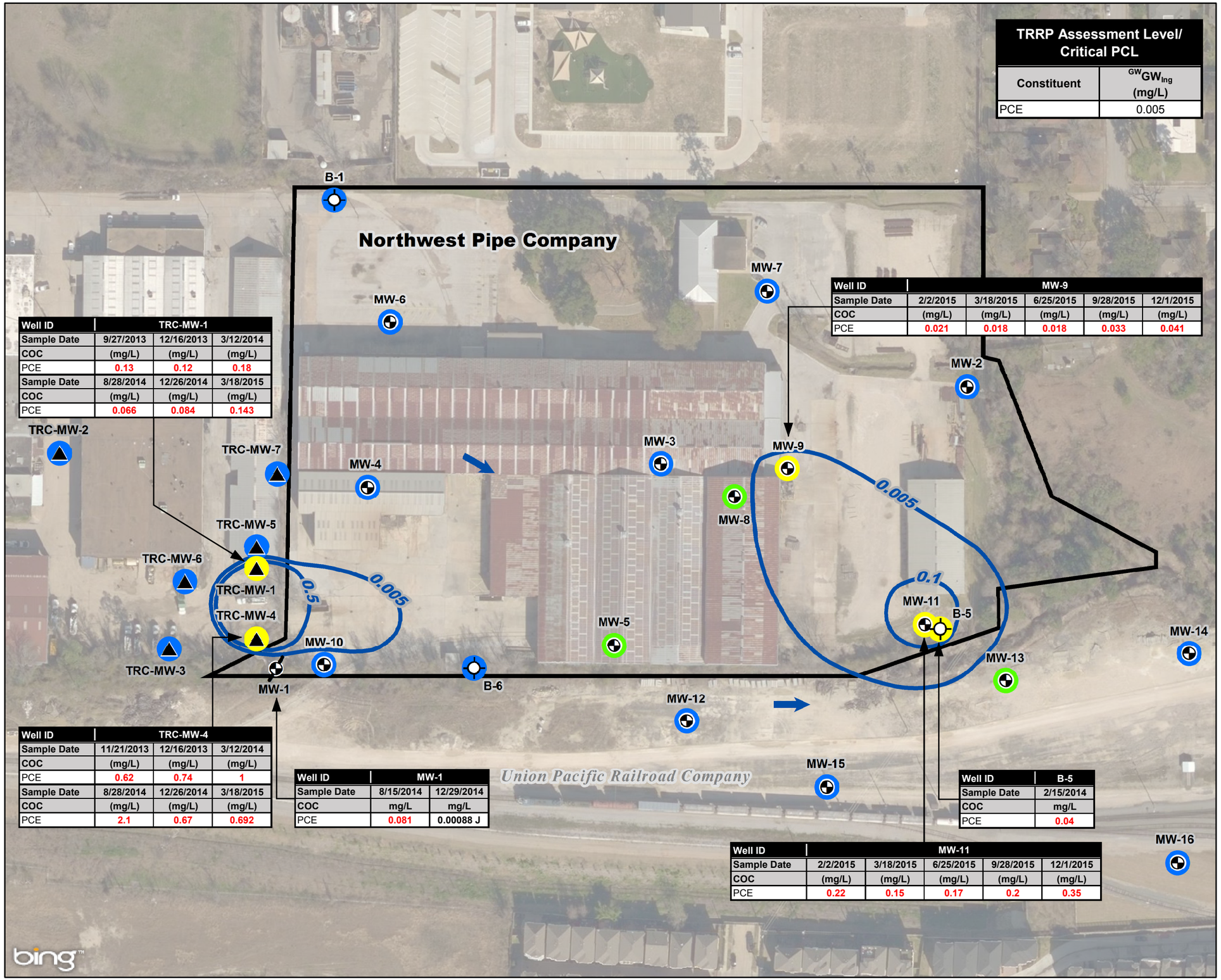
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: 1,1-Dichloroethylene

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_02	Appv'd By:	TMM

FIGURE C.3B



TRRP Assessment Level/ Critical PCL	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
PCE	0.005

Well ID	TRC-MW-1		
Sample Date	9/27/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
PCE	0.13	0.12	0.18
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
PCE	0.066	0.084	0.143

Well ID	MW-9				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
PCE	0.021	0.018	0.018	0.033	0.041

Well ID	TRC-MW-4		
Sample Date	11/21/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
PCE	0.62	0.74	1
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
PCE	2.1	0.67	0.692

Well ID	MW-1	
Sample Date	8/15/2014	12/29/2014
COC	mg/L	mg/L
PCE	0.081	0.00088 J

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
PCE	0.04

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
PCE	0.22	0.15	0.17	0.2	0.35

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.1 — COC concentration contour, mg/L
- MSD Designated Property
- PCE not detected in most recent sample
- PCE detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- PCE detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. **Red** = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

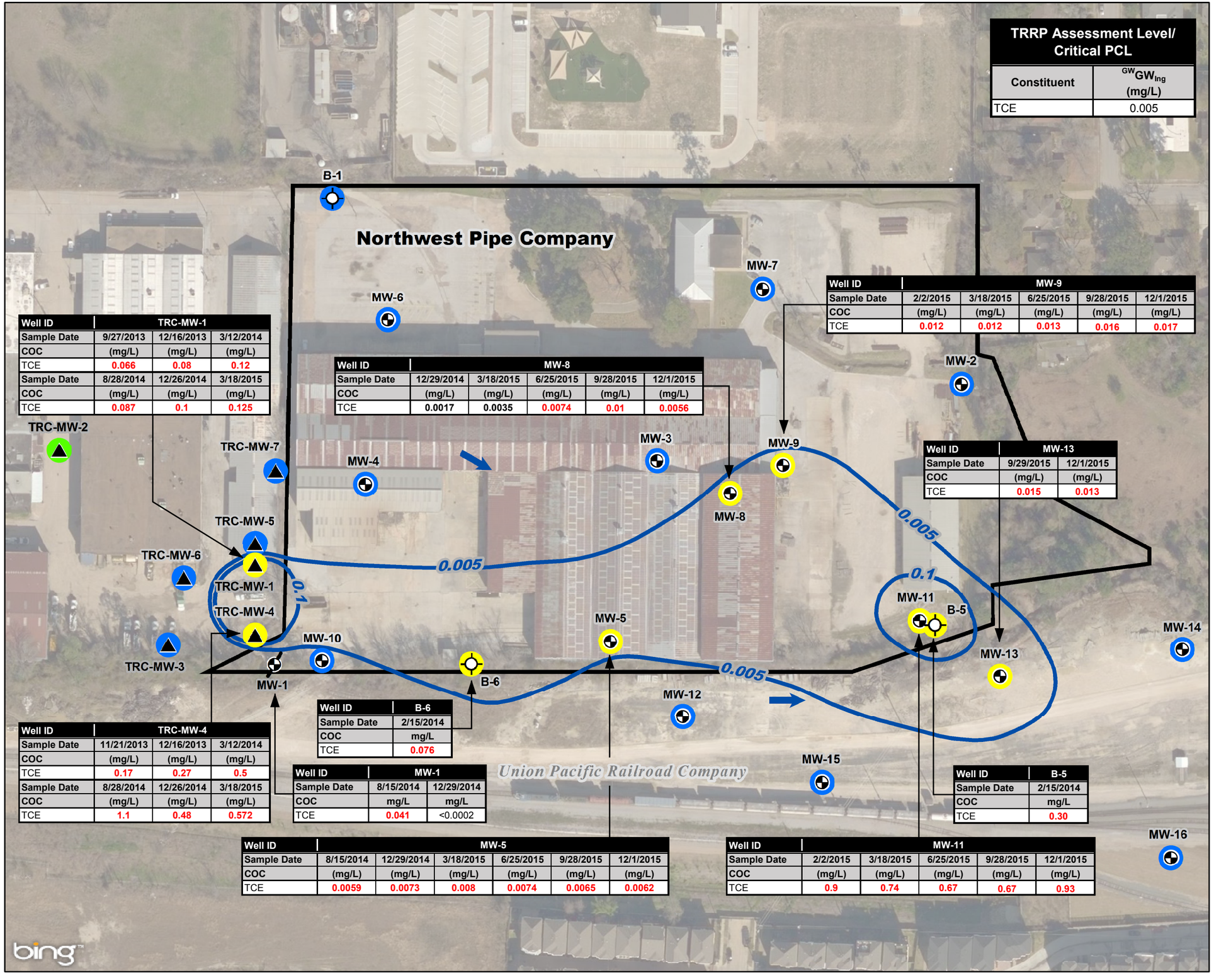
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: Tetrachloroethylene

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_03	Appv'd By:	TMM

FIGURE C.3C



TRRP Assessment Level/ Critical PCL	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
TCE	0.005

Well ID	TRC-MW-1		
Sample Date	9/27/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
TCE	0.066	0.08	0.12
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
TCE	0.087	0.1	0.125

Well ID	MW-8				
Sample Date	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCE	0.0017	0.0035	0.0074	0.01	0.0056

Well ID	MW-9				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCE	0.012	0.012	0.013	0.016	0.017

Well ID	MW-13	
Sample Date	9/29/2015	12/1/2015
COC	(mg/L)	(mg/L)
TCE	0.015	0.013

Well ID	TRC-MW-4		
Sample Date	11/21/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
TCE	0.17	0.27	0.5
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
TCE	1.1	0.48	0.572

Well ID	B-6
Sample Date	2/15/2014
COC	mg/L
TCE	0.076

Well ID	MW-1	
Sample Date	8/15/2014	12/29/2014
COC	mg/L	mg/L
TCE	0.041	<0.0002

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
TCE	0.30

Well ID	MW-5					
Sample Date	8/15/2014	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCE	0.0059	0.0073	0.008	0.0074	0.0065	0.0062

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCE	0.9	0.74	0.67	0.67	0.93

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.1 COC concentration contour, mg/L
- MSD Designated Property
- TCE not detected in most recent sample
- TCE detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- TCE detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. Red = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

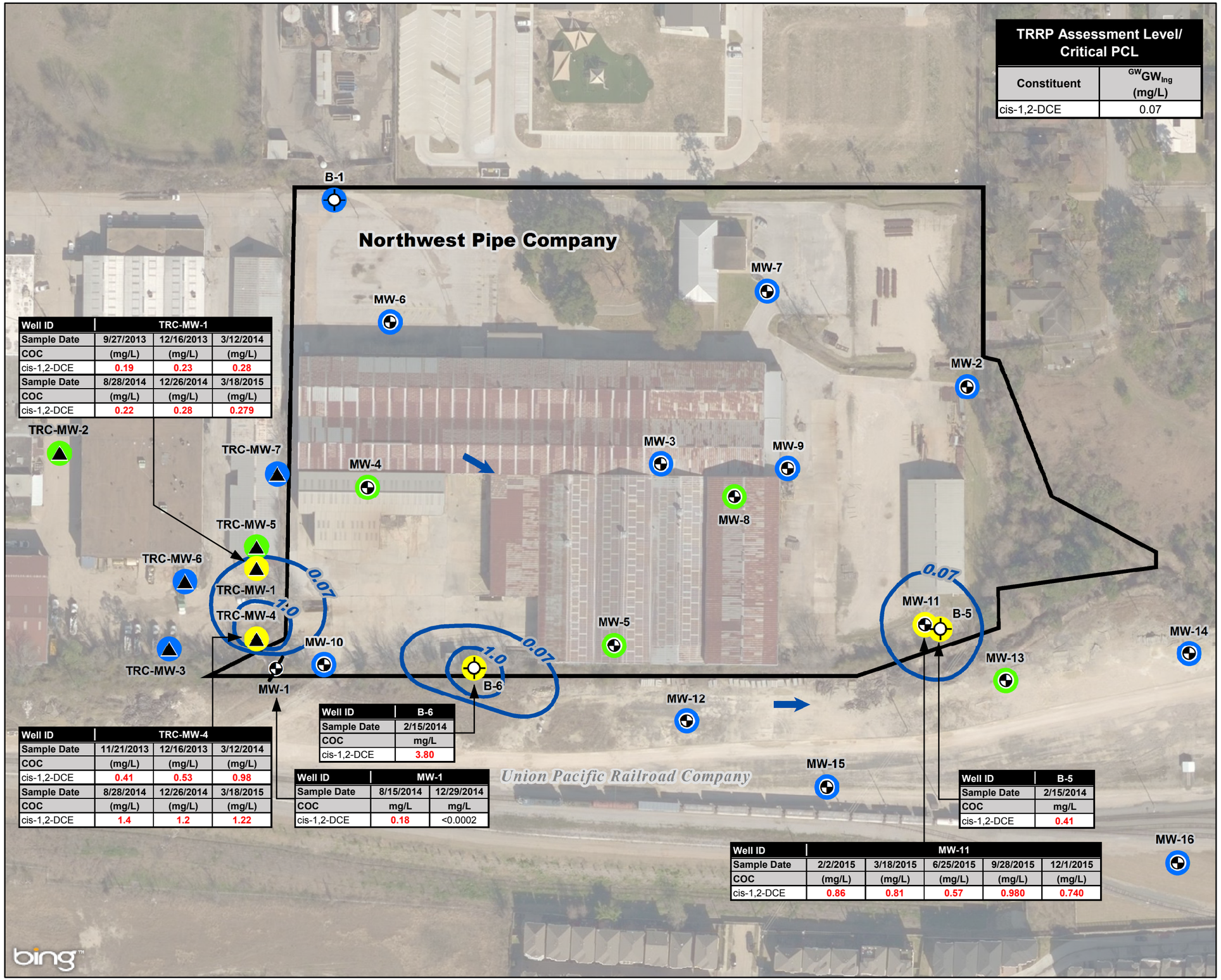
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: Trichloroethylene

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_04	Appv'd By:	TMM

FIGURE C.3D



TRRP Assessment Level/ Critical PCL	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
cis-1,2-DCE	0.07

Well ID	TRC-MW-1		
Sample Date	9/27/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
cis-1,2-DCE	0.19	0.23	0.28
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
cis-1,2-DCE	0.22	0.28	0.279

Well ID	TRC-MW-4		
Sample Date	11/21/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
cis-1,2-DCE	0.41	0.53	0.98
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
cis-1,2-DCE	1.4	1.2	1.22

Well ID	B-6
Sample Date	2/15/2014
COC	mg/L
cis-1,2-DCE	3.80

Well ID	MW-1	
Sample Date	8/15/2014	12/29/2014
COC	mg/L	mg/L
cis-1,2-DCE	0.18	<0.0002

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
cis-1,2-DCE	0.41

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
cis-1,2-DCE	0.86	0.81	0.57	0.980	0.740

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.07 COC concentration contour, mg/L
- MSD Designated Property
- cis-1,2-DCE not detected in most recent sample
- cis-1,2-DCE detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- cis-1,2-DCE detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. **Red** = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

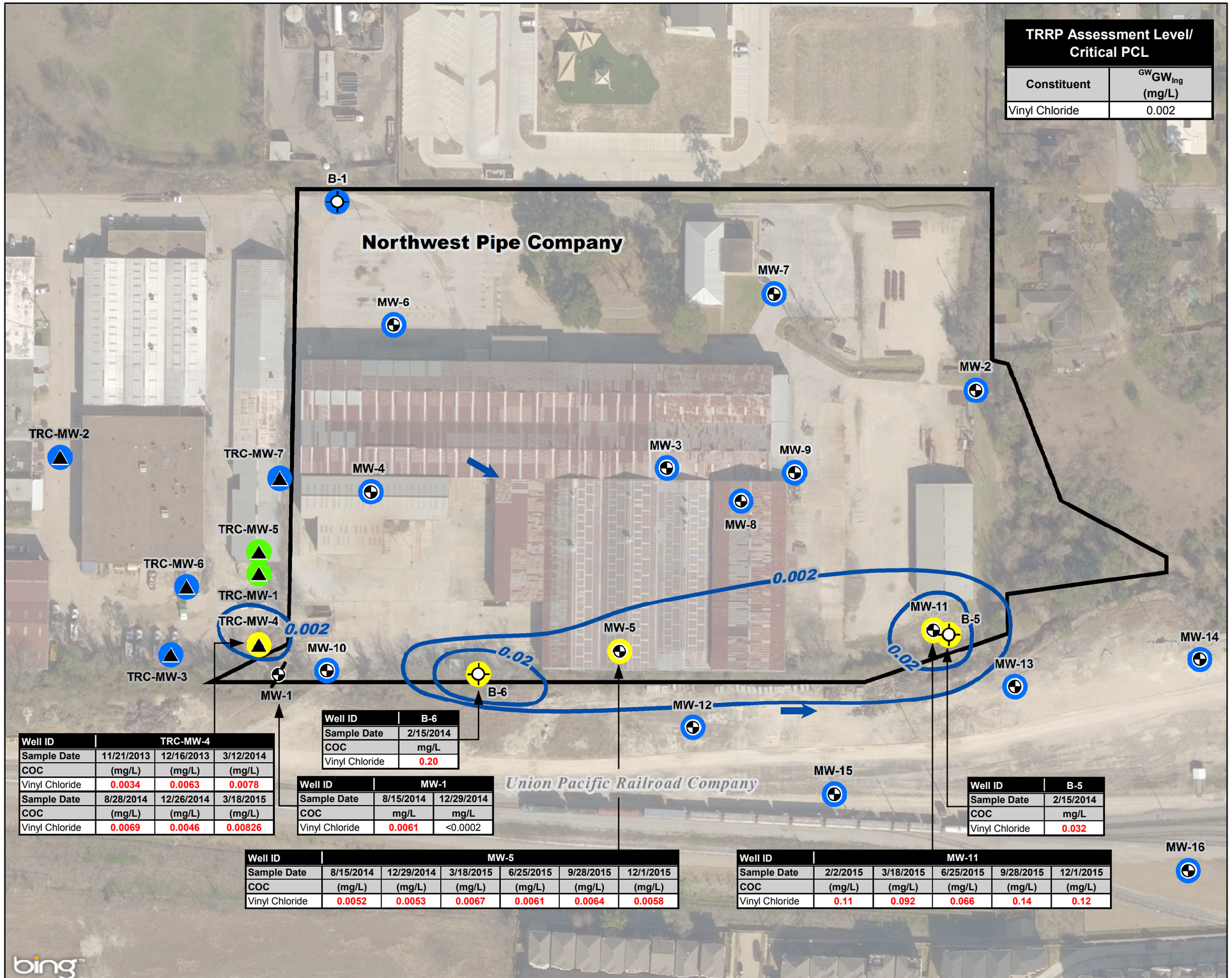
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: cis-1,2-Dichloroethylene

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_05	Appv'd By:	TMM

FIGURE C.3E



TRRP Assessment Level/ Critical PCL	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
Vinyl Chloride	0.002

Well ID	TRC-MW-4		
Sample Date	11/21/2013	12/16/2013	3/12/2014
COC	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	0.0034	0.0063	0.0078
Sample Date	8/28/2014	12/26/2014	3/18/2015
COC	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	0.0069	0.0046	0.00826

Well ID	B-6
Sample Date	2/15/2014
COC	mg/L
Vinyl Chloride	0.20

Well ID	MW-1	
Sample Date	8/15/2014	12/29/2014
COC	mg/L	mg/L
Vinyl Chloride	0.0061	<0.0002

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
Vinyl Chloride	0.032

Well ID	MW-5					
Sample Date	8/15/2014	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	0.0052	0.0053	0.0067	0.0061	0.0064	0.0058

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	0.11	0.092	0.066	0.14	0.12

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.02 COC concentration contour, mg/L
- MSD Designated Property
- Vinyl chloride not detected in most recent sample
- Vinyl chloride detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- Vinyl chloride detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. Red = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

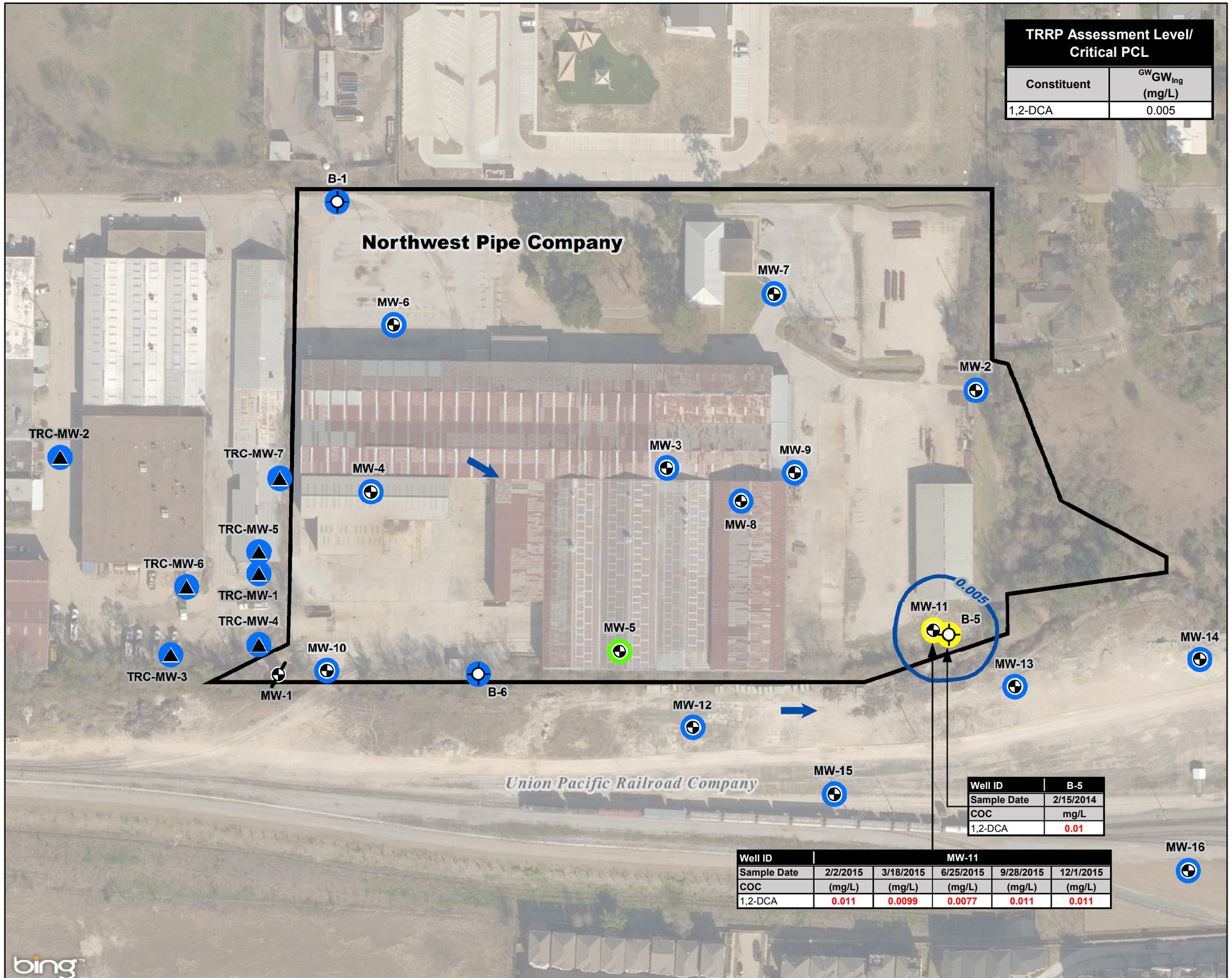
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: Vinyl Chloride

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_06	Appv'd By:	TMM

FIGURE C.3F



TRRP Assessment Level/ Critical PCL	
Constituent	$^{GW}GW_{Ing}$ (mg/L)
1,2-DCA	0.005

Well ID	B-5
Sample Date	2/15/2014
COC	mg/L
1,2-DCA	0.01

Well ID	MW-11				
Sample Date	2/2/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
COC	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-DCA	0.011	0.0099	0.0077	0.011	0.011

LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- General direction of groundwater flow
- 0.005 COC concentration contour, mg/L
- MSD Designated Property
- 1,2-DCA not detected in most recent sample
- 1,2-DCA detected at a concentration below the Assessment Level/Critical PCL in most recent sample
- 1,2-DCA detected at a concentration exceeding the Assessment Level/Critical PCL in most recent sample

Notes

1. **Red** = exceeds Assessment Level.
2. J = Estimated concentration.
3. Maximum concentrations in duplicates shown.
4. Data for TRC monitoring wells obtained from TCEQ files.
5. Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

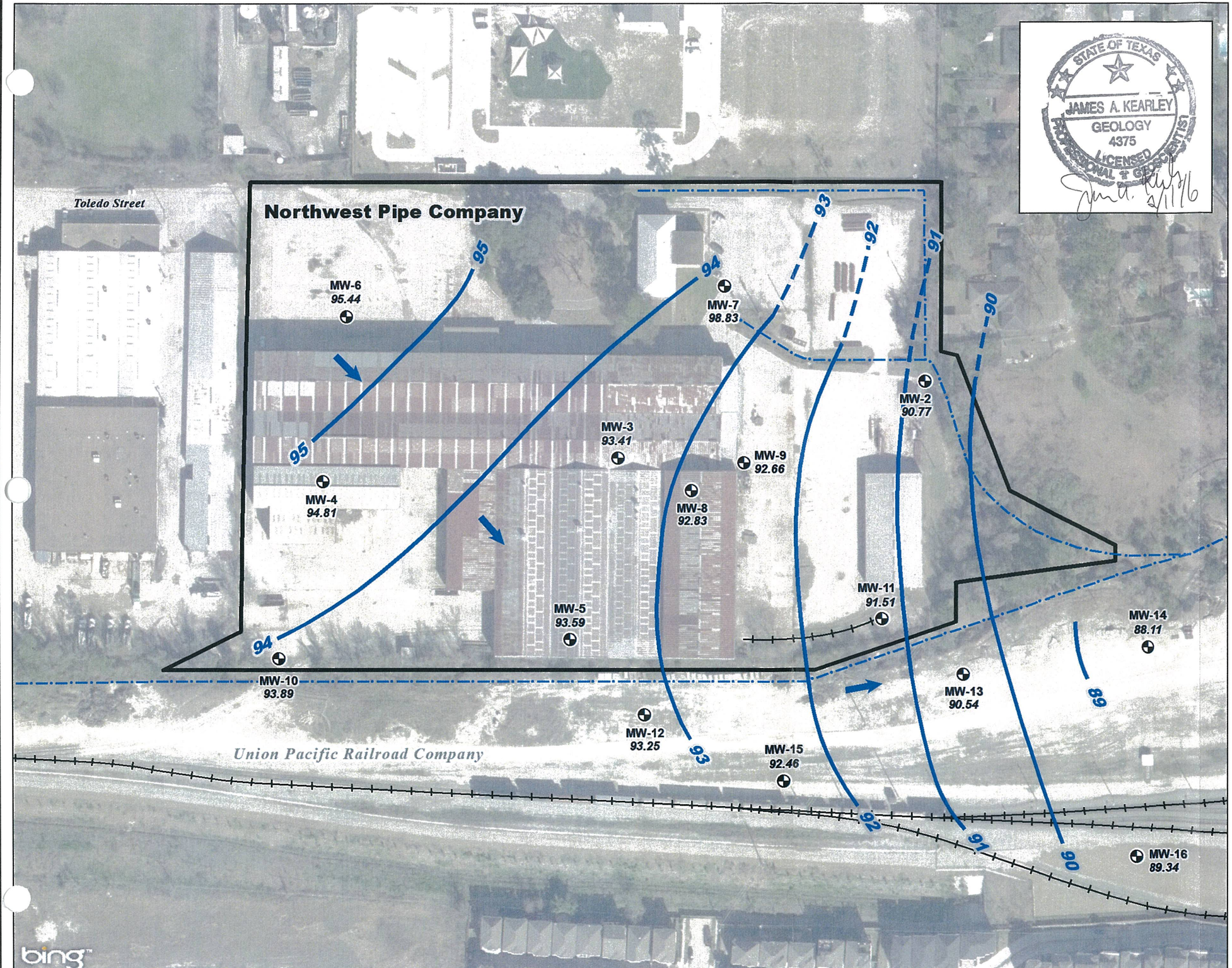
GSI ENVIRONMENTAL

GROUNDWATER COC CONCENTRATION MAP: 1,2-Dichloroethane

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_07	Appv'd By:	TMM

FIGURE C.3G



STATE OF TEXAS
JAMES A. KEARLEY
GEOLOGY
4375
LICENSED
PROFESSIONAL GEOSCIENTIST
2/11/16

N

LEGEND

- Monitoring well
- 90.39 Static water elevation, Feet Site Datum
- 90 Potentiometric surface contour, Feet Site Datum
- General direction of groundwater flow
- MSD Designated Property
- Drainage ditch
- Railroad tracks and spurs

Notes

Background Imagery: Microsoft Bing system via ESRI's ArcGIS Online premium services (http://maps.bing.com)

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

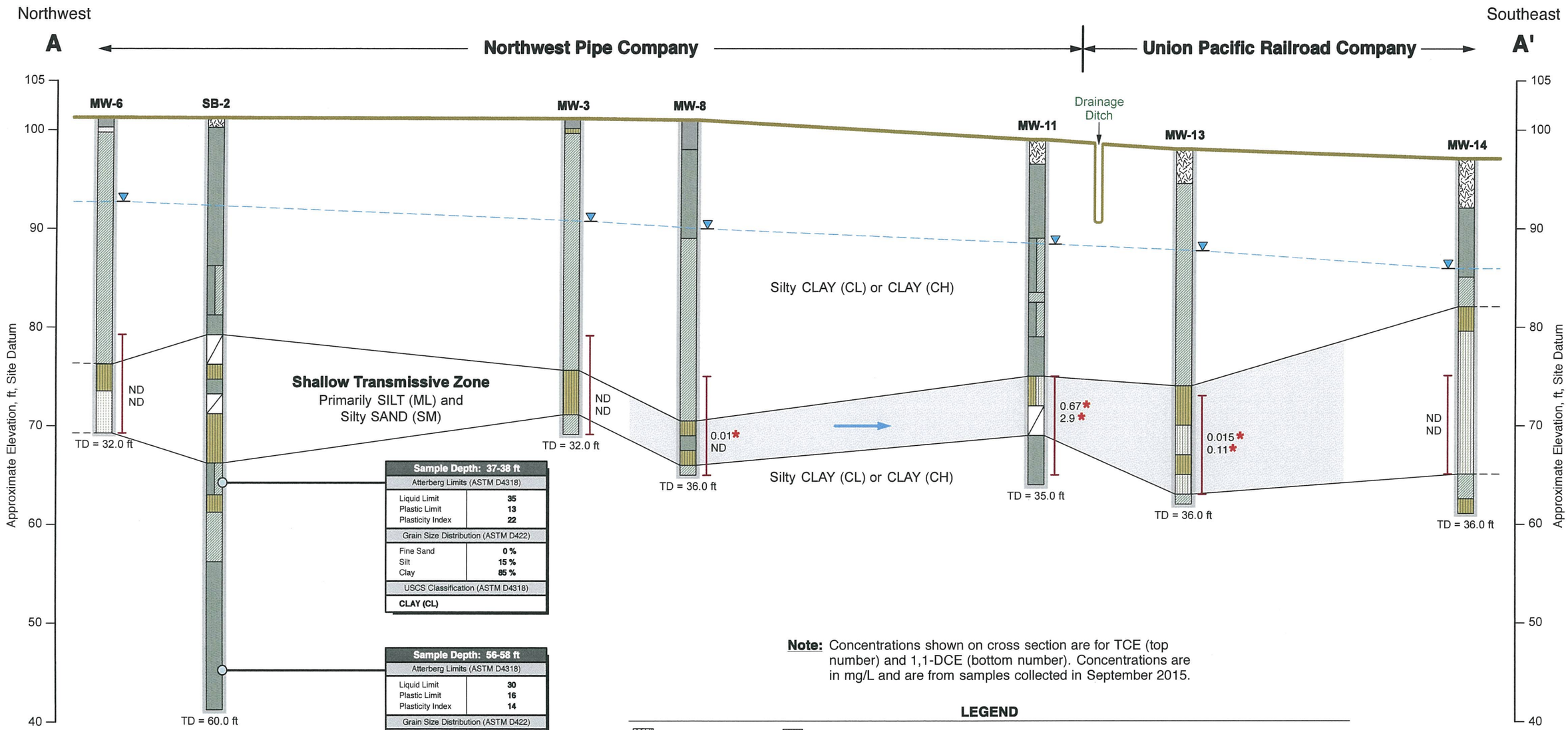
GSI ENVIRONMENTAL

GROUNDWATER GRADIENT MAP: 1 DECEMBER 2015

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	DCK
Map ID:	012_09	Appv'd By:	JAK

FIGURE C.4

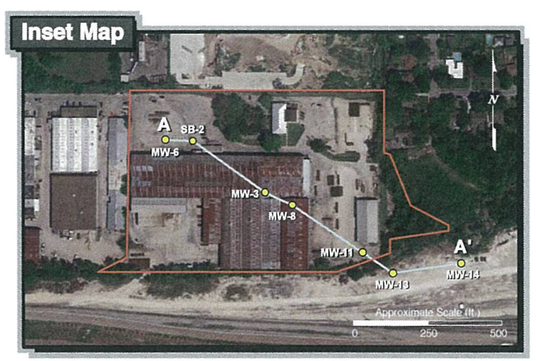


Sample Depth: 37-38 ft	
Atterberg Limits (ASTM D4318)	
Liquid Limit	35
Plastic Limit	13
Plasticity Index	22
Grain Size Distribution (ASTM D422)	
Fine Sand	0 %
Silt	15 %
Clay	85 %
USCS Classification (ASTM D4318)	
CLAY (CL)	

Sample Depth: 56-58 ft	
Atterberg Limits (ASTM D4318)	
Liquid Limit	30
Plastic Limit	16
Plasticity Index	14
Grain Size Distribution (ASTM D422)	
Fine Sand	10 %
Silt	70 %
Clay	20 %
USCS Classification (ASTM D4318)	
Silty CLAY (CL)	

Note: Concentrations shown on cross section are for TCE (top number) and 1,1-DCE (bottom number). Concentrations are in mg/L and are from samples collected in September 2015.

Inset Map



LEGEND

- FILL
- Concrete
- CLAY (CH)
- CLAY, silty CLAY or sandy CLAY (CL)
- SILT (ML)
- Silty SAND (SM)
- SAND (SP)
- Not recovered
- Geotechnical sample point
- Screened interval
- TD Total depth of boring, ft below ground surface (BGS)
- ND Not detected at a detection limit of < 0.0002 mg/L
- * Concentration exceeds critical PCL
- Static water level (SWL), as measured on 1-Oct-2015
- Direction of groundwater flow in Shallow Transmissive Zone
- Approximate extent of groundwater PCLE Zone

HORIZONTAL SCALE, ft

0 40 80 120 160

VERTICAL SCALE: 1 INCH = 10 ft

VERTICAL EXAGGERATION: 8X

STATE OF TEXAS
JAMES A. KEARLEY
GEOLOGY
4375
LICENSED GEOSCIENTIST
2/1/16

GSI ENVIRONMENTAL
Texas Registration Number: 50243

GSI Job No.	3990	Drawn By:	DLB
Issued:	1-Feb-16	Chk'd By:	JMS
Revised:	———	Aprv'd By:	JAK
Scale:	As Shown		FIGURE C.5

GEOLOGIC CROSS-SECTION A-A'
NORTHWEST-SOUTHEAST ORIENTATION
City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

APPENDIX D

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
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4. Provide for each contaminant of concern within the designated groundwater:

a. A description of the ingestion protective concentration level exceedance (PCLE) zone and the non-ingestion PCLE zone, including a specification of the horizontal area and the minimum and maximum depth below grounds surface (bgs).

b. The level of contamination, the ingestion protective concentration level (PCL), and the non-ingestion PCL, all expressed as mg/L units.

c. Its basic geochemical properties (e.g. whether the contaminant of concern migrates with groundwater, floats, or is soluble in water.)

As shown on Figure C.2 in Appendix C of this application, the affected groundwater (i.e., as defined by the ingestion-based PCLE zone) is located on the southern portion of the Northwest Pipe Company facility, and extends south to the Union Pacific Railroad Company property. There are no non-ingestion PCLE zones present at the property. The affected groundwater is limited to the uppermost groundwater bearing unit (GWBU), which is generally encountered between approximately 20 and 30 feet below ground surface (ft bgs). As shown in Figure C.5, the uppermost GWBU is a relatively thin stratum comprised of silt and fine-grain sand. The GWBU was determined to meet the definition of Class 2, as defined by the TCEQ, based on a sustainable well yield that ranged from approximately 515 to 890 gallons per day. As such, all Residential Assessment Levels (RALs) and critical PCLs are based on the Class 2 groundwater designation.

The constituents of concern (COCs) detected in groundwater at concentrations exceeding PCLs are summarized in Table D.1 below. The estimated combined PCLE zone area for all seven COCs is approximately 253,000 square feet. The COCs (1,1-dichloroethylene [1,1-DCE]; tetrachloroethylene [PCE]; trichloroethylene [TCE]; cis-1,2-dichloroethylene [cis-1,2-DCE]; vinyl chloride; and 1,2-dichloroethane [1,2-DCA]) are volatile organic compounds (VOCs). All of these COCs are susceptible to natural attenuation processes, including biodegradation, dispersion, volatilization, and adsorption. Cis-1,2-DCE and vinyl chloride are biodegradation daughter products of natural biodegradation of PCE and TCE. 1,1-DCE and 1,2-DCA are daughter products of 1,1,1-trichloroethane (1,1,1-TCA) degradation. Note that 1,1,1-TCA has not been detected in any groundwater samples, which is significant as it confirms the historical and depleted nature of the source.

Table D.1. Maximum Groundwater Concentrations for COCs Exceeding Groundwater Ingestion PCLs

COC (CAS No.)	Most Recent Max. Concentration Observed (mg/L)	RAL (mg/L)	Ingestion PCL ($^{GW}GW_{Ing}$) (mg/L)	Non-ingestion PCL ($^{Air}GW_{Inh-V}$) (mg/L)	Estimated Ingestion PCLE Zone Area (ft^2)
1,1-Dichloroethylene (75-35-4)	3.7 (MW-11; Dec. 2015)	0.007	0.007	1700	215,000
Tetrachloroethylene (127-18-4)	0.36 (MW-11; Dec. 2015)	0.005	0.005	500	70,500
Trichloroethylene (79-01-6)	0.93 (MW-11; Dec. 2015)	0.005	0.005	24	174,500
cis-1,2-Dichloroethylene (156-59-2)	3.8 (B-6; Feb. 2014)	0.07	0.07	1200	36,000
Vinyl chloride (75-01-4)	0.2 (B-6; Feb. 2014)	0.002	0.002	3.8	83,000
1,2-Dichloroethane (107-06-2)	0.011 (MW-11; Dec. 2015)	0.005	0.005	33	13,000

Notes:
1. * = RAL corresponds to the method quantitation limit (MQL).
2. RAL = Residential Assessment Level; PCL = Protective Concentration Limit.

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5. A table displaying the following information for each contaminant of concern, to the extent known:

a. The maximum concentration level for soil and groundwater, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/kg for soils and mg/L for groundwater.

b. The critical protective concentration level without the municipal setting designation, highlighting any exceedances.

Groundwater and soil have been characterized by the sampling and analysis of samples collected in 2014 through 2015. In addition to the groundwater sampling event conducted by Criterium in February 2014, 6 groundwater monitoring events have been conducted by GSI since August 2014. A total of 42 soil samples have been collected from 26 soil borings. Samples have been analyzed for a broad range of COCs including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and Resource Conservation and Recovery Act (RCRA) metals.

Results of the affected property assessment and a subsequent groundwater sampling event in December 2015 indicated that six COCs (1,1-DCE, PCE, TCE, cis-1,2-DCE, vinyl chloride, and 1,2-DCA) are present in groundwater at the designated property at concentrations in exceedance of applicable ingestion PCLs. Soil analytical results indicated that no constituents, with the exception of 1,1-DCE at a single location, resulted in exceedance of applicable ingestion PCLs. There are no exceedances of non-ingestion PCLs in soil or groundwater. The maximum groundwater and soil concentrations for the six COCs are provided on Tables E.1 and E.2, respectively.

Table E.1. Maximum Groundwater Concentrations for COCs Exceeding Groundwater Ingestion PCLs

COC (CAS No.)	Most Recent Max. Concentration Observed (mg/L)	RAL (mg/L)	Ingestion PCL ($^{GW}GW_{Ing}$) (mg/L)	Non-ingestion PCL ($^{Air}GW_{Inh-V}$) (mg/L)	Estimated Ingestion PCLE Zone Area (ft^2)
1,1-Dichloroethylene (75-35-4)	3.7 (MW-11; Dec. 2015)	0.007	0.007	1700	215,000
Tetrachloroethylene (127-18-4)	0.36 (MW-11; Dec. 2015)	0.005	0.005	500	70,500
Trichloroethylene (79-01-6)	0.93 (MW-11; Dec. 2015)	0.005	0.005	24	174,500
cis-1,2-Dichloroethylene (156-59-2)	3.8 (B-6; Feb. 2014)	0.07	0.07	1200	36,000
Vinyl chloride (75-01-4)	0.2 (B-6; Feb. 2014)	0.002	0.002	3.8	83,000
1,2-Dichloroethane (107-06-2)	0.011 (MW-11; Dec. 2015)	0.005	0.005	33	13,000

Notes:
1. * = RAL corresponds to the method quantitation limit (MQL).
2. RAL = Residential Assessment Level; PCL = Protective Concentration Limit.

Table E.2. Maximum Soil Concentrations for COCs Exceeding Soil and Groundwater Ingestion PCLs

COC (CAS No.)	Maximum Concentration Observed (mg/Kg)	RAL (mg/Kg)	Soil-to-Groundwater PCL ($^{GW}Soil_{Ing}$) (mg/kg)	Non-Ingestion PCL ($^{Air}Soil_{Inh-V}$) (mg/kg)
1,1-Dichloroethylene (75-35-4)	0.44 (B-6-D @ 17 ft bgs; Feb. 2014)	0.05	0.05	12,000
Tetrachloroethylene (127-18-4)	0.0022 J (SB-1 @ 0.8-2 ft bgs; Aug. 2014)	0.05	0.05	5000
Trichloroethylene (79-01-6)	0.0051 J (SB-2 @ 3-4 ft bgs; Feb. 2015)	0.034	0.034	160
cis-1,2-Dichloroethylene (156-59-2)	0.051 (B-5-G @ 25 ft bgs; Feb. 2014)	0.25	0.25	4400
Vinyl chloride (75-01-4)	0.02 (B-6-D @ 17 ft bgs; Feb. 2014)	0.022	0.022	42
1,2-Dichloroethane (107-06-2)	0.007 (B-6-D @ 17 ft bgs; Feb. 2014)	0.014	0.014	91

Notes:
1. ND = Not detected; ft bgs = feet below ground surface.
2. RAL = Residential Assessment Level; PCL = Protective Concentration Limit.
3. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.

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6. If the plume extends beyond the limits of property owners listed in this application, list the owners of the additional property beneath which the plume(s) extend(s), and a summary of interactions with those property owners about the plume(s) and this MSD application. Please Note: You are not required under this item to notify affected property owners, only to provide a summary of who affected property owners are, and if there have been any communications. "No contact" can be an acceptable answer.

As shown on Figure B.1 of this application, the groundwater plume is present off-site to the south of the Site on property owned by Union Pacific Railroad Company. In addition, the groundwater plume has been conservatively identified on the property to the west of the Site on owned by Greer Capital Corporation. The interactions with those property owners regarding the plume and the MSD are summarized below.

Greer Capital Corporation: TRC General Holdings LLC (TRC) leases part of the property owned by Greer Capital Corporation and has investigated soil and shallow groundwater at, and in the vicinity of, the Greer Capital property. Monitoring wells installed by TRC in the southeast corner of the Greer Capital Corporation property detected elevated concentrations of chlorinated VOCs. During 2014 and 2015, Northwest Pipe Company and TRC exchanged groundwater analytical data from various sampling events. Note that it appears the impacts detected by TRC at the Greer Capital property were sourced from the Greer property and did not originate from the Northwest Pipe Company property. The connection of the groundwater plumes on the two properties has been conservatively inferred based on proximity and groundwater flow direction. It is our understanding that TRC plans to submit a separate MSD application for the Greer Capital property.

Union Pacific Railroad Company: During 2015, Northwest Pipe Company installed groundwater monitoring wells on the Union Pacific Railroad (UP) property and has informed UP on the results of laboratory analysis. Northwest Pipe Company representatives are currently working with Union Pacific Railroad representatives to include the UP property in the designated property of the MSD. If concurrence is obtained in advance of the public meeting for this MSD application, then Northwest Pipe Company may amend this application to include the UP property.

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7. Provide a statement as to whether the plume of contamination is stable (i.e., no change) or contracting and delineated, <u>with the basis for that statement.</u> Please include historical sampling data.

The comprehensive Site assessment that was performed from February 2014 to December 2015 has resulted in delineation of the groundwater plume and confirmation of groundwater plume stability. As discussed in Appendix J, the most probable sources of the groundwater impacts detected at the Site are incidental releases of chlorinated solvents that occurred as part of historical Site and neighboring property operations, which began at the Site in the early 1950s. Given the lack of any on-going source, the contaminant mass within the groundwater is diminishing and thus, while some variations in groundwater concentrations over time may occur, the groundwater plume overall is also in a stable to declining state. The following sections provide additional discussion of the plume delineation and stability determinations.

GROUNDWATER PLUME DELINEATION

Site assessment activities for this project were conducted according to the guidelines of the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP; 30 Texas Administrative Code, Chapter 350) with oversight provided by the TCEQ Voluntary Cleanup Program (VCP). Per TRRP guidelines, the Site assessment process culminates in submittal of the Affected Property Assessment Report (APAR) to TCEQ. Northwest Pipe Company submitted the APAR for this site to TCEQ on 30 November 2015.

The APAR requires full delineation of affected property, where “affected” is defined by the TCEQ as a medium (soil, groundwater, etc.) containing constituent concentrations exceeding the lowest applicable Protective Concentration Level (PCL). For groundwater at this Site, the PCL for each constituent of concern (COC) was based on the ingestion pathway. Therefore, the full extent of groundwater containing concentrations in excess of the ingestion-based PCL was delineated as part of the Site assessment. A combined delineation map showing the maximum extent of COCs in excess of PCLs is provided on Figure C.3A, and delineation maps for individual COCs are provided on Figures C.3B through C.3G.

GROUNDWATER PLUME STABILITY

A stable groundwater plume provides evidence that natural conditions are effectively controlling the extent of COCs and that expansion of the groundwater plume over time is unlikely to occur. The natural processes that are primarily responsible for achieving a stable groundwater plume involve biodegradation by native microorganisms, adsorption of COCs to soil particles, and

dispersion of the COCs through groundwater flow. Collectively, these processes are referred to as natural attenuation. TCEQ guidance recommends demonstrating a stable groundwater plume using a lines-of-evidence approach (TCEQ, 2010), involving the following three tiers:

1. **Primary line of evidence:** Relies on historical groundwater data to demonstrate a stable or decreasing trend of COC concentrations over time and with distance away from the source area. This line of evidence is the minimum required to demonstrate plume stability. Depending on the level of confidence in the plume trend results, the analysis may proceed to the secondary and other lines of evidence to provide additional support.

2. **Secondary line of evidence:** Relies on hydrogeologic or chemical indicators to document signatures or "footprints" of certain natural attenuation processes. Example data include presence of "daughter" products to indicate active degradation processes, ratios of parent compounds to daughter products to evaluate the extent of degradation, geochemistry data to demonstrate that appropriate subsurface conditions exist, and groundwater flow rate calculations to evaluate plume migration potential.

3. **Other lines of evidence:** Most often consist of predictive modeling studies or lab studies to further demonstrate an understanding of the natural attenuation processes occurring at a site and their effectiveness at stabilizing the groundwater plume. This line of evidence is typically utilized when the primary line of evidence indicates a stable plume, but the extent of data is such that additional analysis is needed to confirm the historical trend data.

The degree to which the various lines of evidence are evaluated at a given site, or whether the analysis proceeds beyond the primary line of evidence, depends on the project objectives and the extent of available data. For this project, all three lines of evidence have been evaluated since the period of available data is approximately 2 years and some of the downgradient monitoring wells currently have only two monitoring events. By evaluating all available lines of evidence, and if the lines of evidence converge to a common finding, then a higher degree of confidence is achieved. The following sections provide the technical approach and findings of the groundwater plume stability analysis.

Primary Lines of Evidence

<u>COC Concentration vs. Time Trends</u>

The primary line of evidence used to evaluate plume stability was COC concentration trends over time in monitoring wells (see Table G.1 for complete VOC sampling data). Trend evaluation was performed using the Mann-Kendall test, which is a non-parametric statistical procedure for analyzing concentration trends in groundwater monitoring data that is recommended by TCEQ in the TRRP-33 guidance document (TCEQ, 2010). The test can be used with data sets that are incomplete or have irregular sampling intervals. The Mann-Kendall procedure provides a "trend confidence" result representing the statistical confidence that a trend is increasing, probably increasing, stable, probably decreasing, or decreasing (Aziz et al., 2003).

The Mann-Kendall test was applied to the six monitoring wells having exceedances of the ingestion-based PCLs for the six primary COCs (i.e., PCE; TCE; cis-1,2-DCE; vinyl chloride; 1,2-DCA; and 1,1-DCE). The Mann-Kendall test requires a minimum of four sampling events to calculate a trend and often six to eight sampling events are required to meet the statistical confidence and coefficient of variation criteria needed to establish a trend. Two of the wells, MW-12 and MW-13 located on the Union Pacific property, only have two sampling events and therefore a trend calculation was not possible. The remaining wells have five or six sampling events to date, and therefore, trend calculation was possible. Many of the COCs the statistical confidence criteria have not been met, resulting in a "No Trend" result for several wells and COCs. A summary of Mann-Kendall results for each well and COC is provided on the table below.

