CITY OF HOUSTON



PUBLIC WORKS AND ENGINEERING

PLANNING & DEVELOPMENT DIVISION

EXECUTIVE SUMMARY

Project Overview

InControl Technologies was retained by UG Old Hardy, LP, to provide environmental consulting services at the Vacant Commercial property located at 1702 Nance Street, Houston, Harris County, Texas. The subject property is located east of McKee and Hardy Streets, south of Nance Street, and west of Elysian Street. The subject property (the Site) is paved in concrete with a large metal warehouse building taking up most of the property. The site consists of one parcel totaling 0.9816-acres of land located northeast of downtown Houston, Harris County, Texas (**Figure C1**). The general land use of the surrounding area is mostly commercial and light industrial (**Figure B**) but is slowly beginning to transition into residential.

The Site is located within the Buffalo Bayou Watershed (**Figure C2**) and is located outside the 0.2% annual chance (500 year) floodplain (**Figure C3**).

Volatile Organic Compounds (VOC) Protective Concentration Level Exceedance (PCLE) zones were identified on a portion of the subject property. The PCLE zones are depicted on **Figure C4a** through **Figure C4c**. Groundwater samples were also analyzed for the eight RCRA Metals. The groundwater data are summarized in **Tables E3** and **E4**.

Historical Environmental Condition

The 0.9816-acre subject property is located within the area of the Hardy Street Railyards and historical commercial industrial operations. Historically, the subject property was residential from at least 1890 through the 1960s. It was developed into a commercial business in the 1970s to support sales and distribution of oilfield equipment. The property was most recently occupied by Advanced Control Systems, LLC. This company provided a wide range of electrical and energy equipment for applications and operations in the drilling, marine, and industrial markets. Prior to that, the facility was occupied by Wilson Industries. This business was suspected to be similar to the Advanced Control Systems, LLC operations. InControl Technologies does not believe that any manufacturing operations were ever conducted on the subject property.

The adjacent property to the east was historically used for rail operations including a former railroad maintenance facility and switching yard. Early Sanborn Maps from the 1800s into the 1900s indicate rail car and locomotive operations by the Houston East and West Texas Railroad. A main rail corridor, which is still present, is located to the south. Houston East and West Texas Railroad operated on the adjacent

property from the late 1800s to the early 1900s. Additionally, a machine carpentry shop and boiler repair shop were located on the western property boundary of the railyard. These offsite operations are believed to be a source for some of the contamination found onsite.

A number of subsurface investigations were conducted between December 2019 and present. To date, 60 soil borings (as of March 2021) were advanced within the proposed MSD Boundary. The soil borings are depicted on **Figure C5**. The soil samples were analyzed for RCRA Metals by EPA Method 6020/7471 (**Table E1**) and volatile organic compounds (VOCs) by EPA Method 8260 (**Table E2**). The current groundwater monitoring well network consists of nine permanent groundwater monitoring wells (MW-5 through MW-13) (**Figure C6**). The groundwater samples were analyzed for RCRA Metals by EPA Method 6020/7470 (**Table E3**) and volatile organic compounds (VOCs) by EPA Method 8260 (**Table E4**).

The lateral extent of groundwater impact was delineated in all directions. Chlorinated hydrocarbons were present in groundwater at concentrations greater than the applicable Tier 1 ^{GW}GW_{Ing} PCLs. The PCLE zones are depicted in **Figures C4a through C4c**. The direction of groundwater flow is toward the southwest (**Figure C5**).

Nineteen (19) water well records were identified within a ½-mile radius of the proposed Municipal Setting Designation (MSD) boundary. The nearest domestic or public supply well is located approximately 0.32-miles from the subject property in the cross gradient direction. Within a 1/2-mile radius of the proposed MSD boundary, the only well that is believed to still be operational is Map ID #10, which is the domestic well. This well is screened from 442- to 452-ft bgs and is 452-ft deep. All other wells were either dewatering wells or industrial wells that are plugged.

Buffalo Bayou is located approximately 830-feet south of the proposed MSD boundary. Buffalo Bayou is not threatened by the groundwater plume (**Figure C2, C4**).

Appendix A

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.

The legal description plus a metes and bounds description for the designated property is included in this section. Also included is a copy of the deed for the property. The proposed Municipal Setting Designation (MSD) boundary encompasses 0.9816-acres.

Figure A depicts the proposed MSD boundary.

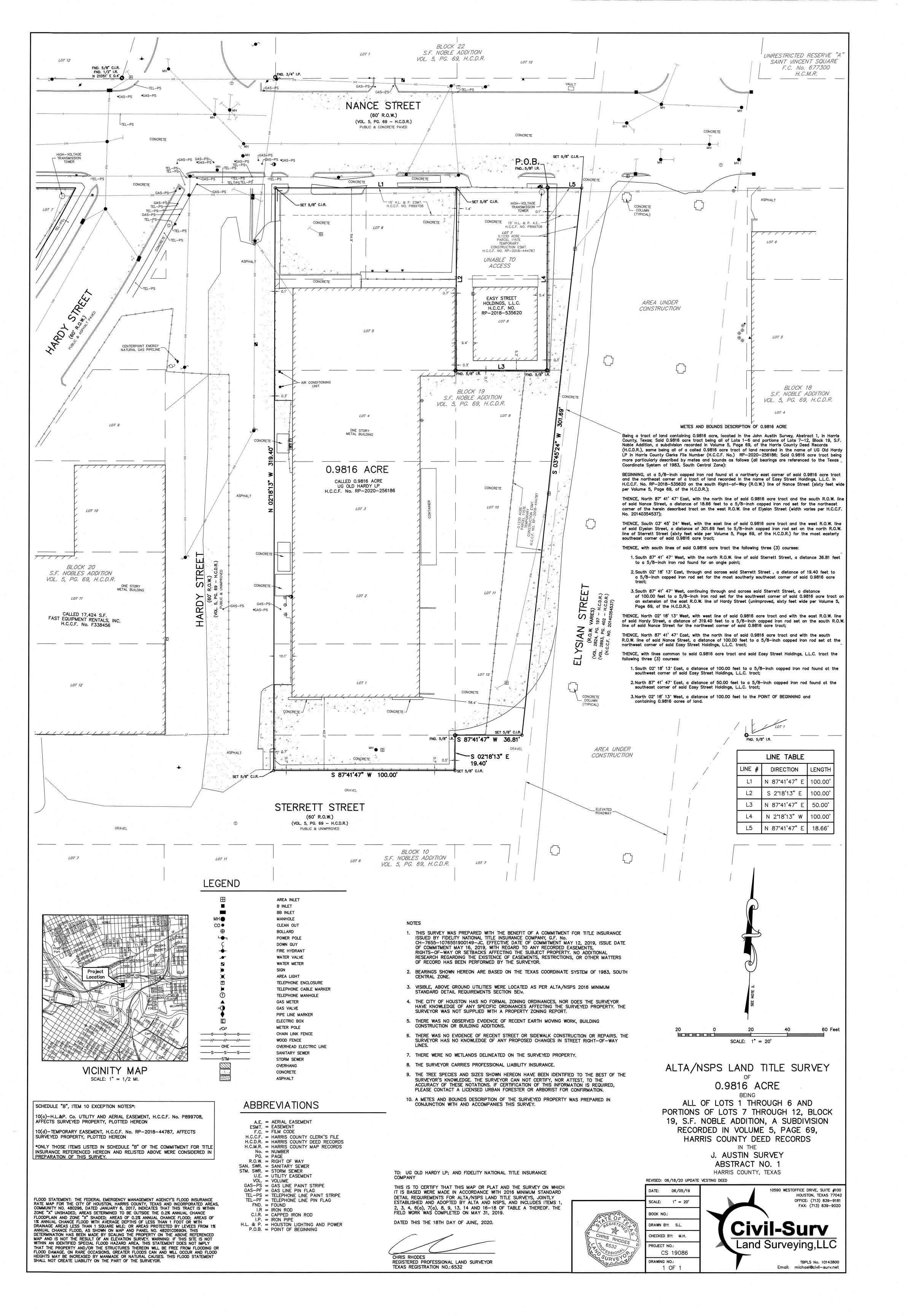


EXHIBIT ___, PAGE 1 OF 2 PAGES

County:

Harris

Project: M&B No: 1702 Nance 19-143(r)

CS Job No:

19086

METES AND BOUNDS DESCRIPTION OF 0.9816 ACRE

Being a tract of land containing 0.9816 acre, located in the John Austin Survey, Abstract 1, in Harris County, Texas; Said 0.9816 acre tract being all of Lots 1-6 and portions of Lots 7-12, Block 19, S.F. Noble Addition, a subdivision recorded in Volume 5, Page 69, of the Harris County Deed Records (H.C.D.R.), same being all of a called 0.9816 acre tract of land recorded in the name of UG Old Hardy LP in Harris County Clerks File Number (H.C.C.F. No.) RP-2020-256186; Said 0.9816 acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System of 1983, South Central Zone):

BEGINNING, at a 5/8-inch capped iron rod found at a northerly east corner of said 0.9816 acre tract and the northeast corner of a tract of land recorded in the name of Easy Street Holdings, L.L.C. in H.C.C.F. No. RP-2018-535620 on the south Right-of-Way (R.O.W.) line of Nance Street (sixty feet wide per Volume 5, Page 69, of the H.C.D.R.);

THENCE, North 87° 41' 47" East, with the north line of said 0.9816 acre tract and the south R.O.W. line of said Nance Street, a distance of 18.66 feet to a 5/8-inch capped iron rod set for the northeast corner of the herein described tract on the west R.O.W. line of Elysian Street (width varies per H.C.C.F. No. 20140354537);

THENCE, South 03° 45' 24" West, with the east line of said 0.9816 acre tract and the west R.O.W. line of said Elysian Street, a distance of 301.69 feet to 5/8-inch capped iron rod set on the north R.O.W. line of Sterrett Street (sixty feet wide per Volume 5, Page 69, of the H.C.D.R.) for the most easterly southeast corner of said 0.9816 acre tract;

THENCE, with south lines of said 0.9816 acre tract the following three (3) courses:

- 1. South 87° 41' 47" West, with the north R.O.W. line of said Sterrett Street, a distance 36.81 feet to a 5/8-inch iron rod found for an angle point;
- 2. South 02° 18' 13" East, through and across said Sterrett Street, a distance of 19.40 feet to a 5/8-inch capped iron rod set for the most southerly southeast corner of said 0.9816 acre tract;
- 3. South 87° 41' 47" West, continuing through and across said Sterrett Street, a distance of 100.00 feet to a 5/8-inch iron rod set for the southwest corner of said 0.9816 acre tract on an extension of the east R.O.W. line of Hardy Street (unimproved, sixty feet wide per Volume 5, Page 69, of the H.C.D.R.);

EXHIBIT ___, PAGE 2 OF 2 PAGES

THENCE, North 02° 18' 13" West, with west line of said 0.9816 acre tract and with the east R.O.W. line of said Hardy Street, a distance of 319.40 feet to a 5/8-inch capped iron rod set on the south R.O.W. line of said Nance Street for the northwest corner of said 0.9816 acre tract;

THENCE, North 87° 41' 47" East, with the north line of said 0.9816 acre tract and with the south R.O.W. line of said Nance Street, a distance of 100.00 feet to a 5/8-inch capped iron rod set at the northwest corner of said Easy Street Holdings, L.L.C. tract;

THENCE, with lines common to said 0.9816 acre tract and said Easy Street Holdings, L.L.C. tract the following three (3) courses:

- 1. South 02° 18' 13" East, a distance of 100.00 feet to a 5/8-inch capped iron rod found at the southwest corner of said Easy Street Holdings, L.L.C. tract;
- 2. North 87° 41' 47" East, a distance of 50.00 feet to a 5/8-inch capped iron rod found at the southeast corner of said Easy Street Holdings, L.L.C. tract;
- 3. North 02° 18' 13" West, a distance of 100.00 feet to the **POINT OF BEGINNING** and containing 0.9816 acres of land.