	PCE	**TCE**	**cis-1,2-DCE**	**VC**	**1,2-DCA**	**1,1-DCE**
MW-5	NT	**Stable**	NT	NT	NT	NT
MW-8	Increasing	NT	NT	NT	**Stable**	**Stable**
MW-9	NT	Increasing	NT	**Stable**	**Stable**	NT
MW-11	NT	**Stable**	**Stable**	NT	NT	NT
MW-12	Not Enough Data for Trend Calculation					
MW-13	Not Enough Data for Trend Calculation					

Note: NT = No Trend

As indicated on the table above, where the monitoring data are sufficient to establish a trend, the majority of the results indicate a stable groundwater plume. For the two instances where an increasing trend was indicated (PCE at MW-8 and TCE at MW-9), the concentrations of these compounds are very low, with PCE being below the ingestion-based PCL (maximum concentration of 0.0048 mg/L vs. PCL of 0.005 mg/L) and TCE being only slightly above the ingestion-based PCL (maximum concentration of 0.017 mg/L vs. PCL of 0.005 mg/L). These monitoring wells are located within the interior of the site and upgradient of MW-11, which exhibits stable concentrations. As such, these wells do not impact the overall finding of a stable groundwater plume at the site (this finding is further supported by the modeling work described below).

COC Concentration vs. Distance Trends

The groundwater plume maps for individual COCs (Figures C.3B through C.3G) indicate strong patterns of decreasing concentrations with distance away from the high concentration wells (i.e., MW-11 on the east portion of the property and TRC-MW-4 located immediately west of the property). These data confirm that COCs are being naturally attenuated in groundwater.

Secondary Lines of Evidence

Presence of Biodegradation Daughter Products

The presence and concentration of biodegradation daughter products indicates microbial biodegradation is an active natural attenuation process at the Site. The presence of cis-1,2-DCE, vinyl chloride, and 1,2-DCA are all indicative of the biological reductive

dechlorination process (note that cis-1,2-DCE and vinyl chloride are both products of PCE and TCE biodegradation; while 1,2-DCE is a product of 1,1,1-TCA biodegradation). It should be noted that in downgradient areas of chlorinated solvent plumes where dissolved oxygen concentrations are often higher, both vinyl chloride and cis-1,2-DCE are susceptible to aerobic biodegradation processes that oxidize the chlorinated compound to carbon dioxide, water, and chloride (Wiedemeier et al., 1999). The presence and concentrations of 1,1-DCE indicates that hydrolysis (an abiotic degradation mechanism) of 1,1,1-TCA has occurred (1,1-DCE is the product of 1,1,1-TCA hydrolysis). The lack of detectable concentrations of 1,1,1-TCA confirms the historical and depleted nature of the original source material.

Geochemical Indicators of Biodegradation

Depressed levels of dissolved oxygen (DO) and oxidation-reduction potential (ORP) are common indicators of the biological reductive dechlorination process. Sampling data for these parameters (see Table G.6) indicates that DO levels are generally below 1 mg/L within the groundwater plume (indicating anaerobic conditions that are favorable for reductive dechlorination) and that ORP levels are generally negative (indicating the presence of reducing conditions that are favorable for reductive dechlorination). Based on these conditions, the biodegradation processes are expected to continue to further reduce COC concentrations over time.

Other Lines of Evidence

Fate and Transport Modeling

The semi-analytical transport model BIOCHLOR (Aziz et al., 2000) was used to further evaluate plume stability and to the future migration potential of PCE, its biodegradation daughter products (i.e., TCE, *cis*-1,2-DCE and vinyl chloride), and 1,1-DCE. Simulations for the both the east plume area and west plume area were completed. Figure G.1 illustrates the groundwater flow paths modeled for the east and west plume areas. The following paragraphs describe the methodology and results of the modeling study.

Technical Approach and Methods

Groundwater Model: BIOCHLOR, a semi-analytical transport model incorporating first-order biodegradation kinetics (Aziz et al., 2000), was used to simulate the groundwater fate and transport of PCE and its biodegradation daughter products (TCE; cis-1,2-DCE, and vinyl chloride), as well as 1,1-DCE (which is a daughter product in the degradation of 1,1,1-trichloroethane [1,1,1-TCA]). BIOCHLOR is one of the most widely used models for evaluating the fate and transport of chlorinated compounds in groundwater.

General Approach: Plume stability was evaluated by conducting two model runs for each of two site areas. The first run simulated current plume conditions in order to establish biodegradation rate constants. To this end, biodegradation rates for each COC were calibrated to match current concentration versus distance sampling data. The second run simulated steady-state plume conditions using a run time of 500 years. Every model input other than run

time, including the calibrated biodegradation rates, remained constant between the two model runs.

The key model output from the second model run is the groundwater plume length predicted 500 years in the future, which is compared to the current plume length as a measure of the groundwater plume stability. If the long-term run predicts a much longer groundwater plume than is currently observed, then the plume may be likely to increase in size over time. On the other hand, if the long-term plume length is predicted to be about the same size as the current plume length, then the plume is considered stable. Note that the model assumes a ***constant*** contaminant source, which is a conservative (and unrealistic) assumption, but one that allows long-term examination of groundwater plume conditions. This does not mean the lifetime of the plume is expected to be 500 years. In reality, the source is also decaying and will become exhausted after some period, as will the groundwater plume (likely much less than 500 years).

Site-wide Input Parameters: The common input parameters used in the model simulations and references for the values are listed in the following table:

Parameter	Value	Reference
Hydraulic Conductivity	7.5×10^{-4} cm/sec	Representative value from slug tests
Hydraulic Gradient	0.005	Approximate average value
Effective Porosity	0.25	Common value for silty sands (Aziz et al., 2000)
Seepage Velocity	15.5 ft/yr	Calculated by BIOCHLOR using above inputs
Soil Bulk Density	1.67 kg/L	BIOCHLOR default (Aziz et al., 2000)
Fraction Organic Carbon	0.0018	BIOCHLOR default (Aziz et al., 2000)
K_{oc} PCE	426 L/kg	BIOCHLOR default (Aziz et al., 2000)
K_{oc} TCE	130 L/kg	BIOCHLOR default (Aziz et al., 2000)
K_{oc} cis-1,2-DCE	125 L/kg	BIOCHLOR default (Aziz et al., 2000)
K_{oc} VC	30 L/kg	BIOCHLOR default (Aziz et al., 2000)
Source Thickness	7 feet	Average groundwater thickness at site

Model Simulations for the East Portion of the Site

At the east portion of the Site, the fate and transport of PCE and its biodegradation daughter products was evaluated, along with 1,1-DCE, which was evaluated in a separate model run.

Monitoring well MW-11 was assumed to be the source area for these runs since the highest COC concentrations in this area have been measured in this well. Data from downgradient wells MW-13 and MW-14 were used to calibrate the biodegradation rates in this portion of the site. The groundwater flow path for the east portion of the site is shown on Figure G.1.

East Site Area Model Parameters: Input parameters that were unique to this portion of the site are summarized on the following table.

Parameter	Value	Reference
First Run Simulation Time (calibration)	55 years	Approximate time from early site operations (~1960) to present
Second Run Simulation Time (prediction)	500 years	Long time period to allow for maximum plume development
Modeled Area Length	340 feet	Distance from highest concentration well MW-11 to downgradient wells MW-14 and MW-16
Modeled Area Width	120 feet	Estimated width of elevated concentrations in the vicinity of MW-11
K_{oc} 1,1-DCE	65 L/kg	TRRP PCL Tables (TRRP, 2015)

East Site Area Methods: The COC concentrations at well MW-11, consistently the highest concentration well, were used as source zone concentrations. The 1,1-DCE plume was simulated separately from PCE and its biodegradation daughter products. Biodegradation rates were calibrated to observed concentrations and then applied to the long-term steady-state run.

East Site Area Results: Attachment G.1 contains all of the model input and output files for the modeling simulations. The simulated plume length downgradient of well MW-11 (i.e., groundwater with concentrations exceeding ingestion-based PCLs) at the end of the 55-year model period was approximately 175 feet for PCE, 225 feet for TCE, 100 feet for cis-1,2-DCE, and 250 feet for vinyl chloride. The plume length for 1,1-DCE was about 250 feet. The biodegradation rates mostly fell within observed literature values for each compound, though the biodegradation rate required to calibrate vinyl chloride was relatively high (4.0 per year). This is likely due to the fact that vinyl chloride is susceptible to aerobic degradation process in addition to the anaerobic reductive dechlorination process that is assumed by the model. The plume lengths for each contaminant at the end of the 500-year model period were approximately equal to those for the 55-year model period, indicating a stable groundwater plume for each COC.

Model Simulations for the West Portion of the Site

At the west portion of the Site, only PCE and its biodegradation daughter products were evaluated. Monitoring well TRC-MW-4 was assumed to be the source area for these runs since the highest COC concentrations in this area have been measured in this well. Data from

downgradient wells B-6, MW-5, MW-12, and MW-15 were used to calibrate the biodegradation rate in this portion of the Site. The groundwater flow path for the west portion of the site is shown on Figure G.1.

West Site Area Model Parameters: Input parameters that were unique to this portion of the Site are summarized on the following table.

Parameter	Value	Reference
First Run Simulation Time (calibration)	55 years	Approximate time from early site operations (~1960) to present
Second Run Simulation Time (prediction)	500 years	Long time period to allow for maximum plume development
Modeled Area Length	740 feet	Distance from highest concentration well to downgradient, low concentration well
Modeled Area Width	80 feet	Estimated width of elevated concentrations in the vicinity of TRC-MW-4

West Site Area Methods: The concentrations at well TRC-MW-4, the highest concentration well for most of the compounds evaluated, were used as the source zone concentrations. The biodegradation rates for each compound were calibrated to observed concentrations and then applied to the long-term steady-state run.

West Site Area Results: Attachment G.1 contains all of the model input and output files for the modeling simulations. The simulated plume length downgradient of well TRC-MW-4 at the end of the 55-year model period was approximately 325 feet for PCE, 400 feet for TCE, 225 feet for cis-1,2-DCE, and 500 feet for vinyl chloride. The biodegradation rates fell within literature values reported for each compound. The plume lengths for each contaminant at the end of the 500-year model period were approximately equal to those for the 55-year model period, indicating a stable groundwater plume for each COC.

Model Conclusions

The modeling results have confirmed that site conditions are sufficient to maintain a stable plume over a long period of time. The slow groundwater velocity, coupled with the active degradation and attenuation processes, are responsible for the observed and predicted groundwater plume stability. Additionally, the model simulations assume a constant source, when in reality both the source and plumes will decay over time.

KEY POINT

The BIOCHLOR semi-analytical model was used to evaluate plume stability as an additional line of evidence to support the primary and secondary lines of evidence. Conservative inputs were used in the model formulation. Results indicate that groundwater plumes at both the eastern and western portions of the site are stable and are very unlikely to migrate appreciable distances beyond the current plume extents. This finding is consistent with the historical nature of the groundwater plumes.

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ATTACHMENTS

Table G.1 Groundwater Sampling and Testing Results: VOCs
Table G.2 Groundwater Sampling and Testing Results: SVOCs
Table G.3 Groundwater Sampling and Testing Results: Metals
Table G.4 Groundwater Sampling and Testing Results: TPH
Table G.5 Criterium Phase II Groundwater Sampling Results
Table G.6 Groundwater Sampling and Testing Results: Geochemical Parameters
Figure G.1 BIOCHLOR Modeling Location Map
Attachment G.1 BIOCHLOR Modeling Input and Output Files

APPENDIX G

Supplemental Information based on City of Houston Technical Review Comments

In a letter dated 9 June 2016, the City of Houston requested additional information as part of the technical review of the MSD application. The City of Houston request and the additional information related to Appendix G are provided below.

City of Houston Request, Appendix G: The results of the Mann-Kendall analysis indicate there is no trend for the tetrachloroethylene (PCE) concentrations in MW-9 and MW-11. However, the sampling data suggests an increasing trend in concentrations in both wells. The results of the Mann-Kendall analysis also indicate there is no trend for the trichloroethylene (TCE) concentrations in MW-8; however, the sampling data suggests an increasing trend in concentrations. In addition, both Mann-Kendall and the sampling data indicate increasing concentrations of TCE in MW-9. Please provide additional discussion regarding the increasing concentrations of PCE and TCE in these wells in relation to plume stability.

The City is requiring a minimum of four sampling events, in addition to other lines of evidence when necessary, to determine stability for monitoring wells displaying PCL exceedances, as recommended by TCEQ in RG-366 "Monitored Natural Attenuation Demonstrations under TRRP". Quarterly sampling events are preferred for all demonstrations of plume stability and required for demonstrations of plume stability that rely on statistical analysis. As such, we are requesting additional sampling for MW-12 and MW-13.

Response: An additional quarterly groundwater sampling event was conducted in June 2016. With the June event, all permanent monitoring wells at the site, including MW-12 and MW-13, have been sampled for at least four consecutive quarters and most monitoring wells now have seven to eight consecutive quarters of monitoring data. Results of the June sampling event, which are shown on the enclosed revisions of Figure C.3A and Table G.1, were very consistent with the previous monitoring data and provide further confirmation that the groundwater plume at the designated property is delineated and stable.

The plume stability demonstration presented in the MSD application consisted of a lines-of-evidence approach for evaluating plume stability as recommended by TCEQ and US EPA guidance on monitored natural attenuation. The lines-of-evidence evaluated were groundwater concentration trends over time, geochemical and biological indicators of natural attenuation, and groundwater fate and transport modeling using the BIOCHLOR natural attenuation model. Based on the weight of evidence, the groundwater plume is stable. The principal points in this regard are discussed below.

- *There is no active source of contaminants at the property and therefore, overall contaminant mass is declining.* To the extent any on-site sources of chlorinated solvents may have affected shallow groundwater, such potential sources would have been incidental, historical releases that pre-dated site operations by Northwest Pipe Company. There were no known or suspected releases at the property during the time period that Northwest Pipe Company operated at the site (1999 to 2013). Given the lack of any active source, the contaminant mass within the groundwater is diminishing and

thus, while some variations in groundwater concentrations over time may occur, the groundwater plume overall is in a stable to declining state.

- *The June 2016 monitoring data indicates that site-wide maximum concentrations (MW-11) have declined by approximately 30 to 70%.* MW-11 has routinely exhibited the highest concentrations of chlorinated compounds at the site. However, based on results of the June 2016 sampling event, concentrations of ***all*** chlorinated compounds at MW-11 have shown a reduction of approximately 30 to 70% from historical maximums. Because the concentrations at MW-11 have been higher than other wells within the plume, the trends observed at this well dominate overall plume behavior and the concentration reductions at MW-11 translate to an overall declining plume.

- *The June 2016 monitoring data shows concentration reductions at MW-8 and MW-9.* MW-8 and 9 were also mentioned in the City's response as wells with potentially increasing concentration trends. Both of these wells have shown minor detections of PCE and TCE that only slightly exceed ingestion-based PCLs. Concentrations reported for both of these wells in June 2016 were less than or equal to concentrations reported from the previous sampling event. It is further noted that these monitoring wells are located at the ***upgradient*** fringe of the groundwater plume, and the very minor concentrations at these wells will ***not*** have a measurable impact on the downgradient plume (i.e., toward MW-11), where concentrations are higher.

- *Groundwater fate and transport modeling shows that the groundwater plume will not expand beyond the designated property in the future.* Northwest Pipe Company elected to conduct predictive modeling of the groundwater plume as further support of the other lines-of evidence for plume stability. The model was developed based on the site-specific hydrogeologic parameters and calibrated to the actual concentration data observed throughout the groundwater plume. The model demonstrated that site conditions are sufficient to maintain a stable plume over a long period of time as a result of the slow groundwater flow velocity and the active degradation and attenuation processes. A key input of the model that is paramount to the plume stability finding is the assumption of a ***continuous*** contaminant source. As discussed in the first bullet point above, the actual contaminant mass is declining at the site because there is no on-going source. However, modeling the plume ***as if*** there were a continuous source provides a high degree of confidence that the plume will not expand in the future.

In summary, the lines of evidence demonstrate that the site conditions, including historical source, very slow moving groundwater, and active natural biodegradation processes, have resulted in an overall stable plume. Though low-level concentration fluctuations have been observed at select monitoring wells for select constituents, the most recent monitoring data and modeling results confirm that such fluctuations do not translate into an expanding plume and have no impact on overall plume stability. Rather, the monitoring data show that the downgradient wells continue to exhibit no detections of constituents of concern, and that maximum concentrations have declined 30 to 70% over the monitoring period.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-1	MW-1	MW-2	MW-2	MW-2 Dup.	MW-2
SAMPLE DATE:		Assessment	8/15/2014	12/29/2014	8/18/2014	12/29/2014	12/29/2014	3/18/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.00056 J**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.18**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	**0.0012**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	NA	<0.02	NA	NA	<0.020
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	**0.081**	**0.00088 J**	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	**0.041**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	**0.0061**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3
SAMPLE DATE:		Assessment	6/25/2015	9/28/2015	12/1/2015	8/15/2014	12/29/2014	3/18/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	NA	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	NA	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	NA	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	NA	<0.020
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	NA	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4
SAMPLE DATE:		Assessment	6/25/2015	9/28/2015	12/1/2015	8/19/2014	12/29/2014	3/18/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	NA	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	NA	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	<0.0002	**0.00052 J**	**0.0011**	**0.0017**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	<0.0002	**0.00098 J**	**0.0011**	**0.0018**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	NA	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	NA	<0.020
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	NA	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	**0.0014**	**0.00026 J**
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	<0.0002	<0.0002	**0.00046 J**	**0.00047 J**	**0.0011**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
SAMPLE DATE:		Assessment	6/25/2015	9/28/2015	12/1/2015	8/15/2014	12/29/2014	3/18/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	NA	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	NA	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	NA	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	**0.031**	**0.037**	**0.041**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	**0.001**	**0.0017**	**0.0019**
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.0014**	<0.0002	<0.0002	**0.26**	**0.3**	**0.37**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.0016**	**0.0017**	**0.0017**	**0.013**	**0.015**	**0.018**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	NA	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	NA	<0.020
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	NA	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	NA	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	<0.0003	**0.0012**	**0.0007 J**	**0.0013**
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	NA	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	**0.0011**	**0.0012**	<0.0002	**0.0059**	**0.0073**	**0.008**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	**0.0052**	**0.0053**	**0.0067**
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	NA	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	NA	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-5	MW-5	MW-5	MW-5 Dup.	MW-5	MW-5
SAMPLE DATE:		Assessment	6/25/2015	9/28/2015	12/1/2015	12/1/2015	3/11/2016	6/15/2016
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	**0.037**	**0.036**	**0.032**	**0.031**	**0.03**	**0.03**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	**0.0019**	**0.0019**	**0.0019**	**0.0018**	**0.0011**	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.69**	**0.37**	**0.34**	**0.33**	**0.29**	**0.34**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.016**	**0.016**	**0.016**	**0.016**	**0.016**	**0.017**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	**0.00075 J**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	**0.12**	<0.020	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.0015**	**0.0012**	**0.0013**	**0.0012**	**0.0012**	**0.0012**
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.0074**	**0.0065**	**0.0062**	**0.0064**	**0.0067**	**0.0057**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	**0.0061**	**0.0064**	**0.0058**	**0.0065**	**0.0067**	**0.0063**
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-6	MW-6 Dup.	MW-6	MW-6	MW-6	MW-6
SAMPLE DATE:		Assessment	8/18/2014	8/18/2014	12/29/2014	3/18/2015	6/25/2015	9/28/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	**0.0017 J**	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	**0.00081 J**
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	<0.0002	**0.0013**	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	NA	<0.020	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	**0.00097 J**	**0.00089 J**	**0.0018**	**0.00089 J**	**0.00069 J**	<0.0002
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	<0.0002	<0.0002	**0.0004 J**	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-6	MW-7	MW-7	MW-7	MW-7	MW-7
SAMPLE DATE:		Assessment	12/1/2015	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	<0.002	<0.002	<0.002	<0.002	NA
Benzene	71-43-2	5.0 E-3	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Bromodichloromethane	75-27-4	1.5 E-2	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Bromoform	75-25-2	1.2 E-1	NA	<0.0004	<0.0004	<0.0004	<0.0004	NA
Bromomethane	74-83-9	3.4 E-2	NA	<0.0004	<0.0004	<0.0004	<0.0004	NA
Carbon disulfide	75-15-0	2.4 E+0	NA	<0.0006	<0.0006	<0.0006	<0.0006	NA
Carbon tetrachloride	56-23-5	5.0 E-3	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Chlorobenzene	108-90-7	1.0 E-1	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Chloroethane	75-00-3	9.8 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Chloroform	67-66-3	2.4 E-1	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Chloromethane	74-87-3	7.0 E-2	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Cumene	98-82-8	2.4 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Cyclohexane	110-82-7	1.2 E+2	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	<0.001	<0.001	<0.001	<0.001	NA
Dibromochloromethane	124-48-1	1.1 E-2	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	<0.0004	<0.0004	<0.0004	<0.0004	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	<0.0004	<0.0004	<0.0004	<0.0004	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	**0.00076 J**	**0.00075 J**	**0.00065 J**	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	**0.0017**	**0.0019**	**0.0017**	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	**0.0011**	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	<0.0001	<0.0001	<0.0001	<0.0001	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	NA	<0.020	<0.02	<0.020	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Hexanone, 2-	591-78-6	1.2 E-1	NA	<0.001	<0.001	<0.001	<0.001	NA
Methyl acetate	79-20-9	2.4 E+1	NA	<0.001	<0.001	<0.001	<0.001	NA
Methyl cyclohexane	108-87-2	1.2 E+2	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	<0.0007	<0.0007	<0.0007	<0.0007	NA
Methylene chloride	75-09-2	5.0 E-3	NA	<0.001	<0.001	<0.001	<0.001	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Styrene	100-42-5	1.0 E-1	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	<0.0005	<0.0005	0.0005	0.0005	NA
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	**0.00097 J**	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	<0.001	<0.001	<0.001	<0.001	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	**0.00024 J**	**0.00069 J**	<0.0002	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
Xylene, o-	95-47-6	1.0 E+1	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA
Xylenes, Total	1330-20-7	1.0 E+1	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
SAMPLE DATE:		Assessment	12/29/2014	3/18/2015	6/25/2015	9/28/2015	12/1/2015	3/11/2016
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	<0.002	<0.002	NA	NA
Benzene	71-43-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	<0.0004	<0.0004	NA	NA
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	<0.0004	<0.0004	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	<0.0006	<0.0006	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	<0.001	<0.001	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	<0.0004	<0.0004	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	<0.0004	<0.0004	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.0017**	**0.0044**	**0.013**	**0.02**	**0.0089**	**0.019**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	**0.00068 J**	**0.0011**	<0.0002	**0.0013**
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	<0.0001	<0.0001	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	NA	<0.020	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	<0.001	<0.001	NA	NA
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	<0.001	<0.001	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	<0.0007	<0.0007	NA	NA
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	<0.001	<0.001	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	0.0002	0.0002	NA	NA
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.0016**	**0.0029**	**0.0035**	**0.0037**	**0.0048**	**0.0069**
Toluene	108-88-3	1.0 E+0	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	<0.001	<0.001	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.0017**	**0.0035**	**0.0074**	**0.01**	**0.0056**	**0.01**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	**0.00054 J**	<0.0002	<0.0002	**0.00071 J**
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
Xylene, o-	95-47-6	1.0 E+1	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-8	MW-9	MW-9	MW-9	MW-9 Dup.	MW-9
SAMPLE DATE:		Assessment	6/15/2016	2/2/2015	3/18/2015	6/25/2015	6/25/2015	9/28/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	<0.002	<0.002	<0.002	<0.002	<0.002
Benzene	71-43-2	5.0 E-3	NA	**0.00099 J**	<0.0002	<0.0002	<0.0002	<0.0002
Bromodichloromethane	75-27-4	1.5 E-2	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Bromoform	75-25-2	1.2 E-1	NA	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Bromomethane	74-83-9	3.4 E-2	NA	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Carbon disulfide	75-15-0	2.4 E+0	NA	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Carbon tetrachloride	56-23-5	5.0 E-3	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	108-90-7	1.0 E-1	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Chloroethane	75-00-3	9.8 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Chloroform	67-66-3	2.4 E-1	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Chloromethane	74-87-3	7.0 E-2	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cumene	98-82-8	2.4 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Cyclohexane	110-82-7	1.2 E+2	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	124-48-1	1.1 E-2	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	**0.00032 J**	**0.00043 J**	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.00076 J**	<0.0002	<0.0002	<0.0002	**0.001 J**	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.018**	**0.00081 J**	**0.00084 J**	**0.00077 J**	**0.00090 J**	**0.00086 J**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	**0.0012**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.020	<0.020	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	**0.00054 J**	<0.0003	<0.0003	<0.0003	<0.0003
Hexanone, 2-	591-78-6	1.2 E-1	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl acetate	79-20-9	2.4 E+1	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl cyclohexane	108-87-2	1.2 E+2	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Methylene chloride	75-09-2	5.0 E-3	NA	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Styrene	100-42-5	1.0 E-1	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	127-18-4	5.0 E-3	**0.0069**	**0.021**	**0.018**	**0.018**	**0.018**	**0.032**
Toluene	108-88-3	1.0 E+0	NA	**0.0029**	<0.0002	<0.0002	<0.0002	<0.0002
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Trichloroethylene	79-01-6	5.0 E-3	**0.0096**	**0.012**	**0.012**	**0.012**	**0.013**	**0.015**
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Vinyl chloride	75-01-4	2.0 E-3	**0.00051 J**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	**0.0016 J**	<0.0005	<0.0005	<0.0005	<0.0005
Xylene, o-	95-47-6	1.0 E+1	NA	**0.00075 J**	<0.0003	<0.0003	<0.0003	<0.0003
Xylenes, Total	1330-20-7	1.0 E+1	NA	**0.0024 J**	<0.0005	<0.0005	<0.0005	<0.0005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-9 Dup.	MW-9	MW-9	MW-9 Dup.	MW-9	MW-9 Dup.
SAMPLE DATE:		Assessment	9/28/2015	12/1/2015	3/2/2016	3/2/2016	6/15/2016	6/15/2016
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	NA	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	<0.0002	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	NA	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	<0.0004	NA	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	<0.0004	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	NA	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	NA	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	<0.0003	NA	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	<0.0002	NA	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	<0.0002	NA	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	<0.0003	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	<0.0003	NA	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.0031**	<0.0002	<0.0002	**0.0035**	<0.0002	**0.0029**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.0014**	<0.0002	<0.0002	**0.0012**	**0.00069 J**	**0.0011**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	NA	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	NA	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	NA	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	<0.0003	NA	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	NA	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	<0.001	NA	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	NA	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	NA	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	NA	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	<0.001	NA	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	NA	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	<0.0003	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	NA	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.033**	**0.041**	**0.021**	**0.022**	**0.019**	**0.018**
Toluene	108-88-3	1.0 E+0	<0.0002	NA	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	NA	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.016**	**0.017**	**0.012**	**0.013**	**0.012**	**0.011**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	<0.0005	NA	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	<0.0003	NA	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	<0.0005	NA	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-10	MW-10	MW-10-Dup.	MW-10	MW-10	MW-10
SAMPLE DATE:		Assessment	2/3/2015	3/18/2015	3/18/2015	6/25/2015	9/28/2015	12/1/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	<0.002	<0.002	<0.002	<0.002	<0.002	NA
Benzene	71-43-2	5.0 E-3	**0.00068 J**	<0.0002	<0.0002	<0.0002	<0.0002	NA
Bromodichloromethane	75-27-4	1.5 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Bromoform	75-25-2	1.2 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NA
Bromomethane	74-83-9	3.4 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NA
Carbon disulfide	75-15-0	2.4 E+0	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	NA
Carbon tetrachloride	56-23-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Chlorobenzene	108-90-7	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Chloroethane	75-00-3	9.8 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Chloroform	67-66-3	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Chloromethane	74-87-3	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Cumene	98-82-8	2.4 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Cyclohexane	110-82-7	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	NA
Dibromochloromethane	124-48-1	1.1 E-2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	**0.0011**	**0.00067 J**	**0.00073 J**	**0.00061 J**	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.0042**	<0.0002	**0.0011**	<0.0002	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.0002	<0.020	<0.020	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	**0.00039 J**	<0.0003	<0.0003	<0.0003	<0.0003	NA
Hexanone, 2-	591-78-6	1.2 E-1	<0.001	<0.001	<0.001	<0.001	<0.001	NA
Methyl acetate	79-20-9	2.4 E+1	<0.001	<0.001	<0.001	<0.001	<0.001	NA
Methyl cyclohexane	108-87-2	1.2 E+2	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	NA
Methylene chloride	75-09-2	5.0 E-3	<0.001	<0.001	<0.001	<0.001	<0.001	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
Styrene	100-42-5	1.0 E-1	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.0021**	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	**0.002**	<0.0002	<0.0002	<0.0002	<0.0002	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	<0.001	<0.001	<0.001	<0.001	<0.001	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.0021**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	**0.0012 J**	<0.0005	<0.0005	<0.0005	<0.0005	NA
Xylene, o-	95-47-6	1.0 E+1	**0.00057 J**	<0.0003	<0.0003	<0.0003	<0.0003	NA
Xylenes, Total	1330-20-7	1.0 E+1	**0.0018 J**	<0.0005	<0.0005	<0.0005	<0.0005	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-10	MW-10	MW-11	MW-11	MW-11	MW-11
SAMPLE DATE:		Assessment	3/2/2016	6/15/2016	2/3/2015	3/18/2015	6/25/2015	9/28/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	NA	<0.002	<0.002	<0.002	<0.01
Benzene	71-43-2	5.0 E-3	NA	NA	**0.00092 J**	**0.00028 J**	<0.0002	<0.001
Bromodichloromethane	75-27-4	1.5 E-2	NA	NA	<0.0002	<0.0002	<0.0002	<0.001
Bromoform	75-25-2	1.2 E-1	NA	NA	<0.0004	<0.0004	<0.0004	<0.002
Bromomethane	74-83-9	3.4 E-2	NA	NA	<0.0004	<0.0004	<0.0004	<0.002
Carbon disulfide	75-15-0	2.4 E+0	NA	NA	<0.0006	<0.0006	<0.0006	<0.003
Carbon tetrachloride	56-23-5	5.0 E-3	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Chlorobenzene	108-90-7	1.0 E-1	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Chloroethane	75-00-3	9.8 E+0	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Chloroform	67-66-3	2.4 E-1	NA	NA	**0.00037 J**	**0.00035 J**	<0.0002	<0.001
Chloromethane	74-87-3	7.0 E-2	NA	NA	<0.0002	<0.0002	<0.0002	<0.001
Cumene	98-82-8	2.4 E+0	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Cyclohexane	110-82-7	1.2 E+2	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	NA	<0.001	<0.001	<0.001	<0.005
Dibromochloromethane	124-48-1	1.1 E-2	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	NA	<0.0002	<0.0002	<0.0002	<0.001
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	NA	**0.00047 J**	<0.0004	<0.0004	<0.002
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	NA	<0.0004	<0.0004	<0.0004	<0.002
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	**0.00057 J**	**0.049**	**0.046**	**0.036**	**0.044**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	**0.011**	**0.0099**	**0.0077**	**0.011**
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	**3.5**	**2.9**	**2.8**	**2.9**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	**0.86**	**0.810**	**0.570**	**0.980**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	**0.0093**	**0.0064**	**0.02**	**0.0065**
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	NA	<0.0001	<0.0001	<0.0001	<0.0005
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	NA	<0.0002	<0.0002	<0.0002	<0.001
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.020	<0.020	**0.095**	<0.1
Ethyl benzene	100-41-4	7.0 E-1	NA	NA	**0.00051 J**	<0.0003	<0.0003	<0.0015
Hexanone, 2-	591-78-6	1.2 E-1	NA	NA	<0.001	<0.001	<0.001	<0.005
Methyl acetate	79-20-9	2.4 E+1	NA	NA	<0.001	<0.001	<0.001	<0.005
Methyl cyclohexane	108-87-2	1.2 E+2	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	NA	<0.0007	<0.0007	<0.0007	<0.0035
Methylene chloride	75-09-2	5.0 E-3	NA	NA	<0.001	<0.001	<0.001	<0.005
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	NA	<0.0002	<0.0002	<0.0002	<0.001
Styrene	100-42-5	1.0 E-1	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	**0.22**	**0.15**	**0.17**	**0.2**
Toluene	108-88-3	1.0 E+0	NA	NA	**0.0025**	<0.0002	<0.0002	<0.001
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	NA	<0.001	<0.001	<0.001	<0.005
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	NA	<0.0005	<0.0005	<0.0005	<0.0025
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	NA	**0.0016**	<0.0003	**0.001**	<0.0015
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	<0.0002	**0.9**	**0.74**	**0.67**	**0.67**
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	NA	<0.0003	<0.0003	<0.0003	<0.0015
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	**0.11**	**0.092**	**0.066**	**0.14**
Xylene, m,p-	179601-23-1	1.0 E+1	NA	NA	**0.0019 J**	<0.0005	<0.0005	<0.0025
Xylene, o-	95-47-6	1.0 E+1	NA	NA	**0.00070 J**	<0.0003	<0.0003	<0.0015
Xylenes, Total	1330-20-7	1.0 E+1	NA	NA	**0.0026 J**	<0.0005	<0.0005	<0.0025

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-11	MW-11 Dup.	MW-11	MW-11	MW-12	MW-12
SAMPLE DATE:		Assessment	12/1/2015	12/1/2015	3/2/2016	6/15/2016	9/29/2015	12/1/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	NA	NA	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	NA	NA	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	NA	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	**0.045**	**0.044**	**0.036**	**0.029**	**0.0041**	**0.0035**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	**0.011**	**0.011**	<0.0002	**0.005**	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**3.5**	**3.7**	**2.9**	**2.0**	**0.044**	**0.044**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.74**	**0.77**	**0.64**	**0.43**	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	**0.0059**	**0.0054**	**0.0052**	**0.0036**	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	NA	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	NA	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	NA	NA	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	NA	NA	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	NA	NA	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	NA	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	NA	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	NA	NA	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	NA	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.35**	**0.36**	**0.17**	**0.11**	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	NA	NA	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.93**	**0.93**	**0.71**	**0.53**	**0.00055 J**	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	**0.12**	**0.11**	**0.1**	**0.095**	**0.00054 J**	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	NA	NA	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicated an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-12	MW-12	MW-13	MW-13 Dup.	MW-13	MW-13
SAMPLE DATE:		Assessment	3/2/2016	6/15/2016	9/29/2015	9/29/2015	12/1/2015	3/2/2016
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	NA	NA	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	NA	NA	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	NA	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	**0.0055**	**0.0038**	**0.0015**	**0.0012**	**0.0016**	**0.0020**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	**0.00052 J**	**0.00032 J**	**0.00031 J**	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.075**	**0.05**	**0.11**	**0.095**	**0.12**	**0.17**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	**0.0073**	**0.0051**	**0.0087**	**0.0088**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	NA	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	NA	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	NA	NA	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	NA	NA	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	NA	NA	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	NA	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	NA	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	NA	NA	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	NA	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	**0.0033**	**0.003**	**0.0029**	**0.0051**
Toluene	108-88-3	1.0 E+0	NA	NA	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.00076 J**	**0.0006 J**	**0.015**	**0.013**	**0.013**	**0.021**
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	NA	NA	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicates an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-13	MW-14	MW-14	MW-14	MW-14	MW-15
SAMPLE DATE:		Assessment	6/15/2016	9/30/2015	12/1/2015	3/2/2016	6/15/2016	9/29/2015
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260								
Acetone	67-64-1	2.2 E+1	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	NA	NA	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	NA	NA	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	NA	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	**0.0026**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	**0.00047 J**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	**0.18**	<0.0002	<0.0002	<0.0002	<0.0002	**0.00075 J**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	**0.017**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	NA	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	NA	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	NA	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	NA	NA	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	NA	NA	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	NA	NA	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	NA	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	NA	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	NA	NA	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	NA	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	**0.0052**	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	NA	NA	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	NA	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	**0.022**	<0.0002	<0.0002	<0.0002	<0.0002	**0.00026 J**
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	**0.00078 J**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	NA	NA	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	NA	NA	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicates an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.1
GROUNDWATER SAMPLING AND TESTING RESULTS: VOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-15	MW-15	MW-15	MW-16	MW-16	MW-16	MW-16
SAMPLE DATE:		Assessment	12/1/2015	3/2/2016	6/15/2016	9/30/2015	12/1/2015	3/2/2016	6/15/2016
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260									
Acetone	67-64-1	2.2 E+1	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	5.0 E-3	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.5 E-2	NA	NA	NA	NA	NA	NA	NA
Bromoform	75-25-2	1.2 E-1	NA	NA	NA	NA	NA	NA	NA
Bromomethane	74-83-9	3.4 E-2	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	75-15-0	2.4 E+0	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	56-23-5	5.0 E-3	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	108-90-7	1.0 E-1	NA	NA	NA	NA	NA	NA	NA
Chloroethane	75-00-3	9.8 E+0	NA	NA	NA	NA	NA	NA	NA
Chloroform	67-66-3	2.4 E-1	NA	NA	NA	NA	NA	NA	NA
Chloromethane	74-87-3	7.0 E-2	NA	NA	NA	NA	NA	NA	NA
Cumene	98-82-8	2.4 E+0	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	110-82-7	1.2 E+2	NA	NA	NA	NA	NA	NA	NA
Dibromo-3-chloropropane, 1,2-	96-12-8	1.0 E-3	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	1.1 E-2	NA	NA	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	106-93-4	1.0 E-3	NA	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	NA	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	NA	NA	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	4.9 E+0	NA	NA	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Dichloropropane, 1,2-	78-87-5	5.0 E-3	NA	NA	NA	NA	NA	NA	NA
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	NA	NA	NA	NA	NA	NA	NA
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	NA	NA	NA	NA	NA	NA	NA
Dioxane, 1,4-	123-91-1	2.0 E-2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethyl benzene	100-41-4	7.0 E-1	NA	NA	NA	NA	NA	NA	NA
Hexanone, 2-	591-78-6	1.2 E-1	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	79-20-9	2.4 E+1	NA	NA	NA	NA	NA	NA	NA
Methyl cyclohexane	108-87-2	1.2 E+2	NA	NA	NA	NA	NA	NA	NA
Methyl ethyl ketone	78-93-3	1.5 E+1	NA	NA	NA	NA	NA	NA	NA
Methyl isobutyl ketone	108-10-1	2.0 E+0	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	75-09-2	5.0 E-3	NA	NA	NA	NA	NA	NA	NA
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	1.0 E-1	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	127-18-4	5.0 E-3	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Toluene	108-88-3	1.0 E+0	NA	NA	NA	NA	NA	NA	NA
Trichlor-1,2,2-trifluoroethane, 1,1,2-	76-13-1	7.3 E+2	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	NA	NA	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	79-01-6	5.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Trichlorofluoromethane	75-69-4	7.3 E+0	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	2.0 E-3	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Xylene, m,p-	179601-23-1	1.0 E+1	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	95-47-6	1.0 E+1	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	1330-20-7	1.0 E+1	NA	NA	NA	NA	NA	NA	NA

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicates an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
5. Dup = Duplicate sample.
6. NA = Sample not analyzed for the analyte.

TABLE G.2
GROUNDWATER SAMPLING AND TESTING RESULTS: SVOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-1	MW-2	MW-3	MW-4
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/15/2014	8/19/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270						
Acenaphthene	83-32-9	1.5 E+0	<0.00003	<0.00003	<0.00003	<0.00003
Acenaphthylene	208-96-8	1.5 E+0	<0.000021	<0.000021	<0.000021	<0.000021
Acetophenone	98-86-2	2.4 E+0	**0.00013 J**	**0.00011 J**	**0.000065 J**	**0.0001 J**
Anthracene	120-12-7	7.3 E+0	<0.00002	<0.00002	<0.00002	<0.00002
Atrazine	1912-24-9	3.0 E-3	<0.00004	<0.00004	<0.00004	**0.0011**
Benz-a-anthracene	56-55-3	1.3 E-3	<0.000025	<0.000025	<0.000025	<0.000025
Benzaldehyde	100-52-7	2.4 E+0	<0.000046 n	<0.000046 n	<0.000046 n	<0.000046 n
Benzo-a-pyrene	50-32-8	2.0 E-4	<0.00003	<0.00003	<0.00003	<0.00003
Benzo-b-fluoranthene	205-99-2	1.3 E-3	<0.000028	<0.000028	<0.000028	<0.000028
Benzo-g,h,i-perylene	191-24-2	7.3 E-1	<0.000026	<0.000026	<0.000026	<0.000026
Benzo-k-fluoranthene	207-08-9	1.3 E-2	<0.000028	<0.000028	<0.000028	<0.000028
Biphenyl, 1,1-	92-52-4	1.2 E+1	<0.000032	<0.000032	<0.000032	<0.000032
Bis (2-chloroethoxy) methane	111-91-1	8.3 E-4	<0.000022	<0.000022	<0.000022	<0.000022
Bis (2-chloroethyl) ether	111-44-4	8.3 E-4	<0.000029	<0.000029	<0.000029	<0.000029
Bis (2-chloroisopropyl) ether	108-60-1	1.3 E-2	<0.000064	<0.000064	<0.000064	<0.000064
Bis (2-ethyl-hexyl) phthalate	117-81-7	6.0 E-3	**0.00025**	**0.000062 J**	**0.00013 J**	**0.00017 J**
Bromophenyl phenylether, 4-	101-55-3	2.0 E-4	<0.000047	<0.000047	<0.000047	<0.000047
Butyl benzyl phthalate	85-68-7	4.8 E-1	<0.000021	<0.000021	<0.000021	<0.000021
Caprolactam	105-60-2	1.2 E+1	<0.000059	**0.000097 J**	<0.000059	<0.000059
Carbazole	86-74-8	4.6 E-2	<0.000025	<0.000025	<0.000025	<0.000025
Chloro-3-methylphenol, 4-	59-50-7	1.2 E-1	<0.000022	<0.000022	<0.000022	<0.000022
Chloroaniline, p-	106-47-8	4.6 E-3	<0.000021	<0.000021	<0.000021	<0.000021
Chloronaphthalene, 2-	91-58-7	2.0 E+0	<0.00004	<0.00004	<0.00004	<0.00004
Chlorophenol, 2-	95-57-8	1.2 E-1	<0.00004	<0.00004	<0.00004	<0.00004
Chlorophenyl phenylether, 4-	7005-72-3	2.0 E-4	<0.000043	<0.000043	<0.000043	<0.000043
Chrysene	218-01-9	1.3 E-1	<0.000046	<0.000046	<0.000046	<0.000046
Cresol, m,p- (3&4-methylphenol)	106-44-5	1.2 E-1	<0.00003	**0.00018 J**	<0.00003	<0.00003
Cresol, o- (2-methylphenol)	95-48-7	1.2 E+0	<0.000033	<0.000033	<0.000033	<0.000033
Dibenz-a,h-anthracene	53-70-3	2.0 E-4	<0.000026	<0.000026	<0.000026	<0.000026
Dibenzofuran	132-64-9	9.8 E-2	<0.000025	<0.000025	<0.000025	<0.000025
Dichlorobenzidine, 3,3-	91-94-1	2.0 E-3	<0.000024	<0.000024	<0.000024	<0.000024
Dichlorophenol, 2,4-	120-83-2	7.3 E-2	<0.000065	**0.00011 J**	<0.000065	<0.000065
Diethyl phthalate	84-66-2	2.0 E+1	**0.00028**	**0.00097**	**0.00015 J**	**0.00022**
Dimethyl phenol, 2,4-	105-67-9	4.9 E-1	<0.000033	<0.000033	<0.000033	<0.000033
Dimethylphthalate	131-11-3	2.0 E+1	<0.00003	<0.00003	<0.00003	<0.00003
Di-n-butyl phthalate	84-74-2	2.4 E+0	<0.00003	**0.000075 J**	**0.000056 J**	**0.000088 J**
Dinitro-2-methylphenol, 4,6-	534-52-1	2.4 E-3	<0.000073	<0.000073	<0.000073	<0.000073
Dinitrophenol, 2,4-	51-28-5	4.9 E-2	<0.00005	<0.00005	<0.00005	<0.00005
Dinitrotoluene, 2,4-	121-14-2	1.3 E-3	<0.00003	<0.00003	<0.00003	<0.00003
Dinitrotoluene, 2,6-	606-20-2	1.3 E-3	<0.00005	<0.00005	<0.00005	<0.00005
Di-n-octyl phthalate	117-84-0	2.4 E-1	<0.000023	<0.000023	<0.000023	<0.000023
Fluoranthene	206-44-0	9.8 E-1	<0.00002	<0.00002	<0.00002	<0.00002
Fluorene	86-73-7	9.80E-01	<0.000021	<0.000021	<0.000021	<0.000021
Hexachlorobenzene	118-74-1	1.0 E-3	<0.00007	<0.00007	<0.00007	<0.00007
Hexachlorobutadiene	87-68-3	1.2 E-2	<0.00005	<0.00005	<0.00005	<0.00005
Hexachlorocyclopentadiene	77-47-4	5.0 E-2	<0.000054	<0.000054	<0.000054	<0.000054
Hexachloroethane	67-72-1	1.7 E-2	<0.000034	<0.000034	<0.000034	<0.000034
Indeno-1,2,3-cd-pyrene	193-39-5	1.3 E-3	<0.000051	<0.000051	<0.000051	<0.000051
Isophorone	78-59-1	9.6 E-1	<0.00003	<0.00003	<0.00003	<0.00003
Methylnaphthalene, 2-	91-57-6	9.8 E-2	**0.000057 J**	<0.000034	<0.000034	<0.000034
Naphthalene	91-20-3	4.9 E-1	<0.00005	<0.00005	<0.00005	<0.00005
Nitroaniline, 2-	88-74-4	7.3 E-3	<0.000038	<0.000038	<0.000038	<0.000038
Nitroaniline, 3-	99-09-2	7.3 E-3	<0.000056	<0.000056	<0.000056	<0.000056

TABLE G.2
GROUNDWATER SAMPLING AND TESTING RESULTS: SVOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-1	MW-2	MW-3	MW-4
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/15/2014	8/19/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270 (continued)						
Nitroaniline, 4-	100-01-6	4.6 E-2	<0.00004	<0.00004	<0.00004	<0.00004
Nitrobenzene	98-95-3	4.9 E-2	<0.00005	<0.00005	<0.00005	<0.00005
Nitrophenol, 2-	88-75-5	4.9 E-2	<0.000024	<0.000024	<0.000024	<0.000024
Nitrophenol, 4-	100-02-7	4.9 E-2	<0.00006	<0.00006	<0.00006	<0.00006
Nitrosodi-n-propylamine, n-	621-64-7	2.0 E-4	<0.00004	<0.00004	<0.00004	<0.00004
Nitrosodiphenylamine	86-30-6	1.9 E-1	<0.000029	<0.000029	<0.000029	<0.000029
Pentachlorophenol	87-86-5	1.0 E-3	<0.000046	<0.000046	<0.000046	<0.000046
Phenanthrene	85-01-8	7.3 E-1	<0.00002	<0.00002	<0.00002	<0.00002
Phenol	108-95-2	7.3 E+0	<0.000032	<0.000032	<0.000032	**0.000048 J**
Pyrene	129-00-0	7.3 E-1	<0.000022	<0.000022	<0.000022	<0.000022
Trichlorophenol, 2,4,5-	95-95-4	2.4 E+0	<0.00004	<0.00004	<0.00004	<0.00004
Trichlorophenol, 2,4,6-	88-06-2	2.4 E-2	<0.00006	<0.00006	<0.00006	<0.00006

Notes:
1. Detections are shown in **bold**.
2. < = Constituent not detected at specified Sample Quantitation Limit.
3. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
4. Dup = Duplicate sample.

TABLE G.2
GROUNDWATER SAMPLING AND TESTING RESULTS: SVOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-5	MW-6	MW-6 Dup.
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/18/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270					
Acenaphthene	83-32-9	1.5 E+0	<0.00003	<0.00003	<0.00003
Acenaphthylene	208-96-8	1.5 E+0	<0.000021	<0.000021	<0.000021
Acetophenone	98-86-2	2.4 E+0	**0.000095 J**	**0.000081 J**	**0.000069 J**
Anthracene	120-12-7	7.3 E+0	<0.00002	<0.00002	<0.00002
Atrazine	1912-24-9	3.0 E-3	<0.00004	<0.00004	<0.00004
Benz-a-anthracene	56-55-3	1.3 E-3	<0.000025	<0.000025	<0.000025
Benzaldehyde	100-52-7	2.4 E+0	<0.000046	<0.000046 n	<0.000046 n
Benzo-a-pyrene	50-32-8	2.0 E-4	<0.00003	<0.00003	<0.00003
Benzo-b-fluoranthene	205-99-2	1.3 E-3	<0.000028	<0.000028	<0.000028
Benzo-g,h,i-perylene	191-24-2	7.3 E-1	<0.000026	<0.000026	<0.000026
Benzo-k-fluoranthene	207-08-9	1.3 E-2	<0.000028	<0.000028	<0.000028
Biphenyl, 1,1-	92-52-4	1.2 E+1	<0.000032	<0.000032	<0.000032
Bis (2-chloroethoxy) methane	111-91-1	8.3 E-4	<0.000022	<0.000022	<0.000022
Bis (2-chloroethyl) ether	111-44-4	8.3 E-4	<0.000029	<0.000029	<0.000029
Bis (2-chloroisopropyl) ether	108-60-1	1.3 E-2	<0.000064	<0.000064	<0.000064
Bis (2-ethyl-hexyl) phthalate	117-81-7	6.0 E-3	**0.00069**	**0.00011 J**	**0.00015 J**
Bromophenyl phenylether, 4-	101-55-3	2.0 E-4	<0.000047	<0.000047	<0.000047
Butyl benzyl phthalate	85-68-7	4.8 E-1	<0.000021	<0.000021	<0.000021
Caprolactam	105-60-2	1.2 E+1	<0.000059	**0.000098 J**	**0.000097 J**
Carbazole	86-74-8	4.6 E-2	<0.000025	<0.000025	<0.000025
Chloro-3-methylphenol, 4-	59-50-7	1.2 E-1	<0.000022	<0.000022	<0.000022
Chloroaniline, p-	106-47-8	4.6 E-3	<0.000021	<0.000021	<0.000021
Chloronaphthalene, 2-	91-58-7	2.0 E+0	<0.00004	<0.00004	<0.00004
Chlorophenol, 2-	95-57-8	1.2 E-1	<0.00004	<0.00004	<0.00004
Chlorophenyl phenylether, 4-	7005-72-3	2.0 E-4	<0.000043	<0.000043	<0.000043
Chrysene	218-01-9	1.3 E-1	<0.000046	<0.000046	<0.000046
Cresol, m,p- (3&4-methylphenol)	106-44-5	1.2 E-1	<0.00003	<0.00003	<0.00003
Cresol, o- (2-methylphenol)	95-48-7	1.2 E+0	<0.000033	<0.000033	<0.000033
Dibenz-a,h-anthracene	53-70-3	2.0 E-4	<0.000026	<0.000026	<0.000026
Dibenzofuran	132-64-9	9.8 E-2	<0.000025	<0.000025	<0.000025
Dichlorobenzidine, 3,3-	91-94-1	2.0 E-3	<0.000024	<0.000024	<0.000024
Dichlorophenol, 2,4-	120-83-2	7.3 E-2	<0.000065	**0.000068 J**	<0.000065
Diethyl phthalate	84-66-2	2.0 E+1	**0.0002**	**0.00024**	**0.00026**
Dimethyl phenol, 2,4-	105-67-9	4.9 E-1	<0.000033	<0.000033	<0.000033
Dimethylphthalate	131-11-3	2.0 E+1	<0.00003	<0.00003	<0.00003
Di-n-butyl phthalate	84-74-2	2.4 E+0	**0.000099 J**	**0.00016 J**	**0.00019 J**
Dinitro-2-methylphenol, 4,6-	534-52-1	2.4 E-3	<0.000073	<0.000073	<0.000073
Dinitrophenol, 2,4-	51-28-5	4.9 E-2	<0.00005	<0.00005	<0.00005
Dinitrotoluene, 2,4-	121-14-2	1.3 E-3	<0.00003	<0.00003	<0.00003
Dinitrotoluene, 2,6-	606-20-2	1.3 E-3	<0.00005	<0.00005	<0.00005
Di-n-octyl phthalate	117-84-0	2.4 E-1	**0.00026**	<0.000023	<0.000023
Fluoranthene	206-44-0	9.8 E-1	<0.00002	<0.00002	<0.00002
Fluorene	86-73-7	9.80E-01	<0.000021	<0.000021	<0.000021
Hexachlorobenzene	118-74-1	1.0 E-3	<0.00007	<0.00007	<0.00007
Hexachlorobutadiene	87-68-3	1.2 E-2	<0.00005	<0.00005	<0.00005
Hexachlorocyclopentadiene	77-47-4	5.0 E-2	<0.000054	<0.000054	<0.000054
Hexachloroethane	67-72-1	1.7 E-2	<0.000034	<0.000034	<0.000034
Indeno-1,2,3-cd-pyrene	193-39-5	1.3 E-3	<0.000051	<0.000051	<0.000051
Isophorone	78-59-1	9.6 E-1	<0.00003	<0.00003	<0.00003
Methylnaphthalene, 2-	91-57-6	9.8 E-2	<0.000034	<0.000034	<0.000034
Naphthalene	91-20-3	4.9 E-1	<0.00005	<0.00005	<0.00005
Nitroaniline, 2-	88-74-4	7.3 E-3	<0.000038	<0.000038	<0.000038
Nitroaniline, 3-	99-09-2	7.3 E-3	<0.000056	<0.000056	<0.000056

TABLE G.2
GROUNDWATER SAMPLING AND TESTING RESULTS: SVOCS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-5	MW-6	MW-6 Dup.
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/18/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270 (continued)					
Nitroaniline, 4-	100-01-6	4.6 E-2	<0.00004	<0.00004	<0.00004
Nitrobenzene	98-95-3	4.9 E-2	<0.00005	<0.00005	<0.00005
Nitrophenol, 2-	88-75-5	4.9 E-2	<0.000024	<0.000024	<0.000024
Nitrophenol, 4-	100-02-7	4.9 E-2	<0.00006	<0.00006	<0.00006
Nitrosodi-n-propylamine, n-	621-64-7	2.0 E-4	<0.00004	<0.00004	<0.00004
Nitrosodiphenylamine	86-30-6	1.9 E-1	<0.000029	<0.000029	<0.000029
Pentachlorophenol	87-86-5	1.0 E-3	<0.000046	<0.000046	<0.000046
Phenanthrene	85-01-8	7.3 E-1	<0.00002	<0.00002	<0.00002
Phenol	108-95-2	7.3 E+0	<0.000032	<0.000032	<0.000032
Pyrene	129-00-0	7.3 E-1	<0.000022	<0.000022	<0.000022
Trichlorophenol, 2,4,5-	95-95-4	2.4 E+0	<0.00004	<0.00004	<0.00004
Trichlorophenol, 2,4,6-	88-06-2	2.4 E-2	<0.00006	<0.00006	<0.00006

Notes:
1. Detections are shown in **bold**.
2. < = Constituent not detected at specified Sample Quantitation Limit.
3. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
4. Dup = Duplicate sample.

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TABLE G.3
GROUNDWATER SAMPLING AND TESTING RESULTS: METALS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-6 Dup.
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/15/2014	8/19/2014	8/15/2014	8/18/2014	8/18/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Metals by EPA Methods 6010B, 6020, and 7471A									
Arsenic, Total	7440-38-2	1.0 E-2	<0.001	**0.00232 J**	<0.001	**0.00182 J**	**0.00428 J**	**0.00106 J**	**0.00140 J**
Barium, Total	7440-39-3	2.0 E+0	**0.0304**	**0.220**	**1.26**	**0.434**	**1.29**	**0.494**	**0.516**
Cadmium, Total	7440-43-9	5.0 E-3	**0.00187 J**	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Chromium, Total	7440-47-3	1.0 E-1	<0.001	**0.00653**	<0.001	**0.00990**	**0.0410**	<0.001	<0.001
Lead, Total	7439-92-1	1.5 E-2	<0.0005	**0.00314 J**	<0.0005	**0.00137 J**	**0.00565**	<0.0005	<0.0005
Mercury, Total	7439-97-6	2.0 E-3	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004
Selenium, Total	7782-49-2	5.0 E-2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00122 J**	**0.00158 J**
Silver, Total	7440-22-4	1.2 E-1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic, Dissolved	7440-38-2	1.0 E-2	<0.001	**0.00101 J**	<0.001	**0.00107 J**	<0.001	**0.00121 J**	**0.00118 J**
Barium, Dissolved	7440-39-3	2.0 E+0	**0.0308**	**0.148**	**1.20**	**0.357**	**1.07**	**0.511**	**0.508**
Cadmium, Dissolved	7440-43-9	5.0 E-3	**0.00195 J**	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Chromium, Dissolved	7440-47-3	1.0 E-1	<0.001	<0.001	<0.001	**0.00186 J**	<0.001	<0.001	<0.001
Lead, Dissolved	7439-92-1	1.5 E-2	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Mercury, Dissolved	7439-97-6	2.0 E-3	<0.000042	<0.000042	**0.000173 J**	<0.000042	<0.000042	<0.000042	<0.000042
Selenium, Dissolved	7782-49-2	5.0 E-2	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00191 J**	**0.00151 J**
Silver, Dissolved	7440-22-4	1.2 E-1	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008

Notes:
1. Detections are shown in **bold**.
2. < = Constituent not detected at specified Sample Quantitation Limit.
3. J = Estimated concentration detected between the Sample Quantitation Limit and Method Quantitation Limit.
4. Dup = Duplicate sample.

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TABLE G.4
GROUNDWATER SAMPLING AND TESTING RESULTS: TPH

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-6 Dup.
SAMPLE DATE:		Assessment	8/15/2014	8/18/2014	8/15/2014	8/19/2014	8/15/2014	8/18/2014	8/18/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Petroleum Hydrocarbons by TX 1005									
nC6 to nC12	NA	9.8 E-1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
>nC12 to nC28	NA	9.8 E-1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
>nC28 to nC35	NA	9.8 E-1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Total Petroleum Hydrocarbons	NA	NA	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19

Notes:
1. < = Constituent not detected at specified Sample Quantitation Limit.
2. Dup = Duplicate sample.

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TABLE G.5
CRITERIUM PHASE II GROUNDWATER SAMPLING RESULTS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	B-1	B-5	B-6
SAMPLE DATE:		Assessment	2/15/2014	2/15/2014	2/15/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L
Volatile Organic Compounds (VOCs) By EPA Method 8260B					
Acetone	67-64-1	2.2 E+1	<0.05	<0.05	<0.05
Benzene	71-43-2	5.0 E-3	<0.005	<0.005	<0.005
Bromodichloromethane	75-27-4	1.5 E-2	<0.005	<0.005	<0.005
Bromoform	75-25-2	1.2 E-1	<0.005	<0.005	<0.005
Bromomethane	74-83-9	3.4 E-2	<0.01	<0.01	<0.01
Carbon disulfide	75-15-0	2.4 E+0	<0.005	<0.005	<0.005
Carbon tetrachloride	56-23-5	5.0 E-3	<0.005	<0.005	<0.005
Chlorobenzene	108-90-7	1.0 E-1	<0.005	<0.005	<0.005
Chloroethane	75-00-3	9.8 E+0	<0.01	<0.01	<0.01
Chloroform	67-66-3	2.4 E-1	<0.005	<0.005	<0.005
Chloromethane	74-87-3	7.0 E-2	<0.005	<0.005	<0.005
Dibromochloromethane	124-48-1	1.1 E-2	<0.005	<0.005	<0.005
Dichloroethane, 1,1-	75-34-3	4.9 E+0	<0.005	**0.02**	**0.29**
Dichloroethane, 1,2-	107-06-2	5.0 E-3	<0.005	**0.0052**	<0.005
Dichloroethylene, 1,1-	75-35-4	7.0 E-3	<0.005	**0.55**	**0.34**
Dichloroethylene, cis-1,2-	156-59-2	7.0 E-2	<0.005	**0.41**	**3.80**
Dichloroethylene, trans-1,2	156-60-5	1.0 E-1	<0.005	<0.005	**0.042**
Dichloropropane, 1,2-	78-87-5	5.0 E-3	<0.005	<0.005	<0.005
Dichloropropene, cis 1,3-	10061-01-5	1.7 E-3	<0.005	<0.005	<0.005
Dichloropropene, trans 1,3-	10061-02-6	9.1 E-3	<0.005	<0.005	<0.005
Ethylbenzene	100-41-4	7.0 E-1	<0.005	<0.005	<0.005
Hexanone, 2-	591-78-6	1.2 E-1	<0.01	<0.01	<0.01
Methyl ethyl ketone	78-93-3	1.5 E+1	<0.02	<0.02	<0.02
Methyl isobutyl ketone	108-10-1	2.0 E+0	<0.01	<0.01	<0.01
Methylene chloride	75-09-2	5.0 E-3	<0.005	<0.005	<0.005
MTBE (methyl tert-butyl ether)	1634-04-4	2.4 E-1	<0.005	<0.005	<0.005
Styrene	100-42-5	1.0 E-1	<0.005	<0.005	<0.005
Tetrachloroethane, 1,1,2,2-	79-34-5	4.6 E-3	<0.005	<0.005	<0.005
Tetrachloroethylene	127-18-4	5.0 E-3	<0.005	**0.039**	<0.005
Toluene	108-88-3	1.0 E+0	<0.005	<0.005	<0.005
Trichloroethane, 1,1,1-	71-55-6	2.0 E-1	<0.005	<0.005	<0.005
Trichloroethane, 1,1,2-	79-00-5	5.0 E-3	<0.005	<0.005	<0.005
Trichloroethylene	79-01-6	5.0 E-3	<0.005	**0.3**	**0.076**
Trichlorofluoromethane	75-69-4	7.3 E+0	<0.005	<0.005	<0.005
Vinyl acetate	108-05-4	2.4 E+1	<0.01	<0.01	<0.01
Vinyl chloride	75-01-4	2.0 E-3	<0.01	**0.032**	**0.20**
Xylene, m,p-	179601-23-1	1.0 E+1	<0.005	<0.005	<0.005
Xylene, o-	95-47-6	1.0 E+1	<0.005	<0.005	<0.005
Xylenes, Total	1330-20-7	1.0 E+1	<0.005	<0.005	<0.005
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A					
Arochlors	1336-36-3	5.0 E-4	<0.0005	<0.0005	<0.0005
Total Petroleum Hydrocarbons by EPA Method 8015C					
C-6 to C-10 Aliphatics	NA	9.8 E-1	<0.1	**0.71**	**3.5**
C-10 to C-28 Aliphatics	NA	9.8 E-1	<0.15	<0.15	<0.15
C-28 to C-35 Aliphatics	NA	9.8 E-1	<0.15	<0.15	<0.15

TABLE G.5
CRITERIUM PHASE II GROUNDWATER SAMPLING RESULTS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	B-1	B-5	B-6
SAMPLE DATE:		Assessment	2/15/2014	2/15/2014	2/15/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L
Metals by EPA Methods 6020					
Arsenic	7440-38-2	1.0 E-2	<0.004	<0.004	<0.004
Beryllium	7440-41-7	4.0 E-3	<0.002	<0.002	<0.002
Cadmium	7440-43-9	5.0 E-3	<0.002	<0.002	<0.002
Chromium	7440-47-3	1.0 E-1	<0.004	<0.004	<0.004
Copper	7440-50-8	1.3 E+0	<0.002	<0.002	<0.002
Lead	7439-92-1	1.5 E-2	<0.001	<0.001	<0.001
Mercury	7439-97-6	2.0 E-3	<0.0002	<0.0002	<0.0002
Nickel	7440-02-0	4.9 E-1	**0.0104**	**0.00501**	**0.00682**
Selenium	7782-49-2	5.0 E-2	<0.005	<0.005	<0.005
Silver	7440-22-4	1.2 E-1	<0.001	<0.001	<0.001
Thalium	7791-12-0	2.0 E-3	<0.002	<0.002	<0.002
Zinc	7440-66-6	7.3 E+0	**0.0123**	**0.00955**	**0.0114**
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270D					
Acenaphthene	83-32-9	1.5 E+0	<0.02	<0.005	<0.005
Acenaphthylene	208-96-8	1.5 E+0	<0.005	<0.005	<0.005
Aniline	62-53-3	1.6 E-1	<0.005	<0.005	<0.005
Anthracene	120-12-7	7.3 E+0	<0.005	<0.005	<0.005
Benz-a-anthracene	56-55-3	1.3 E-3	<0.005	<0.005	<0.005
Benzo-a-pyrene	50-32-8	2.0 E-4	<0.005	<0.005	<0.005
Benzo-b-fluoranthene	205-99-2	1.3 E-3	<0.005	<0.005	<0.005
Benzo-g,h,i-perylene	191-24-2	7.3 E-1	<0.005	<0.005	<0.005
Benzoic acid	65-85-0	9.8 E+1	<0.02	<0.02	<0.02
Benzo-k-fluoranthene	207-08-9	1.3 E-2	<0.005	<0.005	<0.005
Benzyl alcohol	100-51-6	2.4 E+0	<0.01	<0.01	<0.01
Bis (2-chloroethoxy) methane	111-91-1	8.3 E-4	<0.005	<0.005	<0.005
Bis (2-chloroethyl) ether	111-44-4	8.3 E-4	<0.005	<0.005	<0.005
Bis (2-chloroisopropyl) ether	108-60-1	1.3 E-2	<0.005	<0.005	<0.005
Bis (2-ethyl-hexyl) phthalate	117-81-7	6.0 E-3	<0.005	<0.005	<0.005
Bromophenyl phenylether, 4-	101-55-3	2.0 E-4	<0.005	<0.005	<0.005
Butyl benzyl phthalate	85-68-7	4.8 E-1	<0.005	<0.005	<0.005
Carbazole	86-74-8	4.6 E-2	<0.005	<0.005	<0.005
Chloro-3-methylphenol, 4-	59-50-7	1.2 E-1	<0.005	<0.005	<0.005
Chloroaniline, 4-	106-47-8	4.6 E-3	<0.005	<0.005	<0.005
Chloronaphthalene, 2-	91-58-7	2.0 E+0	<0.005	<0.005	<0.005
Chlorophenol, 2-	95-57-8	1.2 E-1	<0.005	<0.005	<0.005
Chlorophenyl phenylether, 4-	7005-72-3	2.0 E-4	<0.005	<0.005	<0.005
Chrysene	218-01-9	1.3 E-1	<0.005	<0.005	<0.005
Cresol, m,p-	106-44-5	1.2 E-1	<0.005	<0.005	<0.005
Cresol, o-	95-48-7	1.2 E+0	<0.005	<0.005	<0.005
Dibenz-a,h-anthracene	53-70-3	2.0 E-4	<0.005	<0.005	<0.005

TABLE G.5
CRITERIUM PHASE II GROUNDWATER SAMPLING RESULTS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

LOCATION ID:		Groundwater	B-1	B-5	B-6
SAMPLE DATE:		Assessment	2/15/2014	2/15/2014	2/15/2014
ANALYTE	CAS No.	Level (mg/L)	mg/L	mg/L	mg/L
Semivolatile Organic Compounds (SVOCs) By EPA Method 8270 (continued)					
Dibenzofuran	132-64-9	9.8 E-2	<0.005	<0.005	<0.005
Dichlorobenzene, 1,2-	95-50-1	6.0 E-1	<0.005	<0.005	<0.005
Dichlorobenzene, 1,3-	541-73-1	7.3 E-1	<0.005	<0.005	<0.005
Dichlorobenzene, 1,4-	106-46-7	7.5 E-2	<0.005	<0.005	<0.005
Dichlorobenzidine, 3,3-	91-94-1	2.0 E-3	<0.005	<0.005	<0.005
Dichlorophenol, 2,4-	120-83-2	7.3 E-2	<0.005	<0.005	<0.005
Diethyl phthalate	84-66-2	2.0 E+1	<0.005	<0.005	<0.005
Dimethyl phthalate	131-11-3	2.0 E+1	<0.005	<0.005	<0.005
Dimethylphenol, 2,4-	105-67-9	4.9 E-1	<0.005	<0.005	<0.005
Di-n-butyl phthalate	84-74-2	2.4 E+0	<0.005	<0.005	<0.005
Dinitro-2-methylphenol, 4,6-	534-52-1	2.4 E-3	<0.01	<0.01	<0.01
Dinitrophenol, 2,4-	51-28-5	4.9 E-2	<0.02	<0.02	<0.02
Dinitrotoluene, 2,4-	121-14-2	1.3 E-3	<0.005	<0.005	<0.005
Dinitrotoluene, 2,6-	606-20-2	1.3 E-3	<0.005	<0.005	<0.005
Di-n-octyl phthalate	117-84-0	2.4 E-1	<0.005	<0.005	<0.005
Diphenylhydrazine, 1.2-	122-66-7	1.1 E-3	<0.005	<0.005	<0.005
Fluoranthene	206-44-0	9.8 E-1	<0.005	<0.005	<0.005
Fluorene	86-73-7	9.8 E-1	<0.005	<0.005	<0.005
Hexachlorobenzene	118-74-1	1.0 E-3	<0.005	<0.005	<0.005
Hexachlorobutadiene	87-68-3	1.2 E-2	<0.005	<0.005	<0.005
Hexachlorocyclopentadiene	77-47-4	5.0 E-2	<0.01	<0.01	<0.01
Hexachloroethane	67-72-1	1.7 E-2	<0.005	<0.005	<0.005
Indeno-1,2,3-cd-pyrene	193-39-5	1.3 E-3	<0.005	<0.005	<0.005
Isophorone	78-59-1	9.6 E-1	<0.005	<0.005	<0.005
Methylnaphthalene, 2-	91-57-6	9.8 E-2	<0.005	<0.005	<0.005
Naphthalene	91-20-3	4.9 E-1	<0.005	<0.005	<0.005
Nitroaniline, 2-	88-74-4	7.3 E-3	<0.005	<0.005	<0.005
Nitroaniline, 3-	99-09-2	7.3 E-3	<0.005	<0.005	<0.005
Nitroaniline, 4-	100-01-6	4.6 E-2	<0.005	<0.005	<0.005
Nitrobenzene	98-95-3	4.9 E-2	<0.005	<0.005	<0.005
Nitrophenol, 2-	88-75-5	4.9 E-2	<0.01	<0.01	<0.01
Nitrophenol, 4-	100-02-7	4.9 E-2	<0.02	<0.02	<0.02
Nitrosodi-n-propylamine, n-	621-64-7	2.0 E-4	<0.005	<0.005	<0.005
Nitrosodiphenylamine, n-	86-30-6	1.9 E-1	<0.005	<0.005	<0.005
Pentachlorophenol	87-86-5	1.0 E-3	<0.01	<0.01	<0.01
Phenanthrene	85-01-8	7.3 E-1	<0.005	<0.005	<0.005
Phenol	108-95-2	7.3 E+0	<0.005	<0.005	<0.005
Pyrene	129-00-0	7.3 E-1	<0.005	<0.005	<0.005
Trichlorobenzene, 1,2,4-	120-82-1	7.0 E-2	<0.005	<0.005	<0.005
Trichlorophenol, 2,4,5-	95-95-4	2.4 E+0	<0.005	<0.005	<0.005
Trichlorophenol, 2,4,6-	88-06-2	2.4 E-2	<0.005	<0.005	<0.005

Notes:
1. Detections are shown in **bold**.
2. Yellow highlight indicates an exceedance of the applicable assessment level.
3. < = Constituent not detected at specified Sample Quantitation Limit.
4. NA = Not applicable.

GSI ENVIRONMENTAL

TABLE G.6
GROUNDWATER SAMPLING AND TESTING RESULTS: GEOCHEMICAL PARAMETERS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

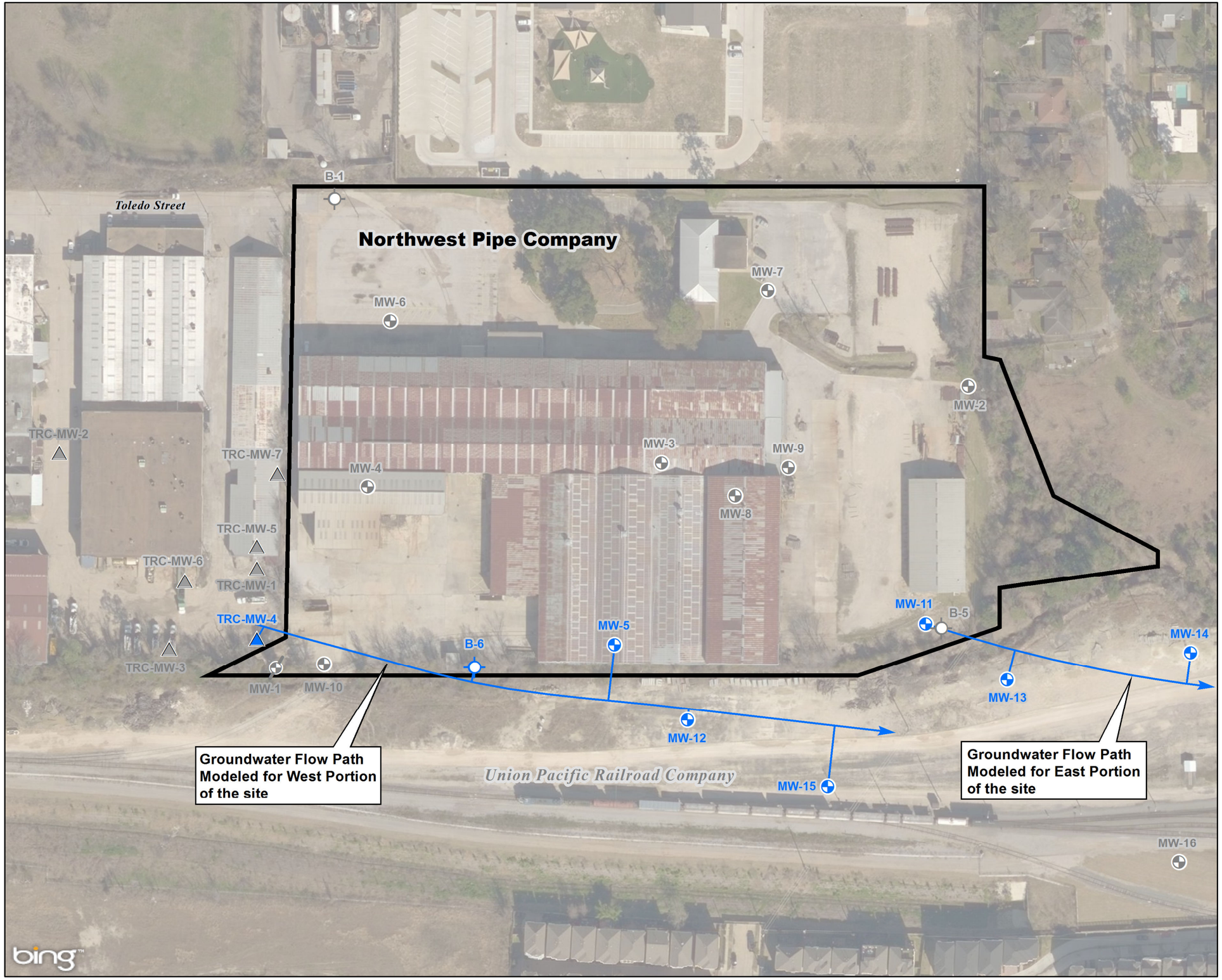
Well ID No.	Date of Measurement	Temp. (°F)	pH (s.u.)	Specific Conductance (mS/cm)	Field Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox (mV)
MW-1	8/15/2014	71.9	5.80	1.282	9.13	1.19	226
	12/29/2014	66.9	6.41	1.326	52.4	3.52	29.6
MW-2	8/18/2014	76.4	6.72	1.178	40.6	1.42	-172
	12/29/2014	68.8	6.60	1.218	20.4	1.55	-119
	3/18/2015	70.0	6.61	1.350	49.1	0.94	-79.0
	6/25/2015	76.0	7.47	1.380	137	0.37	-1.0
	9/28/2015	73.8	6.60	0.885	0.63	0.53	3.4
	12/1/2015	71.4	6.62	1.377	4.80	0.61	-13.9
MW-3	8/15/2014	75.0	6.18	0.639	27.6	1.34	-67.5
	12/29/2014	71.0	6.78	0.680	11.4	1.00	-155
	3/18/2015	70.8	6.74	0.759	25.9	0.89	-200
	6/25/2015	75.8	8.55	0.791	36.2	0.48	-45.0
	9/28/2015	74.6	6.84	0.417	1.84	0.62	-93.6
	12/1/2015	72.4	6.80	0.723	8.73	0.40	-68.5
MW-4	8/19/2014	76.5	7.03	0.811	144	1.86	-479
	12/29/2014	71.4	6.97	0.730	51.0	1.11	-157
	3/18/2015	71.3	6.81	0.784	98.9	4.29	-166
	6/25/2015	77.0	8.31	0.845	157	0.43	-39.0
	9/28/2015	75.9	7.10	0.505	5.21	0.44	25.6
	12/1/2015	73.4	6.95	0.782	46.6	0.71	9.10
MW-5	8/15/2014	76.7	6.13	1.065	>1000	1.12	-116
	12/29/2014	69.2	6.73	1.140	177	0.94	-133
	3/18/2015	74.4	6.59	1.200	111	0.82	-58.0
	6/25/2015	81.5	7.62	1.220	95.6	0.33	-26.0
	9/28/2015	74.3	6.82	0.620	115	1.09	-40.7
	12/1/2015	71.5	6.81	1.167	80.6	1.01	-64.5
MW-6	8/18/2014	82.3	6.87	0.814	49.4	2.66	-178
	12/29/2014	71.3	6.76	0.724	4.57	1.22	-99.4
	3/18/2015	71.1	6.69	0.815	8.0	0.86	16.0
	6/25/2015	85.9	7.72	0.816	0.70	0.35	-19.0
	9/28/2015	79.2	6.91	0.544	1.47	0.41	-67.1
	12/1/2015	73.9	6.80	0.759	0.690	0.59	-58.7
MW-7	12/29/2014	71.8	6.98	0.742	7.50	1.25	-144
	3/18/2015	70.8	6.90	0.803	26.6	1.57	26.0
	6/25/2015	80.1	8.00	0.824	12.3	0.34	-7.0
	9/28/2015	76.7	7.15	0.638	7.30	0.79	-53.3
	12/1/2015	73.4	7.06	0.745	4.51	0.43	-40.6
MW-8	12/29/2014	70.3	6.82	0.694	58.7	1.22	-161
	3/18/2015	72.0	6.72	0.779	65.9	0.86	-75.0
	6/25/2015	79.0	8.02	0.828	39.0	0.38	-17.0
	9/28/2015	76.6	6.93	0.441	8.73	0.88	-121
	12/1/2015	72.7	6.82	0.755	8.44	0.70	-79.4
MW-9	2/2/2015	70.8	7.86	0.859	48.9	2.48	-43.2
	3/18/2015	71.5	6.69	0.824	74.5	1.48	522
	6/25/2015	83.5	7.63	0.855	117	0.37	86.0
	9/28/2015	77.2	6.91	0.431	4.83	0.62	99.1
	12/1/2015	73.1	6.84	0.788	51.2	1.33	62.8
MW-10	2/2/2015	70.1	6.90	0.816	248	3.60	3.70
	3/18/2015	72.8	6.67	0.870	53.4	1.17	533
	6/25/2015	81.2	7.52	0.913	3.80	0.26	85.0
	9/28/2015	75.2	6.68	0.490	10.4	0.42	116
	12/1/2015	71.7	6.73	0.831	4.97	0.44	54.3

TABLE G.6
GROUNDWATER SAMPLING AND TESTING RESULTS: GEOCHEMICAL PARAMETERS

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Well ID No.	Date of Measurement	Temp. (°F)	pH (s.u.)	Specific Conductance (mS/cm)	Field Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox (mV)
MW-11	2/2/2015	72.6	7.60	0.911	263	4.40	-20.6
	3/18/2015	69.4	6.77	0.972	37.7	1.30	517
	6/25/2015	80.5	7.26	0.954	34.6	0.37	57.0
	9/28/2015	75.0	6.81	0.601	2.41	0.52	45.0
	12/1/2015	71.2	6.83	0.963	7.79	0.80	37.2
MW-12	9/29/2015	81.2	6.98	2.400	723	2.36	-28.3
	12/1/2015	73.1	6.58	2.186	25.0	0.52	112
MW-13	9/29/2015	78.7	7.69	2.438	108	1.22	-766
	12/1/2015	71.6	6.54	2.276	27.7	0.55	25.6
MW-14	9/30/2015	78.3	8.00	0.839	372	2.01	6.20
	12/1/2015	69.6	6.96	0.783	>1000	0.34	-43.2
MW-15	9/29/2015	80.3	7.92	1.070	67.3	2.55	-13.3
	12/1/2015	71.8	6.75	1.272	6.76	0.56	87.9
MW-16	9/30/2015	77.9	8.17	0.808	376	0.80	-0.10
	12/1/2015	72.8	6.46	0.754	13.2	0.66	-1.60

Note: Field measurements were collected using a YSI portable field parameter meter and a Hach turbidity meter.



LEGEND

- GSI monitoring well
- Phase II temporary well (Feb-2014)
- Former monitoring well (plugged and abandoned)
- TRC monitoring well
- MSD Designated Property

Monitoring wells used in the BIOCHLOR model are shown with blue symbols

Notes

Background Imagery: Landiscor High Resolution Imagery taken March, 2012; Resolution: 1 Foot.

Feet
0 60 120

Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (ft)

GSI ENVIRONMENTAL

BIOCHLOR MODELING LOCATION MAP

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP No. 2665

GSI Job No.	G-3990	Drawn By:	CDM
Issued:	1-Feb-2016	Chk'd By:	JMS
Map ID:	**012_14**	Appv'd By:	TMM

FIGURE G.1

APPENDIX G

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment G.1
BIOCHLOR Modeling Input and Output Files

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP East Area PCE
Calibration Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	34	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	6.21	(-)
TCE	130	(L/kg)	2.59	(-)
DCE	125	(L/kg)	2.53	(-)
VC	30	(L/kg)	1.36	(-)
ETH	302	(L/kg)	4.70	(-)
Common R (used in model)* =			**2.59**	

4. BIOTRANSFORMATION

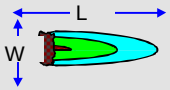
-1st Order Decay Coefficient*

	λ (1/yr)	half-life (yrs)	Yield
Zone 1			
PCE → TCE	0.600		0.79
TCE → DCE	0.800		0.74
DCE → VC	1.600		0.64
VC → ETH	4.000		0.45
Zone 2	λ (1/yr)	half-life (yrs)	
PCE → TCE	0.000		
TCE → DCE	0.000		
DCE → VC	0.000		
VC → ETH	0.000		

λ HELP

5. GENERAL

Simulation Time*	55	(yr)
Modeled Area Width*	120	(ft)
Modeled Area Length*	340	(ft)
Zone 1 Length*	340	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous
Single Planar

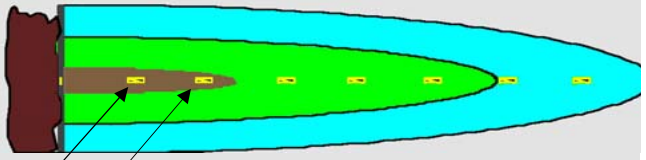
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Y1
Width* (ft) 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	.35	0
TCE	.93	0
DCE	.74	0
VC	.12	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.35	.003	.001								
TCE Conc. (mg/L)	.93	.013	.001								
DCE Conc. (mg/L)	.74	.009	.001								
VC Conc. (mg/L)	0.1	.001	.001								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	0	120	340								
Date Data Collected	2015										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | *Help* | Restore | RESET | *SEE* | Paste

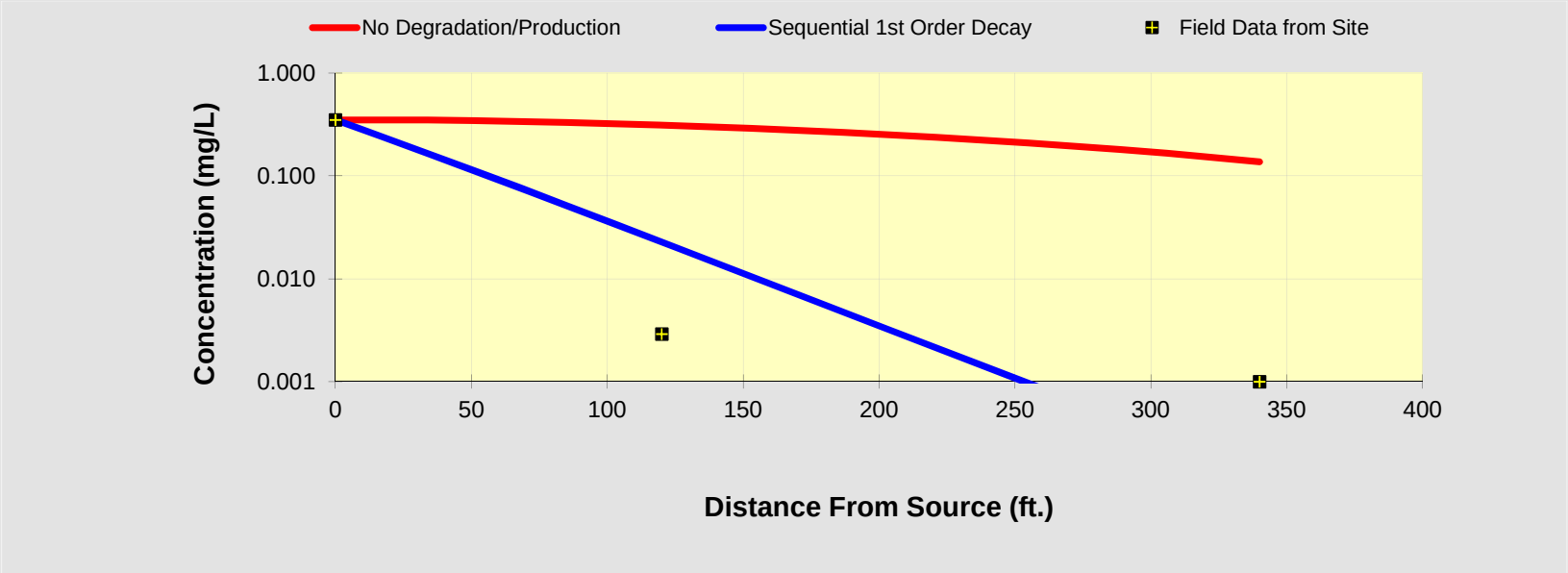
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.350	0.348	0.339	0.322	0.300	0.276	0.251	0.223	0.195	0.166	0.137
Biotransformation	0.3500	0.165	0.076	0.035	0.016	0.007	0.003	0.001	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.350	0.003	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

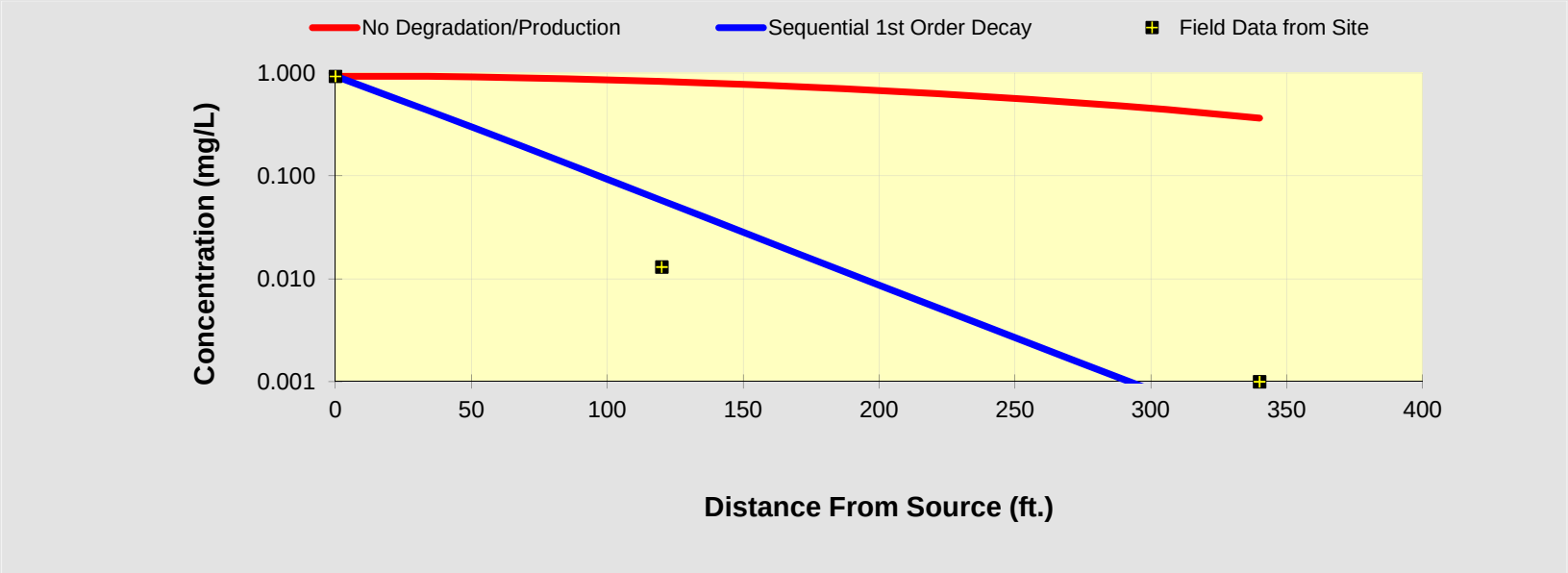
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.930	0.926	0.901	0.855	0.798	0.734	0.666	0.593	0.517	0.440	0.363
Biotransformation	0.9300	0.432	0.197	0.088	0.039	0.018	0.008	0.004	0.002	0.001	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.930	0.013	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

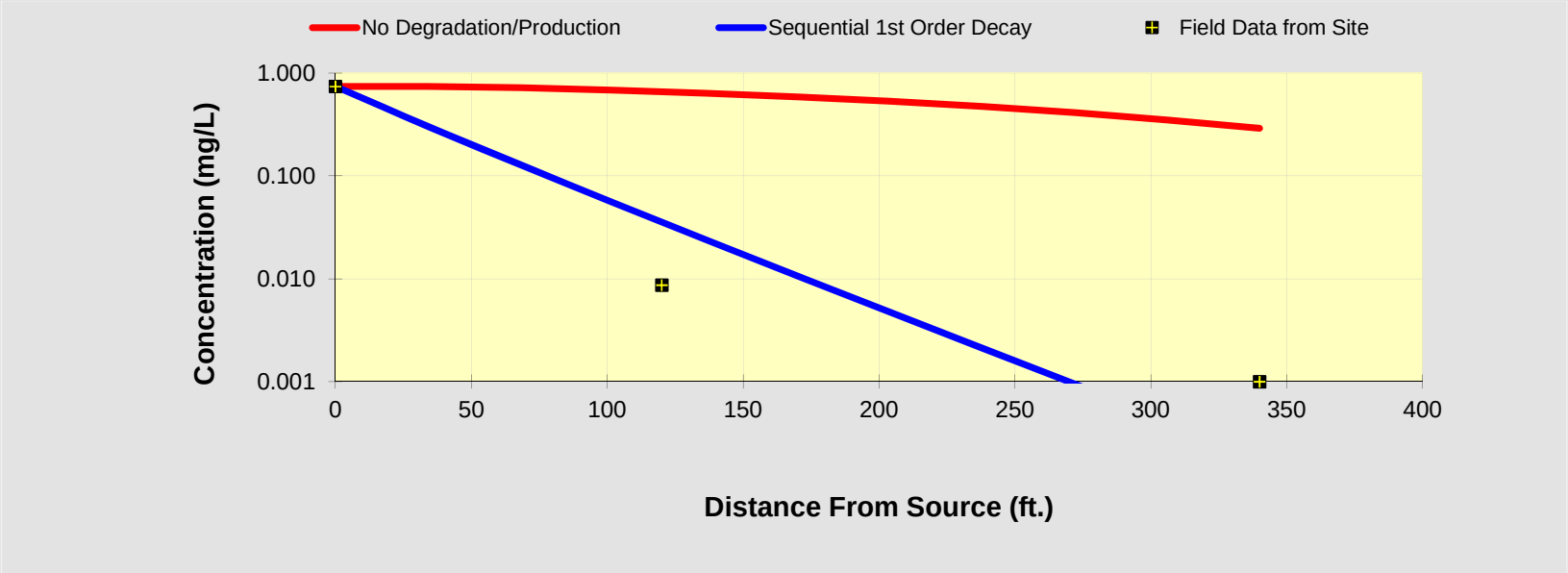
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

DCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.740	0.737	0.717	0.680	0.635	0.584	0.530	0.472	0.412	0.350	0.289
Biotransformation	0.7400	0.302	0.128	0.055	0.024	0.011	0.005	0.002	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.740	0.009	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

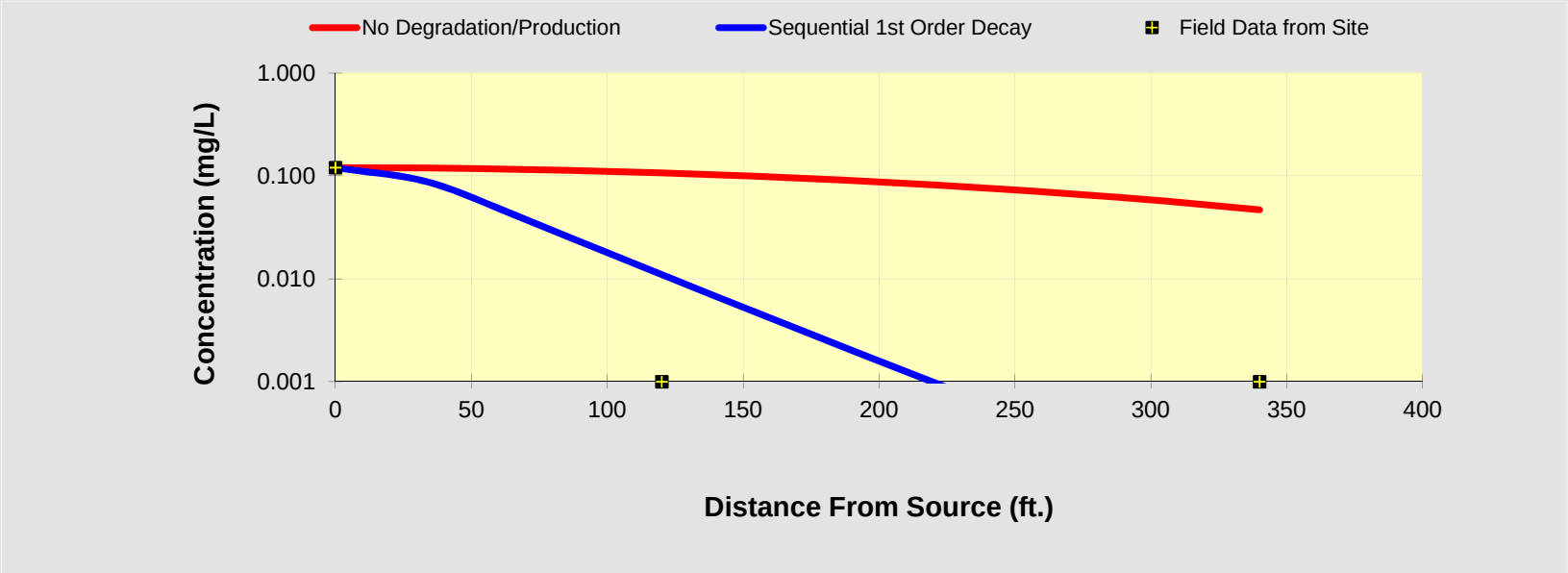
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

VC	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.120	0.119	0.116	0.110	0.103	0.095	0.086	0.077	0.067	0.057	0.047
Biotransformation	0.1200	0.087	0.040	0.017	0.007	0.003	0.001	0.001	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.120	0.001	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP East Area PCE
Prediction Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	34	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	6.21	(-)
TCE	130	(L/kg)	2.59	(-)
DCE	125	(L/kg)	2.53	(-)
VC	30	(L/kg)	1.36	(-)
ETH	302	(L/kg)	4.70	(-)
Common R (used in model)* =			**2.59**	

4. BIOTRANSFORMATION

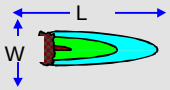
-1st Order Decay Coefficient*

	λ (1/yr)	half-life (yrs)	Yield
Zone 1			
PCE → TCE	0.600		0.79
TCE → DCE	0.800		0.74
DCE → VC	1.600		0.64
VC → ETH	4.000		0.45
Zone 2	λ (1/yr)	half-life (yrs)	
PCE → TCE	0.000		
TCE → DCE	0.000		
DCE → VC	0.000		
VC → ETH	0.000		

λ HELP

5. GENERAL

Simulation Time*	500	(yr)
Modeled Area Width*	120	(ft)
Modeled Area Length*	340	(ft)
Zone 1 Length*	340	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous
Single Planar

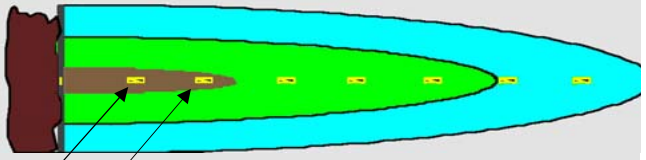
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Y1
Width* (ft) 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	.35	0
TCE	.93	0
DCE	.74	0
VC	.12	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.35	.003	.001								
TCE Conc. (mg/L)	.93	.013	.001								
DCE Conc. (mg/L)	.74	.009	.001								
VC Conc. (mg/L)	0.1	.001	.001								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	0	120	340								
Date Data Collected	2015										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | *Help* | Restore | RESET | *SEE* | Paste

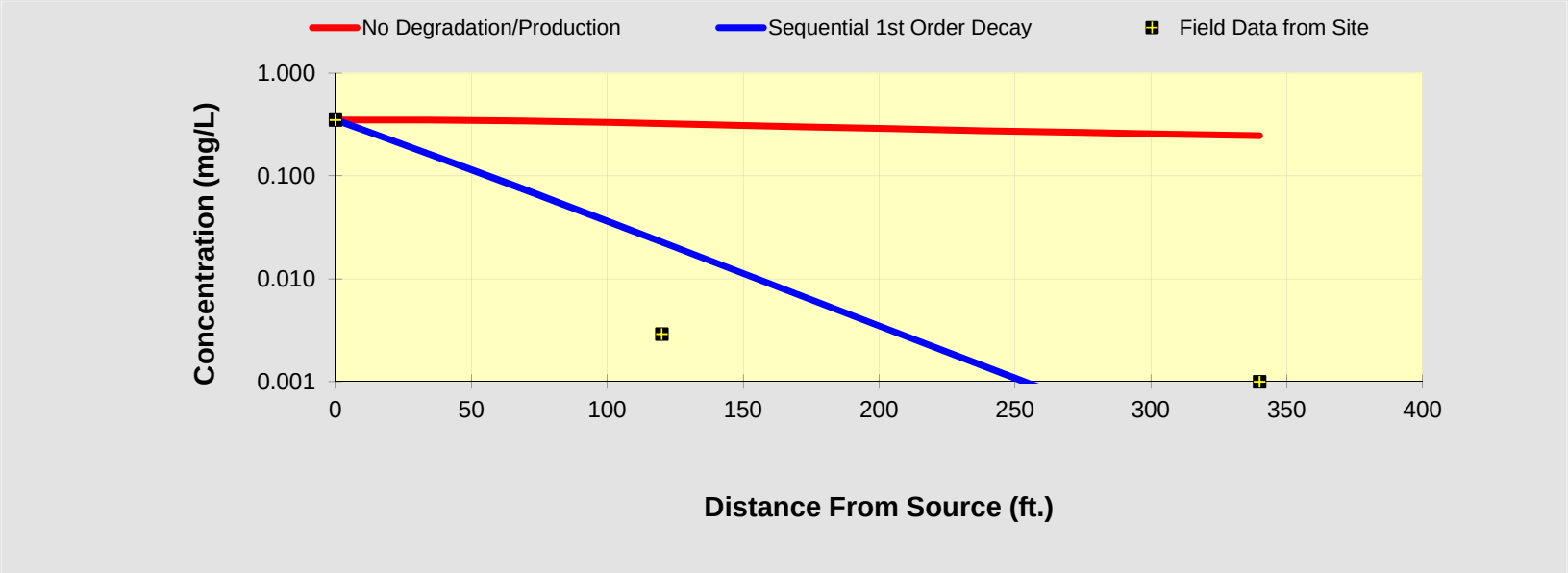
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.350	0.350	0.343	0.330	0.315	0.301	0.287	0.275	0.264	0.254	0.246
Biotransformation	0.3500	0.165	0.076	0.035	0.016	0.007	0.003	0.001	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.350	0.003	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