An ALTA/NSPS Land Title Survey drawing of the herein described tract was prepared in conjunction with and accompanies this description.

Chris Rhodes, R.P.L.S.

Texas Registration Number 6532

CVIL-SURV LAND SURVEYING, LC

PH: (713) 839-9181

June 5, 2019

Revised June 18, 2020

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

STATE OF TEXAS

§ §

COUNTY OF HARRIS

Ş

SPECIAL WARRANTY DEED

address is 2001 Kirby Drive, Suite 805, Houston, Texas 1imited partnership ("Grantor"), whose address is 2001 Kirby Drive, Suite 805, Houston, Texas 77019, for and in consideration of the sum of TEN AND NO/100 DOLLARS (\$10.00) paid to Grantor by UG OLD HARDY LP, a Texas 1imited partnership ("Grantee"), whose address is 306 Avondale St., Suite 200, Houston, Texas 77006 and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged has GRANTED, BARGAINED, SOLD and CONVEYED, and by these presents does hereby GRANT, BARGAIN, SELL and CONVEY unto Grantee, that certain land located in Harris County, Texas, and being more particularly described on the attached Exhibit A, TOGETHER WITH (1) all improvements located thereon, if any, (2) all and singular the rights, interests, benefits, privileges, easements, tenements, hereditaments, and appurtenances thereon or in any way appertaining thereto, and (3) all right, title, and interest of Grantor, if any, in and to all strips and gores and any land lying in the bed of any street, right-of-way, road or alley, open or proposed, appurtenant or incident to such land, and any water rights, surface and subsurface mineral rights (such land, together with the foregoing (1) through (3), are referred to herein as the "Property").

This conveyance is made and accepted subject to the permitted exceptions described on Exhibit B attached hereto (collectively, "Permitted Exceptions").

TO HAVE AND TO HOLD the Property, subject to the Permitted Exceptions, unto Grantee and Grantee's successors and assigns forever; and Granter does hereby bind itself and its successors to warrant and forever defend the Property unto Grantee and Grantee's 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.

GRANTEE ACKNOWLEDGES AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH IN THE TAR COMMERCIAL CONTRACT – IMPROVED PROPERTY DATED EFFECTIVE AS OF MAY 9, 2019, BETWEEN GRANTOR AND GRANTEE'S PREDECESSOR-IN-INTEREST (AS AMENDED, THE "CONTRACT"), AND/OR THE WARRANTIES OF THIS SPECIAL WARRANTY DEED, GRANTOR IS CONVEYING THE PROPERTY TO GRANTEE, AND GRANTEE IS ACCEPTING THE PROPERTY FROM GRANTOR, IN ITS "AS-IS, WHERE-IS" CONDITION "WITH ALL FAULTS" AND SPECIFICALLY AND EXPRESSLY WITHOUT ANY WARRANTIES, REPRESENTATIONS, OR GUARANTIES, EITHER EXPRESS OR IMPLIED, OF ANY KIND, NATURE, OR TYPE WHATSOEVER. GRANTEE ACKNOWLEDGES THAT IT HAS NOT

RELIED, AND IS NOT RELYING, UPON ANY INFORMATION, DOCUMENT, SALES BROCHURES, OR OTHER LITERATURE, MAPS, OR SKETCHES, PROJECTION, PROFORMA, STATEMENT, REPRESENTATION, GUARANTY, OR WARRANTY (WHETHER EXPRESS OR IMPLIED, ORAL, OR WRITTEN, OR MATERIAL OR IMMATERIAL) THAT MAY HAVE BEEN GIVEN OR MADE BY, OR ON BEHALF OF, GRANTOR OR ANYONE ACTING ON ITS BEHALF. GRANTOR SPECIFICALLY DISCLAIMS ANY WARRANTY, GUARANTY, OR REPRESENTATION, ORAL OR WRITTEN, PAST OR PRESENT, EXPRESS OR IMPLIED, CONCERNING THE PROPERTY, EXCEPT AS SUCH WARRANTY, GUARANTY, OR REPRESENTATION IS EXPRESSLY SET FORTH IN THE CONTRACT.

[Signature Page Follows]

EXECUTED effective as of the 15 day of June, 2020.

GRANTOR:

125 WEST CROSSTIMBERS, LTD.,

a Texas limited partnership

By:

125WCT Management, LLC, a Texas limited liability company,

its General Partner

By: John P. Madden, President

STATE OF TEXAS) SS. COUNTY OF HAPPIS)

I, the undersigned, a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY that John P. Madden, as the President of 125WCT Management, LLC, a Texas limited liability company, the General Partner of 125 West Crosstimbers, LTD., a Texas limited partnership, personally known to me, whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered the said instrument as his free and voluntary act for the purposes therein set forth.

Given under my hand and official seal this 15th day of June, 2020.