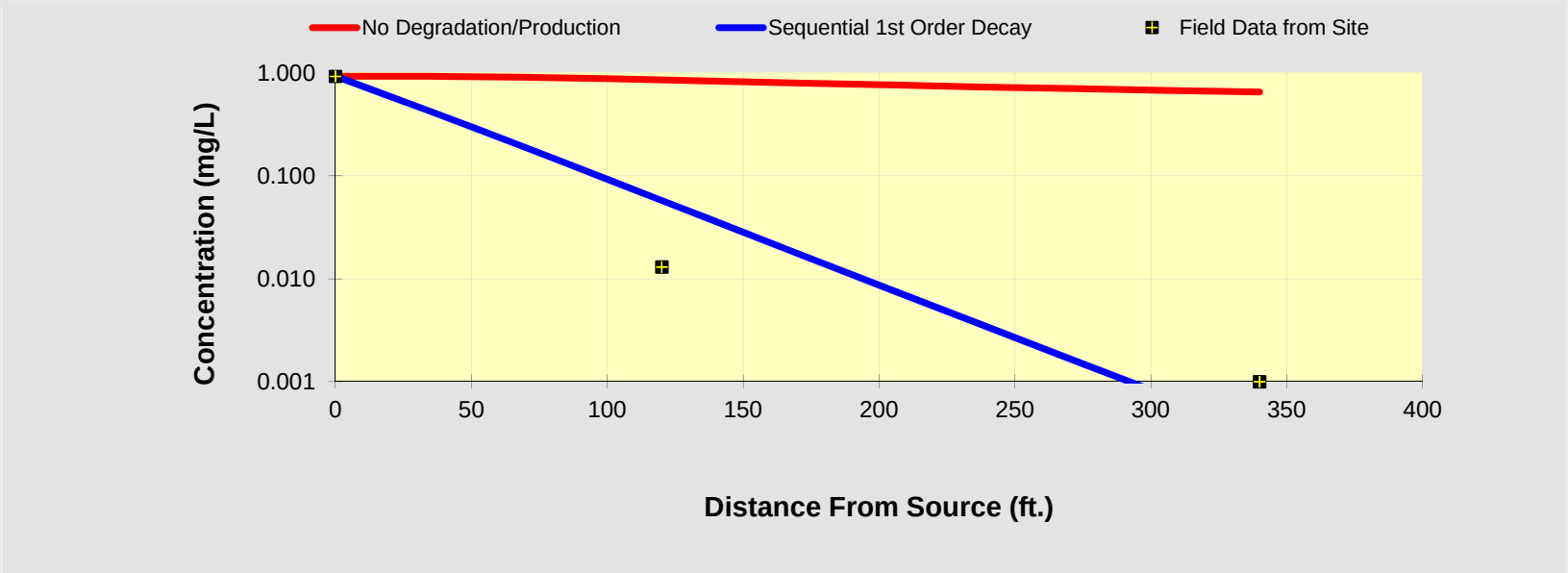
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.930	0.929	0.911	0.876	0.837	0.798	0.763	0.731	0.702	0.676	0.652
Biotransformation	0.9300	0.432	0.197	0.088	0.039	0.018	0.008	0.004	0.002	0.001	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.930	0.013	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

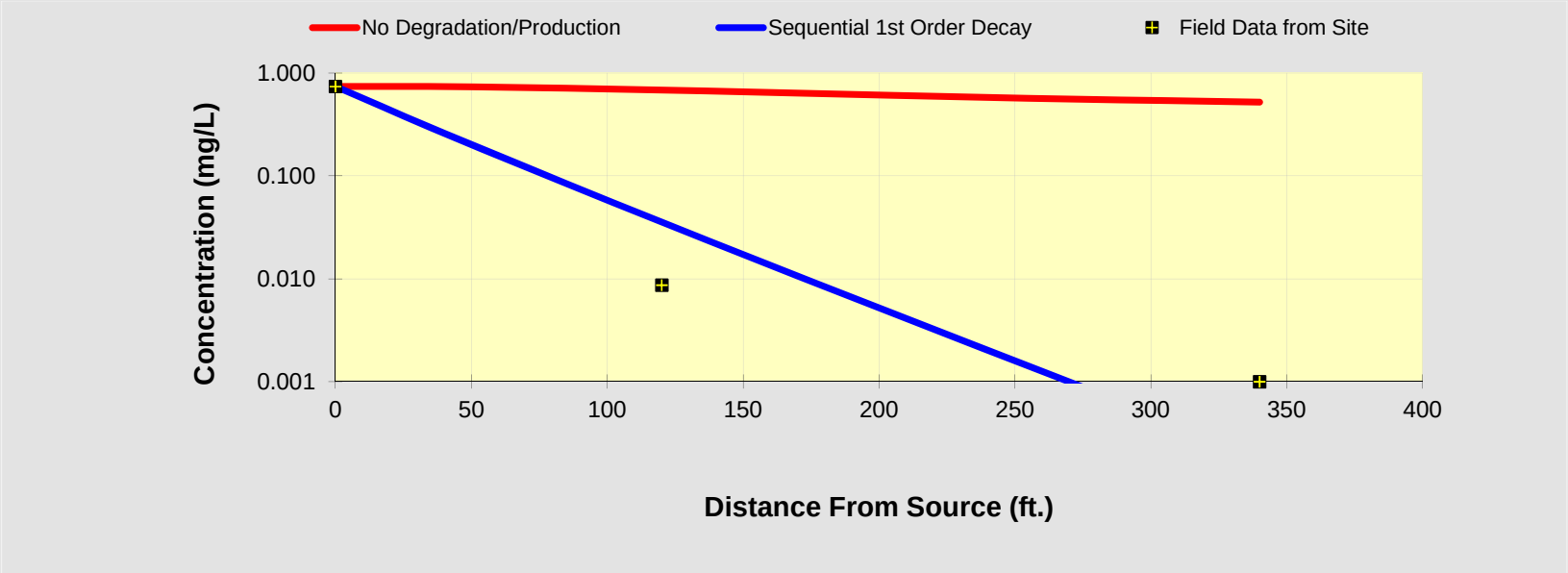
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

DCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.740	0.739	0.725	0.697	0.666	0.635	0.607	0.582	0.559	0.538	0.519
Biotransformation	0.7400	0.302	0.128	0.055	0.024	0.011	0.005	0.002	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.740	0.009	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

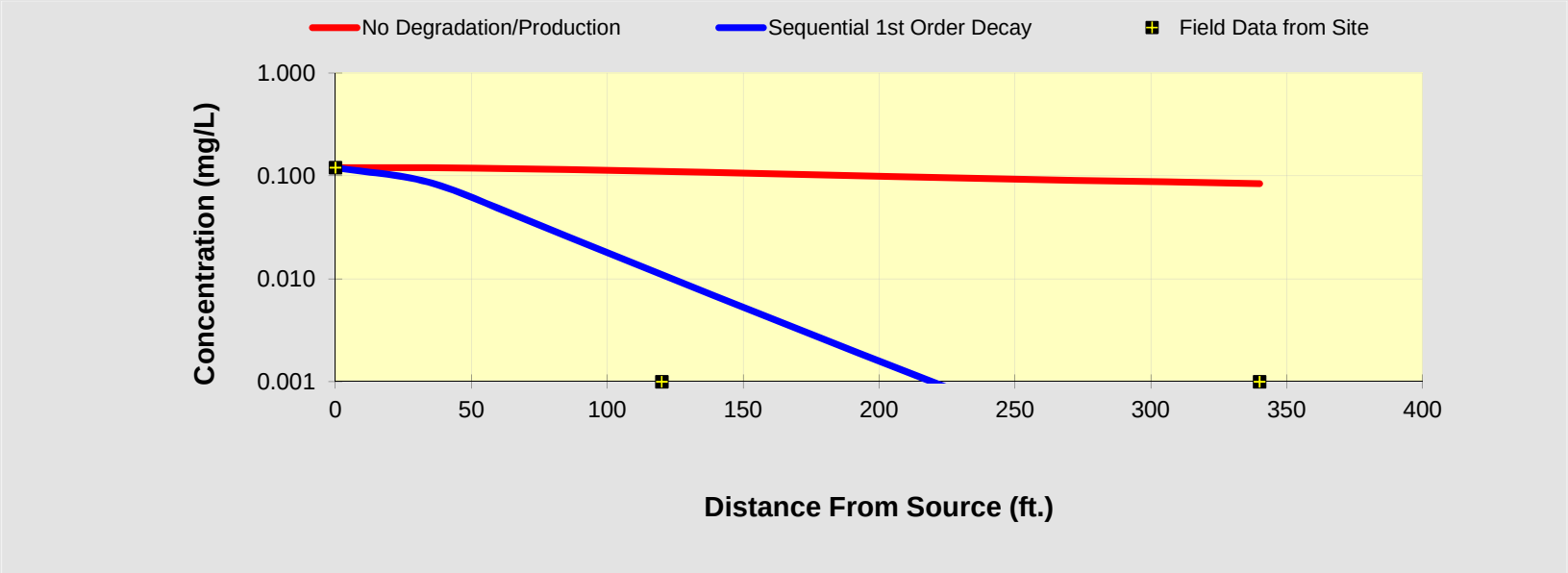
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

VC	0	34	68	102	136	170	204	238	272	306	340
No Degradation	0.120	0.120	0.118	0.113	0.108	0.103	0.098	0.094	0.091	0.087	0.084
Biotransformation	0.1200	0.087	0.040	0.017	0.007	0.003	0.001	0.001	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	0.120	0.001	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP East Area DCE
Calibration Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	34	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	65	(L/kg)	1.79	(-)
TCE		(L/kg)		(-)
DCE		(L/kg)		(-)
VC		(L/kg)		(-)
ETH		(L/kg)		(-)
Common R (used in model)* =			**1.79**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.670		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	55	(yr)
Modeled Area Width*	120	(ft)
Modeled Area Length*	340	(ft)
Zone 1 Length*	340	(ft)
Zone 2 Length*	0	(ft)

L, W

Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous Single Planar

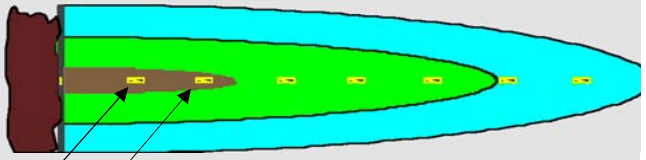
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Width* (ft) Y1 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	3.5	0
TCE	.0	0
DCE	.0	0
VC	.0	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	3.5	.12	.001								
TCE Conc. (mg/L)	.0	.0	.0								
DCE Conc. (mg/L)	.0	.0	.0								
VC Conc. (mg/L)	0.0	.0	.0								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	0	120	340								
Date Data Collected	2015										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | *Help* | Restore | RESET | *SEE* | Paste

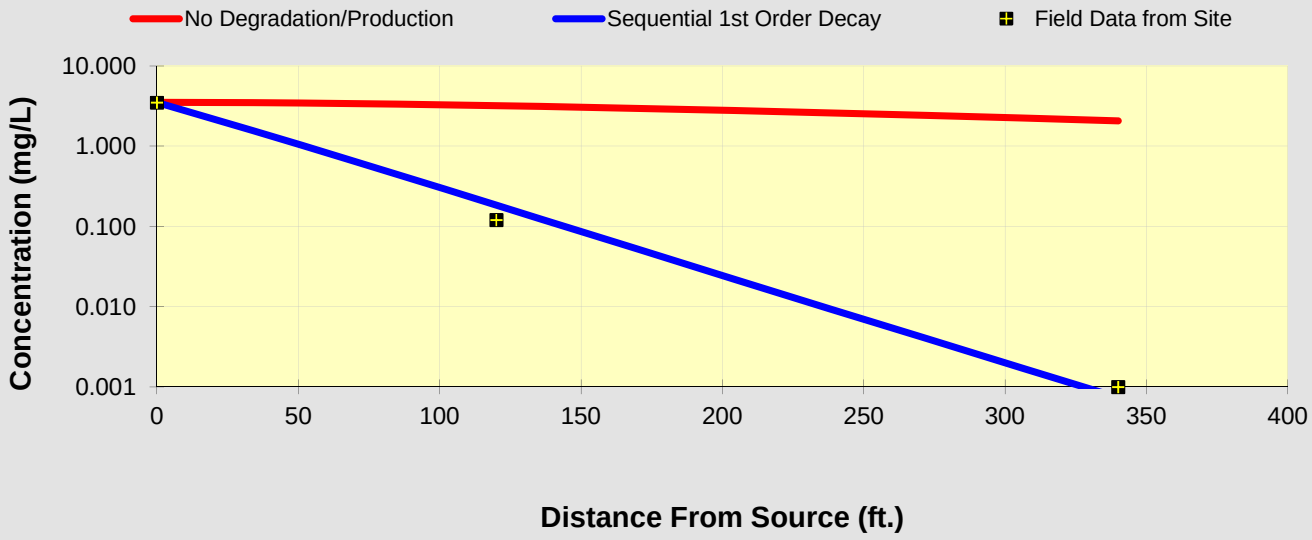
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

1,1-DCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	3.500	3.494	3.421	3.280	3.115	2.945	2.776	2.606	2.431	2.250	2.061
Biotransformation	3.5000	1.554	0.678	0.290	0.123	0.052	0.022	0.009	0.004	0.002	0.001

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	3.500	0.120	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP East Area DCE
Prediction Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	34	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	65	(L/kg)	1.79	(-)
TCE		(L/kg)		(-)
DCE		(L/kg)		(-)
VC		(L/kg)		(-)
ETH		(L/kg)		(-)
Common R (used in model)* =			**1.79**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

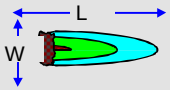
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.670		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	500	(yr)
Modeled Area Width*	120	(ft)
Modeled Area Length*	340	(ft)
Zone 1 Length*	340	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous
Single Planar

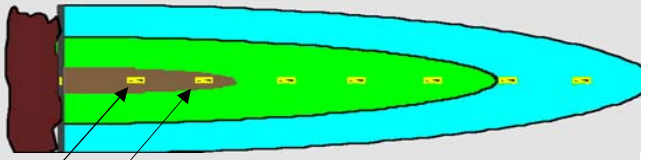
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Width* (ft) Y1 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	3.5	0
TCE	.0	0
DCE	.0	0
VC	.0	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	3.5	.12	.001								
TCE Conc. (mg/L)	.0	.0	.0								
DCE Conc. (mg/L)	.0	.0	.0								
VC Conc. (mg/L)	0.0	.0	.0								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	0	120	340								
Date Data Collected	2015										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | *Help* | Restore | RESET | *SEE* | Paste

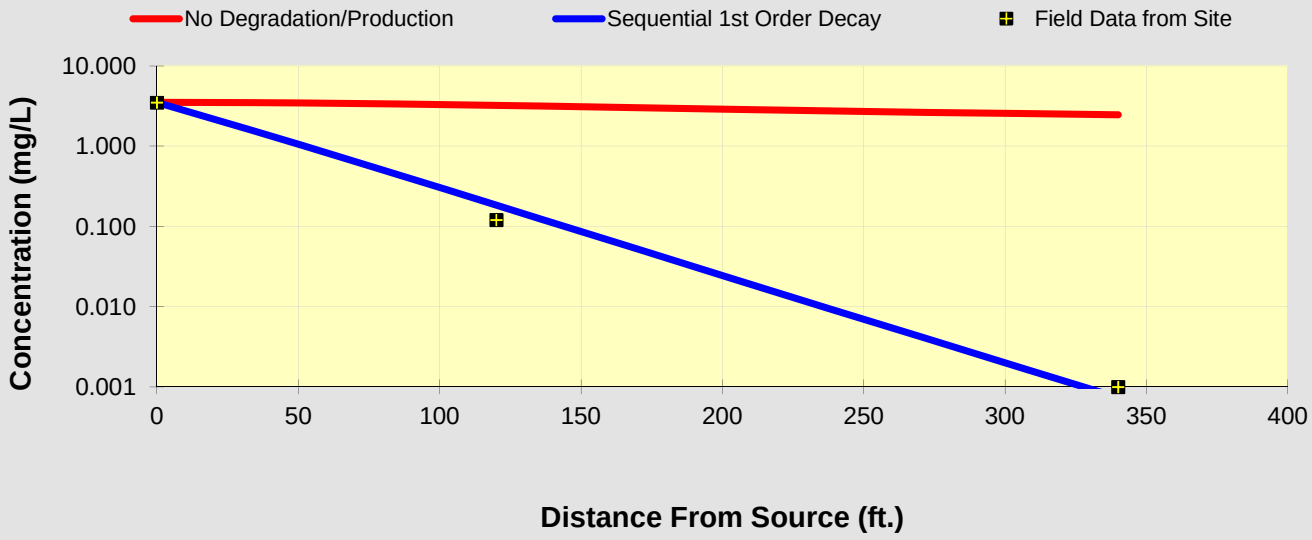
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

1,1-DCE	0	34	68	102	136	170	204	238	272	306	340
No Degradation	3.500	3.496	3.430	3.298	3.150	3.005	2.872	2.751	2.643	2.544	2.456
Biotransformation	3.5000	1.554	0.678	0.290	0.123	0.052	0.022	0.009	0.004	0.002	0.001

Monitoring Well Locations (ft)

	0	120	340								
Field Data from Site	3.500	0.120	0.001								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP West Area PCE
Calibration Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	74.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	6.21	(-)
TCE	130	(L/kg)	2.59	(-)
DCE	125	(L/kg)	2.53	(-)
VC	30	(L/kg)	1.36	(-)
ETH	302	(L/kg)	4.70	(-)
Common R (used in model)* =			**2.59**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

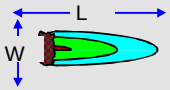
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.500		0.79
TCE → DCE	0.550		0.74
DCE → VC	0.700		0.64
VC → ETH	0.750		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	55	(yr)
Modeled Area Width*	160	(ft)
Modeled Area Length*	740	(ft)
Zone 1 Length*	740	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous
Single Planar

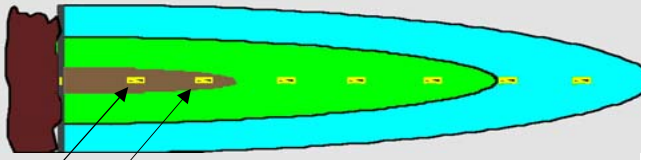
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Y1
Width* (ft) 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	2.1	0
TCE	1.1	0
DCE	1.4	0
VC	.083	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	2.1	.005	.002	.0	.0						
TCE Conc. (mg/L)	1.1	.076	.008	.001	.0						
DCE Conc. (mg/L)	1.4	3.8	.018	.0	.0						
VC Conc. (mg/L)	0.0	.2	.007	.001	.0						
ETH Conc. (mg/L)	0.0	.0	.0	.0	.0						
Distance from Source (ft)	0	278	443	548	743						
Date Data Collected	2014										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore | RESET | SEE | Paste

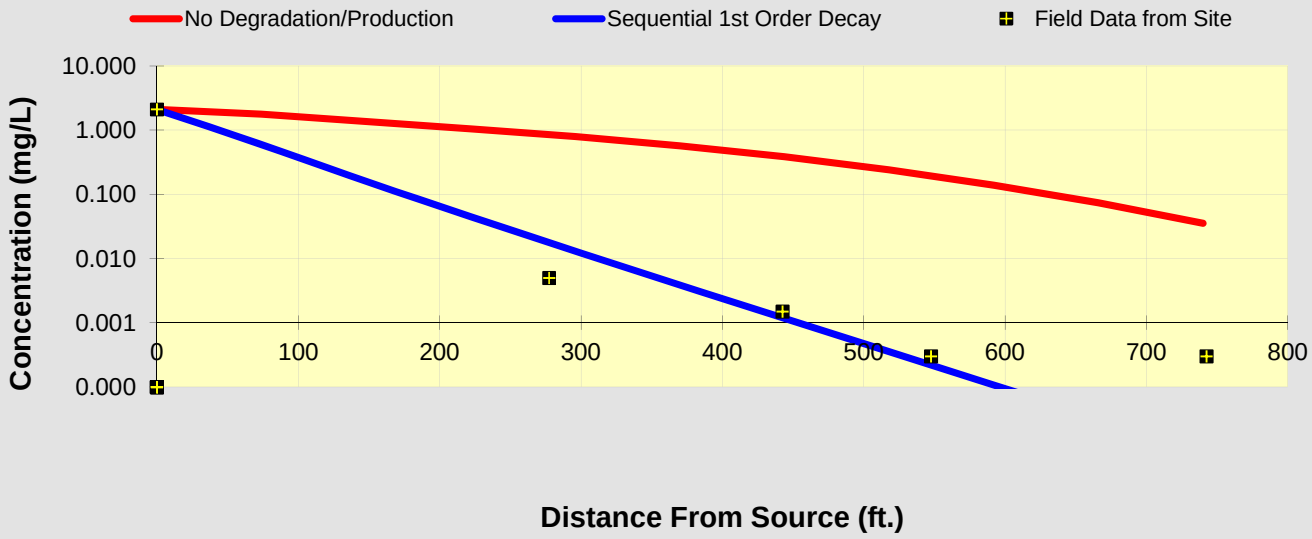
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	2.100	1.765	1.358	1.050	0.791	0.568	0.383	0.240	0.139	0.074	0.036
Biotransformation	2.1000	0.594	0.159	0.045	0.013	0.004	0.001	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	2.100	0.005	0.002	0.000	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

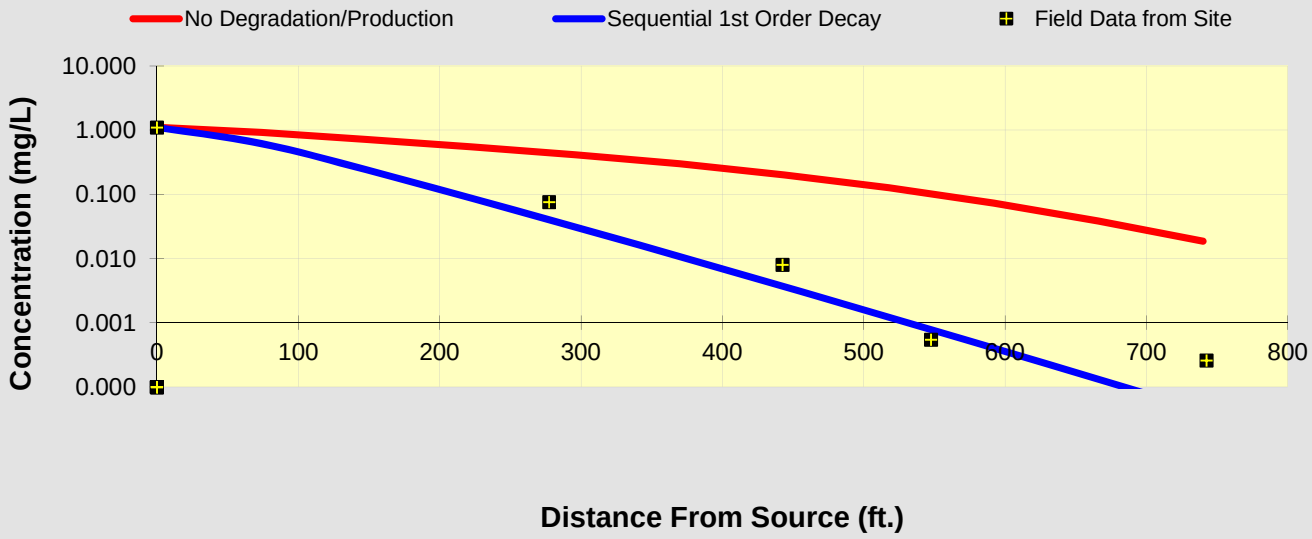
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	1.100	0.924	0.712	0.550	0.414	0.298	0.201	0.126	0.073	0.039	0.019
Biotransformation	1.1000	0.617	0.241	0.088	0.031	0.011	0.004	0.001	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	1.100	0.076	0.008	0.001	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

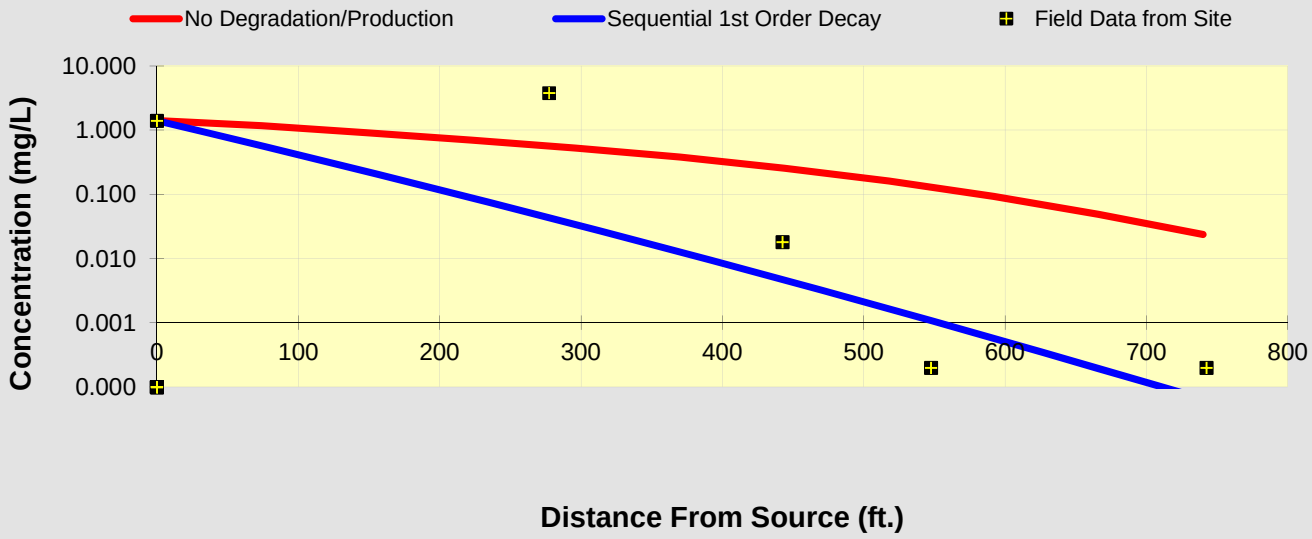
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

DCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	1.400	1.176	0.906	0.700	0.527	0.379	0.256	0.160	0.093	0.049	0.024
Biotransformation	1.4000	0.570	0.226	0.089	0.034	0.013	0.005	0.002	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	1.400	3.800	0.018	0.000	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

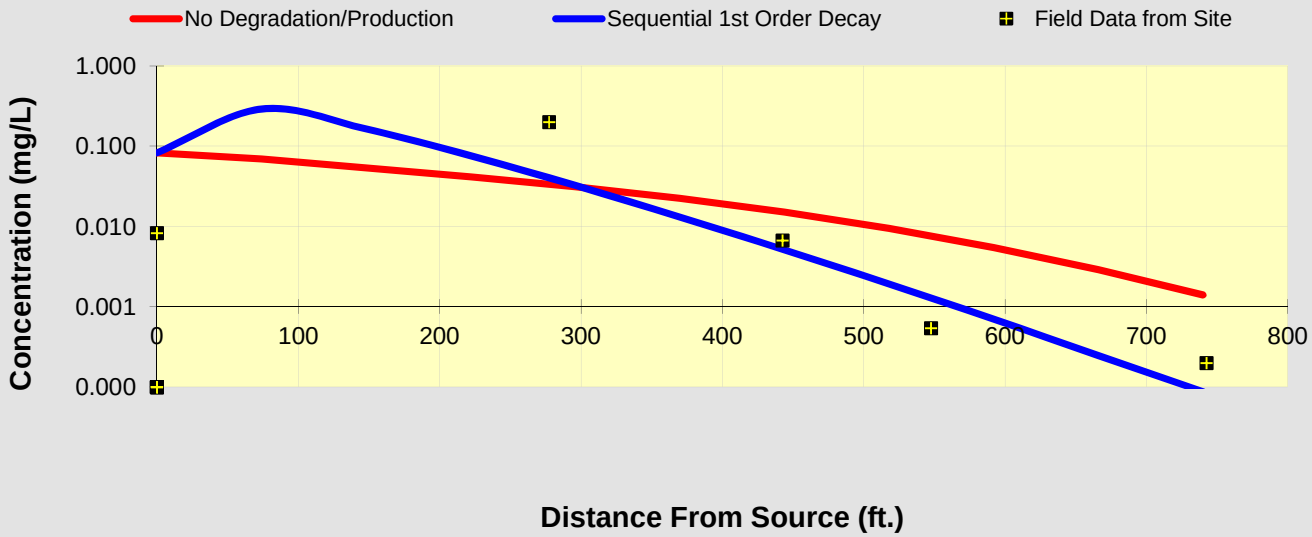
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

VC	0	74	148	222	296	370	444	518	592	666	740
No Degradation	0.083	0.069	0.053	0.041	0.031	0.022	0.015	0.009	0.005	0.003	0.001
Biotransformation	0.0826	0.290	0.164	0.076	0.032	0.013	0.005	0.002	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	0.008	0.200	0.007	0.001	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

55.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

NWP West Area PCE
Prediction Run
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.5	(ft/yr)
or			
Hydraulic Conductivity	K	7.5E-04	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x*	74.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	6.21	(-)
TCE	130	(L/kg)	2.59	(-)
DCE	125	(L/kg)	2.53	(-)
VC	30	(L/kg)	1.36	(-)
ETH	302	(L/kg)	4.70	(-)
Common R (used in model)* =			**2.59**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

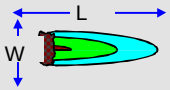
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.500		0.79
TCE → DCE	0.550		0.74
DCE → VC	0.700		0.64
VC → ETH	0.750		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	500	(yr)
Modeled Area Width*	160	(ft)
Modeled Area Length*	740	(ft)
Zone 1 Length*	740	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Decaying
Single Planar

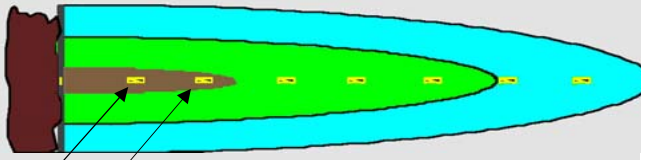
Source Options

Source Thickness in Sat. Zone* 10 (ft)

Width* (ft) Y1 250

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	2.1	0
TCE	1.1	0
DCE	1.4	0
VC	.008	0
ETH	0	0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	2.1	.005	.002	.0	.0						
TCE Conc. (mg/L)	1.1	.076	.008	.001	.0						
DCE Conc. (mg/L)	1.4	3.8	.018	.0	.0						
VC Conc. (mg/L)	0.0	.2	.007	.001	.0						
ETH Conc. (mg/L)	0.0	.0	.0	.0	.0						
Distance from Source (ft)	0	278	443	548	743						
Date Data Collected	2014										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore | RESET | SEE | Paste

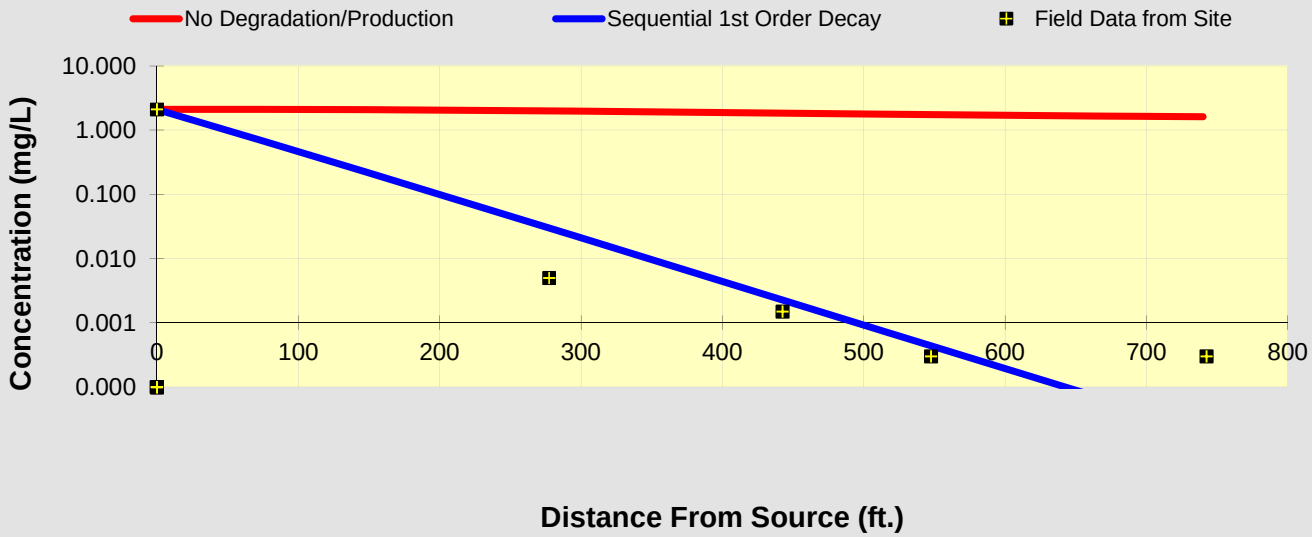
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	2.100	2.100	2.084	2.037	1.974	1.906	1.839	1.775	1.715	1.660	1.608
Biotransformation	2.1000	0.685	0.222	0.071	0.022	0.007	0.002	0.001	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	2.100	0.005	0.002	0.000	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

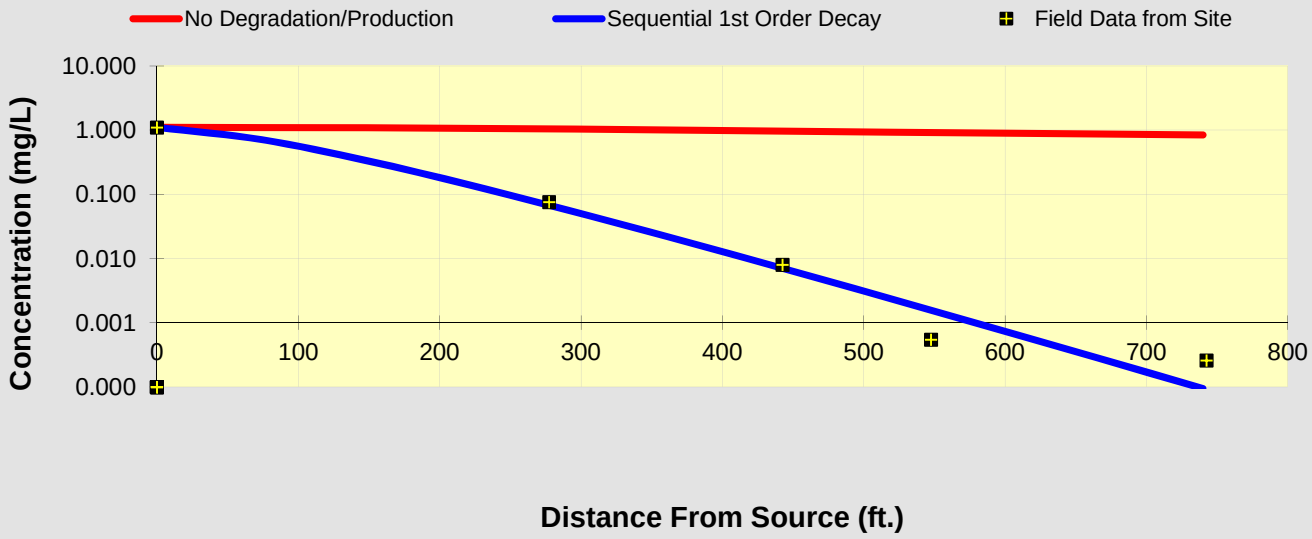
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	1.100	1.100	1.091	1.067	1.034	0.998	0.963	0.930	0.898	0.869	0.843
Biotransformation	1.1000	0.710	0.336	0.139	0.053	0.019	0.007	0.002	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	1.100	0.076	0.008	0.001	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

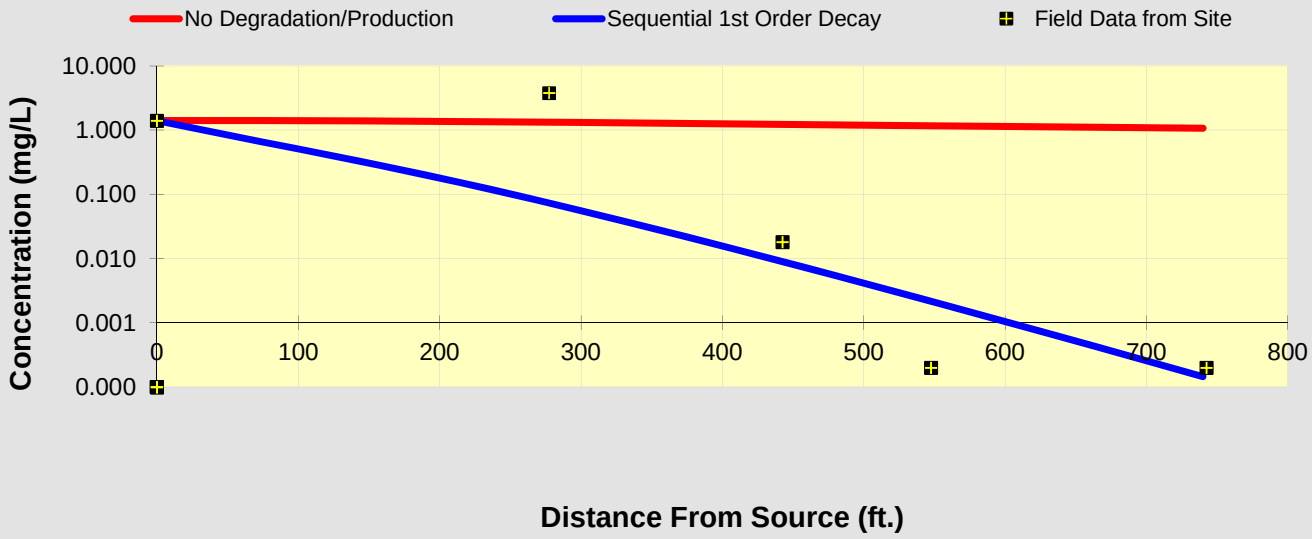
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

DCE	0	74	148	222	296	370	444	518	592	666	740
No Degradation	1.400	1.400	1.389	1.358	1.316	1.271	1.226	1.183	1.143	1.107	1.072
Biotransformation	1.4000	0.657	0.314	0.140	0.058	0.023	0.009	0.003	0.001	0.000	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	1.400	3.800	0.018	0.000	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

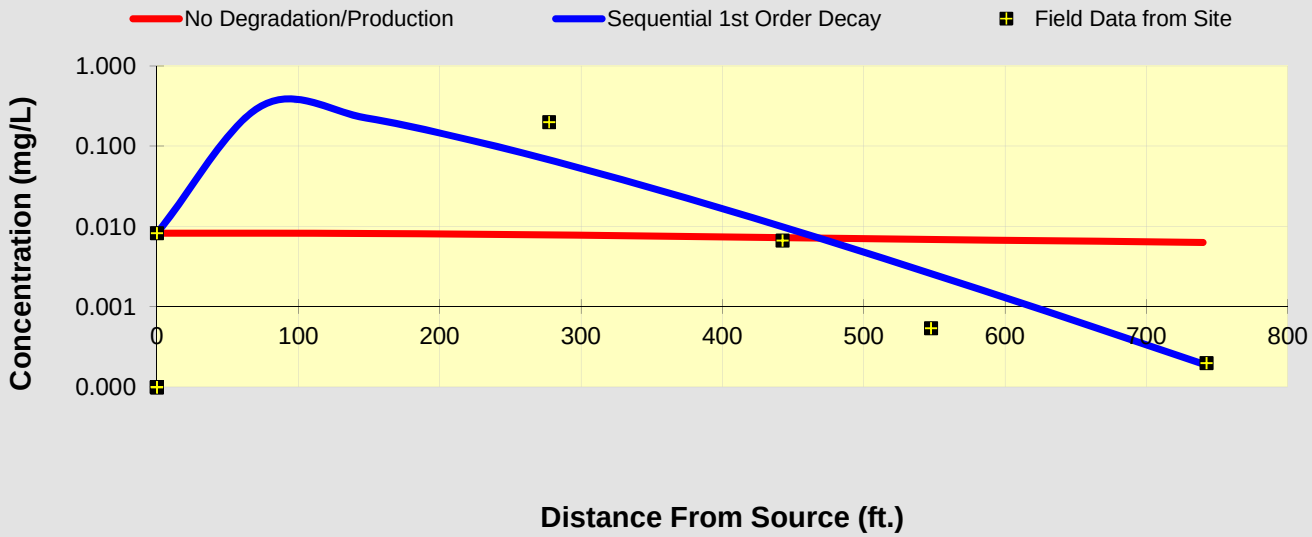
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

VC	0	74	148	222	296	370	444	518	592	666	740
No Degradation	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007	0.007	0.006
Biotransformation	0.0083	0.317	0.224	0.119	0.055	0.024	0.010	0.004	0.001	0.001	0.000

Monitoring Well Locations (ft)

	0	277.5	442.5	547.5	742.5						
Field Data from Site	0.008	0.200	0.007	0.001	0.000						



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

500.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

APPENDIX I

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

9. A statement as to whether contamination on and off the designated property <u>with</u> a Municipal Setting Designation <u>will exceed</u> a residential assessment level as defined in the Texas Risk Reduction Program or analogous residential level set by EPA, if known, and the basis for that statement.

Based on all the soil and groundwater sampling conducted to date on and off the designated property as part of the Voluntary Cleanup Program affected property assessment, with <u>an MSD at the designated property</u>, exceedances of residential assessment levels are limited to the following:

- Shallow groundwater at areas located west and south of the designated property based on ingestion PCLs (see Figures C.3A through C.3H).

APPENDIX J

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

10. Identification of the points of origin of the contamination, to the extent known. Please list the Potentially Responsible Party (PRP), if unknown, state unknown. (Applications without the PRP listed will be deemed incomplete)

The most probable sources of constituents present in soil and groundwater underlying the property are incidental, historical releases that occurred either at or near the Northwest Pipe Company facility, as part of historic facility operations.

The designated property was developed in the early 1950s, has been operated by several different companies, and was predominantly used for the manufacture of steel pipe. Northwest Pipe Company purchased the facility in 1999 and continued manufacturing pipe until operations were ceased in 2014. There have been no known or suspected releases at the designated property since Northwest Pipe Company began operations at the facility in 1999.

A Phase II Environmental Site Assessment (ESA) was conducted in early 2014 on behalf of a prospective purchaser of the property. According to the report, the following evidence of potential sources of COCs were observed:

- Staining on sumps and catch basins associated with the pipe and tube manufacturing process located inside the manufacturing building.
- Staining on an exterior waste storage area located on the east side of the manufacturing building where waste materials were generated and stored. This area is outside of the building, but under a cover to avoid contact with storm water.
- Staining in the materials storage areas located within the manufacturing building.
- Staining on the concrete of a secondary containment area located within the manufacturing building.

All of the areas described above are on paved and covered areas of the facility.

In addition to the above potential sources of COCs, several properties in the vicinity of the Site are currently, or were formerly, enrolled in the TCEQ VCP. The VCP properties are briefly described below:

- TRC General Holdings, LLC, (TRC; VCP ID No. 2581) is located immediately west of the Northwest Pipe Company facility. Operations at the TRC site currently consist of a hydro-excavation business. The TRC site was enrolled in the VCP in June 2013. Sampling and testing data have indicated the presence of CVOCs in the uppermost GWBU and metals in surface soils at concentrations exceeding TRRP assessment levels. Based on

discussions with the TRC site consultant in 2014 and 2015, groundwater monitoring and response actions are on-going.

- A former Seatex Corporation (Seatex) facility was located immediately north of the Northwest Pipe Company facility. A 1.3-acre portion of the facility, located on the western side of the site, was enrolled in the VCP in November 2007 (VCP ID No. 2119; see Figure B.1) and received a Final Certificate of Completion in 2009 (SKA, 2009). A 4.3-acre portion of the facility, located east adjacent of VCP ID No. 2119, was enrolled in the VCP (VCP ID No. 2343) in August 2010 (SKA, 2013). Chlorinated VOCs were present in the uppermost GWBU of affected property at the Seatex site. The site obtained a Municipal Setting Designation (MSD) from TCEQ in 2013 and a VCP Certificate of Completion in January 2015. The property is currently owned by Grace Bible Church, which recently constructed a new church on the property.

APPENDIX K

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

11. Environmental regulatory actions, litigation, and plume identification.

a. A description of any environmental regulatory actions that have been taken within the past five years in connection with the designated property, to the extent known.

In 2014, the Northwest Pipe Company facility was enrolled in the TCEQ VCP, with VCP ID No. 2665. Enrollment in the VCP was prompted by a Phase II ESA that was performed at the Site in 2014 as part of a potential property transaction. The Phase II ESA indicated the presence of CVOCs in shallow groundwater. Since enrollment in the VCP, a comprehensive environmental assessment was performed in accordance with the TCEQ Texas Risk Reduction Program (30 TAC Chapter 350). The regulatory milestones that have been achieved at the Site include:

- Designation of a Class 2 groundwater-bearing unit for the Site;
- Completion of the affected property assessment, which defined the magnitude and extent of affected property at the Site; and
- Submittal of the Affected Property Assessment Report on 30 November 2015.

Table K.1 below provides a detailed chronology of the environmental reports and regulatory actions over the past five years.

b. A description of any litigation that has taken place within the past five years in connection with the designated property, to the extent known.

No litigation has taken place in the past five years.

c. A statement as to whether there are any other remediation activities by the applicant, or any other party or agency, which are not listed in the application.

No remediation has taken place in the past five years.

d. A statement as to which contamination plume and groundwater zone the applicant is including in the MSD.

The MSD is being pursued for the uppermost GWBU beneath the designated property, which generally occurs between 20 and 30 feet bgs. A portion of this GWBU contains dissolved concentrations of volatile organic compounds at concentrations exceeding ingestion-based PCLs.

Table K.1 Chronology of Regulatory Activity since VCP Enrollment

Date	Report / Summary of Event
8 August 2014	*VCP Agreement*: VCP Agreement signed by Northwest Pipe Company and TCEQ.
1 October 2014	*Drinking Water Survey Report:* Presented results of the drinking water survey and concluded that there are no potentially threatened water wells within one-half mile of the Site.
4 February 2015	*TCEQ Letter*: TCEQ issued responses to the Phase I ESA, Limited Phase II ESA, groundwater classification and aquifer testing monitoring wells locations, and the Fourth Quarter VCP Status Report.
30 November 2015	*Affected Property Assessment Report*: Provided results of the affected property assessment. Concluded that subsurface soil in the immediate area of a single boring was affected, and the PCLE zone in shallow groundwater is located on-site, on the TRC General Holdings, LLC property that adjoins the Site to the west, and on the Union Pacific Railroad property that adjoins the Site to the south.
October 2014 to Present	*VCP Quarterly Status Reports*: Northwest Pipe Company has submitted routine quarterly status reports to provide updates to the TCEQ on the progress of response actions conducted under the VCP.

APPENDIX L

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

12. A listing of all existing state or EPA registrations, permits, and identification numbers that applies to the designated property.

The Site has the following currently active regulatory identification numbers:

- TCEQ VCP No. 2665
- TCEQ Regulated Entity No. RN100567668
- TCEQ Customer Number No. CN600278303

APPENDIX M

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

13. Provide evidence that the designated property is currently or has previously been under oversight of the TCEQ or the United States Environmental Protection Agency, as required by the Texas Health & Safety Code § 361.8065(c)(2)(A), and a description of the status of the designated property in the program (the program application number is sufficient evidence). Also, include the state or federal cleanup project manager's name.

The Site is currently enrolled in the TCEQ VCP with ID number 2665. The VCP project manager is Richard Peltier. An affected property assessment was submitted on 30 November 2015 pursuant to the TRRP (30 TAC 350).

APPENDIX N

City of Houston Municipal Setting Designation Application

Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

14. A summary of any environmental site assessment reports filed with TCEQ regarding any site investigations or response actions that are planned, ongoing, or completed related to the designated property.

Table N.1 Chronology of Previous Environmental Assessment Reports

Author	Title	Submittal Date	Summary
Water and Air Research (WAR)	Limited Environmental Testing At Southwestern Pipe Division	Oct. 1988	Report documented an initial ESA to evaluate the status of the Site. The report concluded that there was no indication of significant contamination at the Site. Analytical results were not provided.
TGE	Underground Storage Tank Closure, Southwestern Pipe Corporation	Nov. 1997	Report presented results of the removal of one 10,000 gallon diesel UST and associated piping. The report recommended that no further action be required based on field observations and confirmation soil sample results.
CH2M Hill	Environmental Site Assessment and Initial Compliance Audit for the Southwestern Pipe	Mar. 1998	Report presented results of an initial site assessment and compliance audit conducted in January and February 1998. The report provided a review of the Site's historical records and status and identified six potential environmental concerns.
SKA	Phase I Environmental Site Assessment	May 2009	Report presented results of a Phase I ESA. Assessment activities included a visual inspection of the property for obvious or potential sources of environmental contamination. Staining was observed at sump and catch basin areas, waste storage area, and drum storage areas.
Criterium	Phase I Environmental Site Assessment	Feb. 2014	Report documented the results of a Phase I ESA. The report identified several Recognized Environmental Conditions (RECs), including: i) sumps and catch basins; ii) an exterior waste storage area; iii) a materials storage area; and iv) concrete of a secondary containment area for two aboveground storage tanks.
Criterium	Limited Phase II Environmental Site Assessment	Mar. 2014	The Phase II ESA was conducted to assess potential impacts from historical processes. The report indicates that results confirm a soil and groundwater impact by select COCs.
GSI	Drinking Water Survey Report	Oct. 2014	This report included a survey of water wells within one-half mile of the facility and concluded that no water wells within one-half mile of the Site met the definition of a potentially affected drinking water well.
GSI	Affected Property Assessment Report	Nov. 2015	This report documented affected property assessment activities conducted at the Site. The report concluded that affected soil is limited to subsurface soil in the immediate area of a single boring. Affected groundwater has been delineated. The PCLE zone in shallow groundwater is located on the southern portion of the facility, extends west onto the TRC General Holdings, LLC property, and south onto the Union Pacific Railroad property.

APPENDIX O

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

15. A statement as to whether any public drinking water supply system exists that satisfies the requirements of Chapter 341 of the Texas Health and Safety Code and that supplies or is capable of supplying drinking water to the designated property and property within one-half mile of the designated property and the identity of each supply system.

The City of Houston's public drinking water supply system satisfies the requirements of Chapter 341 of the Texas Health and Safety Code and supplies or is capable of supplying drinking water to the designated property and property within one-half mile of the designated property.

APPENDIX P

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

16. The name and address of each owner or operator of a water well registered or permitted by the state or the Houston-Galveston Subsidence District that is located within five miles of the boundary of the designated property, along with a map showing the location of each well and, to the extent known, a notation of whether each well is used for potable water. Well logs must be included in the electronic copy of the application, but should not be included in the hard copies. (An accompanying electronic excel file with mailing information should be included with your application.)

The 5-mile radius search identified 361 water wells or water well clusters (a water well cluster consists of multiple wells identified at a single location) and 1,058 unique water well IDs registered or permitted by the TCEQ, Texas Water Development Board (TWDB), the Harris-Galveston Subsidence District (HGSD), and/or the U.S. Geologic Survey (USGS). Many of the water wells are registered in multiple databases, resulting in numerous water wells with multiple well IDs. In cases where it could be confirmed that such duplicate entries had the exact same owner and address, the duplicate information was removed from the mailing information Excel file. In addition, owners of multiple water wells were reduced such that only one entry was included in the Excel file. The details for each well, including the type of use, are summarized on Table P.1. The location of each well is illustrated on Figure P.1. An excel file containing mailing information is provided on in electronic format in Appendix Y. Copies of electronic well logs are provided in electronic format in Appendix Y.

ATTACHMENTS

Table P.1 Water Well Details

Figure P.1 5-Mile Radius Well Location Map

Excel File of Mailing Information (See Appendix Y)

Water Well Report (See Appendix Y)

APPENDIX P

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Table P.1
Water Well Details

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
1	HGSD2701	TX HGSD	SUPERIOR CONCRETE ACCESSORIES	Irrigation	480	01/01/1971	-95.42889	29.78417	56 ft	N/A
2	65-13-8G	TX TCEQ HIST	Automation Products Inc.	Domestic	287	11/24/1974	-95.432185	29.785587	60 ft	View
3	65-13-8	TX TCEQ HIST	Texas Bolt Co.	Industrial	305	07/16/1988	-95.433846	29.788214	63 ft	View
3	65-13-830	TX TWDB GW	Production Die Casting Co.	Industrial	310	01/01/1962	-95.433333	29.789444	62 ft	View
4	65-13-8	TX TCEQ HIST	Jester Apartment Partners	Irrigation	393	03/05/2002	-95.418103	29.785676	55 ft	View
4	HGSD8849	TX HGSD	Stonewood Apartments	Other	450	01/01/2002	-95.41889	29.785	53 ft	N/A
5	65-13-804	TX TWDB GW	Spears Co.	Industrial	260	01/01/1948	-95.435833	29.782221	61 ft	View
5	65-13-832	TX TWDB GW	Houston Materials	Industrial	320	01/01/1969	-95.437499	29.784166	63 ft	View
6	65-13-4	TX TCEQ HIST	Warron Eng	Domestic	297	12/13/1990	-95.438845	29.787044	63 ft	View
6	G1011180A	TX TCEQ PWS	EFCO & CO	Public Supply	324	09/10/1957	-95.439106	29.788004	64 ft	View
6	WIID106274	TX TWDB WIID	Steve Droraka	Domestic	38	2/27/2007	-95.438334	29.786111	63 ft	View
6	HGSD7482	TX HGSD	Beeson Properties	Domestic	250	01/01/1976	-95.44056	29.785	64 ft	N/A
6	HGSD2157	TX HGSD	Engineers and Fabricators Co.	Irrigation	330	01/01/1957	-95.43889	29.7875	63 ft	N/A
6	65-13-825	TX TWDB GW	Engineers Fabricators Inc.	Industrial	324	01/01/1957	-95.438333	29.787777	63 ft	View
7	WIID175056	TX TWDB WIID	Williams Brothers	Irrigation	360	4/6/2005	-95.439445	29.781111	56 ft	View
7	WIID74868	TX TWDB WIID	Williams Brothers	Domestic	400	5/13/2004	-95.438889	29.783334	60 ft	View
8	WIID92640	TX TWDB WIID	WILLIAMS BROTHERS	Domestic	360	4/21/2004	-95.441667	29.785278	64 ft	View
8	HGSD10032	TX HGSD	Williams Brothers Const. Co., Inc.	Public Supply	360	01/01/2005	-95.44167	29.78472	63 ft	N/A
8	HGSD9761	TX HGSD	Williams Brothers Const. Co., Inc.	Irrigation	380	n/a	-95.44167	29.78472	63 ft	N/A
8	HGSD12556	TX HGSD	Harris Co. M.U.D. No. 537	Lost	300	n/a	-95.44139	29.78389	62 ft	N/A
8	HGSD7483	TX HGSD	Beeson Properties	Domestic	250	01/01/1976	-95.44361	29.78611	66 ft	N/A
8	HGSD12557	TX HGSD	Harris Co. M.U.D. No. 537	Lost	300	n/a	-95.44139	29.78389	62 ft	N/A
9	65-13-8C	TX TCEQ HIST	General Electric Co.	Industrial	533	03/06/1969	-95.439583	29.792203	67 ft	View
9	HGSD2756	TX HGSD	GENERAL ELECTRIC COMPANY	Irrigation	553	01/01/1969	-95.44111	29.79194	66 ft	N/A
9	65-13-516	TX TWDB GW	General Electric	Industrial	533	03/06/1969	-95.440833	29.792221	67 ft	View
10	65-13-910	TX TWDB GW	Fidelity Chem. Corp.	Unused	465	01/01/1917	-95.409166	29.785833	59 ft	View
11	HGSD7544	TX HGSD	TRINITY INDUSTRIES, INC.	Domestic	350	01/01/1993	-95.44444	29.78694	65 ft	N/A
11	HGSD9760	TX HGSD	Williams Brothers Const. Co., Inc.	Irrigation	380	01/01/2004	-95.44361	29.78778	66 ft	N/A
12	HGSD2844	TX HGSD	HOUSTON SHELL & CONCRETE	Irrigation	565	01/01/1965	-95.445	29.78972	65 ft	N/A
13	65-13-9G	TX TCEQ HIST	William Brothers Construction	Industrial	369	09/15/1982	-95.414245	29.771768	53 ft	View
14	65-13-8H	TX TCEQ HIST	General Welding Works	Industrial	360	07/29/1975	-95.44693	29.785175	65 ft	View
14	65-13-8J	TX TCEQ HIST	General Welding Co.	Industrial	248	02/28/1979	-95.44693	29.785175	65 ft	View
14	65-16-8	TX TCEQ HIST	General Welding	Domestic	430	10/16/1986	-95.44693	29.785175	65 ft	View
14	USGS-294658095264201	WW USGS	USGS	Not Reported	55	09/19/1978	-95.445218	29.783006	62 ft	N/A
14	USGS-294700095264401	WW USGS	USGS	Not Reported	36	09/18/1978	-95.445774	29.783561	64 ft	N/A
14	WIID395323	TX TWDB WIID	LMSLP Hines Somerset	Irrigation	330	3/6/2015	-95.446945	29.784445	65 ft	View
14	65-13-828	TX TWDB GW	Austin Bros. Steel Co.	Industrial	394	01/01/1956	-95.449444	29.784721	65 ft	View
14	65-13-838	TX TWDB GW	USGS EUREKA HTS	Unused	36	01/01/1978	-95.445833	29.78361	64 ft	View
14	65-13-839	TX TWDB GW	USGS EUREKA HTS	Unused	55	01/01/1978	-95.445277	29.783054	62 ft	View
15	65-13-911	TX TWDB GW	Swift and Co.	Industrial	670	01/01/1917	-95.404166	29.781666	48 ft	View
15	65-13-912	TX TWDB GW	Houston Cotton Oil Co.	Unused	540	01/01/1893	-95.403611	29.779443	42 ft	View
16	65-13-9D	TX TCEQ HIST	Mr. Pruitt	Industrial	321	06/07/1968	-95.41037	29.770044	53 ft	View
16	65-13-914	TX TWDB GW	City of Houston	Unused	558	01/01/1917	-95.411111	29.770554	53 ft	View

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 500 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
16	65-13-915	TX TWDB GW	City of Houston	Unused	1465	11/01/1918	-95.411944	29.77111	53 ft	View
16	65-13-945	TX TWDB GW	Robo Car Wash	Industrial	321	01/01/1968	-95.409444	29.769721	52 ft	View
17	65-13-8	TX TCEQ HIST	Bluewater Real Estate	Domestic	494	11/01/2001	-95.423635	29.764985	53 ft	View
18	HGSD5784	TX HGSD	Houston Polo Club	Other	430	01/01/1996	-95.44889	29.77667	60 ft	N/A
18	HGSD5785	TX HGSD	Houston Polo Club	Other	430	01/01/1993	-95.44861	29.77667	59 ft	N/A
19	HGSD2070	TX HGSD	WEINGARTEN REALTY, INC.	Irrigation	438	01/01/1969	-95.45083	29.78611	64 ft	N/A
19	65-13-831	TX TWDB GW	American Porcelain Enameling, Inc.	Industrial	438	01/01/1969	-95.450555	29.785833	65 ft	View
20	65-13-8E	TX TCEQ HIST	Faulkner Contractors	Industrial	449	07/25/1977	-95.45	29.79281	71 ft	View
21	65-13-6J	TX TCEQ HIST	City of Houston	Public Supply	1465	07/01/1979	-95.406072	29.798215	63 ft	View
21	USGS-294752095242102	WW USGS	USGS	Not Reported	1465	12/01/1979	-95.40605	29.798005	62 ft	N/A
21	G1010013Q	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1465	09/01/1979	-95.405929	29.798229	63 ft	View
21	G1010013GY	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	561	01/01/1936	-95.406886	29.797449	63 ft	View
21	HGSD3372	TX HGSD	Houston, City of	Public Supply	1458	01/01/1936	-95.40722	29.79861	65 ft	N/A
21	HGSD3707	TX HGSD	Houston, City of	Public Supply	612	01/01/1988	-95.40806	29.79944	63 ft	N/A
21	65-13-608	TX TWDB GW	City of Houston Heights #7	Unused	1458	01/01/1936	-95.406111	29.798055	62 ft	View
21	65-13-627	TX TWDB GW	City of Houston, Heights, well #7A	Public Supply	1465	09/01/1979	-95.406111	29.798055	62 ft	View
22	65-13-5	TX TCEQ HIST	Houston Garden Center	Irrigation	400	11/07/2000	-95.448779	29.798479	70 ft	View
22	HGSD8385	TX HGSD	Houston Garden Center	Other	400	n/a	-95.45139	29.79861	69 ft	N/A
23	65-13-8	TX TCEQ HIST	Houston Polo Club	Domestic	430	10/13/1993	-95.414146	29.76333	47 ft	View
23	65-13-8	TX TCEQ HIST	Houston Polo Club	Irrigation	430	07/12/1996	-95.414146	29.76333	47 ft	View
24	65-15-8	TX TCEQ HIST	Bobby Earthman	Irrigation	430	08/07/2001	-95.426888	29.761282	53 ft	View
25	65-13-7	TX TCEQ HIST	USS Agri. Chemicals	Domestic	460	06/26/1986	-95.454651	29.784998	65 ft	View
25	65-13-802	TX TWDB GW	Station KATL	Domestic	190	01/01/1949	-95.455555	29.782777	65 ft	View
26	HGSD2056	TX HGSD	Bayou Club	Domestic	1037	01/01/1954	-95.45361	29.77694	60 ft	N/A
26	65-13-803	TX TWDB GW	Bayou Club #2	Public Supply	1037	04/01/1954	-95.454722	29.776943	59 ft	View
27	HGSD4951	TX HGSD	KENT & HAROLDSEN ASSOC., INC.	Public Supply	425	n/a	-95.4375	29.80833	56 ft	N/A
27	HGSD4952	TX HGSD	KENT & HAROLDSEN ASSOC., INC.	Public Supply	425	n/a	-95.4375	29.80833	56 ft	N/A
28	WIID174829	TX TWDB WIID	M F Development	Domestic	435	4/25/2005	-95.423889	29.760001	48 ft	View
29	WIID228016	TX TWDB WIID	Schlenker, Calvin & Jill	Domestic	406	8/16/2010	-95.430278	29.759445	37 ft	View
30	USGS-294811095241901	WW USGS	USGS	Not Reported	1039	01/01/1924	-95.405495	29.803282	63 ft	N/A
30	USGS-294812095241601	WW USGS	USGS	Not Reported	1730	02/01/1965	-95.404661	29.80356	61 ft	N/A
30	USGS-294816095242501	WW USGS	USGS	Not Reported	1890	04/10/1962	-95.407161	29.804671	62 ft	N/A
30	G1010013X	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1844	04/01/1962	-95.406814	29.804683	62 ft	View
30	G1010013GU	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1270	03/05/1923	-95.405772	29.803005	61 ft	View
30	G1010013GZ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1253	01/01/1938	-95.404658	29.803005	62 ft	View
30	G1010013HE	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1730	01/01/1965	-95.405772	29.803838	61 ft	View
30	G1010013GV	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1470	01/01/1924	-95.405772	29.803005	61 ft	View
30	G1010013GW	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1858	07/21/1931	-95.404658	29.803838	60 ft	View
30	HGSD1069	TX HGSD	Houston, City of	Public Supply	1730	01/01/1965	-95.40528	29.80306	61 ft	N/A

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30	HGSD1068	TX HGSD	Houston, City of	Public Supply	1890	01/01/1962	-95.40611	29.80417	61 ft	N/A
30	65-13-604	TX TWDB GW	City of Houston Heights #16	Public Supply	1890	04/01/1962	-95.407222	29.804722	62 ft	View
30	65-13-606	TX TWDB GW	City of Houston Heights #5	Plugged or Destroyed	1858	01/01/1931	-95.404722	29.803888	60 ft	View
30	65-13-607	TX TWDB GW	City of Houston Heights #8	Unused	1252	01/01/1938	-95.404722	29.803055	62 ft	View
30	65-13-613	TX TWDB GW	City of Houston Heights #2	Unused	1362	01/01/1923	-95.405555	29.803333	63 ft	View
30	65-13-614	TX TWDB GW	City of Houston Heights #3	Unused	1039	01/01/1924	-95.405555	29.803333	63 ft	View
30	65-13-624	TX TWDB GW	City of Houston Heights #17	Public Supply	1730	02/01/1965	-95.404722	29.803611	61 ft	View
31	65-13-806	TX TWDB GW	M.L. Hilton	Plugged or Destroyed	60	n/a	-95.4575	29.782777	51 ft	View
32	65-13-612	TX TWDB GW	Oriental Textile Mills	Plugged or Destroyed	800	01/01/1909	-95.409166	29.806666	66 ft	View
33	65-13-9	TX TCEQ HIST	St. Thomas High School	Irrigation	520	12/06/1996	-95.407463	29.762945	48 ft	View
33	HGSD5814	TX HGSD	St. Thomas High School	Other	450	n/a	-95.4075	29.76222	49 ft	N/A
34	65-13-9	TX TCEQ HIST	11th Street Washateria	Industrial	441	11/07/1988	-95.395615	29.790424	58 ft	View
34	USGS-294725095234501	WW USGS	USGS	Not Reported	441	11/07/1988	-95.39605	29.790505	58 ft	N/A
34	HGSD7591	TX HGSD	Do, Hung Dang	Other	300	01/01/1992	-95.39556	29.79028	57 ft	N/A
35	WIID109925	TX TWDB WIID	Francisco Zeleclon	Domestic	50	5/2/2004	-95.455834	29.795834	69 ft	View
35	WIID109922	TX TWDB WIID	Francisco Zeleclon	Domestic	50	5/2/2004	-95.455834	29.795834	69 ft	View
35	HGSD12758	TX HGSD	NPO 1495, LP	Other	370	n/a	-95.45806	29.79722	69 ft	N/A
35	65-13-503	TX TWDB GW	Phillip Carey Manufacturing Co.	Unused	160	01/01/1947	-95.456388	29.797777	70 ft	View
36	65-13-6G	TX TCEQ HIST	Dave Newton	Domestic	460	06/29/1978	-95.414523	29.810142	69 ft	View
36	G1010013LV	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	925	01/01/1937	-95.414386	29.811338	67 ft	View
36	G1010013LW	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1100	10/01/1940	-95.414386	29.811338	67 ft	View
36	G1010013LX	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	400	01/01/1939	-95.414386	29.811338	67 ft	View
36	HGSD7439	TX HGSD	MSN Properties 1, LP	Agriculture	0	01/01/1978	-95.41444	29.81028	68 ft	N/A
36	65-13-618	TX TWDB GW	City of Houston Garden Oaks	Unused	411	01/01/1939	-95.414444	29.811388	67 ft	View
36	65-13-619	TX TWDB GW	City of Houston Garden Oaks #1	Unused	300	01/01/1937	-95.414444	29.811388	67 ft	View
36	65-13-620	TX TWDB GW	City of Houston Garden Oaks #2	Public Supply	834	01/01/1940	-95.414444	29.811388	67 ft	View
37	65-13-8	TX TCEQ HIST	Reed Marian	Irrigation	492	11/19/1985	-95.416271	29.758577	42 ft	View
38	65-13-9H	TX TCEQ HIST	H.L. & P.	Industrial	506	11/02/1983	-95.411122	29.760186	40 ft	View
38	65-13-9	TX TCEQ HIST	Hossein Tabrizi	Irrigation	500	01/23/1990	-95.413182	29.75936	48 ft	View
38	65-13-9	TX TCEQ HIST	Hossein Tabrizi	Irrigation	489	11/14/1989	-95.413139	29.759462	48 ft	View
38	65-13-9J	TX TCEQ HIST	H.L. & P.	Industrial	510	10/26/1983	-95.409118	29.760053	40 ft	View
38	HGSD12739	TX HGSD	Steele, John	n/a	550	n/a	-95.41278	29.76028	42 ft	N/A
39	65-13-833	TX TWDB GW	J. Ray McDermott	Irrigation	633	01/01/1969	-95.422499	29.756944	23 ft	View
40	65-14-9	TX TCEQ HIST	Robert A. Rowland	Domestic	334	04/26/1988	-95.459221	29.778385	64 ft	View
41	65-13-8B	TX TCEQ HIST	O.T.M. Corp.	Industrial	389	11/11/1974	-95.459992	29.785867	65 ft	View
41	G1010937A	TX TCEQ PWS	WYMAN GORDON FORGINGS SILBER RD	Public Supply	1568	01/01/1960	-95.462437	29.786061	67 ft	View
41	HGSD1366	TX HGSD	CAMERON IRON WORKS, INC.	Irrigation	860	01/01/1963	-95.46194	29.78667	66 ft	N/A
41	HGSD4651	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.4625	29.7875	66 ft	N/A
41	HGSD4652	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46056	29.7875	65 ft	N/A
41	HGSD1365	TX HGSD	COOPER CAMERON CORP - CAMRON DIV	Irrigation	1568	01/01/1960	-95.4625	29.78694	65 ft	N/A

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41	65-13-717	TX TWDB GW	Cooper Industries Cameron FRGD Div.	Industrial	1568	01/01/1960	-95.4625	29.78611	67 ft	View
42	65-04-9M	TX TCEQ HIST	Brookhollow Corporation	Domestic	340	10/01/1973	-95.451623	29.804924	72 ft	View
43	65-13-623	TX TWDB GW	Heights Savings Assoc.	Domestic	286	01/01/1961	-95.399444	29.801944	59 ft	View
44	HGSD5352	TX HGSD	2000 North Loop, LP	Lost	300	01/01/1971	-95.44056	29.81167	56 ft	N/A
45	65-13-809	TX TWDB GW	Dudley Sharp	Domestic	492	01/01/1939	-95.456666	29.770277	60 ft	View
46	65-21-3K	TX TCEQ HIST	River Oak Country Club	Irrigation	726	04/15/1974	-95.428291	29.755707	52 ft	View
46	USGS-294518095254801	WW USGS	USGS	Not Reported	1227	09/13/1949	-95.430218	29.755229	50 ft	N/A
46	WIID373614	TX TWDB WIID	RB RATCLIFF - BARNHART	Irrigation	431	6/13/2014	-95.428889	29.753334	53 ft	View
46	HGSD1784	TX HGSD	RIVER OAKS COUNTRY CLUB	Other	726	01/01/1973	-95.42861	29.75361	56 ft	N/A
46	HGSD1783	TX HGSD	RIVER OAKS COUNTRY CLUB	Other	1224	01/01/1967	-95.42861	29.75361	56 ft	N/A
46	65-13-801	TX TWDB GW	River Oaks Country Club	Irrigation	1227	01/01/1949	-95.430277	29.755277	50 ft	View
46	65-13-824	TX TWDB GW	River Oaks Country Club	Plugged or Destroyed	887	01/01/1929	-95.429999	29.757777	51 ft	View
47	65-13-7	TX TCEQ HIST	McDugald Steel	Irrigation	321	09/10/1990	-95.458702	29.772781	60 ft	View
47	65-13-807	TX TWDB GW	H. C. Weiss	Domestic	355	01/01/1936	-95.4575	29.772221	61 ft	View
48	65-13-8	TX TCEQ HIST	Richard Kinder	Domestic	411	03/08/2002	-95.418452	29.755765	58 ft	View
48	65-13-9	TX TCEQ HIST	Lanier Yates	Domestic	401	07/26/2002	-95.415573	29.75559	55 ft	View
48	65-13-8	TX TCEQ HIST	Mary Ralph Lowe	Irrigation	506	10/25/1989	-95.419252	29.756662	53 ft	View
48	USGS-294523095251001	WW USGS	USGS	Not Reported	506	10/25/1989	-95.419662	29.756617	47 ft	N/A
48	WIID404314	TX TWDB WIID	CAMPO, RICHARD	Irrigation	361	7/14/2015	-95.4175	29.756112	52 ft	View
48	HGSD12419	TX HGSD	Klaes, Daniel	n/a	65	n/a	-95.41722	29.75361	56 ft	N/A
48	HGSD13062	TX HGSD	Campo, Richard J.	n/a	450	n/a	-95.41694	29.75611	55 ft	N/A
48	HGSD3240	TX HGSD	MCDERMOTT, MRS. R. THOMAS	Other	633	01/01/1969	-95.42028	29.75639	41 ft	N/A
49	65-13-625	TX TWDB GW	National Forge Co.	Industrial	410	01/08/1969	-95.401666	29.805277	61 ft	View
50	65-13-8	TX TCEQ HIST	Thomas P. Tathum	Domestic	440	04/27/1998	-95.434508	29.755737	50 ft	View
50	65-13-8	TX TCEQ HIST	R.B. Ratcliff & Associates	Irrigation	610	08/21/2001	-95.435944	29.757427	47 ft	View
50	WIID147326	TX TWDB WIID	Robert Lanier	Irrigation	325	5/24/2008	-95.434722	29.755834	50 ft	View
50	WIID141269	TX TWDB WIID	Bob Lanier	Domestic	535	3/20/2008	-95.434722	29.755834	50 ft	View
51	HGSD13397	TX HGSD	Car Wash Partners, Inc.	Domestic	400	n/a	-95.39556	29.76972	53 ft	N/A
51	65-13-916	TX TWDB GW	Horlock Ice.co.	Unused	340	01/01/1925	-95.395833	29.770832	54 ft	View
52	65-13-721	TX TWDB GW	W. T. Carter, Jr.	Domestic	293	01/01/1929	-95.4625	29.780277	60 ft	View
53	WIID197988	TX TWDB WIID	Grocers Supply	Industrial	337	10/21/2009	-95.3925	29.773333	52 ft	View
53	HGSD11189	TX HGSD	GSC Wholesale, LLC	Irrigation	400	01/01/2009	-95.3925	29.77333	52 ft	N/A
54	65-21-2	TX TCEQ HIST	R.B. & Assoc. Ratcliff Dan Friedkin	Irrigation	402	10/01/1996	-95.437836	29.755018	48 ft	View
54	65-13-8	TX TCEQ HIST	Henry New	Domestic	415	08/06/1996	-95.437973	29.756722	41 ft	View
54	WIID104033	TX TWDB WIID	David Hull	Domestic	380	10/13/2003	-95.438611	29.755556	52 ft	View
54	WIID244243	TX TWDB WIID	Herman Wilson	Domestic	420	10/17/2006	-95.438611	29.755556	52 ft	View
55	G1010013QJ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	598	02/21/1949	-95.461887	29.794393	65 ft	View
55	65-13-401	TX TWDB GW	City of Houston Westview	Unused	598	02/21/1949	-95.461944	29.794444	65 ft	View
56	65-13-8	TX TCEQ HIST	McDugald Steel Company	Irrigation	400	09/09/1992	-95.421471	29.753439	57 ft	View
56	65-13-8F	TX TCEQ HIST	Joe L. Allbritton	Domestic	643	06/01/1977	-95.42172	29.754325	57 ft	View
56	65-13-5	TX TCEQ HIST	McDugald Steel	Irrigation	475	04/04/1991	-95.41983	29.752483	56 ft	View
56	65-13-8	TX TCEQ HIST	Jim Kempner	Irrigation	480	09/29/1988	-95.420842	29.750749	58 ft	View
56	65-13-8	TX TCEQ HIST	Jon L. Gilbreath	Domestic	395	10/22/2001	-95.423828	29.752071	58 ft	View

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56	USGS-294503095251601	WW USGS	USGS	Not Reported	480	09/29/1988	-95.421329	29.751062	57 ft	N/A
56	USGS-294508095251801	WW USGS	USGS	Not Reported	475	04/04/1991	-95.421884	29.752451	56 ft	N/A
56	WIID174612	TX TWDB WIID	Tyne Sparks Builders	Domestic	372	1/21/2005	-95.421111	29.754723	58 ft	View
56	WIID220553	TX TWDB WIID	Cedar Baldridge	Irrigation	405	1/22/2008	-95.420278	29.751389	58 ft	View
56	HGSD2727	TX HGSD	ALLBRITTON, JOE L.	Other	400	01/01/1977	-95.42194	29.75389	57 ft	N/A
56	HGSD13022	TX HGSD	Dogget, WM Leslie & Ann	n/a	550	n/a	-95.4225	29.75194	57 ft	N/A
56	65-13-815	TX TWDB GW	S. P. Farish	Domestic	525	01/01/1938	-95.419166	29.753333	57 ft	View
57	65-13-6E	TX TCEQ HIST	Corrosion Protection	Industrial	337	12/04/1976	-95.403393	29.809561	64 ft	View
57	65-13-3C	TX TCEQ HIST	National Forge Co.	Industrial	410	01/15/1969	-95.402265	29.808631	62 ft	View
57	USGS-294836095241901	WW USGS	USGS	Not Reported	1232	01/01/1936	-95.405494	29.810227	64 ft	N/A
57	USGS-294836095241902	WW USGS	USGS	Not Reported	1455	04/01/1982	-95.405494	29.810227	64 ft	N/A
57	G1010013P	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1231	03/01/1982	-95.405769	29.810289	64 ft	View
57	G1010013GX	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1232	09/18/1936	-95.405772	29.809949	63 ft	View
57	HGSD1060	TX HGSD	Houston, City of	Public Supply	1232	01/01/1936	-95.40556	29.80972	65 ft	N/A
57	HGSD3706	TX HGSD	Houston, City of	Public Supply	2000	01/01/1990	-95.40583	29.81028	64 ft	N/A
57	HGSD10609	TX HGSD	Moss Landscaping	Other	450	n/a	-95.40361	29.81028	64 ft	N/A
57	HGSD2198	TX HGSD	National Flame & Forge, Inc.	Irrigation	612	01/01/1965	-95.40306	29.80889	64 ft	N/A
57	65-13-605	TX TWDB GW	City of Houston Heights #6	Unused	1232	01/01/1936	-95.405555	29.810277	64 ft	View
57	65-13-626	TX TWDB GW	City of Houston, Heights, well #6A	Public Supply	1231	03/01/1982	-95.405555	29.810277	64 ft	View
58	HGSD4650	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46389	29.7875	65 ft	N/A
58	65-13-714	TX TWDB GW	Cameron Iron Works #3	Industrial	992	06/01/1949	-95.464444	29.787221	65 ft	View
58	65-13-736	TX TWDB GW	Cameron Iron Works	Industrial	860	01/01/1963	-95.464166	29.788055	66 ft	View
59	65-13-7	TX TCEQ HIST	William V. Clarke	Irrigation	440	08/07/1988	-95.464181	29.78282	66 ft	View
59	HGSD4655	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46306	29.78444	73 ft	N/A
59	HGSD4656	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46194	29.78444	73 ft	N/A
60	65-13-5E	TX TCEQ HIST	Five P. Processing Lab	Domestic	420	06/07/1977	-95.4506	29.81012	67 ft	View
61	65-13-7	TX TCEQ HIST	Caroline Vaden	Domestic	332	11/30/1989	-95.463493	29.777477	64 ft	View
62	65-13-7	TX TCEQ HIST	Signature Homes	Irrigation	450	11/18/2002	-95.462364	29.773705	65 ft	View
62	65-13-7	TX TCEQ HIST	Stone Bridge Construction	Domestic	470	11/12/1990	-95.462614	29.77484	64 ft	View
62	USGS-294617095274801	WW USGS	USGS	Not Reported	321	09/10/1990	-95.463552	29.771617	62 ft	N/A
62	WIID165743	TX TWDB WIID	Buu Q. Dang	Irrigation	335	1/6/2009	-95.461389	29.773611	63 ft	View
62	WIID157718	TX TWDB WIID	Kaves, Kenneth	Domestic	465	10/22/2008	-95.461667	29.775278	63 ft	View
62	65-13-722	TX TWDB GW	H. C. Weiss	Unused	173	01/01/1930	-95.459444	29.773054	60 ft	View
62	65-13-733	TX TWDB GW	J. O. Winston, Jr.	Domestic	337	01/01/1939	-95.460833	29.772221	63 ft	View
63	HGSD2203	TX HGSD	Houstonian, The	Public Supply	500	01/01/1961	-95.45889	29.76667	57 ft	N/A
64	65-13-502	TX TWDB GW	Mraz Dance Hall	Unused	259	01/01/1948	-95.416943	29.816388	73 ft	View
65	65-12-9S	TX TCEQ HIST	Country Stock	Domestic	220	07/06/1984	-95.460726	29.769098	49 ft	View
65	WIID45261	TX TWDB WIID	The Houstonian #2	Irrigation	446	10/31/2003	-95.459445	29.768889	61 ft	View
65	HGSD2204	TX HGSD	Houstonian, The	Public Supply	350	01/01/1971	-95.46056	29.76667	45 ft	N/A
65	HGSD4177	TX HGSD	Fay School, The	Other	465	01/01/1985	-95.45917	29.7675	61 ft	N/A

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65	HGSD6114	TX HGSD	Houstonian, The	Other	400	01/01/1998	-95.46028	29.76806	59 ft	N/A
65	HGSD9616	TX HGSD	Houstonian, The	Other	470	01/01/2003	-95.45917	29.76889	58 ft	N/A
66	65-21-2G	TX TCEQ HIST	Mr. Robinson	Domestic	320	07/26/1984	-95.435361	29.752417	58 ft	View
66	65-21-2G	TX TCEQ HIST	Mr. Robinson	Domestic	472	07/30/1984	-95.435361	29.752417	58 ft	View
66	65-13-8	TX TCEQ HIST	H I S Construction	Domestic	542	11/07/1994	-95.437971	29.752307	59 ft	View
66	HGSD13287	TX HGSD	Raymond, John & Liegh Anne	Other	400	n/a	-95.43417	29.75389	56 ft	N/A
67	65-14-7H	TX TCEQ HIST	National Beverage Co.	Domestic	338	06/12/1975	-95.388588	29.775906	47 ft	View
67	65-13-943	TX TWDB GW	Cook Paint & Varnish	n/a	502	01/14/1965	-95.388333	29.773888	54 ft	View
68	65-21-2	TX TCEQ HIST	Paul F. Bernhart	Irrigation	324	10/23/1990	-95.42881	29.751547	57 ft	View
68	65-13-8	TX TCEQ HIST	Paul Barnhart Sr.	Domestic	455	12/08/1998	-95.42881	29.751547	57 ft	View
68	65-21-1	TX TCEQ HIST	R.D.W.	Domestic	400	10/23/1996	-95.430289	29.750851	58 ft	View
68	WIID184981	TX TWDB WIID	Max Watson	Domestic	445	5/11/2006	-95.430278	29.750834	58 ft	View
68	WIID40186	TX TWDB WIID	Miner-Dedrick	Domestic	438	8/7/2003	-95.430278	29.752223	56 ft	View
69	65-13-902	TX TWDB GW	Washington Laundry	Industrial	487	01/01/1936	-95.392221	29.767777	49 ft	View
70	65-13-9	TX TCEQ HIST	Davis Brothers Construction	Irrigation	480	05/13/1996	-95.400883	29.758804	48 ft	View
70	HGSD5459	TX HGSD	Villas at River Oaks	Lost	430	01/01/1996	-95.40139	29.75778	51 ft	N/A
70	65-13-906	TX TWDB GW	Harris Cream Top Dairy	Plugged or Destroyed	514	01/01/1933	-95.399721	29.759722	44 ft	View
71	HGSD2169	TX HGSD	HARDING, GEORGE F.	Irrigation	476	01/01/1962	-95.38778	29.79194	53 ft	N/A
71	65-13-621	TX TWDB GW	Globe Laundry and Cleaners	Industrial	477	01/01/1962	-95.389166	29.791944	55 ft	View
71	65-13-909	TX TWDB GW	Creamix Corp.	Unused	250	01/01/1927	-95.38861	29.79111	55 ft	View
72	WIID199244	TX TWDB WIID	Scott Hendrickson	Domestic	180	9/15/2009	-95.408334	29.815278	63 ft	View
73	65-21-3	TX TCEQ HIST	James Weaver	Irrigation	400	12/18/1991	-95.42254	29.75071	58 ft	View
73	65-21-2	TX TCEQ HIST	Chip Bryant	Domestic	310	03/20/1996	-95.420275	29.750807	57 ft	View
73	WIID204294	TX TWDB WIID	Tom Hooks	Domestic	380	8/23/2009	-95.421389	29.750278	56 ft	View
74	65-13-8A	TX TCEQ HIST	Lestos Company	Domestic	322	08/28/1985	-95.441829	29.752102	55 ft	View
74	65-13-8	TX TCEQ HIST	Lestos Co.	Domestic	322	08/28/1985	-95.441829	29.752102	55 ft	View
74	65-13-8	TX TCEQ HIST	Corbin J. Robertson Jr.	Domestic	475	12/10/1996	-95.444656	29.75091	53 ft	View
74	USGS-294506095263001	WW USGS	USGS	Not Reported	321	08/28/1985	-95.441885	29.751895	56 ft	N/A
74	WIID244038	TX TWDB WIID	Michael Zilka	Domestic	440	10/6/2006	-95.439722	29.752223	56 ft	View
74	WIID378914	TX TWDB WIID	Mike Linn	Irrigation	325	9/16/2014	-95.4425	29.751112	56 ft	View
74	WIID73989	TX TWDB WIID	Jeff Heldebrand	Irrigation	439	10/17/2003	-95.441667	29.753889	6 ft	View
74	HGSD13129	TX HGSD	Linn, Mike	n/a	400	n/a	-95.44194	29.75111	56 ft	N/A
74	HGSD13394	TX HGSD	Cockrell, Ernie	n/a	400	n/a	-95.44333	29.75111	55 ft	N/A
74	65-13-837	TX TWDB GW	Lestos Co.	Domestic	321	01/01/1985	-95.441944	29.751944	56 ft	View
75	65-13-7	TX TCEQ HIST	Ugo Di Portanova Estate	Domestic	429	11/14/2001	-95.464935	29.771667	64 ft	View
75	HGSD3219	TX HGSD	WINSTON, JR., J. O.	Public Supply	337	01/01/1939	-95.46778	29.77139	61 ft	N/A
76	65-13-7B	TX TCEQ HIST	Texaco, Inc	Other	273	10/12/1965	-95.467774	29.785017	65 ft	View
76	HGSD2812	TX HGSD	TEXACO, INC.	Irrigation	273	01/01/1965	-95.46778	29.78472	66 ft	N/A
76	HGSD4653	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46667	29.78444	89 ft	N/A
76	HGSD4654	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46528	29.78444	80 ft	N/A
76	HGSD4648	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46778	29.7875	66 ft	N/A
76	HGSD4649	TX HGSD	COOPER INDUSTRIES	Irrigation	50	n/a	-95.46667	29.7875	66 ft	N/A
76	65-13-712	TX TWDB GW	Cameron Iron Works #1	Industrial	388	03/04/1942	-95.466388	29.785277	67 ft	View
76	65-13-713	TX TWDB GW	Cameron Iron Works Well #2	Industrial	0	n/a	-95.465	29.785277	67 ft	View
76	65-13-745	TX TWDB GW	Texaco Inc.	Industrial	273	01/01/1965	-95.467221	29.784444	90 ft	View
77	65-05-7D	TX TCEQ HIST	Maurice Shannon	Domestic	150	11/10/1970	-95.437118	29.819163	70 ft	View
78	65-13-8	TX TCEQ HIST	Dennis Wright & Assoc.	Domestic	405	04/26/1990	-95.432427	29.749835	58 ft	View

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78	WIID385302	TX TWDB WIID	Bill Pritchard	Irrigation	370	12/12/2014	-95.432778	29.747778	57 ft	View
78	WIID373616	TX TWDB WIID	CAIN, WALKER	Irrigation	380	7/25/2014	-95.4325	29.750556	56 ft	View
78	HGSD13100	TX HGSD	Pritchard, Bill	n/a	450	n/a	-95.43278	29.74778	57 ft	N/A
78	HGSD12954	TX HGSD	Cain, Walker	n/a	400	n/a	-95.4325	29.75056	56 ft	N/A
79	65-13-9	TX TCEQ HIST	M.R. Fathers	Domestic	65	05/06/1992	-95.388901	29.769071	50 ft	View
79	65-13-918	TX TWDB GW	Henke and Pillot	Plugged or Destroyed	571	01/01/1929	-95.387499	29.768332	48 ft	View
80	65-13-8	TX TCEQ HIST	W.F. Chao	Irrigation	472	03/08/1990	-95.446442	29.75326	39 ft	View
80	65-13-8	TX TCEQ HIST	Ann Chao	Domestic	510	12/17/1994	-95.44548	29.752998	54 ft	View
80	62-21-4	TX TCEQ HIST	Ann Chao	Irrigation	494	04/02/2002	-95.445333	29.752917	54 ft	View
80	65-13-8F	TX TCEQ HIST	J. Brian Estate	Domestic	431	03/14/1985	-95.44408	29.752327	56 ft	View
80	65-13-8A	TX TCEQ HIST	J. Brian Eby	Domestic	431	11/20/1964	-95.44408	29.752327	56 ft	View
80	65-13-8	TX TCEQ HIST	Al Lasher	Domestic	341	06/05/2002	-95.444862	29.752172	48 ft	View
80	65-13-7	TX TCEQ HIST	Ron Welsh	Irrigation	340	05/27/1994	-95.44603	29.751963	50 ft	View
80	65-21-1	TX TCEQ HIST	Anne Chao	Irrigation	490	09/28/1999	-95.44548	29.752998	54 ft	View
80	65-13-8	TX TCEQ HIST	Karla Huckin	Domestic	370	10/14/2000	-95.446541	29.751547	55 ft	View
80	WIID220507	TX TWDB WIID	G Brock	Irrigation	445	1/31/2008	-95.446389	29.750556	57 ft	View
80	WIID218242	TX TWDB WIID	Robertson, Corbin	Domestic	450	2/2/2010	-95.445	29.751667	48 ft	View
80	HGSD11458	TX HGSD	Robertson, Corbin	Other	450	01/01/1996	-95.44472	29.75111	51 ft	N/A
80	65-13-829	TX TWDB GW	J. Brian Eby	Domestic	431	01/01/1964	-95.444721	29.7525	50 ft	View
81	65-13-7	TX TCEQ HIST	Darla Lexington	Domestic	455	05/25/1996	-95.466596	29.774059	63 ft	View
81	65-13-5J	TX TCEQ HIST	J.O. Winston Jr.	Domestic	378	03/17/1983	-95.467698	29.772012	64 ft	View
81	65-13-8	TX TCEQ HIST	A.B. Ramesh	Domestic	470	09/30/2000	-95.467555	29.771503	65 ft	View
81	65-13-7	TX TCEQ HIST	Ray B. Nesbitt	Domestic	424	11/02/2001	-95.468147	29.772755	62 ft	View
81	WIID278048	TX TWDB WIID	Kramer	Domestic	378	5/3/2006	-95.466112	29.776111	50 ft	View
81	WIID76932	TX TWDB WIID	John Howenstine	Domestic	340	11/30/2005	-95.463889	29.774722	63 ft	View
81	WIID72388	TX TWDB WIID	John Howenstine	Domestic	340	11/30/2005	-95.463889	29.774722	63 ft	View
81	65-13-704	TX TWDB GW	Laise	Domestic	505	01/01/1953	-95.466666	29.773332	53 ft	View
81	65-13-708	TX TWDB GW	M. R. Sprague	Domestic	325	01/01/1950	-95.466388	29.775832	57 ft	View
82	65-21-2	TX TCEQ HIST	McDugal- Steel	Irrigation	458	02/05/1991	-95.426146	29.749335	56 ft	View
82	65-21-2	TX TCEQ HIST	Fairfax Randall	Domestic	410	04/11/1994	-95.424786	29.748235	56 ft	View
82	65-21-2	TX TCEQ HIST	Albert Smith	Domestic	420	10/26/1990	-95.428428	29.749265	59 ft	View
82	65-13-8	TX TCEQ HIST	Dr. Boyce	Domestic	408	01/20/1995	-95.426957	29.750373	59 ft	View
82	65-13-8	TX TCEQ HIST	Bill Baker Construction	Irrigation	405	08/24/1992	-95.427225	29.746901	58 ft	View
82	65-21-2	TX TCEQ HIST	Robert McNair	Domestic	407	06/15/2000	-95.425735	29.749384	58 ft	View
82	65-21-2	TX TCEQ HIST	Dr. Mike Mann	Domestic	412	06/20/1994	-95.425941	29.748137	59 ft	View
82	65-13-8	TX TCEQ HIST	Mr. Harry Holmes	Irrigation	471	05/15/1987	-95.425735	29.751556	57 ft	View
82	65-13-8	TX TCEQ HIST	Ned Holmes	Domestic	525	03/13/1997	-95.425735	29.751556	57 ft	View
82	USGS-294457095253401	WW USGS	USGS	Not Reported	479	02/05/1991	-95.426329	29.749395	56 ft	N/A
82	USGS-294501095253301	WW USGS	USGS	Not Reported	471	05/15/1987	-95.426051	29.750506	58 ft	N/A
82	USGS-294502095253901	WW USGS	USGS	Not Reported	455	10/23/1990	-95.427718	29.750784	55 ft	N/A
82	WIID145996	TX TWDB WIID	Sam Douglass	Domestic	515	5/7/2008	-95.424444	29.748056	55 ft	View
82	WIID20927	TX TWDB WIID	NED HOLMES	Domestic	520	5/12/2003	-95.425833	29.751945	57 ft	View
82	WIID182613	TX TWDB WIID	McNair, Robert	Domestic	412	5/28/2009	-95.425555	29.749722	55 ft	View
82	WIID278221	TX TWDB WIID	Rod Cutsinger	Domestic	380	10/6/2006	-95.427222	29.746945	58 ft	View
82	WIID222014	TX TWDB WIID	Don Chalmers	Domestic	400	6/7/2010	-95.424722	29.750278	56 ft	View

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82	WIID199502	TX TWDB WIID	Mosing, Keith	Domestic	402	11/14/2009	-95.425833	29.751112	56 ft	View
82	HGSD12943	TX HGSD	Barnhart, Paul Jr.	n/a	400	n/a	-95.42833	29.75056	57 ft	N/A
82	65-13-814	TX TWDB GW	H. R. Cullen	Domestic	1084	01/01/1935	-95.425277	29.751388	56 ft	View
82	65-13-840	TX TWDB GW	Harry Holmes	Irrigation	471	01/01/1987	-95.42611	29.750555	58 ft	View
83	60-29-1	TX TCEQ HIST	Lester Smith	Domestic	742	02/27/2001	-95.46434	29.768669	56 ft	View
83	65-13-8	TX TCEQ HIST	Carl Davis	Domestic	318	08/25/1993	-95.463318	29.770073	64 ft	View
83	65-13-7	TX TCEQ HIST	Mr. Cizik	Domestic	435	07/13/1999	-95.463417	29.768478	53 ft	View
83	WIID173010	TX TWDB WIID	Lester Smith	Domestic	370	10/11/2004	-95.463612	29.768889	60 ft	View
84	65-13-7	TX TCEQ HIST	A.J. Foyt	Irrigation	386	07/19/1989	-95.468236	29.778159	64 ft	View
84	USGS-294637095275601	WW USGS	USGS	Not Reported	334	04/26/1988	-95.465774	29.777172	63 ft	N/A
84	USGS-294641095280801	WW USGS	USGS	Not Reported	386	07/19/1989	-95.469108	29.778284	63 ft	N/A
84	WIID278307	TX TWDB WIID	Grainger	Domestic	370	10/12/2006	-95.468889	29.78	64 ft	View
84	WIID278046	TX TWDB WIID	Mc Alister	Domestic	370	5/9/2006	-95.466667	29.778889	65 ft	View
84	65-13-750	TX TWDB GW	Robert A. Rowland Well #	Domestic	334	01/01/1988	-95.465833	29.777221	63 ft	View
85	HGSD1061	TX HGSD	Houston, City of	Public Supply	1730	01/01/1949	-95.42278	29.82111	73 ft	N/A
85	HGSD11552	TX HGSD	Batterson LLP	Other	420	n/a	-95.42278	29.82028	70 ft	N/A
86	HGSD1659	TX HGSD	COOK PAINT & VARNISH COMPANY	Irrigation	502	01/01/1965	-95.38528	29.77444	55 ft	N/A
87	HGSD4791	TX HGSD	Abercrombie, Doyle L.	Public Supply	100	01/01/1953	-95.46389	29.80444	69 ft	N/A
88	65-13-7	TX TCEQ HIST	Tim Vail	Domestic	397	08/09/1988	-95.43885	29.749039	58 ft	View
89	65-13-6Q	TX TCEQ HIST	Sparkle Ice	Industrial	425	05/15/1978	-95.411327	29.819684	71 ft	View
90	USGS-294541095232901	WW USGS	USGS	Not Reported	1644	03/08/1966	-95.391606	29.761617	22 ft	N/A
90	G1010013O	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1645	01/26/1966	-95.391586	29.762002	32 ft	View
90	HGSD1023	TX HGSD	Houston, City of	Public Supply	1644	01/01/1966	-95.39167	29.76167	28 ft	N/A
90	HGSD1670	TX HGSD	AMERICAN GENERAL LIFE INS. CO.	Public Supply	1337	01/01/1963	-95.39361	29.76083	36 ft	N/A
90	65-13-921	TX TWDB GW	Standard Rice Co.	Plugged or Destroyed	853	01/01/1908	-95.391944	29.763888	45 ft	View
90	65-13-942	TX TWDB GW	American General Ins.	n/a	1337	01/01/1963	-95.39361	29.761111	30 ft	View
90	65-13-944	TX TWDB GW	City of Houston Central #22	Public Supply	1644	01/22/1966	-95.391666	29.761666	22 ft	View
91	65-13-7	TX TCEQ HIST	Shorenstein Co.	Irrigation	452	02/06/1990	-95.462555	29.761934	54 ft	View
91	USGS-294546095274101	WW USGS	USGS	Not Reported	452	02/06/1990	-95.461608	29.763006	46 ft	N/A
92	HGSD9268	TX HGSD	Huntingdon Council of Co-Owners, The	Domestic	550	n/a	-95.41778	29.7475	52 ft	N/A
93	WIID190019	TX TWDB WIID	Rebecca Parsons	Domestic	435	8/30/2006	-95.468611	29.771667	61 ft	View
93	WIID48621	TX TWDB WIID	IMF Investments No. 201 Ltd	Irrigation	406	8/6/2003	-95.469722	29.770555	22 ft	View
94	65-13-7D	TX TCEQ HIST	H.A. Lott, Inc.	Industrial	298	12/30/1973	-95.471838	29.78482	68 ft	View
94	65-13-4	TX TCEQ HIST	Courtesy Cheverolet	Industrial	355	05/20/1989	-95.470734	29.782837	66 ft	View
95	65-21-2	TX TCEQ HIST	Douglas Gordan	Irrigation	401	10/02/1990	-95.429181	29.746093	57 ft	View
95	65-21-2	TX TCEQ HIST	John Young	Irrigation	400	06/13/1989	-95.42908	29.745555	57 ft	View
95	65-21-2	TX TCEQ HIST	Charles & John Duncan	Domestic	493	04/18/2001	-95.428276	29.747135	59 ft	View
95	USGS-294443095254501	WW USGS	USGS	Not Reported	400	06/13/1989	-95.429385	29.745507	58 ft	N/A
95	USGS-294446095254401	WW USGS	USGS	Not Reported	401	10/02/1990	-95.429107	29.74634	57 ft	N/A