JONATHAN DAVIS COOPER 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756107 10 131756

Notágy Public

MyCommission expires: 16

Signature Page to Special Warranty Deed

Exhibit A

LEGAL DESCRIPTION

Being a tract of land containing 0.9816 acre, located in the John Austin Survey, Abstract 1, in Harris County, Texas; Said 0.9816 acre tract being all of Lots 1-6 and portions of Lots 7-12, Block 19, S.F. Noble Addition, a subdivision recorded in Volume 5, Page 69, of the Harris County Deed Records (H.C.D.R.), same being out of a called 1.228 acre tract of land recorded in the name of 125 West Crosstimbers, Ltd. in Harris County Clerks File (H.C.C.F.) Number 20110223447 (Tract I) and all of a tract of land recorded in the name of 125 West Crosstimbers, Ltd. in Harris County Clerks File (H.C.C.F.) Number 2020252429 (Tract II); Said 0.9816 acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System of 1983, South Central Zone):

BEGINNING, at a 5/8-inch capped iron rod found at a northerly east corner of said Tract I and the northeast corner of a tract of land recorded in the name of Easy Street Holdings, L.L.C. in H.C.C.F. Number RP-2018-535620 on the south Right-of-Way (R.O.W.) line of Nance Street (sixty feet wide per Volume 5, Page 69, of the H.C.D.R.);

THENCE, North 87° 41° 47" East, with the north line of said Tract I and the south R.O.W. line of said Nance Street, a distance of 18.66 feet to a 5/8-inch capped iron rod set for the northeast corner of the herein described tract on the west R.O.W. line of Elysian Street (width varies per H.C.C.F. Number 20140354537);

THENCE, South 03° 45' 24" West, through and across said Tract I and with the west R.O.W. line of said Elysian Street, a distance of 301.69 feet to 5/8-inch capped iron rod set on the south line of said Tract I and the north R.O.W. line of Sterrett Street (sixty feet wide per Volume 5, Page 69, of the H.C.D.R.) for the most easterly southeast corner of the herein described tract;

THENCE, with south lines of said Tract I the following three (3) courses:

- 1. South 87° 41° 47° West, with the north R.O.W. line of said Sterrett Street, a distance 36.81 feet to a 5/8-inch iron rod found for an angle point;
- 2. South 02° 18' 13" East, through and across said Sterrett Street, a distance of 19.40 feet to a 5/8-inch capped iron rod set for the most southerly southeast corner of the herein described tract;
- 3. South 87° 41' 47" West, continuing through and across said Sterrett Street, a distance of 100.00 feet to a 5/8-inch iron rod set for the southwest corner of the herein described tract on an extension of the east R.O.W. line of Hardy Street (unimproved, sixty feet wide per Volume 5, Page 69, of the H.C.D.R.)

Exhibit A to Special Warranty Deed

THENCE, North 02° 18' 13" West, with west line of said Tract I and with the east R.O.W. line of said Hardy Street, a distance of 319.40 feet to a 5/8-inch capped iron rod set on the south R.O.W. line of said Nance Street for the northwest corner of the herein described tract;

THENCE, North 87° 41' 47" East, with the north lines of said Tract I and said Tract II and with the south R.O.W. line of said Nance Street, a distance of 100.00 feet to a 5/8-inch capped iron rod set at the northeast corner of said Tract II and the northwest corner of said Easy Street Holdings, L.L.C. tract;

THENCE, with lines common to said Tracts I and II and said Easy Street Holdings, L.L.C. tract the following three (3) courses:

- 1. South 02° 18' 13" East, a distance of 100.00 feet to a 5/8-inch capped iron rod found at the southwest corner of said Easy Street Holdings, L.L.C. tract;
- 2. North 87° 41° 47" East, a distance of 50.00 feet to a 5/8-inch capped iron rod found at the southeast corner of said Easy Street Holdings, L.L.C. tract;
- 3. North 02° 18' 13" West, a distance of 100,00 feet to the **POINT OF BEGINNING** and containing 0.9816 acres of land.

Exhibit A to Special Warranty Deed

Exhibit B

PERMITTED EXCEPTIONS

- 1. Standby fees, taxes and assessments by any taxing authority for the year 2020 and subsequent years.
- 2. Temporary Easement granted to the State of Texas by instrument August 10, 2018, filed for record under Harris County Clerk's File No. RP-2018-444787.
- 3. The following matters shown on the survey prepared by Michael Hall, RPLS No. 5765, dated 06/05/2019, as amended:
 - a. Overhead Electric Line extending from the west property line;
 - b. Gas Line Paint Stripe along west property line;
 - c. Storm Sewer along the east property line;
 - d. Manhole along the south property line; and
 - e. Fences do not follow the property lines.

Exhibit B to Special Warranty Deed

RP-2020-256186
Pages 7
06/16/2020 08:25 AM
e-Filed & e-Recorded in the
Official Public Records of
HARRIS COUNTY
CHRIS HOLLINS
COUNTY CLERK
Fees \$38.00