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95	HGSD3239	TX HGSD	Sarofim, Fayez	Other	644	01/01/1953	-95.42694	29.74556	57 ft	N/A
96	65-13-7	TX TCEQ HIST	Cary McNair	Irrigation	386	11/08/1993	-95.470948	29.775144	64 ft	View
96	65-13-7	TX TCEQ HIST	Michael Tran	Domestic	380	11/27/1996	-95.471683	29.774065	61 ft	View
96	65-13-7	TX TCEQ HIST	David King	Domestic	420	10/16/1988	-95.470879	29.776131	64 ft	View
96	65-13-7	TX TCEQ HIST	Lydia Dugan	Domestic	402	08/22/2000	-95.470497	29.773129	51 ft	View
96	65-13-7	TX TCEQ HIST	Mcdugald-Steel (Camp)	Irrigation	388	05/10/1990	-95.472209	29.776158	63 ft	View
96	65-13-7	TX TCEQ HIST	Robert Brockman	Domestic	456	03/17/1998	-95.473473	29.774012	58 ft	View
96	65-13-7	TX TCEQ HIST	Adriane Unger	Domestic	385	10/12/2000	-95.469711	29.776604	64 ft	View
96	WIID232419	TX TWDB WIID	Smith	Irrigation	360	6/30/2010	-95.469167	29.774722	63 ft	View
96	HGSD3520	TX HGSD	ROANE, GAY A.	Other	500	01/01/1980	-95.47194	29.77417	60 ft	N/A
97	65-13-7	TX TCEQ HIST	Debbie J. Callen	Irrigation	420	01/21/1994	-95.472122	29.779598	65 ft	View
97	65-13-7	TX TCEQ HIST	John Karbli	Domestic	382	10/18/1993	-95.474174	29.777672	63 ft	View
97	WIID163571	TX TWDB WIID	Harl, Randy & Cassie	Domestic	367	1/4/2008	-95.4725	29.779167	62 ft	View
98	65-13-7	TX TCEQ HIST	Brad Tucker	Irrigation	433	04/01/1996	-95.467366	29.76616	56 ft	View
98	65-13-7	TX TCEQ HIST	Jane Owen	Domestic	460	11/08/1993	-95.465202	29.765089	52 ft	View
98	WIID166657	TX TWDB WIID	Neil Leibman	Domestic	425	6/13/2008	-95.466667	29.766667	55 ft	View
98	65-13-732	TX TWDB GW	R.H. Goodrich	Plugged or Destroyed	1996	01/01/1934	-95.467777	29.767777	55 ft	View
99	65-21-2G	TX TCEQ HIST	David McDonough	Domestic	412	09/20/1982	-95.443898	29.748146	58 ft	View
99	65-12-9P	TX TCEQ HIST	Sunbelt Landscape	Domestic	360	10/29/1980	-95.443966	29.747163	59 ft	View
99	65-21-2	TX TCEQ HIST	Kelly Coselli	Domestic	388	10/31/2000	-95.443413	29.750175	57 ft	View
99	G1012723A	TX TCEQ PWS	WILLOWICK CONDOMINIUM ASSOCIATION THE	Public Supply	464	07/20/1990	-95.442165	29.746061	59 ft	View
99	WIID228021	TX TWDB WIID	Rosenthal, Gary	Domestic	394	8/11/2010	-95.443334	29.749445	57 ft	View
99	WIID219764	TX TWDB WIID	Wendi Grimes	Irrigation	366	8/10/2009	-95.445278	29.748334	57 ft	View
99	WIID204233	TX TWDB WIID	R.B. Ratcliff Builders	Domestic	350	3/15/2006	-95.445278	29.750556	55 ft	View
99	65-21-207	TX TWDB GW	M. S. McCorquodale	Domestic	236	01/01/1940	-95.446944	29.747777	56 ft	View
99	65-21-208	TX TWDB GW	A.M.Parsons	Public Supply	437	01/01/1941	-95.445555	29.74611	58 ft	View
99	65-21-209	TX TWDB GW	T. D. Anderson	Domestic	400	01/01/1941	-95.44611	29.747221	57 ft	View
99	65-21-210	TX TWDB GW	J. P. Schumacher	Domestic	424	01/01/1940	-95.446666	29.748888	56 ft	View
99	65-21-211	TX TWDB GW	Ray Smith	Domestic	445	01/01/1939	-95.444721	29.749444	56 ft	View
99	65-21-212	TX TWDB GW	S. H. Davis	Domestic	425	01/01/1939	-95.444721	29.749444	56 ft	View
100	65-13-811	TX TWDB GW	R.W. Gillette West Oak Addition	Public Supply	400	01/01/1940	-95.456944	29.754722	53 ft	View
101	65-13-9	TX TCEQ HIST	Glenwood Cemetery	Irrigation	508	12/17/1989	-95.385785	29.765732	46 ft	View
101	G1010013M	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1920	01/01/1949	-95.383058	29.767083	46 ft	View
101	HGSD1021	TX HGSD	Houston, City of	Public Supply	1960	01/01/1949	-95.38306	29.76694	35 ft	N/A
101	HGSD9338	TX HGSD	Glenwood Cemetery, Inc.	Other	500	01/01/1988	-95.38556	29.76778	46 ft	N/A
102	65-13-9E	TX TCEQ HIST	C.O. Wiley	Other	254	02/13/1969	-95.414576	29.822997	73 ft	View
103	65-13-5D	TX TCEQ HIST	Ross Foster	Domestic	57	06/28/1974	-95.399709	29.816866	63 ft	View
104	65-21-2B	TX TCEQ HIST	Westway Utility District	Public Supply	1280	08/01/1973	-95.452377	29.751383	50 ft	View
104	65-13-7F	TX TCEQ HIST	Autotronic System Inc.	Industrial	336	01/29/1979	-95.450859	29.750689	55 ft	View
105	65-21-213	TX TWDB GW	Claude B. Hamill	Domestic	928	01/01/1939	-95.424166	29.744999	57 ft	View
106	USGS-294913095241801	WW USGS	USGS	Not Reported	1730	04/18/1949	-95.405217	29.820504	68 ft	N/A
106	G1010013HA	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1730	01/01/1949	-95.405498	29.82078	67 ft	View
106	65-13-602	TX TWDB GW	City of Houston Heights #9	Public Supply	1730	04/18/1949	-95.405277	29.820554	68 ft	View
107	65-13-8	TX TCEQ HIST	Tynes Sparks Building Corp.	Irrigation	514	02/12/1991	-95.399243	29.751435	52 ft	View

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108	HGSD12016	TX HGSD	Cupp, Charles & Aneta	Other	20	01/01/1984	-95.43139	29.825	76 ft	N/A
109	65-21-2E	TX TCEQ HIST	Gaylord Construction	Domestic	351	08/07/1981	-95.43454	29.74503	58 ft	View
110	USGS-294601095225801	WW USGS	USGS	Not Reported	1960	01/01/1949	-95.382994	29.767172	45 ft	N/A
110	65-13-904	TX TWDB GW	City of Houston (Central #20)	Public Supply	1960	01/01/1949	-95.383054	29.767221	45 ft	View
111	65-21-2	TX TCEQ HIST	Willowwick Cndominiam Assoc.	Public Supply	501	02/07/1990	-95.442215	29.745398	60 ft	View
111	65-13-5	TX TCEQ HIST	River Oaks Baptist Church	Irrigation	470	07/11/1991	-95.442674	29.743935	58 ft	View
111	USGS-294436095263401	WW USGS	USGS	Not Reported	470	07/09/1991	-95.442996	29.743562	58 ft	N/A
111	HGSD4973	TX HGSD	Willowick Condominium Assoc.	Other	508	01/01/1990	-95.44222	29.745	58 ft	N/A
112	65-13-622	TX TWDB GW	Pine Forest Country Club	Irrigation	441	01/01/1963	-95.407777	29.823054	69 ft	View
113	65-13-8K	TX TCEQ HIST	J.N. Warren	Domestic	433	07/01/1980	-95.473312	29.772942	56 ft	View
113	65-13-4	TX TCEQ HIST	Gay Roane	Domestic	520	02/09/1990	-95.473312	29.772942	56 ft	View
113	65-13-729	TX TWDB GW	W. T. Carter	Domestic	492	01/01/1940	-95.471666	29.771666	47 ft	View
114	HGSD1062	TX HGSD	Houston, City of	Public Supply	1880	01/01/1949	-95.41861	29.82583	76 ft	N/A
115	G1010013OK	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	590	n/a	-95.471608	29.800783	69 ft	View
115	G1010013OL	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	710	n/a	-95.471608	29.800783	69 ft	View
115	HGSD3844	TX HGSD	Houston, City of	Public Supply	0	01/01/1986	-95.47194	29.80194	70 ft	N/A
115	65-13-402	TX TWDB GW	City of Houston Pine Terrace	Unused	710	n/a	-95.471666	29.800833	69 ft	View
115	65-13-419	TX TWDB GW	City of Houston Pine Terrace	Unused	590	n/a	-95.471666	29.800833	69 ft	View
116	65-13-5E	TX TCEQ HIST	Jim Mortimer	Domestic	107	10/23/1973	-95.458101	29.817099	71 ft	View
117	65-13-734	TX TWDB GW	R.W. Gillette West Oak Addition	Public Supply	701	01/01/1939	-95.460277	29.754166	59 ft	View
118	WIID196606	TX TWDB WIID	Galvin Kennedy	Domestic	57	10/2/2009	-95.415278	29.825833	75 ft	View
119	65-13-8	TX TCEQ HIST	Jack Castle Jr.	Irrigation	400	11/09/1995	-95.469101	29.762798	54 ft	View
120	65-14-9	TX TCEQ HIST	Ed Cappel	Domestic	46	12/14/1987	-95.475266	29.777203	63 ft	View
121	WIID211879	TX TWDB WIID	John Huff	Irrigation	345	3/18/2010	-95.472778	29.769167	58 ft	View
122	65-13-730	TX TWDB GW	R.W. Gillette West Oak Addition	Public Supply	403	01/01/1938	-95.466943	29.759722	57 ft	View
123	65-12-9Q	TX TCEQ HIST	H.O. Richey	Domestic	381	08/11/1983	-95.47596	29.782143	65 ft	View
124	USGS-294721095283201	WW USGS	USGS	Not Reported	1665	10/01/1954	-95.475774	29.789394	66 ft	N/A
124	G1010013BS	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1665	12/07/1954	-95.475891	29.789989	67 ft	View
124	HGSD1002	TX HGSD	Houston, City of	Public Supply	1665	01/01/1954	-95.47528	29.79	69 ft	N/A
124	HGSD11404	TX HGSD	Afton HOA	Other	50	01/01/2010	-95.47278	29.79028	65 ft	N/A
124	65-13-701	TX TWDB GW	City of Houston (Afton Village)	Public Supply	1665	12/01/1954	-95.475832	29.789444	66 ft	View
125	65-21-1L	TX TCEQ HIST	B.C. Edwards	Domestic	361	05/27/1981	-95.464881	29.757166	59 ft	View
125	65-13-7	TX TCEQ HIST	Zach Blailock	Irrigation	395	11/04/1991	-95.466074	29.75881	57 ft	View
126	65-21-2	TX TCEQ HIST	Dr. H.C. Robinson Jr.	Domestic	384	08/30/1986	-95.41942	29.742719	54 ft	View
127	65-13-941	TX TWDB GW	General Dynamics	Unused	300	01/01/1960	-95.379999	29.768888	51 ft	View
128	65-13-4B	TX TCEQ HIST	Mrs. Tilson	Domestic	225	10/30/1973	-95.454826	29.820778	67 ft	View
129	65-13-9	TX TCEQ HIST	Ray Aire of Houston	Other	133	05/22/1987	-95.376595	29.789071	52 ft	View
130	65-13-4	TX TCEQ HIST	Quong Vo	Domestic	50	11/07/2000	-95.47541	29.798317	70 ft	View
130	65-13-4	TX TCEQ HIST	Gonzello Uriostegui	Domestic	50	11/07/2000	-95.475456	29.798494	70 ft	View
131	HGSD5941	TX HGSD	EXXON COMPANY, U.S.A.	Public Supply	300	n/a	-95.46389	29.81556	70 ft	N/A

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132	65-21-2	TX TCEQ HIST	Danny Claes	Irrigation	70	08/22/2001	-95.423553	29.740838	55 ft	View
132	HGSD8831	TX HGSD	GBL Developers LLC	Lost	50	01/01/2001	-95.42333	29.74028	53 ft	N/A
133	USGS-294537095225801	WW USGS	USGS	Not Reported	1980	04/01/1948	-95.382994	29.760506	45 ft	N/A
133	G1010013L	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1980	07/15/1948	-95.38299	29.760506	45 ft	View
133	WIID165739	TX TWDB WIID	Federal Reserve Bank of Dallas	Domestic	350	12/31/2008	-95.385	29.759167	45 ft	View
133	WIID210899	TX TWDB WIID	Williams Brothers	Domestic	230	7/10/2009	-95.383055	29.762778	19 ft	View
133	HGSD1020	TX HGSD	Houston, City of	Public Supply	1980	01/01/1948	-95.38194	29.76056	47 ft	N/A
133	HGSD11040	TX HGSD	Federal Reserve Bank of Dallas	Domestic	400	01/01/2009	-95.385	29.75917	45 ft	N/A
133	65-13-903	TX TWDB GW	City of Houston Central	Public Supply	1980	01/01/1948	-95.383054	29.760555	45 ft	View
134	65-20-6G	TX TCEQ HIST	Knight Construction	Domestic	131	10/01/1972	-95.407511	29.743047	53 ft	View
135	65-13-7J	TX TCEQ HIST	Ark Wrecking	Industrial	345	12/07/1983	-95.47409	29.766017	62 ft	View
136	HGSD1788	TX HGSD	LAMAR HOTEL	Public Supply	0	01/01/1928	-95.37528	29.79194	50 ft	N/A
137	65-21-2	TX TCEQ HIST	St. John's School	Irrigation	510	01/31/1997	-95.428238	29.740238	56 ft	View
137	WIID40292	TX TWDB WIID	Derrick Keys	Domestic	340	5/28/2004	-95.426944	29.74	56 ft	View
137	HGSD5717	TX HGSD	St. Johns School	Other	500	01/01/1997	-95.42806	29.73972	56 ft	N/A
138	65-13-6	TX TCEQ HIST	Farmers Market Washateria	Industrial	422	10/12/1988	-95.381485	29.80728	56 ft	View
138	USGS-294826095225301	WW USGS	USGS	Not Reported	422	10/12/1988	-95.381605	29.807449	56 ft	N/A
138	HGSD7590	TX HGSD	Satgur Properties, Inc.	Other	320	01/01/1992	-95.38111	29.80694	56 ft	N/A
139	65-13-2P	TX TCEQ HIST	L.D. Shipley	Domestic	275	01/06/1981	-95.415222	29.828922	76 ft	View
139	65-13-5	TX TCEQ HIST	Bill Montgomery	Domestic	425	03/24/1989	-95.415236	29.828442	76 ft	View
139	WIID192060	TX TWDB WIID	Ed De Alba	Domestic	220	8/18/2009	-95.414167	29.8275	75 ft	View
140	G1010013LY	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1100	01/01/1945	-95.41994	29.829947	76 ft	View
140	65-13-501	TX TWDB GW	City of Houston Garden Oaks #2	Public Supply	1100	01/01/1945	-95.419999	29.829999	76 ft	View
141	65-12-7B	TX TCEQ HIST	Signal Oil Co.	Other	329	12/12/1966	-95.479673	29.784536	67 ft	View
141	WIID135362	TX TWDB WIID	Markman, Barbara	Domestic	370	6/20/2007	-95.478889	29.785278	66 ft	View
141	HGSD2813	TX HGSD	TEXACO, INC.	Irrigation	263	01/01/1962	-95.48	29.78306	66 ft	N/A
141	HGSD2997	TX HGSD	EXXON COMPANY, U.S.A.	Irrigation	0	01/01/1983	-95.48278	29.78417	82 ft	N/A
141	65-13-738	TX TWDB GW	Texaco Inc.	Industrial	263	01/01/1962	-95.479721	29.783054	65 ft	View
141	65-13-741	TX TWDB GW	Signal Oil Co.	Industrial	329	01/01/1966	-95.480554	29.784166	68 ft	View
142	65-13-6	TX TCEQ HIST	MIke Story	Irrigation	565	10/05/1990	-95.408577	29.827793	71 ft	View
142	USGS-294939095243001	WW USGS	USGS	Not Reported	565	10/02/1990	-95.40855	29.827726	72 ft	N/A
142	HGSD4415	TX HGSD	CWP Asset Corp./Mister Car Wash	Irrigation	565	01/01/1990	-95.40889	29.8275	71 ft	N/A
143	USGS-294931095240801	WW USGS	USGS	Not Reported	1880	05/19/1949	-95.402439	29.825504	69 ft	N/A
143	G1010013R	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1880	06/01/1949	-95.402412	29.825569	69 ft	View
143	65-13-601	TX TWDB GW	City of Houston Heights #10	Public Supply	1880	05/19/1949	-95.4025	29.825554	69 ft	View
144	65-12-5W	TX TCEQ HIST	Bellewood Subdivision	Public Supply	483	04/26/1984	-95.47963	29.789057	68 ft	View
144	G1010013TA	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	421	06/16/1976	-95.481536	29.790235	67 ft	View
144	G1010013TB	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	465	04/26/1984	-95.481506	29.789773	68 ft	View
144	WIID204024	TX TWDB WIID	James Dorsett	Domestic	42	12/16/2009	-95.481111	29.79	69 ft	View

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144	HGSD3977	TX HGSD	Bellewood Water Supply Corp.	Domestic	500	01/01/1990	-95.48139	29.79	68 ft	N/A
144	HGSD3919	TX HGSD	Bellewood Water Supply Corp.	Domestic	430	01/01/1976	-95.48139	29.78972	68 ft	N/A
144	HGSD3920	TX HGSD	BELLEWOOD WATER SUPPLY CORP.	Public Supply	320	01/01/1947	-95.48139	29.78944	68 ft	N/A
145	WIID219707	TX TWDB WIID	The Womesm's Home	Irrigation	375	1/5/2010	-95.475833	29.803056	70 ft	View
145	HGSD2597	TX HGSD	E.Lindsay. Edward E	Public Supply	60	01/01/1950	-95.47694	29.80528	71 ft	N/A
146	65-13-2Q	TX TCEQ HIST	Shipley	Domestic	370	03/24/1983	-95.434513	29.830699	79 ft	View
147	65-13-7G	TX TCEQ HIST	Tan Land Sales	Domestic	323	08/02/1978	-95.48002	29.77762	59 ft	View
148	65-13-4C	TX TCEQ HIST	Jack Lodge	Domestic	421	06/02/1980	-95.479334	29.79492	69 ft	View
149	HGSD4600	TX HGSD	AIR LIQUIDE AMERICA CORPORATION	Irrigation	380	01/01/1950	-95.47278	29.80972	74 ft	N/A
150	65-13-4A	TX TCEQ HIST	Don Bradshaw	Industrial	400	10/15/1969	-95.469751	29.813753	70 ft	View
151	65-13-8E	TX TCEQ HIST	Jarda Cerny	Domestic	50	03/27/1972	-95.478992	29.797772	70 ft	View
152	65-13-6	TX TCEQ HIST	Sid Anderson	Domestic	575	03/07/1991	-95.411296	29.829908	75 ft	View
153	65-21-2	TX TCEQ HIST	Essex II Apartments	Irrigation	425	07/19/1999	-95.443914	29.740116	59 ft	View
153	HGSD7404	TX HGSD	Gael Apartments, LP	Lost	420	01/01/1999	-95.44444	29.73972	57 ft	N/A
154	65-21-3F	TX TCEQ HIST	Preston Villa Apartments	Other	444	07/21/1967	-95.414685	29.738729	56 ft	View
154	65-21-328	TX TWDB GW	Preston Villa Apartments	Public Supply	444	01/01/1967	-95.415555	29.737499	54 ft	View
155	65-13-703	TX TWDB GW	Carl Detering	Unused	545	01/01/1950	-95.481388	29.781388	63 ft	View
156	USGS-294545095223801	WW USGS	USGS	Not Reported	2020	02/04/1957	-95.377439	29.762728	39 ft	N/A
156	G1010013GM	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1540	01/01/1927	-95.376604	29.763838	39 ft	View
156	G1010013GN	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1456	01/01/1927	-95.379663	29.763562	35 ft	View
156	G1010013N	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1990	02/04/1957	-95.377441	29.76263	39 ft	View
156	G1010013GP	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	953	01/01/1935	-95.377993	29.763562	38 ft	View
156	HGSD1022	TX HGSD	Houston, City of	Public Supply	2020	01/01/1957	-95.37722	29.76278	44 ft	N/A
156	65-13-905	TX TWDB GW	City of Houston Central 21	Public Supply	2020	02/04/1957	-95.377499	29.762777	39 ft	View
156	65-13-924	TX TWDB GW	City of Houston Central	Industrial	1456	01/01/1927	-95.379721	29.763611	35 ft	View
156	65-13-925	TX TWDB GW	City of Houston Central	Unused	1540	01/01/1927	-95.376666	29.763888	39 ft	View
156	65-13-932	TX TWDB GW	City of Houston Central	Plugged or Destroyed	953	01/01/1935	-95.37861	29.763888	39 ft	View
157	USGS-294422095243202	WW USGS	USGS	Not Reported	660	01/21/1984	-95.409106	29.739673	52 ft	N/A
157	HGSD1798	TX HGSD	Admiral Linen & Uniform Service	Irrigation	650	01/01/1963	-95.41028	29.73944	51 ft	N/A
157	HGSD3964	TX HGSD	Admiral Linen & Uniform Service	Irrigation	650	01/01/1990	-95.40917	29.73944	52 ft	N/A
157	65-21-326	TX TWDB GW	Admiral Linen Co.	Industrial	648	01/01/1964	-95.408888	29.73861	50 ft	View
157	65-21-332	TX TWDB GW	Admiral Linen Service	Industrial	660	01/01/1984	-95.409166	29.739721	52 ft	View
158	65-21-312	TX TWDB GW	American Service Co.	Plugged or Destroyed	584	01/01/1937	-95.400277	29.742499	51 ft	View
159	65-14-702	TX TWDB GW	Southern Pacific Railroad	Unused	774	01/01/1913	-95.37361	29.769999	49 ft	View
159	65-14-764	TX TWDB GW	Willborg's Laundry	Plugged or Destroyed	958	01/01/1932	-95.37361	29.769999	49 ft	View
160	HGSD7611	TX HGSD	THOMPSON & HANSON GARDENS	Other	400	n/a	-95.43444	29.7375	57 ft	N/A
161	65-13-727	TX TWDB GW	Allen and Leavens	Domestic	616	01/01/1939	-95.478888	29.766111	65 ft	View
162	65-13-928	TX TWDB GW	Public Laundries	Plugged or Destroyed	1377	01/01/1927	-95.383054	29.753333	50 ft	View
162	65-13-931	TX TWDB GW	Horlock Ice co.	Industrial	509	01/01/1941	-95.382499	29.753888	51 ft	View
163	65-21-2	TX TCEQ HIST	Mister Car Wash	Domestic	582	09/03/1994	-95.419177	29.736653	53 ft	View
163	HGSD4959	TX HGSD	CWP Asset Corp./Mister Car Wash	Irrigation	550	01/01/1994	-95.41944	29.73667	53 ft	N/A

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164	65-13-705	TX TWDB GW	Bellewood Subdivision	Public Supply	323	01/01/1947	-95.483054	29.789721	68 ft	View
165	65-13-7	TX TCEQ HIST	Houston-Thomson & Hanson	Irrigation	421	05/04/1994	-95.483209	29.778856	51 ft	View
165	65-13-7	TX TCEQ HIST	Pete Stiegerwald	Domestic	372	04/03/1986	-95.481236	29.77814	58 ft	View
166	WIID6306	TX TWDB WIID	BABA YEGA RESTURANT	Industrial	270	4/3/2002	-95.39	29.746389	49 ft	View
166	HGSD9086	TX HGSD	BaBa Yega Restaurant	Other	400	01/01/2002	-95.39	29.74611	50 ft	N/A
166	65-21-334	TX TWDB GW	Baba Yega Resturant	Industrial	270	04/03/2002	-95.389999	29.746388	50 ft	View
167	65-21-2	TX TCEQ HIST	Photocolor of Houston	Industrial	381	04/17/1989	-95.426475	29.735511	53 ft	View
167	USGS-294407095253301	WW USGS	USGS	Not Reported	381	04/17/1989	-95.426051	29.735507	52 ft	N/A
168	HGSD1790	TX HGSD	Admiral Linen & Uniform Service	Irrigation	600	01/01/1967	-95.38417	29.75056	51 ft	N/A
169	65-13-4	TX TCEQ HIST	T.L. Smith	Domestic	57	02/09/2001	-95.481789	29.799652	70 ft	View
169	65-12-5V	TX TCEQ HIST	Sam Mullin	Domestic	228	05/06/1982	-95.484146	29.800474	71 ft	View
169	65-13-5C	TX TCEQ HIST	E.W. Sanders	Domestic	47	11/21/1973	-95.483375	29.79914	70 ft	View
170	USGS-294536095223201	WW USGS	USGS	Not Reported	625	N/A	-95.375772	29.760228	42 ft	N/A
170	G1010013GO	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1320	01/01/1927	-95.377436	29.761616	ft	View
170	G1010013GQ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	2025	01/01/1935	-95.376047	29.76245	51 ft	View
170	65-13-926	TX TWDB GW	City of Houston Central	Unused	1320	01/01/1927	-95.377499	29.761666	ft	View
170	65-13-927	TX TWDB GW	City of Houston	Public Supply	625	n/a	-95.375832	29.760277	42 ft	View
170	65-13-933	TX TWDB GW	City of Houston Central	Plugged or Destroyed	2025	01/01/1935	-95.37611	29.7625	51 ft	View
171	65-13-4K	TX TCEQ HIST	John Speights	Domestic	28	06/22/1974	-95.465752	29.822794	72 ft	View
172	65-13-4C	TX TCEQ HIST	Burkhardt Nursery	Domestic	440	08/03/1971	-95.485136	29.78756	68 ft	View
172	65-13-4	TX TCEQ HIST	Marvin T Wolfe, Jr	Domestic	43	07/26/1991	-95.483345	29.787546	68 ft	View
172	G1010013SZ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.482717	29.787449	67 ft	View
173	WIID44920	TX TWDB WIID	GEORGE & LORI RODRIGUEZ	Domestic	450	7/22/2004	-95.3675	29.784167	40 ft	View
173	65-14-709	TX TWDB GW	Crescent Laundry	Unused	235	01/01/1936	-95.365555	29.783333	49 ft	View
174	65-13-2	TX TCEQ HIST	Burt Saville	Domestic	345	10/04/1995	-95.472694	29.817595	73 ft	View
174	65-13-4B	TX TCEQ HIST	Turner Hdw. Co.	Industrial	252	11/22/1969	-95.472206	29.820177	74 ft	View
174	65-13-422	TX TWDB GW	Gulf Coast Welding & Construction Co.	Industrial	252	01/01/1969	-95.472221	29.819443	73 ft	View
175	65-21-1	TX TCEQ HIST	BT & S Construction	Irrigation	388	04/30/1997	-95.465065	29.745323	60 ft	View
175	HGSD5431	TX HGSD	Montecito	Other	470	01/01/1996	-95.46556	29.74472	59 ft	N/A
176	WIID232163	TX TWDB WIID	Hawkins, Russell	Irrigation	364	9/20/2010	-95.434167	29.734167	57 ft	View
177	65-13-9	TX TCEQ HIST	JMG Builders, Ltd.	Irrigation	361	12/31/1998	-95.380567	29.75049	51 ft	View
177	HGSD2130	TX HGSD	SPARKLE ICE COMPANY	Irrigation	517	01/01/1941	-95.38222	29.75083	49 ft	N/A
177	HGSD2129	TX HGSD	SPARKLE ICE COMPANY	Irrigation	514	01/01/1970	-95.38222	29.75083	49 ft	N/A
177	HGSD6700	TX HGSD	Oakwood Apartment Management	Other	440	01/01/1998	-95.38083	29.75056	48 ft	N/A
177	65-13-930	TX TWDB GW	Horlock Ice co.	Industrial	250	01/01/1929	-95.38361	29.750277	51 ft	View
177	65-13-946	TX TWDB GW	Sparkle Ice Co.	n/a	514	04/21/1970	-95.382499	29.751111	51 ft	View
178	HGSD2732	TX HGSD	Wilshire Village Corporation	Domestic	526	01/01/1939	-95.4025	29.73667	50 ft	N/A
179	G1010013ME	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	468	01/01/1950	-95.485494	29.797727	70 ft	View
179	G1010013MF	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	281	01/01/1954	-95.486882	29.798004	71 ft	View
179	65-13-403	TX TWDB GW	City of Houston Glenmore Forest	Unused	468	01/01/1950	-95.485555	29.797777	70 ft	View
179	65-13-404	TX TWDB GW	City of Houston Glenmore Forest	Unused	281	01/01/1954	-95.486944	29.798055	71 ft	View

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
180	HGSD9697	TX HGSD	Houston Garden Center # 16	Agriculture	350	01/01/2004	-95.47139	29.82083	74 ft	N/A
181	65-13-4M	TX TCEQ HIST	O.A. Fritsche	Domestic	51	08/12/1974	-95.482323	29.806429	72 ft	View
181	65-12-6J	TX TCEQ HIST	Adele Wichman	Domestic	42	02/10/1974	-95.484077	29.806417	75 ft	View
181	HGSD11347	TX HGSD	Women's Home, The	Other	400	n/a	-95.48167	29.805	71 ft	N/A
182	65-13-6H	TX TCEQ HIST	M.W. McCurdey & Co. Inc.	Industrial	447	02/01/1984	-95.395538	29.829956	66 ft	View
182	WIID3790	TX TWDB WIID	M.W. McCurdy & Co., Inc.	Industrial	450	11/21/2001	-95.396667	29.829167	66 ft	View
182	HGSD8820	TX HGSD	WFI International	Domestic	450	01/01/2001	-95.39667	29.82917	66 ft	N/A
183	G1010013 JO	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.44772	29.735229	58 ft	View
183	G1010013 JN	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.44772	29.735229	58 ft	View
184	USGS-294551095221001	WW USGS	USGS	Not Reported	2035	06/01/1945	-95.369661	29.764395	27 ft	N/A
184	HGSD1019	TX HGSD	Houston, City of	Public Supply	2035	01/01/1945	-95.36889	29.76444	33 ft	N/A
184	65-14-707	TX TWDB GW	City of Houston Central	Unused	2035	01/01/1945	-95.369721	29.764444	27 ft	View
184	65-14-765	TX TWDB GW	Ineeda Laundry	Plugged or Destroyed	975	01/01/1910	-95.368332	29.7625	38 ft	View
185	65-13-7F	TX TCEQ HIST	Houston Country Club	Public Supply	1185	12/09/1930	-95.485283	29.76833	56 ft	View
186	G1012714 A	TX TCEQ PWS	TROPICAL MOTEL	Public Supply	0	n/a	-95.411326	29.836058	74 ft	View
186	G1012714 B	TX TCEQ PWS	TROPICAL MOTEL	Public Supply	0	n/a	-95.411326	29.836337	74 ft	View
186	HGSD4432	TX HGSD	LANE, WILLIAM L.	Public Supply	0	n/a	-95.41	29.83639	74 ft	N/A
186	HGSD4431	TX HGSD	LANE, WILLIAM L.	Public Supply	0	n/a	-95.41139	29.83528	75 ft	N/A
187	65-13-1I	TX TCEQ HIST	Bill Ridgeway	N/A	121	06/10/1976	-95.476146	29.816752	76 ft	View
187	65-13-4	TX TCEQ HIST	Eddie Willrick	Domestic	360	10/13/1997	-95.477402	29.816719	76 ft	View
187	HGSD7495	TX HGSD	Nguyen, Tu W.	Domestic	0	n/a	-95.47444	29.81722	74 ft	N/A
187	65-13-420	TX TWDB GW	South Texas Tool Co.	Commercial	50	01/01/1963	-95.478054	29.816388	77 ft	View
187	65-13-423	TX TWDB GW	Adair Equipment Co.	Industrial	400	10/15/1969	-95.475832	29.815833	75 ft	View
188	G1010013 NQ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	600	01/01/1950	-95.487722	29.776616	64 ft	View
188	WIID45196	TX TWDB WIID	Joe Fung	Domestic	360	1/15/2004	-95.487222	29.778611	62 ft	View
188	65-13-702	TX TWDB GW	City of Houston Long Wood	Unused	600	n/a	-95.487777	29.776666	64 ft	View
189	65-13-720	TX TWDB GW	M. R. Pretty	Domestic	90	n/a	-95.488333	29.782777	66 ft	View
190	65-13-6H	TX TCEQ HIST	City of Houston	Public Supply	1300	10/01/1979	-95.401068	29.833853	67 ft	View
190	USGS-295001095240301	WW USGS	USGS	Not Reported	1780	04/19/1950	-95.40105	29.833837	67 ft	N/A
190	USGS-295001095240302	WW USGS	USGS	Not Reported	1290	09/01/1979	-95.40105	29.833837	67 ft	N/A
190	G1010013 S	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1300	09/01/1979	-95.400932	29.833665	67 ft	View
190	G1010013 HB	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1780	01/01/1950	-95.40188	29.834115	67 ft	View
190	WIID122583	TX TWDB WIID	Dara Childs	Domestic	47	9/16/2007	-95.400278	29.833334	66 ft	View
190	HGSD1063	TX HGSD	Houston, City of	Public Supply	1780	01/01/1950	-95.39889	29.83417	65 ft	N/A
190	HGSD3371	TX HGSD	Houston, City of	Public Supply	1780	01/01/1950	-95.40083	29.83389	66 ft	N/A
190	HGSD3708	TX HGSD	Houston, City of	Public Supply	612	01/01/1988	-95.39889	29.83417	65 ft	N/A
190	65-13-305	TX TWDB GW	City of Houston Heights #11	Public Supply	1780	04/19/1950	-95.401111	29.833888	67 ft	View
190	65-13-324	TX TWDB GW	City of Houston Heights # 11A	Public Supply	1290	01/01/1979	-95.401111	29.833888	67 ft	View
191	HGSD5221	TX HGSD	7706 Properties, LLC.	Other	450	01/01/1983	-95.48139	29.81139	79 ft	N/A

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Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
192	HGSD4734	TX HGSD	INWOOD MANOR CONDOMINIUM ASSOC.	Public Supply	600	n/a	-95.42917	29.73111	56 ft	N/A
193	65-13-4Q	TX TCEQ HIST	Vernon Clinger	Domestic	50	07/10/1984	-95.488284	29.794878	68 ft	View
193	65-13-4F	TX TCEQ HIST	Ken Martin	Domestic	48	03/24/1974	-95.490776	29.796171	70 ft	View
193	65-12-6	TX TCEQ HIST	Lesley Kahanek	Domestic	50	12/18/1996	-95.489639	29.796425	70 ft	View
193	WIID31000	TX TWDB WIID	Clarence H. Cook	Domestic	34	6/18/2003	-95.489445	29.795278	69 ft	View
194	HGSD9070	TX HGSD	Montierra Apartments I, LLC	Lost	425	01/01/2002	-95.46694	29.74278	60 ft	N/A
195	65-20-3F	TX TCEQ HIST	John Flesher	Domestic	318	11/14/1968	-95.476163	29.750317	61 ft	View
195	65-13-737	TX TWDB GW	J. D. Westcott	Domestic	189	01/01/1962	-95.47861	29.751388	62 ft	View
195	65-21-136	TX TWDB GW	John Flesher	Domestic	318	01/01/1968	-95.476388	29.749166	61 ft	View
196	65-14-703	TX TWDB GW	Phenix Dairy Well #2	Unused	962	01/01/1948	-95.37111	29.7575	45 ft	View
197	WIID156326	TX TWDB WIID	I-45 Plumbing	Domestic	50	9/26/2008	-95.378611	29.820278	54 ft	View
197	65-13-603	TX TWDB GW	Houston Textile Co	Industrial	745	01/01/1948	-95.376666	29.821388	59 ft	View
198	G1010013GD	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	800	01/01/1946	-95.369936	29.809671	57 ft	View
198	65-14-412	TX TWDB GW	City of Houston Lindale Park	Unused	800	01/01/1946	-95.369999	29.809722	57 ft	View
199	65-14-7G	TX TCEQ HIST	J. D. Westcott	N/A	189	01/31/1962	-95.478706	29.751987	60 ft	View
199	65-13-711	TX TWDB GW	R. C. Sweet	Domestic	191	01/01/1950	-95.479166	29.754166	62 ft	View
199	65-13-744	TX TWDB GW	Harold Thurow	Domestic	319	01/01/1968	-95.479721	29.753611	61 ft	View
200	65-13-2	TX TCEQ HIST	John Karbli	Domestic	414	01/08/1993	-95.416849	29.839789	76 ft	View
200	65-13-5	TX TCEQ HIST	Ray Dhom	Domestic	376	03/12/1986	-95.41835	29.839141	78 ft	View
200	65-13-6B	TX TCEQ HIST	J.D. Miller	Domestic	307	01/29/1975	-95.418171	29.838503	77 ft	View
200	WIID21684	TX TWDB WIID	Dena Joy Davidson	Domestic	60	6/11/2003	-95.414723	29.839167	77 ft	View
201	65-20-9	TX TCEQ HIST	Ninfa Cavazos	Domestic	285	09/10/1995	-95.400711	29.733298	50 ft	View
201	WIID214937	TX TWDB WIID	Bohnn, Anne	Irrigation	370	2/19/2010	-95.399167	29.731111	32 ft	View
202	65-13-1Q	TX TCEQ HIST	Royal Ollarble	Domestic	355	03/31/1982	-95.430482	29.840557	79 ft	View
202	HGSD7288	TX HGSD	Your Container Solutions, Inc.	Domestic	50	01/01/1999	-95.43139	29.84222	80 ft	N/A
202	65-13-217	TX TWDB GW	Parker Garage	Domestic	245	01/01/1969	-95.431388	29.840277	79 ft	View
203	65-13-7	TX TCEQ HIST	Colby Moshier	Domestic	317	08/15/1990	-95.491112	29.790476	69 ft	View
204	G1010148F	TX TCEQ PWS	MEMORIAL VILLAGES WATER AUTHORITY	Public Supply	1526	11/01/1983	-95.491333	29.777765	68 ft	View
204	WIID204702	TX TWDB WIID	Leslie Cooper	Irrigation	400	1/29/2009	-95.493056	29.779167	69 ft	View
204	HGSD1483	TX HGSD	Memorial Villages Water Authority	Public Supply	1498	01/01/1970	-95.49139	29.77778	67 ft	N/A
204	65-13-709	TX TWDB GW	T. C. Rhodes	Domestic	178	01/01/1951	-95.492221	29.778888	67 ft	View
204	65-13-718	TX TWDB GW	E. G. Pearson	Domestic	356	01/01/1939	-95.491666	29.776943	67 ft	View
205	65-13-7	TX TCEQ HIST	Jeff Griffis	Domestic	420	11/12/1999	-95.488907	29.767569	56 ft	View
206	WIID69516	TX TWDB WIID	Houston Garden Center #16	Irrigation	371	2/5/2004	-95.474444	29.823611	73 ft	View
206	HGSD9704	TX HGSD	Houston Garden Center # 16	Agriculture	350	01/01/2004	-95.4725	29.82222	73 ft	N/A
207	65-14-725	TX TWDB GW	Model Laundry	Plugged or Destroyed	1875	01/01/1909	-95.365555	29.763333	37 ft	View
208	HGSD5228	TX HGSD	Taylor, Carter	Public Supply	386	01/01/1975	-95.48306	29.755	64 ft	N/A
209	USGS-294341095252002	WW USGS	USGS	Not Reported	1400	07/25/1984	-95.42244	29.728285	53 ft	N/A
209	G1010027C	TX TCEQ PWS	CITY OF WEST UNIVERSITY PLACE	Public Supply	1298	07/25/1984	-95.422488	29.728552	54 ft	View
209	HGSD2410	TX HGSD	West University Place, City of	Public Supply	1700	01/01/1949	-95.42306	29.72889	55 ft	N/A
209	HGSD3986	TX HGSD	West University Place, City of	Public Supply	1360	01/01/1990	-95.42222	29.72889	54 ft	N/A
209	65-21-203	TX TWDB GW	City of West University Place	Public Supply	2007	01/01/1949	-95.422777	29.72861	53 ft	View
209	65-21-233	TX TWDB GW	City of West Univer- sity Place Well #9	Public Supply	1400	07/25/1984	-95.422499	29.728332	53 ft	View
210	65-14-7G	TX TCEQ HIST	Gifford-Hill America, Inc.	Industrial	552	08/19/1974	-95.36092	29.78881	47 ft	View

Water Well Details

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211	65-13-5B	TX TCEQ HIST	Jobmaster Inc.	Industrial	377	10/01/1976	-95.438529	29.840847	80 ft	View
211	65-13-1	TX TCEQ HIST	Job - Master Sales	Domestic	377	09/15/1994	-95.438529	29.840847	80 ft	View
211	65-13-1H	TX TCEQ HIST	R&R Industries	Industrial	351	11/12/1975	-95.436071	29.841798	80 ft	View
211	65-13-5D	TX TCEQ HIST	Makada	Domestic	237	02/14/1978	-95.439301	29.84297	80 ft	View
211	G1010013 KO	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.437991	29.839114	80 ft	View
211	HGSD3251	TX HGSD	SIGMOR CORPORATION	Irrigation	0	01/01/1967	-95.44028	29.84111	80 ft	N/A
211	65-13-213	TX TWDB GW	Sigmor Oil Co.	Industrial	291	01/01/1967	-95.44111	29.840555	80 ft	View
211	65-13-216	TX TWDB GW	Eutsler Technical Products	Industrial	344	01/01/1964	-95.438333	29.84111	80 ft	View
212	65-22-1	TX TCEQ HIST	JMG Builders, LTD	Irrigation	388	04/08/1997	-95.416084	29.72868	52 ft	View
212	HGSD5893	TX HGSD	Boulevard Apartments, The	Lost	350	01/01/1997	-95.41639	29.72806	52 ft	N/A
213	65-13-7	TX TCEQ HIST	Ernest Mitchkie	Domestic	420	07/28/1994	-95.49144	29.795248	70 ft	View
214	G1011174 A	TX TCEQ PWS	TENNECO BUILDING WATER SYSTEM	Public Supply	1480	n/a	-95.367716	29.758006	47 ft	View
214	HGSD4590	TX HGSD	El Paso Energy	Domestic	1372	01/01/1962	-95.3675	29.75778	47 ft	N/A
214	65-14-719	TX TWDB GW	Oil & Gas Building	Public Supply	986	01/01/1939	-95.367221	29.7575	47 ft	View
214	65-14-720	TX TWDB GW	Rice Hotel Laundry	Plugged or Destroyed	1502	01/01/1936	-95.368054	29.760555	50 ft	View
214	65-14-763	TX TWDB GW	Memorial Baptist Hospital	Public Supply	1500	01/01/1963	-95.36861	29.757222	47 ft	View
215	65-21-315	TX TWDB GW	Shepherd Laundry	Plugged or Destroyed	1416	01/01/1930	-95.376666	29.746388	48 ft	View
216	65-13-4X	TX TCEQ HIST	Big Three Industries	Industrial	392	07/24/1982	-95.482781	29.815973	78 ft	View
217	65-13-4	TX TCEQ HIST	Frank Weeden	Domestic	48	05/31/2000	-95.491447	29.798105	70 ft	View
217	WIID174921	TX TWDB WIID	St. Mark's Lutheran Church	Irrigation	318	10/19/2004	-95.494445	29.798889	70 ft	View
218	WIID138366	TX TWDB WIID	Betty Hecker	Domestic	50	4/2/2008	-95.408612	29.840278	71 ft	View
219	65-14-716	TX TWDB GW	Sunshine Laundry	Plugged or Destroyed	602	01/01/1929	-95.360833	29.773054	49 ft	View
219	65-14-733	TX TWDB GW	Missouri, Kansas and Texas Railroad	Plugged or Destroyed	1638	01/01/1910	-95.36	29.771388	50 ft	View
220	65-13-746	TX TWDB GW	Memorial Village	Public Supply	864	01/01/1970	-95.49361	29.779999	66 ft	View
221	USGS-295019095240801	WW USGS	USGS	Not Reported	1770	09/23/1949	-95.402439	29.838837	66 ft	N/A
221	G1010013 T	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1772	11/05/1949	-95.4023	29.838977	67 ft	View
221	WIID96461	TX TWDB WIID	New Bradley	Domestic	47	10/12/2006	-95.405556	29.838889	70 ft	View
221	HGSD1064	TX HGSD	Houston, City of	Public Supply	1770	01/01/1949	-95.40333	29.83806	67 ft	N/A
221	65-13-304	TX TWDB GW	City of Houston Heights #12	Public Supply	1770	09/23/1949	-95.4025	29.838888	66 ft	View
222	65-14-4	TX TCEQ HIST	Henry Baker	Domestic	378	02/20/1992	-95.360655	29.795918	49 ft	View
223	65-13-3W	TX TCEQ HIST	Mr. Jessie Sharmon	Domestic	365	01/18/1983	-95.38387	29.829338	57 ft	View
224	HGSD1660	TX HGSD	CHRIST EVANGELICAL PRESBYTERIAN	Irrigation	1806	01/01/1970	-95.49389	29.78556	66 ft	N/A
224	HGSD1661	TX HGSD	HUGHES TOOL COMPANY	Irrigation	163	01/01/1951	-95.49306	29.78528	67 ft	N/A
224	HGSD3265	TX HGSD	BROWN OIL TOOLS, INC.	Public Supply	820	01/01/1970	-95.49333	29.78722	67 ft	N/A
224	65-13-715	TX TWDB GW	Brown Oil Tools	Unused	163	01/01/1951	-95.493055	29.78611	68 ft	View
224	65-13-747	TX TWDB GW	Brown Oil Tools	Other	1806	03/14/1970	-95.493888	29.784999	67 ft	View
225	HGSD2598	TX HGSD	E.Lindsay. Edward E	Public Supply	60	01/01/1950	-95.49111	29.80222	70 ft	N/A
226	65-14-4K	TX TCEQ HIST	C. C. Hern	Domestic	248	06/08/1983	-95.359615	29.791773	47 ft	View
227	USGS-294348095270401	WW USGS	USGS	Not Reported	1965	07/22/1953	-95.45133	29.730229	56 ft	N/A
227	G1010013 BJ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1905	08/04/1953	-95.451171	29.73051	57 ft	View

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227	HGSD1126	TX HGSD	Houston, City of	Public Supply	1965	01/01/1953	-95.45083	29.73028	72 ft	N/A
227	65-21-202	TX TWDB GW	City of Houston Southwest	Public Supply	1965	07/22/1953	-95.451388	29.730277	56 ft	View
228	65-13-7	TX TCEQ HIST	Joe Mundy	Domestic	355	04/15/1996	-95.492393	29.76989	63 ft	View
228	65-13-7	TX TCEQ HIST	Janet Morrow	Domestic	330	03/12/1999	-95.490601	29.771929	65 ft	View
228	65-13-7	TX TCEQ HIST	Monte Eubank	Domestic	360	09/14/1995	-95.492393	29.770437	65 ft	View
228	65-13-7	TX TCEQ HIST	Raymond Waterwell Services	Irrigation	360	07/14/1993	-95.492393	29.76989	63 ft	View
228	65-12-9	TX TCEQ HIST	Mr. Blackwell	Domestic	402	07/14/1989	-95.49106	29.76987	63 ft	View
228	65-13-7	TX TCEQ HIST	Dunkin	Domestic	330	03/09/2001	-95.490593	29.771374	65 ft	View
229	65-14-713	TX TWDB GW	Southland	Unused	354	01/01/1941	-95.361944	29.766388	38 ft	View
229	65-14-715	TX TWDB GW	Houston Ice and Cold Storage	Unused	720	01/01/1915	-95.363055	29.766111	39 ft	View
229	65-14-726	TX TWDB GW	Houston Ice and Cold Storage Co.	Unused	825	01/01/1915	-95.362222	29.766388	18 ft	View
230	USGS-294545095292301	WW USGS	USGS	Not Reported	1146	02/01/1955	-95.489942	29.762729	60 ft	N/A
230	USGS-294545095292302	WW USGS	USGS	Not Reported	1195	10/18/1980	-95.489942	29.762729	60 ft	N/A
230	HGSD2263	TX HGSD	Houston Country Club	Other	1146	01/01/1955	-95.49	29.7625	61 ft	N/A
230	HGSD3167	TX HGSD	Houston Country Club	Lost	1150	01/01/1990	-95.49278	29.7625	54 ft	N/A
230	65-13-716	TX TWDB GW	Houston Country Club	Public Supply	1146	01/01/1955	-95.489999	29.762777	60 ft	View
230	65-13-748	TX TWDB GW	Houston Country Club well #2	Irrigation	1197	01/01/1980	-95.489999	29.762777	60 ft	View
231	WIID210471	TX TWDB WIID	John F. Houchins	Domestic	47	2/19/2010	-95.394167	29.732778	50 ft	View
232	65-30-2H	TX TCEQ HIST	T.W. Gothard	Domestic	131	12/16/1981	-95.488273	29.810142	78 ft	View
233	65-21-1	TX TCEQ HIST	Sueba/Davis Joint Venture	Irrigation	419	02/10/1993	-95.480423	29.748201	62 ft	View
234	65-14-7E	TX TCEQ HIST	Jack Philpot	Domestic	384	02/20/1981	-95.36473	29.75943	47 ft	View
234	HGSD2637	TX HGSD	TISHMAN MANAGEMENT OF HOUSTON	Public Supply	900	01/01/1939	-95.36306	29.7575	47 ft	N/A
234	HGSD3624	TX HGSD	FIRST CITY NATIONAL BANK	Other	550	01/01/1981	-95.36167	29.76	47 ft	N/A
234	65-14-728	TX TWDB GW	Rice Hotel	Plugged or Destroyed	1395	01/01/1913	-95.363055	29.760833	46 ft	View
234	65-14-729	TX TWDB GW	Rice Hotel	Unused	896	01/01/1926	-95.362777	29.761111	46 ft	View
234	65-14-736	TX TWDB GW	Niels Esperson Bldg.	Unused	895	01/01/1925	-95.365277	29.758888	47 ft	View
235	USGS-294901095221001	WW USGS	USGS	Not Reported	1152	06/01/1947	-95.36966	29.817171	62 ft	N/A
235	G1010013GE	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1152	07/10/1947	-95.370493	29.81717	62 ft	View
235	G1010013OG	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	220	01/01/1938	-95.366884	29.816893	62 ft	View
235	65-14-409	TX TWDB GW	City of Houston Lindale Park	Unused	1152	06/01/1947	-95.369443	29.817221	61 ft	View
235	65-14-418	TX TWDB GW	City of Houston Oakwood	Unused	220	01/01/1938	-95.366943	29.816943	62 ft	View
236	WIID69514	TX TWDB WIID	Houston Garden Center #16	Irrigation	347	2/5/2004	-95.476389	29.825833	72 ft	View
237	65-14-7K	TX TCEQ HIST	Four D Construction-Contractor	Domestic	377	05/08/1981	-95.454643	29.73073	57 ft	View
238	65-21-3F	TX TCEQ HIST	W.K. Plumbing	Domestic	413	01/20/1981	-95.371796	29.748614	46 ft	View
239	G1013079A	TX TCEQ PWS	FULTON CABINS	Public Supply	0	n/a	-95.375635	29.824225	60 ft	View
240	WIID23463	TX TWDB WIID	HANSON CONCRETE	Industrial	504	7/18/2003	-95.371944	29.820833	64 ft	View
240	HGSD2348	TX HGSD	Southern Star Concrete, Inc.	Irrigation	548	01/01/1974	-95.37194	29.82083	64 ft	N/A
240	HGSD9533	TX HGSD	Southern Star Concrete, Inc.	Irrigation	500	01/01/2003	-95.37194	29.82083	64 ft	N/A
240	65-14-419	TX TWDB GW	Lone Star Cement Co.	Industrial	465	01/01/1967	-95.372221	29.820832	64 ft	View