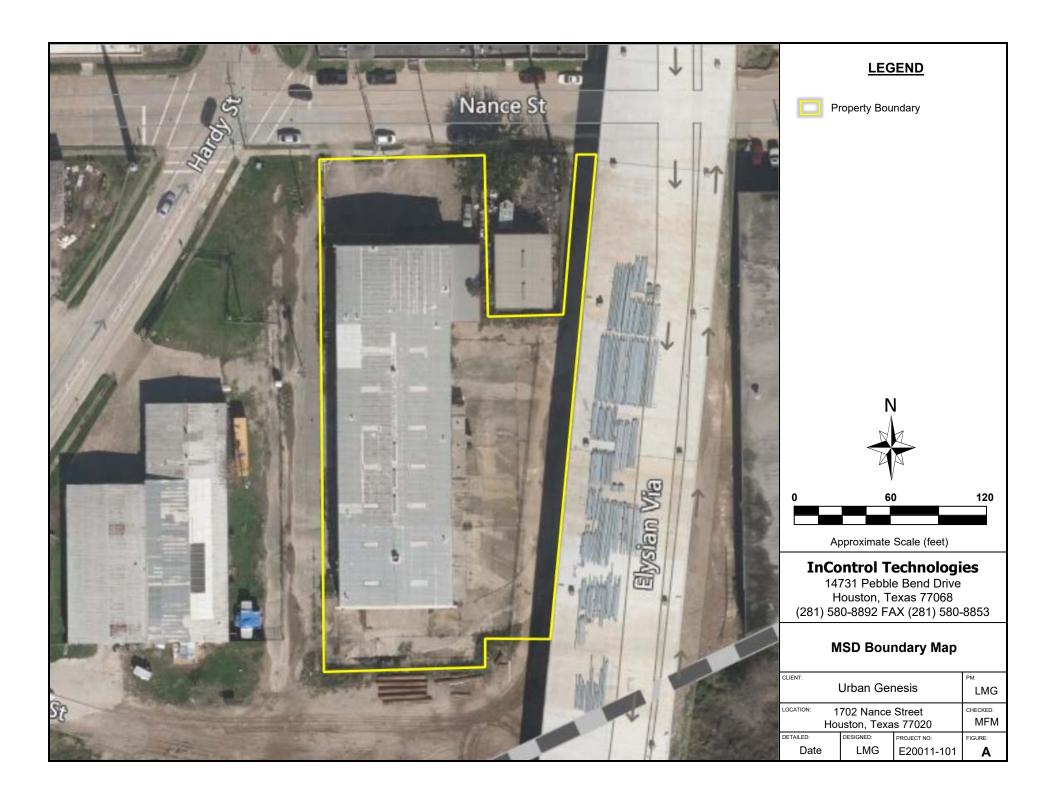
RECORDERS MEMORANDUM
This instrument was received and recorded electronically
and any blackouts, additions or changes were present
at the time the instrument was filed and recorded.

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.

THE TOT HARRIS COUNTY, IN

COUNTY CLERK HARRIS COUNTY, TEXAS



Appendix B

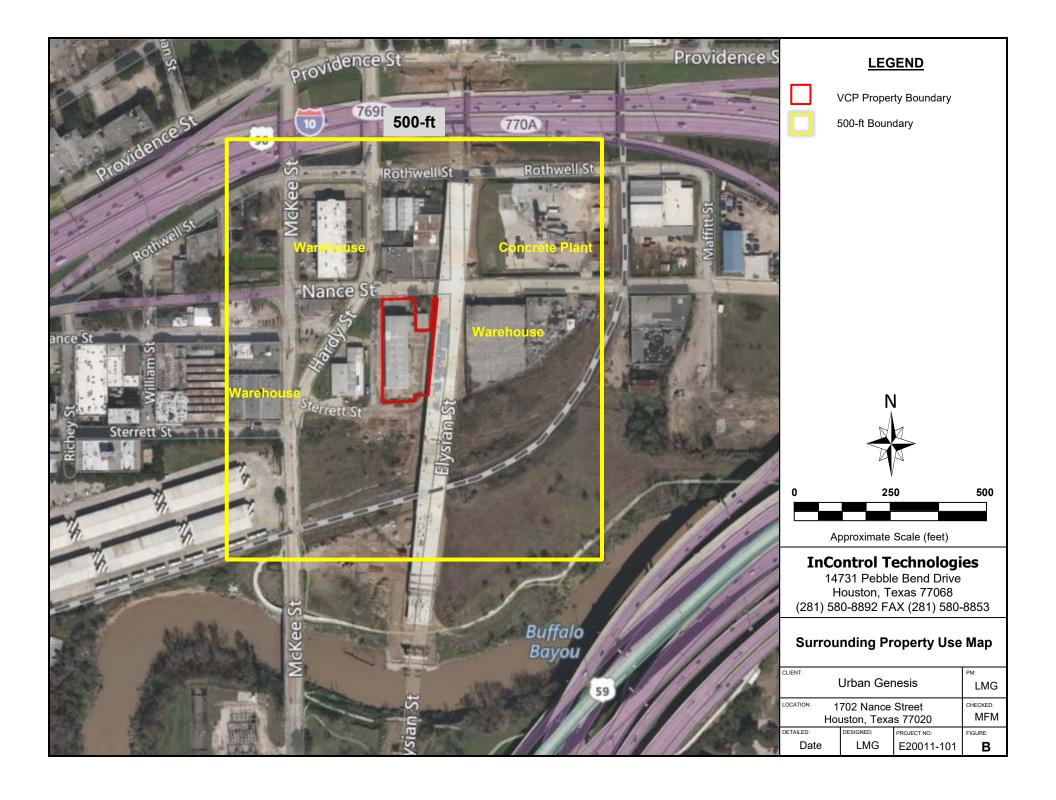
A description of the current use, and, to the extent known, the anticipated use(s), of the designated property and properties within 500 feet of the boundary of the designated property.

The proposed MSD area is 0.9816-acres of land located northeast of downtown Houston, Harris County, Texas. The affected property is in a commercial/industrial land use area of Houston. **Figure B** provides a description of the surrounding land use within 500-feet of the site.

The subject property is currently developed with one vacant warehouse building. The anticipated future use of the property is a multi-family residential development.

The surrounding land use is described as:

- North commercial warehouse buildings and a concrete plant to the northeast;
- East commercial warehouse building;
- South vacant property owned by Harris County Flood Control District, railroad tracks;
- West commercial warehouse building.



Appendix C

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 <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.
- 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.

The following is a listing of figures included in Appendix C.