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
241	65-21-215	TX TWDB GW	City of West University Place	Unused	600	n/a	-95.416388	29.725554	50 ft	View
242	65-13-7H	TX TCEQ HIST	Paul Rosenberg	Domestic	293	08/02/1982	-95.487924	29.755371	63 ft	View
243	65-14-717	TX TWDB GW	Main Building Corp.	Unused	932	01/01/1938	-95.366388	29.753611	45 ft	View
244	65-13-3	TX TCEQ HIST	James A Bearben	Domestic	210	07/18/1991	-95.417686	29.84449	79 ft	View
245	HGSD2715	TX HGSD	Garza, Julio	Irrigation	0	01/01/1989	-95.385	29.83333	59 ft	N/A
246	HGSD8451	TX HGSD	Houston Steel Service	Domestic	460	01/01/1986	-95.43056	29.72444	52 ft	N/A
247	65-14-4	TX TCEQ HIST	Tom Lane	Domestic	47	07/10/1998	-95.361464	29.80816	55 ft	View
247	65-14-415	TX TWDB GW	W. E. Emerson	Public Supply	191	01/01/1953	-95.363333	29.808611	55 ft	View
248	G1010013 GR	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1535	01/01/1925	-95.359941	29.763562	39 ft	View
248	G1010013 GS	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	980	01/01/1925	-95.361048	29.765227	12 ft	View
248	G1010013 GT	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1986	08/28/1945	-95.36133	29.764117	32 ft	View
248	WIID273565	TX TWDB WIID	Harris County	Industrial	44	12/7/2011	-95.357223	29.764167	38 ft	View
248	HGSD4266	TX HGSD	HINES CONSOLIDATED INVESTMENTS	Irrigation	44	01/01/1990	-95.3625	29.7625	46 ft	N/A
248	HGSD1676	TX HGSD	SOUTHLAND CORPORATION, THE	Irrigation	900	01/01/1946	-95.36028	29.76472	23 ft	N/A
248	HGSD4265	TX HGSD	HINES CONSOLIDATED INVESTMENTS	Irrigation	58	01/01/1990	-95.3625	29.7625	46 ft	N/A
248	65-14-740	TX TWDB GW	Southern Pacific Building	Plugged or Destroyed	861	01/01/1923	-95.360833	29.763611	40 ft	View
248	65-14-747	TX TWDB GW	City of Houston Central	Plugged or Destroyed	1535	01/01/1925	-95.36	29.763611	39 ft	View
248	65-14-748	TX TWDB GW	City of Houston Central	Unused	980	01/01/1925	-95.361111	29.765277	12 ft	View
248	65-14-751	TX TWDB GW	T.J. Bettis Building	Unused	363	01/01/1923	-95.360277	29.761666	44 ft	View
249	USGS-294338095270401	WW USGS	USGS	Not Reported	1051	07/04/1953	-95.45133	29.727452	56 ft	N/A
249	USGS-294338095270402	WW USGS	USGS	Not Reported	2358	02/01/1980	-95.450996	29.72723	57 ft	N/A
249	USGS-294338095270403	WW USGS	USGS	Not Reported	1943	03/01/1980	-95.45133	29.727452	56 ft	N/A
249	USGS-294338095270404	WW USGS	USGS	Not Reported	1433	04/01/1980	-95.45133	29.727452	56 ft	N/A
249	USGS-294338095270405	WW USGS	USGS	Not Reported	253	04/09/1980	-95.45133	29.727452	56 ft	N/A
249	USGS-294338095270406	WW USGS	USGS	Not Reported	627	04/14/1980	-95.45133	29.727452	56 ft	N/A
249	G1010013 BI	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	900	07/14/1953	-95.451133	29.72784	57 ft	View
249	HGSD1125	TX HGSD	Houston, City of	Public Supply	1051	01/01/1953	-95.45083	29.72694	59 ft	N/A
249	65-21-201	TX TWDB GW	City of Houston Southwest #9	Public Supply	1051	01/01/1953	-95.451388	29.727499	56 ft	View
249	65-21-229	TX TWDB GW	Harris-Galveston Coast Subsidence Dist.,S.W.	Unused	627	01/01/1980	-95.451388	29.727499	56 ft	View
249	65-21-230	TX TWDB GW	Harris-Galveston Subsidence District	Unused	1943	01/01/1980	-95.451111	29.727221	57 ft	View
250	65-14-721	TX TWDB GW	Commerce Building	Public Supply	900	01/01/1939	-95.363888	29.755555	45 ft	View
250	65-14-743	TX TWDB GW	Ambassador Apartments	Unused	888	01/01/1910	-95.360833	29.755833	44 ft	View
251	65-13-4W	TX TCEQ HIST	J. C. Freeman	Domestic	228	01/04/1982	-95.49517	29.800416	71 ft	View
251	HGSD9857	TX HGSD	Saint Mark Lutheran Church	Other	350	01/01/2004	-95.49472	29.79861	71 ft	N/A
252	HGSD5053	TX HGSD	Phoenician Apartments	Lost	419	01/01/1993	-95.47861	29.7425	64 ft	N/A
253	65-05-9E	TX TCEQ HIST	Don Wallis	Domestic	165	11/17/1983	-95.371879	29.824339	63 ft	View
253	G1010013 OH	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	753	05/01/1941	-95.370768	29.826336	63 ft	View

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Water Well Details

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253	65-14-424	TX TWDB GW	City of Houston Oakwood	Unused	753	05/01/1941	-95.370832	29.826388	63 ft	View
254	65-13-2J	TX TCEQ HIST	National Flarge & Filling Co.	Domestic	241	05/14/1973	-95.452614	29.842855	73 ft	View
254	65-13-1N	TX TCEQ HIST	National Flange & Fitting	Domestic	397	02/02/1981	-95.452619	29.84286	73 ft	View
254	HGSD12207	TX HGSD	National Flange	Domestic	400	n/a	-95.45333	29.8425	71 ft	N/A
255	65-13-3	TX TCEQ HIST	Kenneth Bagwell	Domestic	380	07/01/1986	-95.396431	29.840948	65 ft	View
255	65-13-3	TX TCEQ HIST	Tree Experts, Inc.	N/A	400	04/05/2001	-95.396681	29.842003	65 ft	View
255	65-13-3E	TX TCEQ HIST	Mr. Ryman	Domestic	204	07/12/1976	-95.398409	29.842645	66 ft	View
255	65-13-3	TX TCEQ HIST	B.C. Dowell	Domestic	540	07/18/1988	-95.396729	29.840942	65 ft	View
255	HGSD8698	TX HGSD	Clooney, Dennis R.	Domestic	400	01/01/2001	-95.39694	29.84222	64 ft	N/A
256	G1010013GB	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	856	02/11/1938	-95.365212	29.816615	61 ft	View
256	G1010013GC	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	853	06/17/1940	-95.365212	29.816615	61 ft	View
256	65-14-428	TX TWDB GW	City of Houston Lindale Park	Unused	856	02/11/1938	-95.365277	29.816388	59 ft	View
256	65-14-435	TX TWDB GW	City of Houston Lindale Park	Unused	853	06/17/1940	-95.365277	29.816388	59 ft	View
257	65-12-4J	TX TCEQ HIST	Adrian Flake	Domestic	358	06/04/1984	-95.4952	29.765449	61 ft	View
258	USGS-295049095253101	WW USGS	USGS	Not Reported	24	03/24/2003	-95.425306	29.847	83 ft	N/A
259	65-21-3	TX TCEQ HIST	Tom Taylor	Other	200	07/25/1986	-95.409814	29.724115	49 ft	View
260	USGS-294641095295401	WW USGS	USGS	Not Reported	1526	11/13/1983	-95.498553	29.778284	68 ft	N/A
260	65-13-749	TX TWDB GW	Memorial Village Water Authority	Public Supply	1526	01/01/1983	-95.49861	29.778332	68 ft	View
261	65-14-1J	TX TCEQ HIST	Southwestern Plating Co.	Industrial	462	06/21/1977	-95.354512	29.787905	48 ft	View
262	65-14-711	TX TWDB GW	Southern Pacific Railroad, Well#3	Unused	932	01/01/1937	-95.355555	29.772221	52 ft	View
263	65-21-2	TX TCEQ HIST	John Fort	Domestic	385	07/30/1998	-95.396568	29.727579	51 ft	View
263	65-21-3H	TX TCEQ HIST	Bill Dove	Domestic	60	08/01/1969	-95.39654	29.72994	50 ft	View
263	WIID204732	TX TWDB WIID	Scott Vandyke	Irrigation	370	4/30/2009	-95.398611	29.726389	49 ft	View
264	65-12-9J	TX TCEQ HIST	Walter Duson	Domestic	60	02/28/1971	-95.498863	29.789021	69 ft	View
264	65-12-6F	TX TCEQ HIST	Henry Burkhardt	Domestic	283	05/01/1970	-95.499215	29.789697	68 ft	View
264	65-12-6E	TX TCEQ HIST	Gene Stringer	Domestic	45	01/19/1974	-95.500544	29.787688	68 ft	View
264	65-12-6G	TX TCEQ HIST	A.H. Bingle	Domestic	591	12/10/1963	-95.500509	29.789679	68 ft	View
264	65-12-6AA	TX TCEQ HIST	Ed Springs	Domestic	353	09/30/1980	-95.499542	29.789993	70 ft	View
264	65-13-7C	TX TCEQ HIST	Frank McFadden	Domestic	250	04/17/1972	-95.497452	29.789194	68 ft	View
264	65-12-6T	TX TCEQ HIST	M. Lemmons	Domestic	315	10/02/1974	-95.495964	29.789022	68 ft	View
264	65-12-6	TX TCEQ HIST	E Callenius	Domestic	306	07/07/1992	-95.500038	29.790167	70 ft	View
264	USGS-294725095295801	WW USGS	USGS	Not Reported	320	07/06/1992	-95.499664	29.790506	70 ft	N/A
264	65-12-929	TX TWDB GW	A. H. Bingle	Domestic	591	01/01/1963	-95.500833	29.790555	70 ft	View
265	HGSD7476	TX HGSD	SWE Homes	Domestic	90	n/a	-95.40806	29.84528	73 ft	N/A
265	HGSD11520	TX HGSD	Houston, City of	Irrigation	450	n/a	-95.40944	29.84306	76 ft	N/A
266	65-14-744	TX TWDB GW	Kress Building	Unused	542	01/01/1913	-95.360555	29.757777	44 ft	View
267	65-14-7	TX TCEQ HIST	Hydraulic Equipment Serv.	Domestic	452	02/19/1999	-95.356442	29.767483	35 ft	View
267	HGSD7262	TX HGSD	Hydraulic Equipment Service, Inc.	Other	400	01/01/1999	-95.35694	29.76722	37 ft	N/A
268	65-21-2	TX TCEQ HIST	Stone Mountain Properties	Irrigation	480	07/13/2002	-95.464859	29.730925	57 ft	View
268	HGSD8986	TX HGSD	Stone Mountain Properties	Lost	400	01/01/2002	-95.46528	29.73139	57 ft	N/A
269	65-14-4	TX TCEQ HIST	Kent Wong	Industrial	502	10/25/1988	-95.356117	29.800952	49 ft	View
269	USGS-294801095211901	WW USGS	USGS	Not Reported	502	10/25/1988	-95.355493	29.800505	51 ft	N/A

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270	G1010013 OS	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	990	01/01/1950	-95.49661	29.803838	77 ft	View
270	65-13-405	TX TWDB GW	City of Houston Ridgecrest	Unused	729	01/01/1950	-95.496666	29.803888	77 ft	View
271	65-13-121	TX TWDB GW	Helen Plaag	Domestic	46	01/01/1970	-95.463055	29.840833	75 ft	View
272	65-13-3M	TX TCEQ HIST	Jimmy Hull Drilling	Domestic	476	03/24/1972	-95.40362	29.845752	70 ft	View
272	USGS-295048095 240801	WW USGS	USGS	Not Reported	1820	10/31/1949	-95.402439	29.846892	69 ft	N/A
272	G1010013 U	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1555	11/30/1949	-95.402137	29.846841	71 ft	View
272	G1010013 OE	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.402496	29.844722	69 ft	View
272	G1010013 OF	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.402778	29.844722	69 ft	View
272	WIID19958	TX TWDB WIID	Omar Alvarenga	Domestic	390	12/4/2002	-95.405278	29.843889	69 ft	View
272	WIID19458	TX TWDB WIID	Helen Steele	Domestic	58	4/24/2003	-95.405278	29.843889	69 ft	View
272	HGSD9812	TX HGSD	Pigge, Willie & Lynda	Domestic	1	n/a	-95.40111	29.84694	68 ft	N/A
272	65-13-303	TX TWDB GW	City of Houston Heights #13	Public Supply	1820	10/31/1949	-95.4025	29.846944	69 ft	View
273	HGSD1165 8	TX HGSD	Harris County	Irrigation	680	n/a	-95.35583	29.76444	34 ft	N/A
274	USGS-294335095 273301	WW USGS	USGS	Not Reported	2015	05/23/1960	-95.459385	29.726618	56 ft	N/A
274	G1010013 BL	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1592	07/15/1960	-95.459104	29.726063	58 ft	View
274	HGSD1128	TX HGSD	Houston, City of	Public Supply	2015	01/01/1960	-95.45889	29.72667	66 ft	N/A
274	HGSD8795	TX HGSD	Houston Garden Center	Other	350	01/01/2001	-95.45833	29.725	59 ft	N/A
274	65-21-106	TX TWDB GW	City of Houston Southwest #12	Public Supply	2015	07/15/1960	-95.459444	29.726666	56 ft	View
275	65-12-9D	TX TCEQ HIST	L.B. Standley	Other	606	10/30/1964	-95.50141	29.78462	68 ft	View
275	63-13-7D	TX TCEQ HIST	Grace Chappel- Mr. Sit	Domestic	263	02/01/1977	-95.500545	29.786565	68 ft	View
275	65-13-7S	TX TCEQ HIST	Y.M.C.A.	Domestic	430	03/23/1984	-95.500322	29.785173	67 ft	View
275	USGS-294708095 300801	WW USGS	USGS	Not Reported	430	03/23/1984	-95.502442	29.785783	67 ft	N/A
275	HGSD3980	TX HGSD	Dad's Club Swim Team, Inc.	Lost	450	01/01/1990	-95.50167	29.78583	65 ft	N/A
275	65-12-940	TX TWDB GW	YMCA Voss Road well	Public Supply	430	01/01/1984	-95.5025	29.785833	67 ft	View
276	65-05-9N	TX TCEQ HIST	E.C. Gilbreath	Domestic	370	09/23/1980	-95.391246	29.841689	65 ft	View
276	65-13-321	TX TWDB GW	Harold Long	Domestic	393	01/01/1967	-95.39111	29.840833	65 ft	View
277	65-13-4U	TX TCEQ HIST	Howard Dye	Domestic	210	04/10/1978	-95.497219	29.807541	80 ft	View
278	WIID23220 3	TX TWDB WIID	Houston Emergency Center	Industrial	358	8/3/2010	-95.415834	29.849167	78 ft	View
279	65-21-305	TX TWDB GW	Dr. Allaly	Domestic	279	01/01/1951	-95.384444	29.730277	47 ft	View
280	65-21-3	TX TCEQ HIST	Dennis Wright	Domestic	395	10/29/1997	-95.394286	29.725565	50 ft	View
280	65-21-3	TX TCEQ HIST	Anthony Portello	Domestic	396	03/08/1997	-95.395532	29.723736	48 ft	View
280	65-21-3	TX TCEQ HIST	Mr. Henderson	Domestic	400	10/10/1986	-95.393608	29.724232	48 ft	View
280	65-21-3	TX TCEQ HIST	Matt Prucka	Irrigation	383	11/05/2001	-95.394623	29.723934	48 ft	View
280	65-22-4	TX TCEQ HIST	Windi Phillips	Irrigation	522	09/29/1997	-95.395416	29.727022	50 ft	View
280	65-21-3	TX TCEQ HIST	Pete Kelsher	Domestic	405	10/28/1998	-95.392044	29.723878	48 ft	View
280	65-21-3	TX TCEQ HIST	Mr. Henderson	Other	400	10/09/1986	-95.393587	29.724176	48 ft	View
280	WIID20429 0	TX TWDB WIID	Michael Linn	Domestic	377	7/10/2009	-95.393056	29.723055	48 ft	View
281	USGS-294314095 262601	WW USGS	USGS	Not Reported	1360	03/01/1980	-95.440774	29.720785	53 ft	N/A
281	G1010027 A	TX TCEQ PWS	CITY OF WEST UNIVERSITY PLACE	Public Supply	1310	05/01/1980	-95.441326	29.720786	53 ft	View
281	HGSD2411	TX HGSD	West University Place, City of	Public Supply	1700	01/01/1990	-95.44083	29.72111	52 ft	N/A
281	65-21-231	TX TWDB GW	City of West Univ. Place	Public Supply	1360	01/01/1980	-95.440833	29.720832	53 ft	View

Water Well Details

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282	65-13-7C	TX TCEQ HIST	J. B Gates	Domestic	48	04/20/1975	-95.501938	29.792273	73 ft	View
282	65-13-4H	TX TCEQ HIST	Frank Welch	Domestic	50	09/15/1974	-95.502711	29.792049	72 ft	View
282	HGSD2051	TX HGSD	SPRING VALLEY, CITY OF	Public Supply	440	01/01/1981	-95.50306	29.79111	72 ft	N/A
282	65-12-934	TX TWDB GW	Magnolia Valley City of Spring Valley	Public Supply	606	10/30/1964	-95.503055	29.793333	72 ft	View
283	65-14-432	TX TWDB GW	Newsom's Truck Lines	Industrial	210	01/01/1939	-95.352777	29.801666	50 ft	View
284	65-13-2	TX TCEQ HIST	Stanley Johnson	Domestic	342	01/11/1991	-95.44563	29.848982	82 ft	View
285	65-22-6B	TX TCEQ HIST	Sylvester Martinez	Domestic	95	08/11/1966	-95.375714	29.734895	45 ft	View
286	65-05-8	TX TCEQ HIST	Lee Ellis	Domestic	580	09/14/1996	-95.40962	29.84928	76 ft	View
286	60-60-9CC	TX TCEQ HIST	Zelda Furlow	Domestic	214	09/25/1979	-95.408633	29.849503	74 ft	View
286	HGSD5825	TX HGSD	Adams, Frank D.	Domestic	600	01/01/1996	-95.40972	29.84861	76 ft	N/A
287	WIID296041	TX TWDB WIID	Vincent Aducci	Irrigation	250	6/19/2012	-95.478055	29.735278	59 ft	View
288	65-21-1	TX TCEQ HIST	Granite Construction	Industrial	271	08/17/1989	-95.463244	29.726354	52 ft	View
288	USGS-294333095275601	WW USGS	USGS	Not Reported	1520	01/01/1945	-95.465775	29.726063	58 ft	N/A
288	USGS-294333095275602	WW USGS	USGS	Not Reported	1510	07/17/1974	-95.465775	29.726063	58 ft	N/A
288	G1010013BB	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1395	11/11/1974	-95.465881	29.726209	58 ft	View
288	G1010013HZ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1520	04/03/1945	-95.465497	29.726063	59 ft	View
288	HGSD1117	TX HGSD	Houston, City of	Public Supply	1510	01/01/1975	-95.46583	29.72583	58 ft	N/A
288	HGSD7202	TX HGSD	T/H Land Holdings, Ltd.	Other	400	01/01/1999	-95.465	29.72472	58 ft	N/A
288	HGSD8133	TX HGSD	Hooper, Matthew	Other	400	n/a	-95.46389	29.72611	71 ft	N/A
288	65-21-101	TX TWDB GW	City of Houston Southwest	Public Supply	1520	01/01/1945	-95.465833	29.72611	58 ft	View
288	65-21-143	TX TWDB GW	City of Houston Southwest # 1A	Public Supply	1510	11/11/1974	-95.465833	29.72611	58 ft	View
289	65-13-4Y	TX TCEQ HIST	Monarch Paint Co.	Industrial	281	01/24/1990	-95.488557	29.825102	72 ft	View
289	65-13-4V	TX TCEQ HIST	Monarch Paint Co.	Domestic	331	03/27/1980	-95.488557	29.825102	72 ft	View
289	HGSD2765	TX HGSD	GULF OIL COMPANY - U.S.	Irrigation	210	01/01/1962	-95.48889	29.82306	75 ft	N/A
289	HGSD4681	TX HGSD	PPG Architectural Finishes	Irrigation	0	n/a	-95.4875	29.82528	72 ft	N/A
289	HGSD4680	TX HGSD	PPG Architectural Finishes	Irrigation	400	01/01/1990	-95.48778	29.825	72 ft	N/A
290	WIID123731	TX TWDB WIID	Reindl, Erich	Domestic	330	9/6/2007	-95.501945	29.799445	73 ft	View
291	65-20-2M	TX TCEQ HIST	Anderson Landscaping	Domestic	375	08/23/1983	-95.495783	29.814988	79 ft	View
291	HGSD7419	TX HGSD	Anderson Landscape & Nursery Inc.	Agriculture	350	01/01/1984	-95.49583	29.815	79 ft	N/A
291	HGSD7492	TX HGSD	Qui Ton, Dharma	Other	22	01/01/1989	-95.49583	29.81361	79 ft	N/A
292	65-05-7X	TX TCEQ HIST	Research Farms	Industrial	306	09/03/1974	-95.477962	29.835457	77 ft	View
292	65-03-6	TX TCEQ HIST	Joe Kmiec	Industrial	270	04/18/2002	-95.475845	29.836554	77 ft	View
293	65-14-750	TX TWDB GW	Burkhart Laundry	Industrial	1402	01/01/1931	-95.355555	29.757222	21 ft	View
294	65-14-737	TX TWDB GW	Houston Lighting and Power co.	Plugged or Destroyed	873	01/01/1922	-95.352777	29.763055	40 ft	View
295	65-14-7F	TX TCEQ HIST	Builders Supply	Industrial	455	02/20/1981	-95.351716	29.76601	35 ft	View
295	USGS-294556095210001	WW USGS	USGS	Not Reported	520	02/20/1981	-95.350216	29.765783	19 ft	N/A
295	HGSD1180	TX HGSD	HOUSTON LIGHTING & POWER COMPANY	Irrigation	887	01/01/1939	-95.35278	29.76389	43 ft	N/A
295	HGSD1181	TX HGSD	HOUSTON LIGHTING & POWER COMPANY	Irrigation	1500	01/01/1949	-95.35222	29.76472	38 ft	N/A
295	HGSD3625	TX HGSD	Builders Supply Co. Of Houston	Irrigation	0	01/01/1981	-95.34972	29.76583	13 ft	N/A
295	HGSD1807	TX HGSD	Builders Supply Co. Of Houston	Irrigation	0	01/01/1982	-95.35	29.76583	13 ft	N/A
295	65-14-704	TX TWDB GW	Houston Lighting and Power Co	Industrial	1550	01/01/1949	-95.353055	29.765	33 ft	View

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
295	65-14-714	TX TWDB GW	Houston Lighting and Power Co	Industrial	887	01/01/1939	-95.352777	29.764722	39 ft	View
295	65-14-767	TX TWDB GW	Builders Supply	Industrial	520	01/01/1981	-95.350277	29.765833	19 ft	View
296	WIID118777	TX TWDB WIID	Robert Amboree	Domestic	50	8/3/2007	-95.4375	29.851389	82 ft	View
297	USGS-294732095205701	WW USGS	USGS	Not Reported	523	02/01/1992	-95.349382	29.792449	47 ft	N/A
298	65-22-1	TX TCEQ HIST	David Berg	Irrigation	460	03/09/2001	-95.396015	29.722634	48 ft	View
298	65-22-4	TX TCEQ HIST	David Berg	Irrigation	520	09/22/1997	-95.396015	29.722634	48 ft	View
298	65-21-3	TX TCEQ HIST	Michael Flinn	Irrigation	70	07/11/2001	-95.396689	29.723577	49 ft	View
299	G1010013NN	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.493331	29.820278	76 ft	View
299	G1010013NL	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	0	n/a	-95.493614	29.820554	76 ft	View
300	G1010908A	TX TCEQ PWS	RICE UNIVERSITY	Public Supply	1650	09/02/1969	-95.40002	29.72116	48 ft	View
300	HGSD2256	TX HGSD	Rice University, William Marsh	Domestic	1650	01/01/1969	-95.4	29.72111	48 ft	N/A
300	65-21-324	TX TWDB GW	Rice University	Plugged or Destroyed	910	01/01/1910	-95.399166	29.721943	49 ft	View
300	65-21-329	TX TWDB GW	Rice University	Public Supply	1650	07/16/1969	-95.399444	29.721666	49 ft	View
301	WIID173603	TX TWDB WIID	Second Baptist Church	Irrigation	386	3/30/2009	-95.4975	29.755834	62 ft	View
302	65-13-1B	TX TCEQ HIST	Space City Oil	Industrial	186	04/04/1966	-95.471306	29.840742	78 ft	View
302	65-13-112	TX TWDB GW	Space City Oil Co.	Industrial	186	01/01/1966	-95.472221	29.839166	77 ft	View
303	HGSD1065	TX HGSD	Houston, City of	Public Supply	1820	01/01/1949	-95.3975	29.8475	68 ft	N/A
304	65-14-4G	TX TCEQ HIST	Mrs. Doris Adams	Domestic	175	06/10/1982	-95.354237	29.810745	53 ft	View
304	65-14-7E	TX TCEQ HIST	Barold Division (National Lead Company)	Industrial	750	12/29/1965	-95.35237	29.81228	53 ft	View
305	65-13-5C	TX TCEQ HIST	Lindsay Glenn	Domestic	46	05/03/1974	-95.467506	29.843136	77 ft	View
305	65-05-7C	TX TCEQ HIST	Francisco Gonzalez	Domestic	37	10/06/1969	-95.465462	29.842495	77 ft	View
306	65-12-6D	TX TCEQ HIST	Covington Nursery	Domestic	372	03/17/1975	-95.501328	29.806061	79 ft	View
306	65-12-604	TX TWDB GW	City of Houston Ridgecrest	Unused	987	01/01/1953	-95.500555	29.808333	80 ft	View
307	65-12-9N	TX TCEQ HIST	Tracy Guthrie	Domestic	41	08/21/1974	-95.50451	29.775108	69 ft	View
308	65-21-3	TX TCEQ HIST	The Wyndham Harwick	Public Supply	420	06/23/1992	-95.390106	29.724268	47 ft	View
308	USGS-294320095231901	WW USGS	USGS	Not Reported	2190	01/25/1958	-95.388828	29.722452	47 ft	N/A
308	USGS-294327095232201	WW USGS	USGS	Not Reported	420	06/23/1992	-95.389661	29.724396	47 ft	N/A
308	G1010013HR	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1127	01/01/1919	-95.390216	29.723283	47 ft	View
308	G1010013HT	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1620	01/01/1931	-95.389384	29.72245	47 ft	View
308	G1012844A	TX TCEQ PWS	PARK PLACE WARWICK INTERNATIONAL	Public Supply	420	06/01/1992	-95.389659	29.724395	47 ft	View
308	G1010013HS	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	777	01/01/1919	-95.388553	29.723283	46 ft	View
308	G1010013HP	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1394	03/01/1917	-95.390216	29.723283	47 ft	View
308	HGSD1110	TX HGSD	Houston, City of	Public Supply	2190	01/01/1958	-95.38917	29.72222	46 ft	N/A
308	HGSD5290	TX HGSD	ZaZA Fountains, LP	Public Supply	420	01/01/1992	-95.38944	29.72417	46 ft	N/A
308	HGSD1672	TX HGSD	WYNDHAM WARWICK ASSOCIATES	Public Supply	900	01/01/1962	-95.38944	29.72389	46 ft	N/A
308	65-21-304	TX TWDB GW	City of Houston South End #4	Public Supply	2190	01/25/1958	-95.388888	29.722499	47 ft	View
308	65-21-306	TX TWDB GW	City of Houston South End #11	Public Supply	2215	04/01/1962	-95.388055	29.722221	45 ft	View
308	65-21-318	TX TWDB GW	Warwick Hotel	Unused	579	01/01/1932	-95.387221	29.723888	46 ft	View

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308	65-21-319	TX TWDB GW	City of Houston South End #1	Unused	1394	03/01/1917	-95.390277	29.723332	47 ft	View
308	65-21-320	TX TWDB GW	City of Houston South End #5	Unused	1618	01/01/1931	-95.389444	29.722499	47 ft	View
308	65-21-321	TX TWDB GW	City of Houston South End #4	Plugged or Destroyed	777	01/01/1919	-95.38861	29.723332	46 ft	View
308	65-21-323	TX TWDB GW	City of Houston South End #3	Unused	1127	01/01/1919	-95.390277	29.723332	47 ft	View
308	65-21-331	TX TWDB GW	Warwick Hotel	Public Supply	900	12/01/1962	-95.389444	29.723888	46 ft	View
309	WIID137995	TX TWDB WIID	Harris County Burnet Park	Public Supply	330	10/30/2007	-95.348611	29.774722	48 ft	View
310	HGSD2566	TX HGSD	ABERCROMBIE MINERAL CO., J. S.	Public Supply	667	01/01/1940	-95.45889	29.7225	55 ft	N/A
311	65-12-6	TX TCEQ HIST	Tim-Am Pump & Well	Domestic	42	01/28/1989	-95.50307	29.80263	78 ft	View
311	G1010013QD	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	542	01/01/1951	-95.503554	29.800226	76 ft	View
311	G1010013QE	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	717	01/01/1954	-95.503554	29.800226	76 ft	View
311	HGSD2455	TX HGSD	H & J UTILITY SERVICES	Public Supply	250	01/01/1968	-95.50472	29.80361	80 ft	N/A
311	HGSD2454	TX HGSD	H & J UTILITY SERVICES	Public Supply	330	01/01/1965	-95.5025	29.80361	79 ft	N/A
311	65-12-607	TX TWDB GW	City of Houston Timber Creek	Unused	542	01/01/1951	-95.503611	29.800277	76 ft	View
311	65-12-608	TX TWDB GW	City of Houston Timber Creek	Unused	717	01/01/1954	-95.503611	29.800277	76 ft	View
312	65-13-3	TX TCEQ HIST	Sparkle Ice	Industrial	561	01/31/1991	-95.411712	29.852071	77 ft	View
312	HGSD3250	TX HGSD	SIGMOR CORPORATION	Irrigation	0	01/01/1970	-95.41222	29.85417	76 ft	N/A
313	G1010013OT	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	982	01/01/1953	-95.50105	29.808837	80 ft	View
314	HGSD2017	TX HGSD	GIFFORD-HILL & COMPANY, INC.	Irrigation	560	01/01/1967	-95.35806	29.81972	61 ft	N/A
314	65-14-439	TX TWDB GW	Gifford Hill	n/a	552	08/19/1974	-95.358333	29.821388	59 ft	View
315	HGSD3208	TX HGSD	MEMORIAL DRIVE COUNTRY CLUB	Public Supply	367	01/01/1953	-95.50194	29.76111	58 ft	N/A
316	65-12-910	TX TWDB GW	Memorial Country Club	Domestic	367	01/01/1953	-95.500555	29.757777	62 ft	View
317	USGS-295050095274201	WW USGS	USGS	Not Reported	1120	10/09/1969	-95.461885	29.847448	70 ft	N/A
317	G1010013DF	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1120	11/10/1969	-95.462105	29.847536	71 ft	View
317	65-13-119	TX TWDB GW	City of Houston Candlelight Oaks	Public Supply	1120	10/09/1969	-95.461944	29.847499	70 ft	View
318	65-05-7V	TX TCEQ HIST	Marion Sadowski	Domestic	150	09/05/1974	-95.489207	29.828899	77 ft	View
319	HGSD2910	TX HGSD	CROZIER-NELSON CHEM. & CONST.	Irrigation	0	01/01/1981	-95.34722	29.79667	49 ft	N/A
319	65-14-416	TX TWDB GW	Standard Rendering Co.	Industrial	520	n/a	-95.345833	29.798055	84 ft	View
319	65-14-417	TX TWDB GW	Standard Rendering Co.	Industrial	515	01/01/1951	-95.345833	29.798055	84 ft	View
320	65-21-1X	TX TCEQ HIST	Apex Valve and Fitting	Industrial	323	07/14/1983	-95.485541	29.736595	62 ft	View
320	HGSD9865	TX HGSD	Parvizian, Gus	Public Supply	220	n/a	-95.48333	29.73694	62 ft	N/A
321	65-21-1D	TX TCEQ HIST	Humble Oil & Refining Co.	Other	233	01/08/1965	-95.472295	29.726837	57 ft	View
321	USGS-294327095281501	WW USGS	USGS	Not Reported	460	06/06/1986	-95.471052	29.724396	60 ft	N/A
321	65-21-114	TX TWDB GW	Southern Floral Co.	Unused	196	n/a	-95.469999	29.728332	57 ft	View
321	65-21-153	TX TWDB GW	Houston Steel Service	Industrial	460	01/01/1986	-95.47111	29.724443	60 ft	View
322	65-21-2H	TX TCEQ HIST	City of West Universty Place	Public Supply	1380	07/25/1984	-95.438464	29.715869	51 ft	View
322	65-21-2D	TX TCEQ HIST	City of West universty place	Public Supply	1360	03/01/1980	-95.43771	29.714924	50 ft	View
322	65-21-2D	TX TCEQ HIST	City of Wect Universtity Place	Public Supply	1250	12/01/1982	-95.43771	29.714924	50 ft	View

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322	USGS-294256095261602	WW USGS	USGS	Not Reported	1250	11/17/1982	-95.437996	29.715785	51 ft	N/A
322	G1010027B	TX TCEQ PWS	CITY OF WEST UNIVERSITY PLACE	Public Supply	1230	09/30/1982	-95.43827	29.71593	51 ft	View
322	HGSD2407	TX HGSD	West University Place, City of	Public Supply	768	01/01/1938	-95.43944	29.71528	50 ft	N/A
322	HGSD2409	TX HGSD	West University Place, City of	Public Supply	1600	01/01/1941	-95.43944	29.71556	51 ft	N/A
322	HGSD2408	TX HGSD	West University Place, City of	Public Supply	1182	01/01/1939	-95.43944	29.71556	51 ft	N/A
322	HGSD3768	TX HGSD	West University Place, City of	Public Supply	1700	01/01/1982	-95.43833	29.71611	49 ft	N/A
322	65-21-220	TX TWDB GW	City of West University Place	Unused	650	01/01/1925	-95.438055	29.715555	50 ft	View
322	65-21-221	TX TWDB GW	City of West University Place	Unused	900	01/01/1931	-95.438333	29.716111	49 ft	View
322	65-21-222	TX TWDB GW	City of West University Place	Public Supply	1673	01/01/1941	-95.439444	29.716111	49 ft	View
322	65-21-223	TX TWDB GW	City of West University Place	Public Supply	768	01/01/1938	-95.439166	29.715833	51 ft	View
322	65-21-224	TX TWDB GW	City of West University Place	Public Supply	1282	01/01/1939	-95.438888	29.716388	51 ft	View
322	65-21-232	TX TWDB GW	City of West University Place	Public Supply	1250	09/30/1982	-95.438055	29.715833	51 ft	View
323	G1010013NM	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	862	n/a	-95.497222	29.819444	76 ft	View
324	65-13-201	TX TWDB GW	Aid Utility Co.	Public Supply	357	01/01/1955	-95.437499	29.854166	83 ft	View
324	65-13-202	TX TWDB GW	Aid Utility Co.	Public Supply	237	02/10/1957	-95.437499	29.854166	83 ft	View
325	65-22-104	TX TWDB GW	Seven-Up Bottling Co.	Unused	388	01/01/1937	-95.358055	29.74611	43 ft	View
326	USGS-294932095293501	WW USGS	USGS	Not Reported	862	04/15/1953	-95.493275	29.825782	76 ft	N/A
326	G1010013NK	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	862	01/01/1953	-95.493276	29.825504	76 ft	View
326	65-13-408	TX TWDB GW	City of Houston Langwood Plan	Public Supply	862	01/01/1953	-95.493333	29.825832	76 ft	View
327	65-21-3C	TX TCEQ HIST	Westmoreland Dairy	Stock	407	07/16/1965	-95.468856	29.724247	57 ft	View
327	HGSD2050	TX HGSD	MECCA DEVELOPMENT CORPORATION	Public Supply	420	01/01/1965	-95.46944	29.72333	57 ft	N/A
327	HGSD2688	TX HGSD	TXI Operations, LP	Irrigation	0	01/01/1977	-95.47	29.72278	55 ft	N/A
327	HGSD3088	TX HGSD	TXI Operations, LP	Irrigation	0	01/01/1990	-95.47	29.72278	55 ft	N/A
327	65-21-131	TX TWDB GW	Security Lumber Co.	Domestic	233	01/01/1963	-95.468888	29.723054	58 ft	View
327	65-21-132	TX TWDB GW	Westmoreland Dairy	Industrial	420	01/01/1965	-95.471388	29.724166	60 ft	View
328	65-21-112	TX TWDB GW	R. R. Leslie	Domestic	104	01/01/1950	-95.482777	29.733054	60 ft	View
329	65-14-7F	TX TCEQ HIST	Olds Press and Forge	Industrial	302	12/20/1974	-95.34531	29.790971	45 ft	View
329	65-14-7C	TX TCEQ HIST	Olds Press & Forge	Industrial	302	05/19/1966	-95.345557	29.790578	51 ft	View
329	WIID28780	TX TWDB WIID	Rodolfo Casanova	Domestic	428	9/14/2003	-95.345	29.79	45 ft	View
329	65-14-438	TX TWDB GW	Olds Press & Forge Co.	Industrial	302	01/01/1966	-95.345277	29.791944	46 ft	View
330	65-13-3	TX TCEQ HIST	Oscar	Domestic	66	07/27/1992	-95.407731	29.853562	73 ft	View
330	65-13-3N	TX TCEQ HIST	Sparkle Ice, Inc.	Industrial	520	05/11/1981	-95.410301	29.852564	74 ft	View
330	G1012436A	TX TCEQ PWS	REDDY ICE - HOUSTON	Public Supply	560	01/31/1991	-95.409629	29.853096	75 ft	View
330	G1012436B	TX TCEQ PWS	REDDY ICE - HOUSTON	Public Supply	0	n/a	-95.410494	29.853002	74 ft	View
330	G1012436C	TX TCEQ PWS	REDDY ICE - HOUSTON	Public Supply	0	n/a	-95.410494	29.853002	74 ft	View
330	HGSD3124	TX HGSD	SPARKLE ICE COMPANY	Irrigation	400	01/01/1978	-95.40972	29.85278	74 ft	N/A
330	HGSD3125	TX HGSD	SPARKLE ICE COMPANY	Irrigation	400	01/01/1978	-95.40972	29.85278	74 ft	N/A
330	HGSD5090	TX HGSD	Houston, City of	Public Supply	562	01/01/1991	-95.40972	29.85306	74 ft	N/A
331	HGSD1111	TX HGSD	Houston, City of	Public Supply	2215	01/01/1962	-95.38944	29.72139	46 ft	N/A

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332	65-12-9M	TX TCEQ HIST	R.C. Standish	Domestic	47	11/03/1973	-95.508235	29.789812	70 ft	View
332	65-13-4P	TX TCEQ HIST	Bob Holsembeck	Domestic	48	07/27/1974	-95.50818	29.788338	71 ft	View
332	65-13-4N	TX TCEQ HIST	Hans O. Jahns	Domestic	48	07/20/1974	-95.506936	29.791765	72 ft	View
332	65-13-4Q	TX TCEQ HIST	J.H. Jordan	Domestic	51	09/23/1974	-95.507141	29.791058	71 ft	View
332	HGSD2052	TX HGSD	SPRING VALLEY, CITY OF	Public Supply	602	01/01/1954	-95.51028	29.78889	72 ft	N/A
333	USGS-295109095240801	WW USGS	USGS	Not Reported	1830	11/30/1949	-95.402439	29.852725	73 ft	N/A
333	65-13-302	TX TWDB GW	City of Houston Heights #14	Public Supply	1830	11/30/1949	-95.4025	29.852777	73 ft	View
334	65-14-4A	TX TCEQ HIST	W. A. Brown	Industrial	190	01/01/1963	-95.361721	29.828354	63 ft	View
334	65-14-437	TX TWDB GW	W. R. Brown	Domestic	190	01/01/1963	-95.361944	29.828332	64 ft	View
335	WIID140124	TX TWDB WIID	Ron Dryer	Domestic	215	3/5/2008	-95.463889	29.720833	55 ft	View
335	WIID140121	TX TWDB WIID	Ron Dryer	Domestic	365	3/4/2008	-95.463889	29.720833	55 ft	View
336	65-21-3	TX TCEQ HIST	Thompson & Hanson	Irrigation	400	08/18/1992	-95.385093	29.722556	46 ft	View
336	USGS-294319095231601	WW USGS	USGS	Not Reported	2195	04/01/1962	-95.387995	29.722174	45 ft	N/A
336	G1010013HQ	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1325	01/01/1917	-95.384105	29.723283	45 ft	View
336	G1010013HW	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	2215	01/01/1962	-95.382442	29.72245	45 ft	View
336	HGSD2869	TX HGSD	PARKLANE PLAZA INTERESTS	Public Supply	490	01/01/1939	-95.3825	29.72278	44 ft	N/A
336	HGSD7410	TX HGSD	Children's Museum of Houston, The	Irrigation	0	01/01/1991	-95.385	29.72194	44 ft	N/A
336	65-21-322	TX TWDB GW	City of Houston South End #2	Plugged or Destroyed	830	01/01/1917	-95.384166	29.723332	45 ft	View
337	65-12-3	TX TCEQ HIST	J A Booker	Domestic	80	10/20/1991	-95.478127	29.841278	80 ft	View
337	65-04-9Q	TX TCEQ HIST	Sitton Construction	Domestic	150	05/01/1975	-95.479358	29.840075	79 ft	View
338	65-14-1	TX TCEQ HIST	Thomas Perze	Domestic	450	07/19/1991	-95.371884	29.838194	66 ft	View
339	65-14-760	TX TWDB GW	Coca Cola Bottling Co.	Unused	824	01/01/1933	-95.3525	29.751944	45 ft	View
340	65-12-9F	TX TCEQ HIST	Memorial Villages Water Authority	Public Supply	1620	02/01/1981	-95.50947	29.781078	68 ft	View
340	USGS-294651095303301	WW USGS	USGS	Not Reported	1570	12/01/1959	-95.509387	29.781061	68 ft	N/A
340	G1010148A	TX TCEQ PWS	MEMORIAL VILLAGES WATER AUTHORITY	Public Supply	1570	01/01/1960	-95.509895	29.781261	70 ft	View
340	HGSD1486	TX HGSD	Memorial Villages Water Authority	Public Supply	1570	01/01/1960	-95.51	29.78111	69 ft	N/A
340	65-12-904	TX TWDB GW	Memorial Village	Public Supply	1555	01/01/1959	-95.509444	29.78111	68 ft	View
340	65-12-941	TX TWDB GW	Mem Village well # 1	Public Supply	537	01/01/1981	-95.509444	29.78111	68 ft	View
341	65-12-909	TX TWDB GW	L. G. Gaines	Domestic	297	01/01/1954	-95.508055	29.770277	67 ft	View
342	65-13-5	TX TCEQ HIST	City of Houston	Other	40	04/16/2003	-95.48886	29.83296	75 ft	View
343	65-21-2H	TX TCEQ HIST	Custom Environmental	Domestic	375	11/10/1982	-95.43264	29.713404	50 ft	View
343	G1010023A	TX TCEQ PWS	CITY OF SOUTHSIDE PLACE	Public Supply	998	09/01/1969	-95.433342	29.714505	51 ft	View
343	HGSD1539	TX HGSD	Southside Place, City of	Public Supply	994	01/01/1969	-95.43333	29.71389	49 ft	N/A
343	65-21-217	TX TWDB GW	City of Southside Place	Unused	610	01/01/1924	-95.43361	29.714166	52 ft	View
343	65-21-218	TX TWDB GW	City of Southside Place	Unused	988	01/01/1935	-95.43361	29.714166	52 ft	View
343	65-21-219	TX TWDB GW	City of Southside Place	Unused	894	01/01/1941	-95.43361	29.714166	52 ft	View
343	65-21-225	TX TWDB GW	City of Southside Place	Public Supply	998	08/18/1969	-95.433888	29.714166	47 ft	View
344	65-13-4Y	TX TCEQ HIST	Pete Maniscalco	Domestic	50	01/04/1985	-95.505699	29.807196	79 ft	View
344	65-12-6	TX TCEQ HIST	K.L. Mikeselll	Domestic	360	01/04/1990	-95.507515	29.805964	81 ft	View
344	65-13-4	TX TCEQ HIST	Velma Dickerson	Domestic	47	02/21/2001	-95.505707	29.808018	80 ft	View
344	65-13-4F	TX TCEQ HIST	Bill Roberts	Domestic	45	11/17/1973	-95.507523	29.806787	80 ft	View
344	HGSD8125	TX HGSD	Houston Mini Storage #7	Domestic	50	01/01/2000	-95.50694	29.80861	81 ft	N/A

Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs
345	65-12-9	TX TCEQ HIST	Santana Dotson	Domestic	417	09/06/2002	-95.506493	29.763159	64 ft	View
346	USGS-294302095234301	WW USGS	USGS	Not Reported	1955	04/01/1965	-95.395495	29.717452	45 ft	N/A
346	G1010013HV	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1932	08/16/1944	-95.395495	29.716897	44 ft	View
346	G1010013HY	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1955	04/01/1965	-95.395495	29.718007	45 ft	View
346	G1010013HX	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1780	n/a	-95.395495	29.71773	45 ft	View
346	HGSD1112	TX HGSD	Houston, City of	Public Supply	1955	01/01/1965	-95.39528	29.71722	45 ft	N/A
346	65-21-301	TX TWDB GW	City of Houston South End #7	Unused	1750	01/01/1944	-95.395555	29.717221	46 ft	View
346	65-21-327	TX TWDB GW	City of Houston South End #12	Public Supply	1955	04/01/1965	-95.395555	29.717499	45 ft	View
347	65-21-1C	TX TCEQ HIST	Mano Corp.	Other	205	01/29/1962	-95.476723	29.726517	58 ft	View
347	USGS-294331095282801	WW USGS	USGS	Not Reported	1508	02/09/1945	-95.474664	29.725507	57 ft	N/A
347	G1010013IA	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1508	03/27/1945	-95.474111	29.72523	57 ft	View
347	HGSD2809	TX HGSD	TEXACO, INC.	Irrigation	206	01/01/1961	-95.47583	29.725	58 ft	N/A
347	65-21-102	TX TWDB GW	City of Houston Southwest	Public Supply	1508	01/01/1945	-95.474721	29.725554	57 ft	View
348	65-13-2K	TX TCEQ HIST	Benjamin Smith	Domestic	335	05/14/1985	-95.431122	29.856955	84 ft	View
349	65-14-407	TX TWDB GW	Hunt-Wesson Foods, Inc Well #3	Public Supply	782	01/01/1946	-95.343333	29.794166	50 ft	View
349	65-14-408	TX TWDB GW	Hunt-Wesson Foods, Inc Well #4	Industrial	1022	09/01/1948	-95.343888	29.795555	49 ft	View
349	65-14-425	TX TWDB GW	Hunt-Wesson Foods, Inc	Plugged or Destroyed	834	01/01/1928	-95.344444	29.793888	49 ft	View
350	HGSD3214	TX HGSD	TRUMIX CONCRETE COMPANY	Irrigation	0	01/01/1972	-95.34861	29.81167	67 ft	N/A
350	HGSD3215	TX HGSD	TRUMIX CONCRETE COMPANY	Irrigation	478	01/01/1971	-95.34861	29.81167	67 ft	N/A
350	65-14-420	TX TWDB GW	Northside Ready Mix Concrete Co.	Industrial	478	01/01/1971	-95.349166	29.810833	53 ft	View
351	65-14-7L	TX TCEQ HIST	Calco of Houston Inc.	Domestic	350	01/24/1983	-95.353777	29.747677	44 ft	View
351	HGSD5861	TX HGSD	Houston Calco, Inc.	Agriculture	200	01/01/1980	-95.35389	29.74806	41 ft	N/A
351	HGSD5862	TX HGSD	Houston Calco, Inc.	Agriculture	180	01/01/1982	-95.35389	29.74778	43 ft	N/A
352	G1010013HC	TX TCEQ PWS	CITY OF HOUSTON	Public Supply	1827	01/01/1949	-95.39744	29.853002	72 ft	View
352	HGSD1066	TX HGSD	Houston, City of	Public Supply	1830	01/01/1949	-95.39722	29.85278	71 ft	N/A
353	65-14-753	TX TWDB GW	Gould Wet Wash Laundry	Unused	1391	01/01/1924	-95.349444	29.755	45 ft	View
354	HGSD2366	TX HGSD	PEOPLES NATIONAL UTILITY CO.	Public Supply	0	01/01/1982	-95.44778	29.85556	83 ft	N/A
355	65-13-2	TX TCEQ HIST	Mr. Salvage	Domestic	40	09/21/1992	-95.424708	29.857637	82 ft	View
355	65-13-2	TX TCEQ HIST	Sam Messins	Domestic	43	01/30/1991	-95.427445	29.857618	82 ft	View
356	USGS-294739095303601	WW USGS	USGS	Not Reported	560	N/A	-95.51022	29.794394	73 ft	N/A
356	65-12-613	TX TWDB GW	Spring Branch ISD	Public Supply	468	08/16/1970	-95.508611	29.796388	74 ft	View
356	65-12-626	TX TWDB GW	Spring Branch I.S.D.	Public Supply	560	n/a	-95.510277	29.794444	73 ft	View
357	65-14-7M	TX TCEQ HIST	Michael Augustine	Domestic	61	06/05/1985	-95.342341	29.789784	47 ft	View
358	HGSD2362	TX HGSD	PEOPLES NATIONAL UTILITY CO.	Public Supply	0	01/01/1982	-95.44306	29.85667	84 ft	N/A
359	65-14-413	TX TWDB GW	Koppers Company, Inc.	Unused	666	n/a	-95.353888	29.821943	60 ft	View
359	65-14-414	TX TWDB GW	Koppers Company, Inc.	Unused	661	01/01/1946	-95.354166	29.822221	60 ft	View
360	65-12-923	TX TWDB GW	H.W. Rasmussen	Plugged or Destroyed	416	01/01/1938	-95.502777	29.752222	63 ft	View
361	65-21-113	TX TWDB GW	Builders Supply co	Industrial	368	01/01/1950	-95.474999	29.724166	58 ft	View

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Water Well Details

Map ID	Source ID	Dataset	Owner of Well	Type of Well	Depth Drilled	Completion Date	Longitude	Latitude	Elevation	Driller's Logs

Water Well Dataset	# of Wells
TX HGSD	222
TX TCEQ HIST	313
TX TCEQ PWS	96
TX TWDB GW	259
TX TWDB WIID	93
WW USGS	75
Total Count	**1058**

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APPENDIX P

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Figure P.1

5-Mile Radius Well Location Map

Summary Map - 5 Mile Buffer

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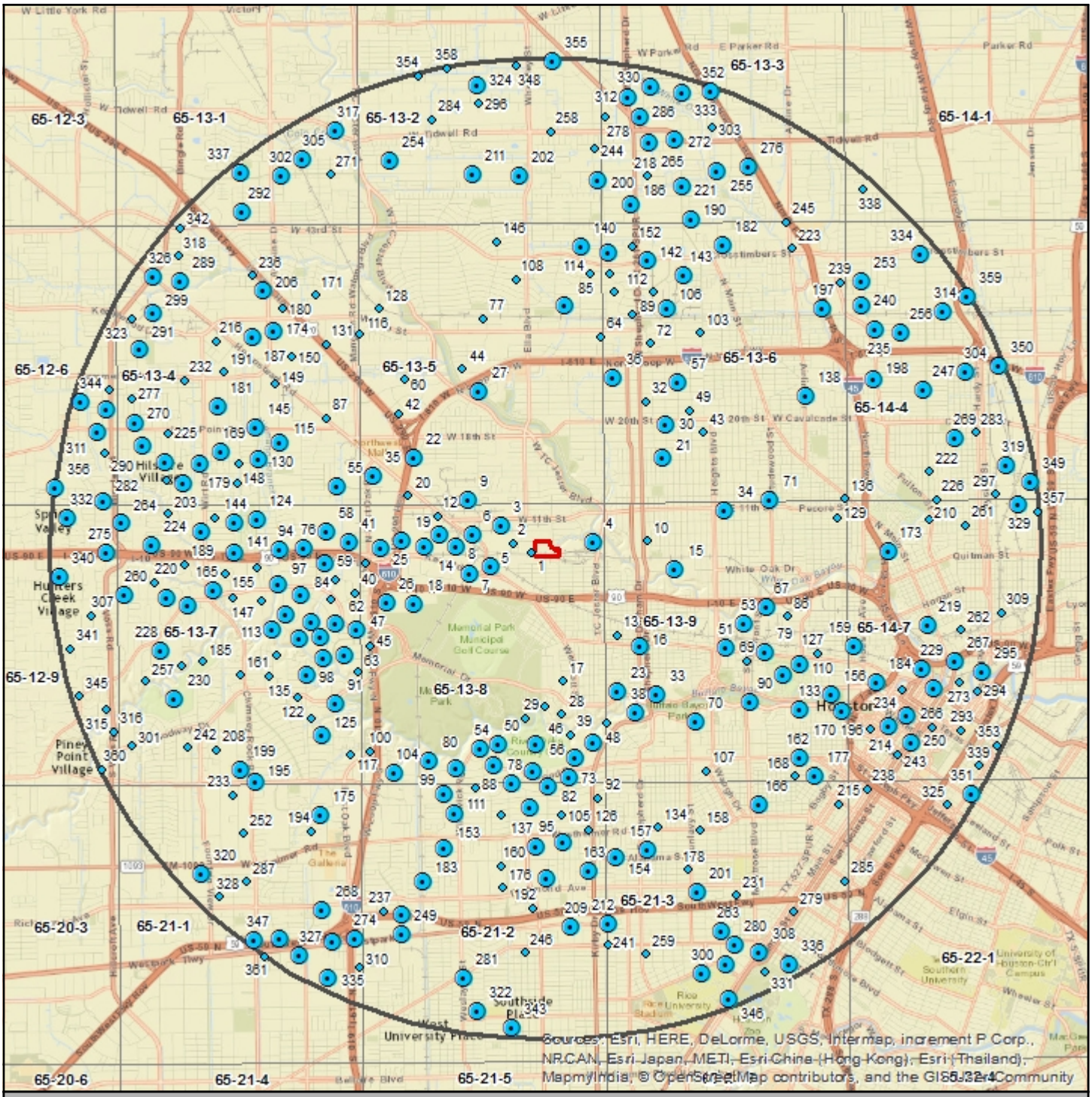

6307 Toledo Street

Well

Well Cluster

Target Property

Search Buffer

Texas Quad Index

1 : 95,000

1 inch = 1.499 miles
1 inch = 7917 feet
1 centimeter = 0.950 kilometers
1 centimeter = 950 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

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APPENDIX Q

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

17. The name and address of each retail public utility, as defined in section 13.002 of the Texas Water Code that owns or operates a groundwater supply well within five miles of the boundary of the designated property.