Figure C1 - Topographic Map

Figure C2 - Watershed Map

Figure C3 – Flood Plain Map

Figure C4a – Tetrachloroethene Concentrations in Groundwater

Figure C4b - Trichloroethene Concentrations in Groundwater

Figure C4c – Cis-1,2-Dichloroethene Concentrations in Groundwater

Figure C5 – Soil Boring Location Map

Figure C6 – Groundwater Monitoring Well Location Map

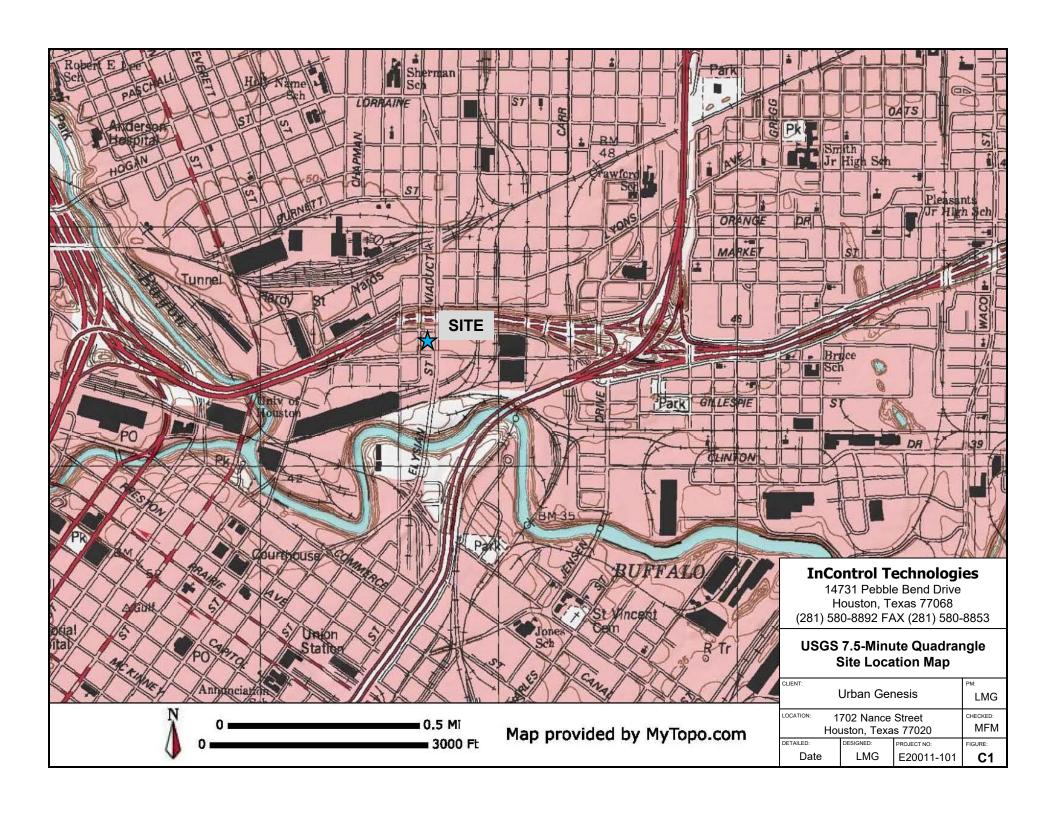
Figure C7 – Groundwater Gradient Map (March 2021)

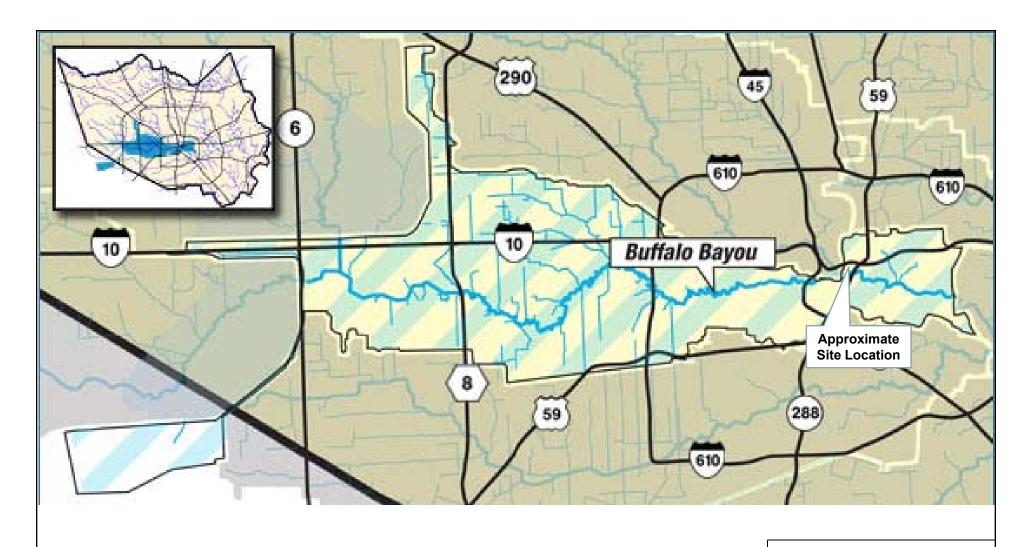
The Site is located within the Buffalo Bayou Watershed and is located primarily outside the 0.2% annual chance (500 year) floodplain (**Figure C2**).

The primary chemicals of concern (COCs) are chlorinated hydrocarbons tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) (**Figures C4a through C4c**).

Figure C4a through **Figure C4c** depicts the groundwater PCLE zones during the most recent sampling event (March 2021). **Figure C5** and **Figure C6** depict the locations of the soil and groundwater samples, respectively. The groundwater gradient flows to the southwest at 0.004 ft/ft (**Figure C7**).

The first groundwater bearing unit is comprised of sand and is encountered at a depth of approximately 15-feet below ground surface (ft bgs) during drilling. The base of the first groundwater bearing unit is encountered at a depth of approximately 29-ft bgs and is underlain by a sandy clay. The average static depth to groundwater in the monitoring wells is 15.5-ft bgs.