The Public Water System Report identified 96 groundwater supply wells associated with 13 utilities within 5 miles of the designated property (Attachment Q.1). The report identified 85 of these wells associated with 5 utilities as active. An Excel file containing mailing information for the active well owners is provided on in electronic format Appendix Y.

ATTACHMENTS

Attachment Q.1 Public Water System Report

Excel File of Mailing Information (See Appendix Y)

APPENDIX Q

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment Q.1
Public Water System Report

Prepared for:

GSI ENVIRONMENTAL, INC.-Houston
2211 Norfolk, #1000
Houston, TX 77098-4044

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Public Water System Report

6307 Toledo Street

Houston, TX

Harris County

PO #: 3990

ES-118200

Thursday, December 10, 2015

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Geographic Summary

Location
Harris County, TX
Target location is 0.033 square miles and has a 0.82 mile perimeter

Coordinates	
Longitude & Latitude in Degrees Minutes Seconds	NA
Longitude & Latitude in Decimal Degrees	NA
X and Y in UTM	NA

Elevation
NA

Zip Codes Searched	
Search Distance	**Zip Codes (historical zip codes included)**
Target Property	77007, 77201, 77008
5 miles	77002, 77201, 77003, 77004, 77005, 77006, 77007, 77201, 77008, 77009, 77010, 77018, 77019, 77020, 77022, 77024, 77026, 77027, 77030, 77046, 77055, 77056, 77057, 77063, 77076, 77080, 77081, 77091, 77092, 77093, 77098, 77401

Topos Searched	
Search Distance	**Topo Name**
Target Property	Houston Heights (1983)
5 miles	Park Place (1983), Settegast (1983), Hedwig Village (1982), Alief (1983), Houston Heights (1983), Bellaire (1983)

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Summary Map - 5 Mile Buffer

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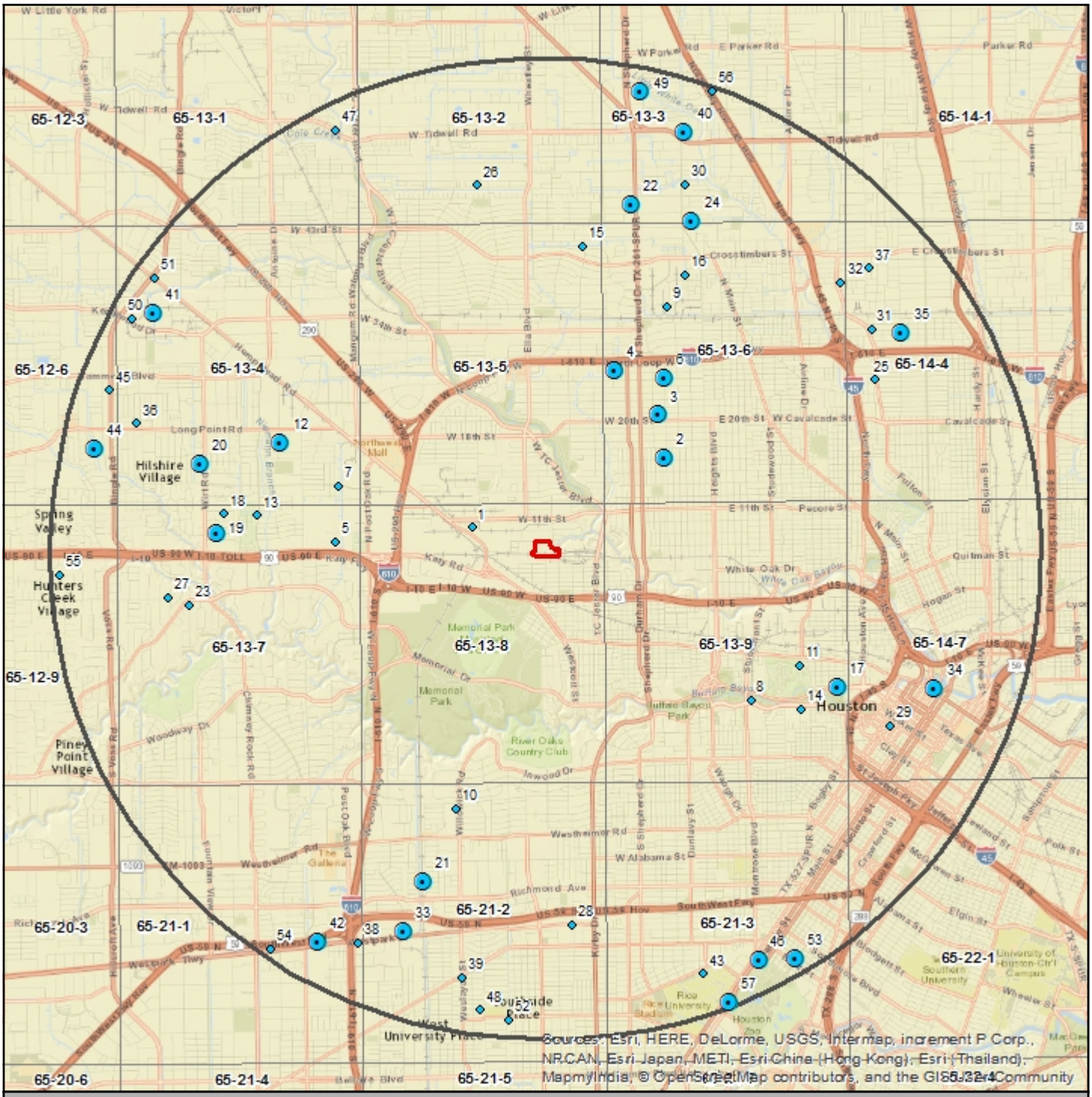

6307 Toledo Street

- Well
- Well Cluster
- Target Property
- Search Buffer
- Texas Quad Index

1 : 95,000

1 inch = 1.499 miles
1 inch = 7917 feet
1 centimeter = 0.950 kilometers
1 centimeter = 950 meters

N

Lambert Conformal Conic Projection
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First Standard Parallel: 33 0' 00" North
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Latitude of Origin: 39 0' 00" North

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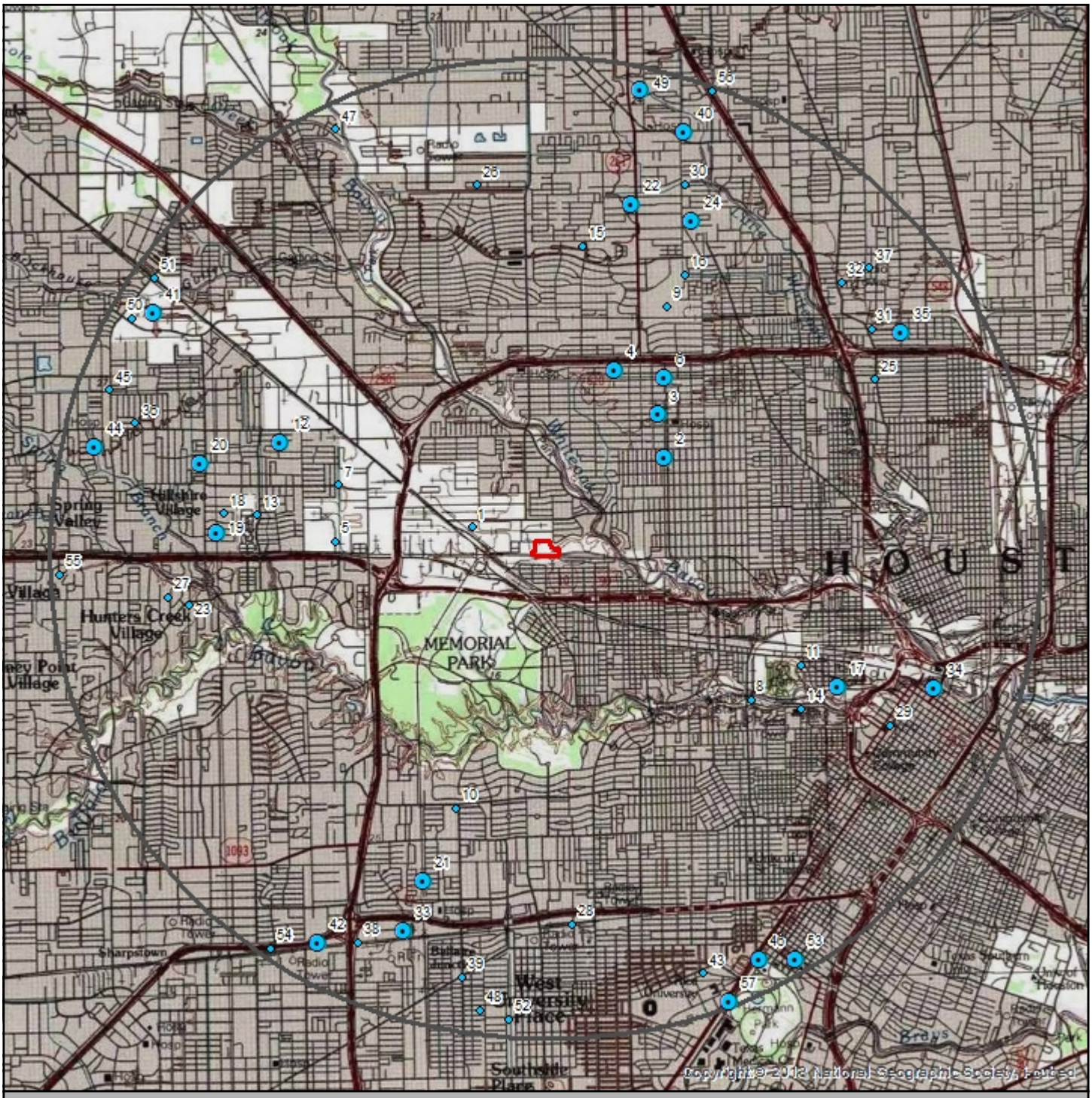
Topographic Overlay Map - 5 Mile Buffer



6307 Toledo Street

Well

Well Cluster

Target Property

Search Buffer

Target Property Quad Name(s)
Houston Heights (1983)

1 : 95,000
1 inch = 1.499 miles
1 inch = 7917 feet

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

N

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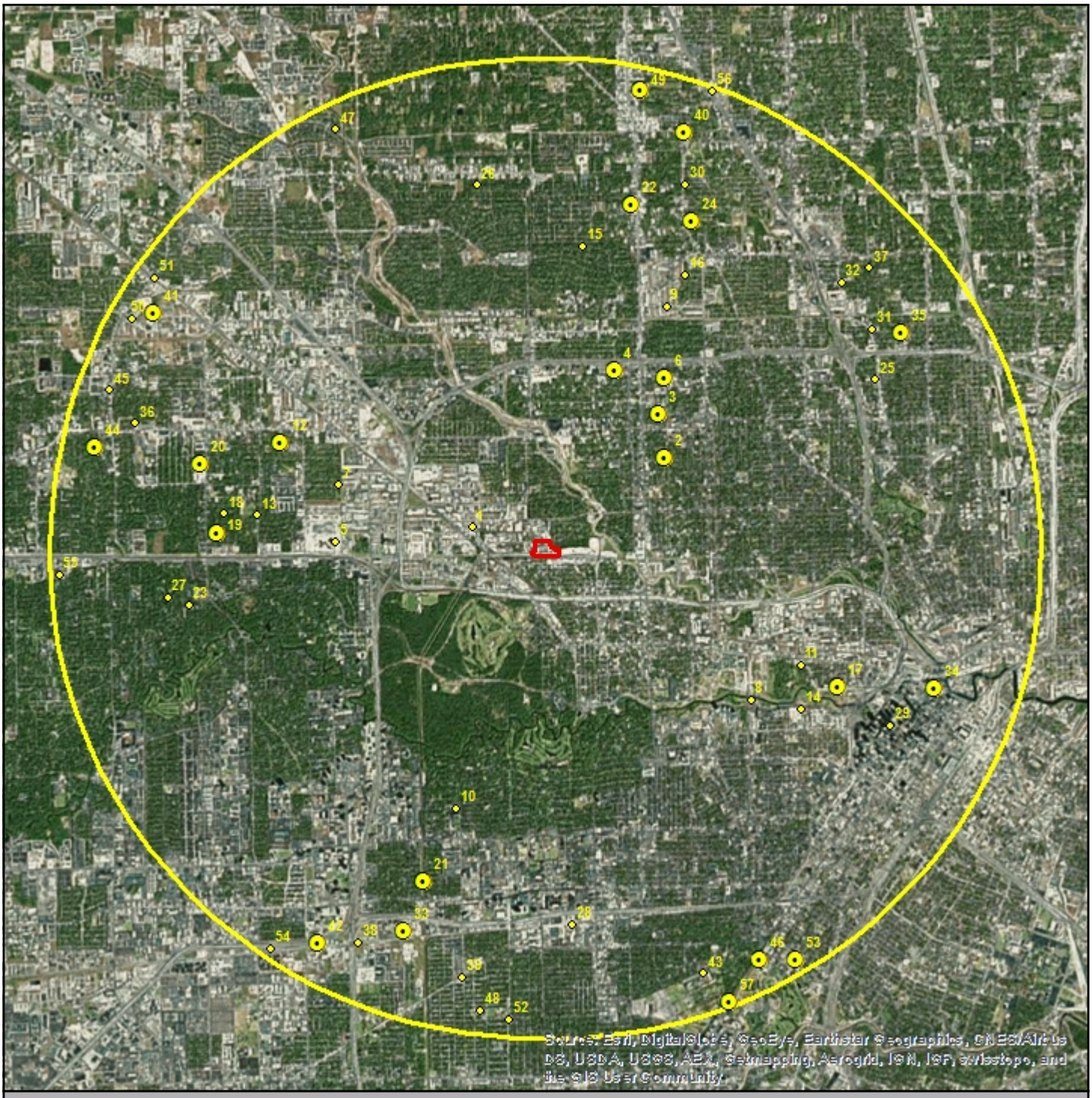
Current Imagery Overlay Map - 5 Mile Buffer



6307 Toledo Street

Well

Well Cluster

Target Property

Search Buffer

1 : 95,000

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CCN Service Boundaries - 5 Mile Buffer

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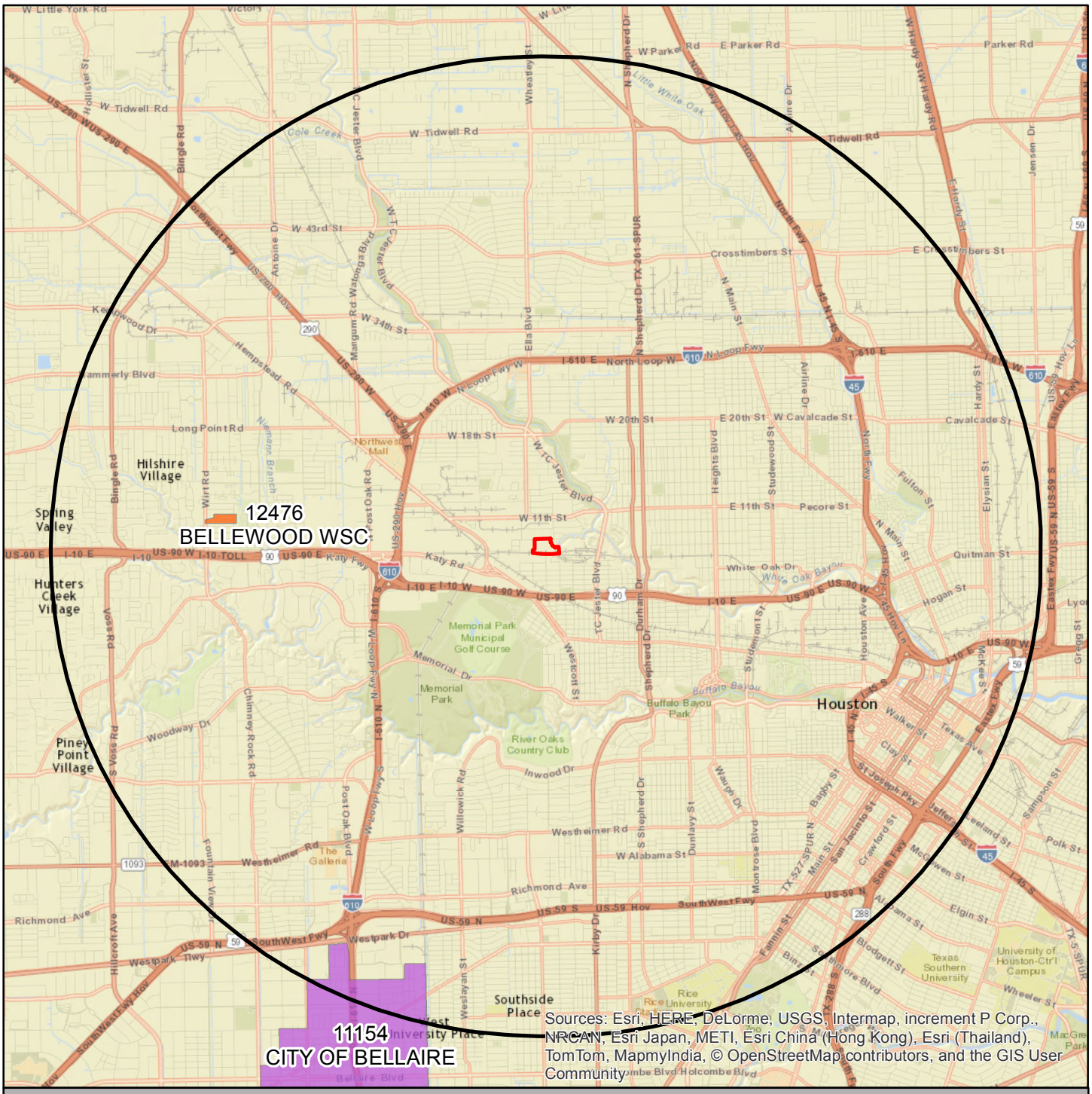

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Utility

- Target Property
- 5 Mile Buffer
- BELLEWOOD WSC
- CITY OF BELLAIRE

1:95,000

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00"

N

Water Well Details

Map ID	State ID	CCN	PWS Name	System Status	Source Status	Depth	Longitude	Latitude
1	G1011180A		EFCO & CO	INACTIVE	FORMER PWS WELL	324	-95.43910578	29.78800356
2	G1010013Q	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1465	-95.405929	29.79822899
2	G1010013GY	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	561	-95.4068858	29.79744912
3	G1010013GZ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1253	-95.40465769	29.80300493
3	G1010013HE	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1730	-95.40577172	29.80383791
3	G1010013GU	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1270	-95.40577172	29.80300494
3	G1010013GV	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1470	-95.40577172	29.80300494
3	G1010013GW	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1858	-95.40465769	29.80383791
3	G1010013X	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1844	-95.406814	29.80468299
4	G1010013LV	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	925	-95.4143859	29.81133772
4	G1010013LW	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1100	-95.4143859	29.81133772
4	G1010013LX	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	400	-95.4143859	29.81133772
5	G1010937A		WYMAN GORDON FORGINGS SILBER RD	INACTIVE	FORMER PWS WELL	1568	-95.46243745	29.78606073
6	G1010013GX	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1232	-95.40577167	29.80994872
6	G1010013P	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1231	-95.405769	29.81028899
7	G1010013QJ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	598	-95.46188737	29.79439346
8	G1010013O	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1645	-95.391586	29.76200199
9	G1010013HA	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1730	-95.40549757	29.82078038
10	G1012723A		WILLOWICK CONDOMINIUM ASSOCIATION THE	INACTIVE	FORMER PWS WELL	464	-95.44216518	29.74606088
11	G1010013M	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1920	-95.383058	29.76708299
12	G1010013OK	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	590	-95.4716076	29.80078331
12	G1010013OL	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	710	-95.4716076	29.80078331
13	G1010013BS	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1665	-95.475891	29.78998899
14	G1010013L	99144	CITY OF HOUSTON	ACTIVE	ABANDONED	1980	-95.38299043	29.76050616
15	G1010013LY	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1100	-95.41993991	29.82994716
16	G1010013R	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1880	-95.402412	29.82556899
17	G1010013N	99144	CITY OF HOUSTON	ACTIVE	EMERGENCY	1990	-95.377441	29.76262999
17	G1010013GQ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	2025	-95.37604722	29.76245007
17	G1010013GM	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1540	-95.37660422	29.76383803
17	G1010013GN	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1456	-95.37966331	29.76356205
17	G1010013GO	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1320	-95.37743626	29.7616161
17	G1010013GP	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	953	-95.37799326	29.76356205
18	G1010013TA	99144	CITY OF HOUSTON	ACTIVE	ABANDONED	421	-95.481536	29.79023499
19	G1010013TB	99144	CITY OF HOUSTON	ACTIVE	ABANDONED	465	-95.481506	29.78977299
19	G1010013SZ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.48271701	29.78744878
20	G1010013ME	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	468	-95.48549401	29.79772747
20	G1010013MF	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	281	-95.48688205	29.79800447
21	G1010013JO	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.44772038	29.73522925
21	G1010013JN	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.44772038	29.73522925
22	G1012714A		TROPICAL MOTEL	INACTIVE	PUBLIC WATER SYSTEM: DELETED	0	-95.41132561	29.83605793
22	G1012714B		TROPICAL MOTEL	INACTIVE	PLUGGED	0	-95.41132561	29.83633692
23	G1010013NQ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	600	-95.48772223	29.77661614

Water Well Details

Map ID	State ID	CCN	PWS Name	System Status	Source Status	Depth	Longitude	Latitude
24	G1010013S	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1300	-95.400932	29.83366499
24	G1010013HB	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1780	-95.40188036	29.83411495
25	G1010013GD	99144	CITY OF HOUSTON	ACTIVE	NON-DRINKING WATER	800	-95.36993566	29.80967056
26	G1010013KO	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.43799135	29.83911396
27	G1010148F	P0351	MEMORIAL VILLAGES WATER AUTHORITY	ACTIVE	OPERATIONAL	1526	-95.491333	29.77776499
28	G1010027C	P0525	CITY OF WEST UNIVERSITY PLACE	ACTIVE	OPERATIONAL	1298	-95.422488	29.72855199
29	G1011174A		TENNECO BUILDING WATER SYSTEM	INACTIVE	PUBLIC WATER SYSTEM: DELETED	1480	-95.36771602	29.75800617
30	G1010013T	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1772	-95.4023	29.83897699
31	G1010013GE	99144	CITY OF HOUSTON	ACTIVE	NON-DRINKING WATER	1152	-95.37049261	29.81717033
32	G1013079A		FULTON CABINS	INACTIVE	FORMER PWS WELL	0	-95.3756347	29.82422513
33	G1010013BI	99144	CITY OF HOUSTON	ACTIVE	OPERATIONAL	900	-95.451133	29.72783999
33	G1010013BJ	99144	CITY OF HOUSTON	ACTIVE	OPERATIONAL	1905	-95.451171	29.73050999
34	G1010013GR	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1535	-95.35994076	29.76356196
34	G1010013GS	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	980	-95.36104778	29.76522692
34	G1010013GT	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1986	-95.36132979	29.76411695
35	G1010013GB	99144	CITY OF HOUSTON	ACTIVE	NON-DRINKING WATER	856	-95.36521247	29.81661532
35	G1010013GC	99144	CITY OF HOUSTON	ACTIVE	NON-DRINKING WATER	853	-95.36521247	29.81661532
35	G1010013OG	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	220	-95.36688351	29.81689332
36	G1010013OS	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	990	-95.49661028	29.80383833
37	G1010013OH	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	753	-95.37076754	29.82633605
38	G1010013BL	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1592	-95.45910375	29.72606259
39	G1010027A	P0525	CITY OF WEST UNIVERSITY PLACE	ACTIVE	PLUGGED	1310	-95.44132627	29.72078566
40	G1010013U	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1555	-95.402137	29.84684099
40	G1010013OE	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.402496	29.84472199
40	G1010013OF	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.402778	29.84472199
41	G1010013NN	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.493331	29.82027799
41	G1010013NL	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	0	-95.493614	29.82055399
42	G1010013BB	99144	CITY OF HOUSTON	ACTIVE	OPERATIONAL	1395	-95.465881	29.72620899
42	G1010013HZ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1520	-95.46549693	29.72606262
43	G1010908A		RICE UNIVERSITY	ACTIVE	OPERATIONAL	1650	-95.40002	29.72115999
44	G1010013QD	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	542	-95.5035535	29.80022647
44	G1010013QE	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	717	-95.5035535	29.80022647
45	G1010013OT	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	982	-95.50105037	29.80883719
46	G1010013HR	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1127	-95.3902158	29.72328333
46	G1010013HT	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1620	-95.38938378	29.72245035
46	G1010013HP	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1394	-95.3902158	29.72328333
46	G1012844A		PARK PLACE WARWICK INTERNATIONAL	INACTIVE	PUBLIC WATER SYSTEM: INACTIVE	420	-95.38965878	29.72439529
46	G1010013HS	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	777	-95.38855276	29.72328332

Water Well Details

Map ID	State ID	CCN	PWS Name	System Status	Source Status	Depth	Longitude	Latitude
47	G1010013DF	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1120	-95.462105	29.84753599
48	G1010027B	P0525	CITY OF WEST UNIVERSITY PLACE	ACTIVE	OPERATIONAL	1230	-95.43827	29.71592999
49	G1012436A		REDDY ICE - HOUSTON	INACTIVE	PUBLIC WATER SYSTEM: INACTIVE	560	-95.409629	29.85309599
49	G1012436B		REDDY ICE - HOUSTON	INACTIVE	PLUGGED	0	-95.41049445	29.8530024
49	G1012436C		REDDY ICE - HOUSTON	INACTIVE	PLUGGED	0	-95.41049445	29.8530024
50	G1010013NM	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	862	-95.497222	29.81944399
51	G1010013NK	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	862	-95.49327602	29.82550364
52	G1010023A	P0522	CITY OF SOUTHSIDE PLACE	ACTIVE	PLUGGED	998	-95.433342	29.71450499
53	G1010013HW	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	2215	-95.38244159	29.72245032
53	G1010013HQ	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1325	-95.38410463	29.7232833
54	G1010013IA	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1508	-95.47411118	29.72522969
55	G1010148A	P0351	MEMORIAL VILLAGES WATER AUTHORITY	ACTIVE	OPERATIONAL	1570	-95.509895	29.78126099
56	G1010013HC	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1827	-95.39744008	29.85300234
57	G1010013HX	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1780	-95.39549497	29.71772952
57	G1010013HV	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1932	-95.39549498	29.71689655
57	G1010013HY	99144	CITY OF HOUSTON	ACTIVE	PLUGGED	1955	-95.39549497	29.71800652

Well Summary

Water Well Dataset	# of Wells
TX TCEQ PWS	96
Total Count	**96**

Dataset Descriptions and Sources

Dataset	Source	Dataset Description	Update Schedule	Data Requested	Data Obtained	Data Updated	Source Updated
TX TCEQ PWS - Texas TCEQ PWS	Texas Commission on Environmental Quality	This dataset contains a collection of records from Texas Water Districts, Public Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ.	Quarterly	09/11/2015	09/14/2015	10/11/2015	09/14/2015

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 500 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Disclaimer

Banks Environmental Data, Inc. has performed a thorough and diligent search of all public water supply systems recorded with Texas Commission on Environmental Quality (TCEQ) Safe Drinking Water Information System (SDWIS). Actual site locations are derived from TCEQ Texas Drinking Water Watch digital data. Although Banks performs quality assurance and quality control on all research, we recognize that any inaccuracies of the records and mapped locations could be traced to TCEQ.

Description of CCN (Certificate of Convenience and Necessity)

A Certificate of Convenience and Necessity (CCN) is issued by the Public Utility Commission (PUC) of Texas, and authorizes a utility to provide water and/or sewer service to a specific area. CCNs are required of investor owned utilities and water supply corporations. The CCN obligates the water or sewer retail public utility to provide continuous and adequate service to every customer who requests service in that area.

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 500 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

APPENDIX R

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

18. A listing of each municipality, other than the city of Houston, with corporate limit within one-half mile of the boundary of the designated property.

There are no other municipalities within one-half mile of the boundary of the designated property.

ATTACHMENTS

Attachment R.1 Municipal Boundaries Report

APPENDIX R

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment R.1
Municipal Boundaries Report

Prepared for:

GSI ENVIRONMENTAL, INC.-Houston
2211 Norfolk, #1000
Houston, TX 77098-4044

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Municipal Boundaries Report

6307 Toledo Street

Houston, TX

Harris County

PO #: 3990

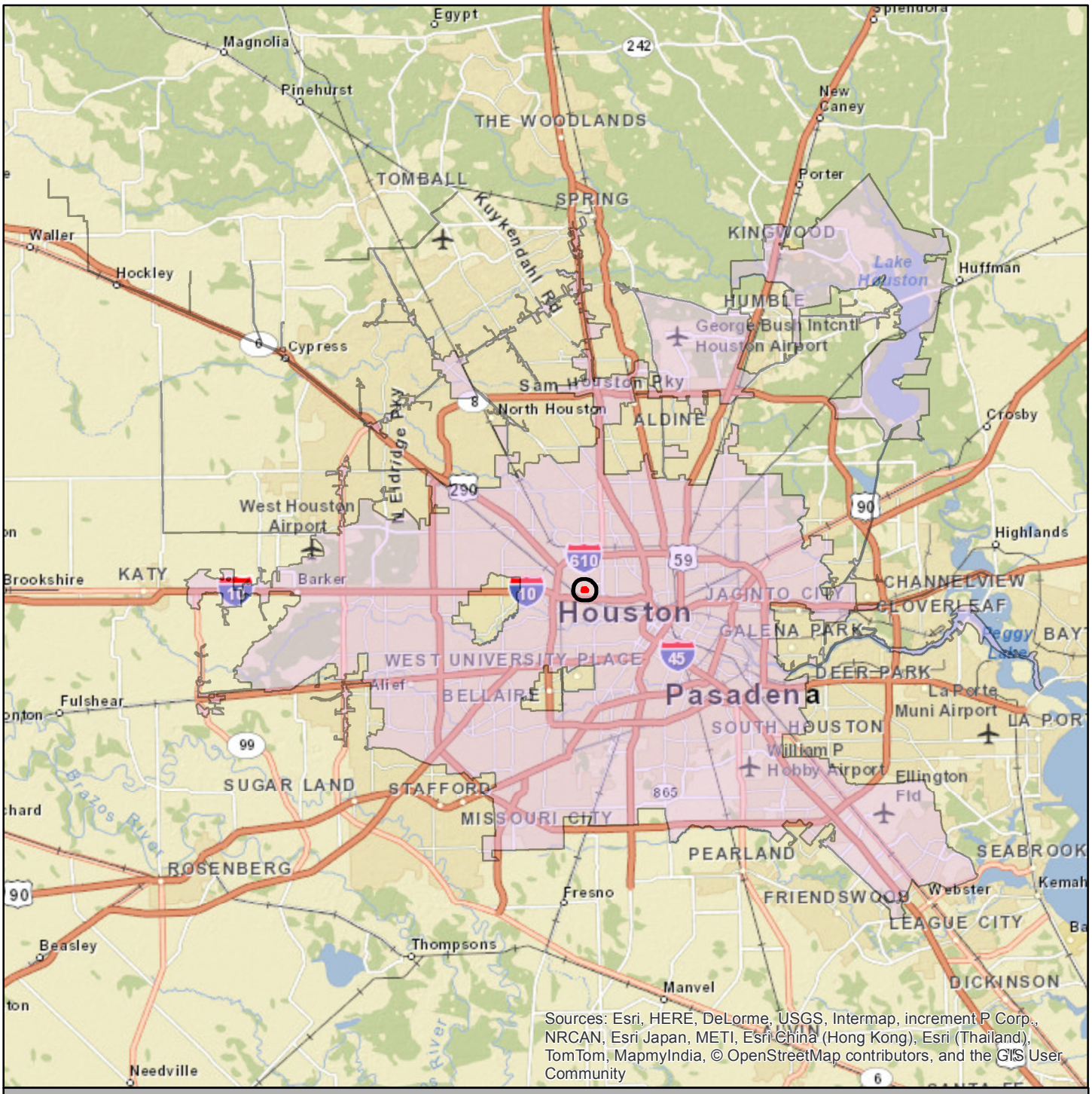
ES-118200

Thursday, December 10, 2015

Banks Environmental Data, Inc. - 1601 Rio Grande, Ste. 500 - Austin, TX 78701 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Municipal Boundaries

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



6307 Toledo Street

Target Property

0.5 Mile Buffer

City of Houston

Source: U.S. Census

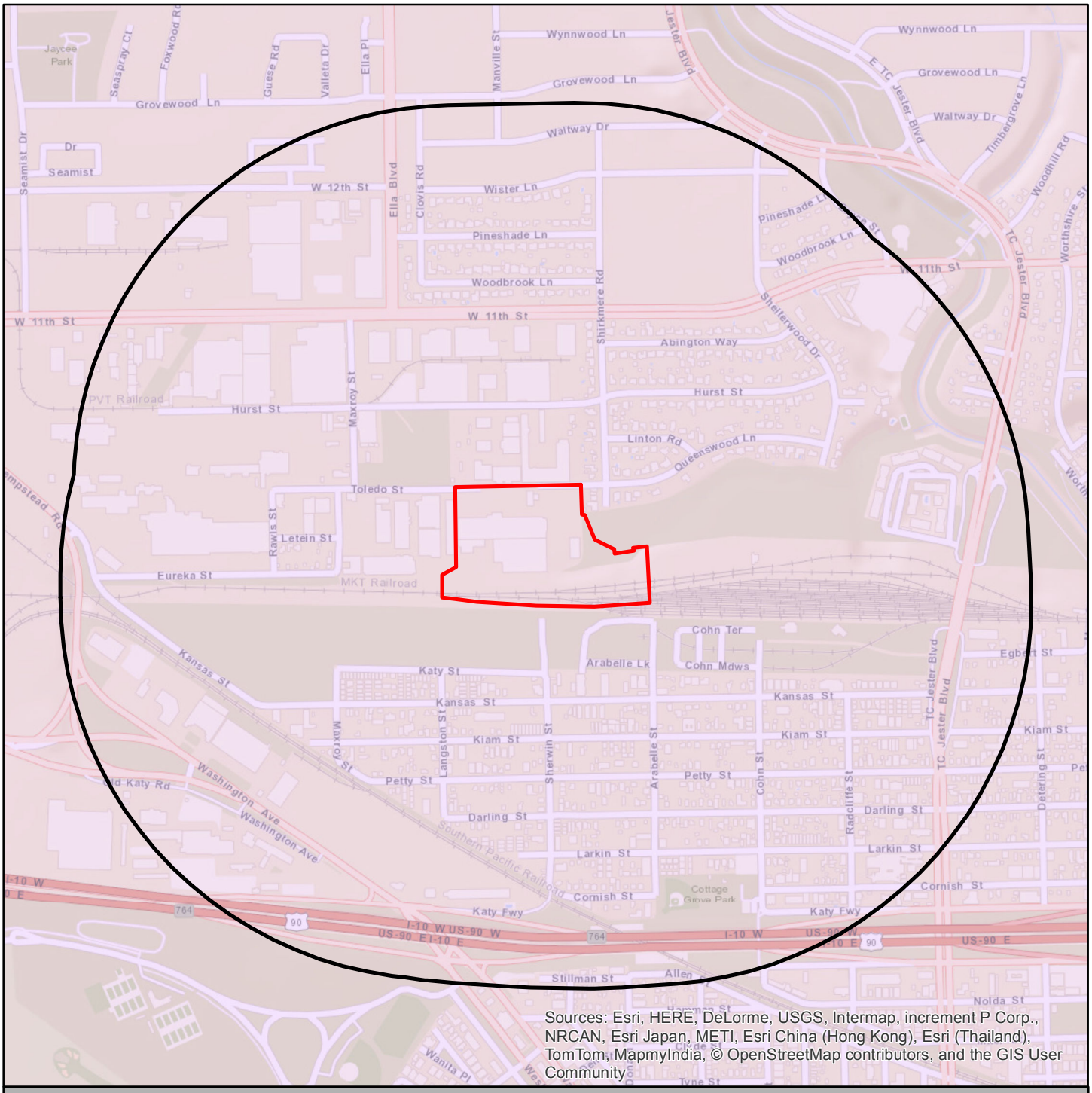
1:500,000

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00"

N

Municipal Boundaries - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



6307 Toledo Street

Target Property

0.5 Mile Buffer

City of Houston

Source: U.S. Census

1:12,000

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00"

N

APPENDIX S

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

19. A listing of each municipality, other than the city of Houston, that owns or operates a groundwater supply well within five miles of the boundary of the designated property.

The following municipalities own or operate groundwater supply wells within five miles of the boundary of the designated property (other than the city of Houston):

City of Pasadena
City of Southside Place
City of West University Place
Memorial Villages

APPENDIX T

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

20. A listing of owners of real property within 2,500 ft. of the boundary of the designated property as indicated by the most recent appraisal district records. Please Note: Depending on the location of your site, this requirement may include real property outside the City of Houston. Be sure to include ALL properties in the 2,500 ft. boundary. (An accompanying electronic excel file with mailing information should be included with your application)

A radius search identified 2,742 real property owners within 2,500 feet of the designated property. In cases where it could be confirmed that a duplicate entry had the exact same owner and address, the duplicate information was removed from the mailing information Excel file. An Excel file containing mailing information for the property owners is provided in electronic format in Appendix Y.

ATTACHMENTS

Excel File of Mailing Information (See Appendix Y)

APPENDIX U

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

21. Provide form U-2012-01 signed and sealed by a licensed professional engineer or licensed professional geoscientist authorized to practice in the State of Texas with expertise in environmental remediation. (Form U-2012-01 can be found under the "Forms" section on the homepage.) https://www.publicworks.houstontx.gov/pds/municipal-settings-designation.html

Signing and sealing Form U-2012-01 certifies:

a. The contaminants of concern from sources on the designated property or migrating from or through the designated property more likely than not [do exceed] OR [do not exceed] a non-ingestion protective concentration level on property beyond the boundaries of the designated property. (select the appropriate statement)

b. All requirements of Section 47-762 of the Houston Code of Ordinances have been met, including demonstration that the groundwater contamination plume has been fully delineated and is stable or contracting in size.

ATTACHMENTS

Attachment U.1 Completed Form U-2012-01

APPENDIX U

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment U.1
Completed Form U-2012-01

Form U-2012-01

Appendix U – Completeness of Information and On-Site and Off-Site Impact(s)

To the best of my knowledge and belief, based upon a review of all public and private records and other information sources available to me in the exercise of due diligence, the opinions stated and conclusions made in this application are supported by such information, and the technical and scientific information submitted with the application is true, accurate and complete. Based on such review, the contaminants of concern from sources on the designated property or migrating from or through the designated property more likely than not ~~[do exceed]~~ OR [do not exceed] a non-ingestion protective concentration level on property beyond the boundaries of the designated property. Further, I certify that all requirements of Section 47-762 of the Houston Code of Ordinances have been met, including demonstration that the groundwater contamination plume has been fully delineated and is stable or contracting in size.

Travis M. McGuire
(Name)

Senior Engineer
(Title)

GSI Environmental Inc.
(Firm)

Signature: Travis M. McGuire Date: 2/1/2016

Travis M. McGuire 2/1/16
GSI Environmental F-1198

STATE OF TEXAS
TRAVIS M. MCGUIRE
108754
LICENSED
PROFESSIONAL ENGINEER

Professional Seal

APPENDIX V

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

22. If the licensed professional engineer or licensed professional geoscientist determines that contaminants of concern from sources on the designated property are migrating from or through the designated property more likely than not do exceed a non-ingestion protective concentration level on property beyond the boundary of the designated property, then the applicant must:

a. Specify the name and address of the owner of each property.

b. Send a copy of the application to the owner of the property with the notice of the public meeting.

c. Provide documentation that the designated property has been included in a state or federal program that requires that the entire non-ingestion protective concentration level exceedance zone be addressed to the satisfaction of the agency administering the program, along with documentation of the estimated time period in which it is to be addressed. An example of such a program is the Texas Voluntary Cleanup Program (section 361.501 of the Texas Health and Safety Code, as may be amended from time to time).

d. Provide documentation upon completion of the state or federal program showing that the non-ingestion protective concentration level exceedances have been addressed to the satisfaction of the agency administering the program.

Not applicable. As previously noted, concentrations within the designated property do not exceed non-ingestion PCLs, and therefore do not exceed such PCLs beyond the designated property.

APPENDIX W

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

23. Form W-2012-01 <u>certified/signed</u> by the applicant and any authorized representatives of the applicant(s) listed in the application. (Form W-2012-01 can be found under the "Forms" section on the homepage.)
https://www.publicworks.houstontx.gov/pds/municipal-settings-designation.html

ATTACHMENTS

Attachment W.1 Completed Form W-2012-01

APPENDIX W

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment W.1
Completed Form W-2012-01

Form W-2012-01

Appendix W – Accuracy of Information

I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in a manner designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the persons responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violation.

William M. Smith
(Applicant's Name)

Exec. VP - Operations
(Title)

Northwest Pipe Co.
(Company)

Signature: Wm. M. Smith Date: 2/1/16

State of ~~Texas~~ Washington §

County of ~~Harris~~ Clark § §

Notary Public
State of Washington
CHRISTINE A. NUSOM
MY COMMISSION EXPIRES
~~March 25, 2016~~
(Seal)

This instrument was acknowledged before me on this day the 1 day of February, 20 16 by

William M. Smith
(Print)

Christine A. Nusom
NOTARY PUBLIC, STATE OF ~~TEXAS~~ Washington

Christine A. Nusom
Printed/Typed Name of Notary

My commission expires: 3-25.2016

APPENDIX X

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

24. Form X-2012-01 signed by the property owner or authorized agent (if an authorized agent, you must provide the legal authorization instrument). (Form W-2012-01 can be found under the "Forms" section on the homepage. https://www.publicworks.houstontx.gov/pds/municipal-settings-designation.html

ATTACHMENTS

Attachment X.1 Completed Form X-2012-01

APPENDIX X

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

Attachment X.1
Completed Form X-2012-01

Form X-2012-01

Appendix X – Signed Restrictive Covenant

I certify under penalty of law that I, the undersigned, as the real property owner or authorized agent of the designated property listed herein, have the legal authority and do agree to prohibit the use of designated groundwater in support of the Municipal Setting Designation by the Texas Commission on Environmental Quality.

William M. Smith
(Owner or Authorized Agent's Name)

Exec. VP-Operations
(Title)

Northwest Pipe Co.
(Company)

Signature: Wm. M. Smith Date: 2/1/16

If authorized agent, provide proof of legal authorization instrument in the application under appendix x.

State of ~~Texas~~ Washington §

§

County of ~~Harris~~ Clark §

Notary Public
State of Washington
CHRISTINE A. NUSOM
MY COMMISSION EXPIRES
March 25, 2016

(Seal)

This instrument was acknowledged before me on this day the 1 day of February, 2016 by

William M. Smith
(Print)

Christine A. Nusom
NOTARY PUBLIC, STATE OF ~~TEXAS~~ Washington

Christine A. Nusom
Printed/Typed Name of Notary

My commission expires: 3-25-2016

APPENDIX Y

City of Houston Municipal Setting Designation Application
Northwest Pipe Company, Houston, Texas
TCEQ VCP ID No. 2665

25. A CD (or other device) containing the pdf file of the application, Excel spreadsheet of water well owners and property owners for mailing notices, and the pdf file of the well log report.

CD CONTENTS

File Name:	**File Contains:**
NWP_MSDApp.pdf	PDF File of MSD Application
5Mile_WellOwners.xls	Excel File of Mailing Information for Wells in a 5 Mile Radius
PWS_MailingInfo.xls	Excel File of Mailing Information for Wells Owned by Utilities
HalfMile_PropOwners.xls	Excel File of Mailing Information for Property Owners in a Half Mile Radius
WaterWellReport.pdf	PDF File of Water Well Information in a 5 Mile Radius, Includes Well Logs