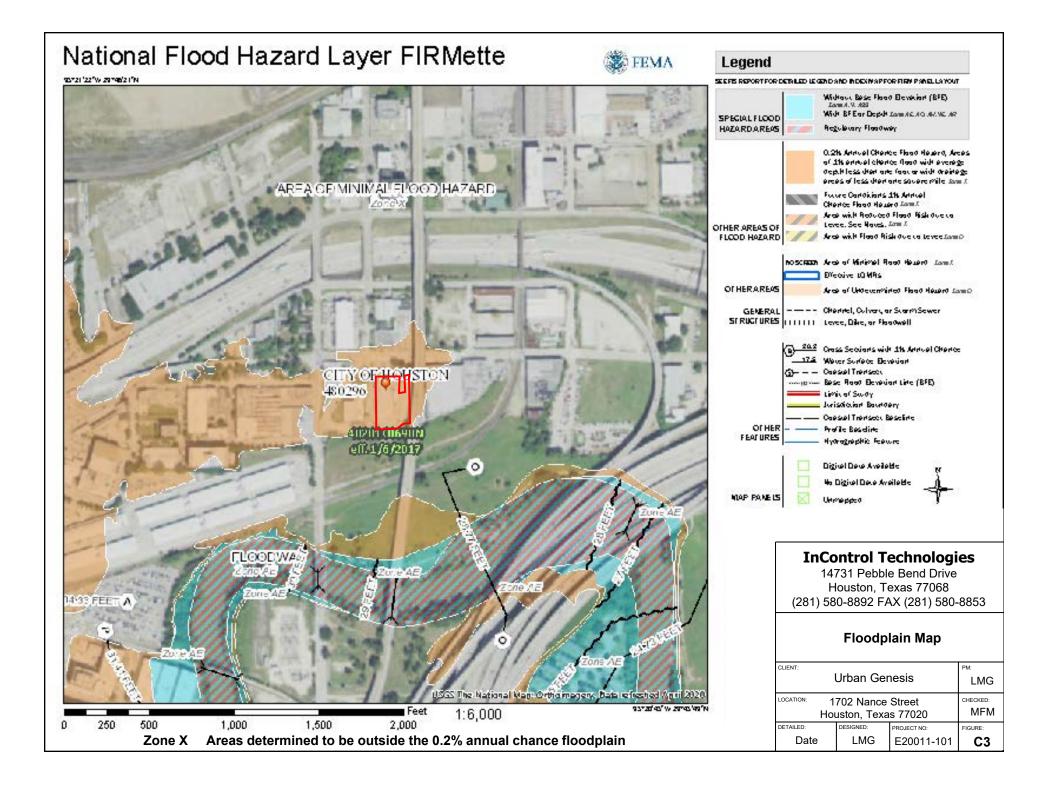
InControl Technologies 14731 Pebble Bend Drive

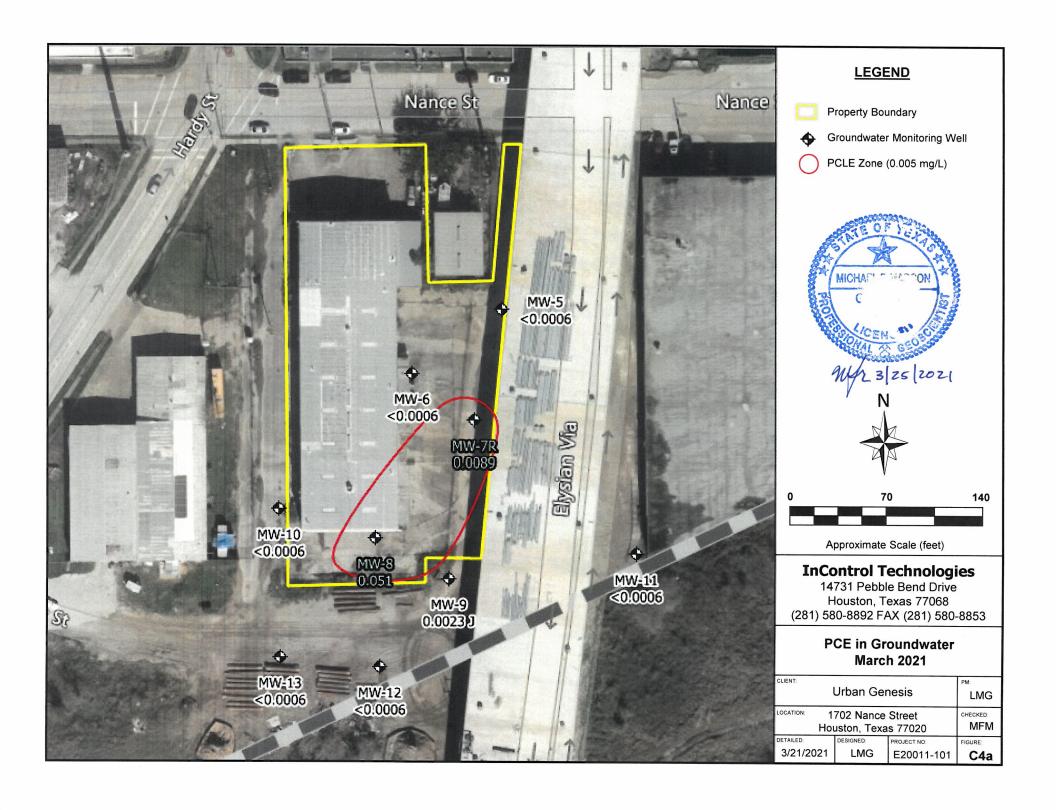
14731 Pebble Bend Drive Houston, Texas 77068 (281) 580-8892 FAX (281) 580-8853

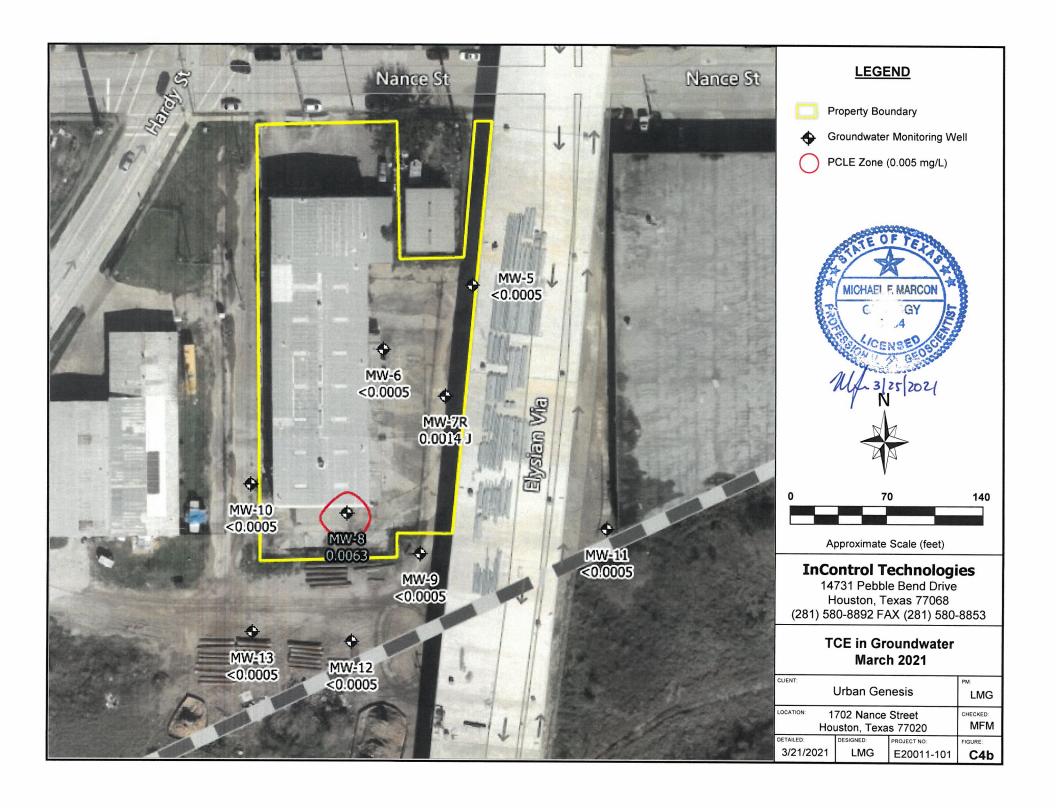
Watershed Map

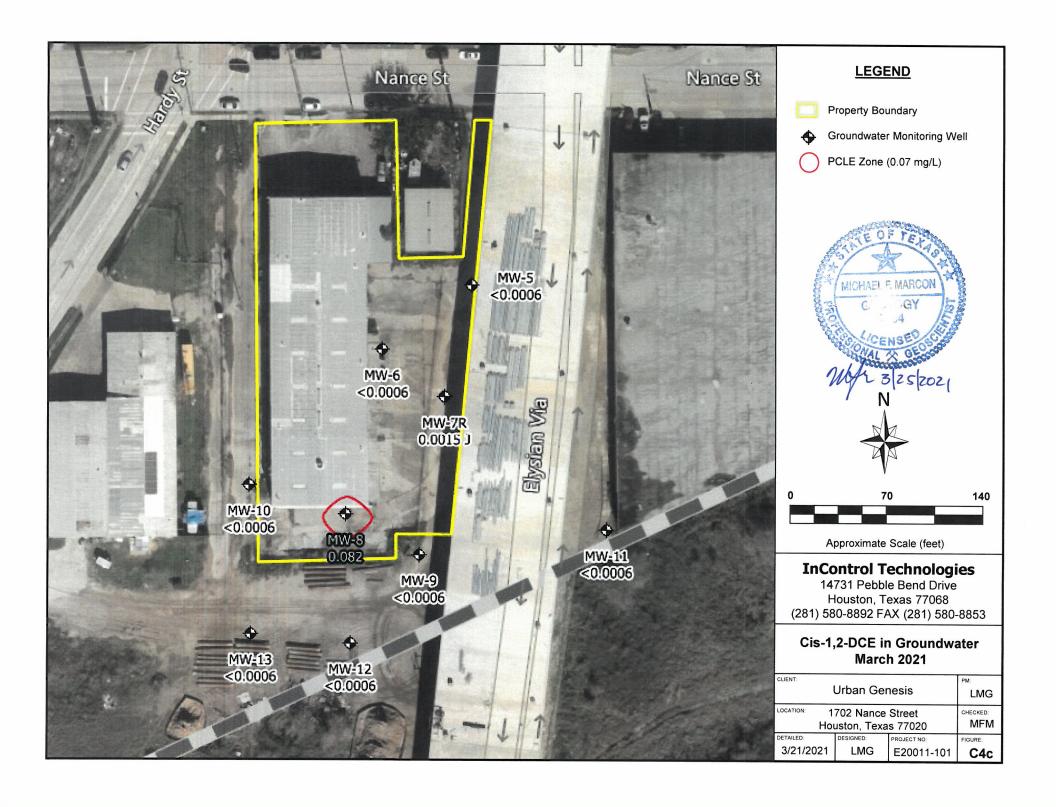
CLIENT:	Urban Gei	nesis	PM: LMG
	1702 Nance Juston, Texa		CHECKED: MFM
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:
Date	LMG	E20011-101	C2

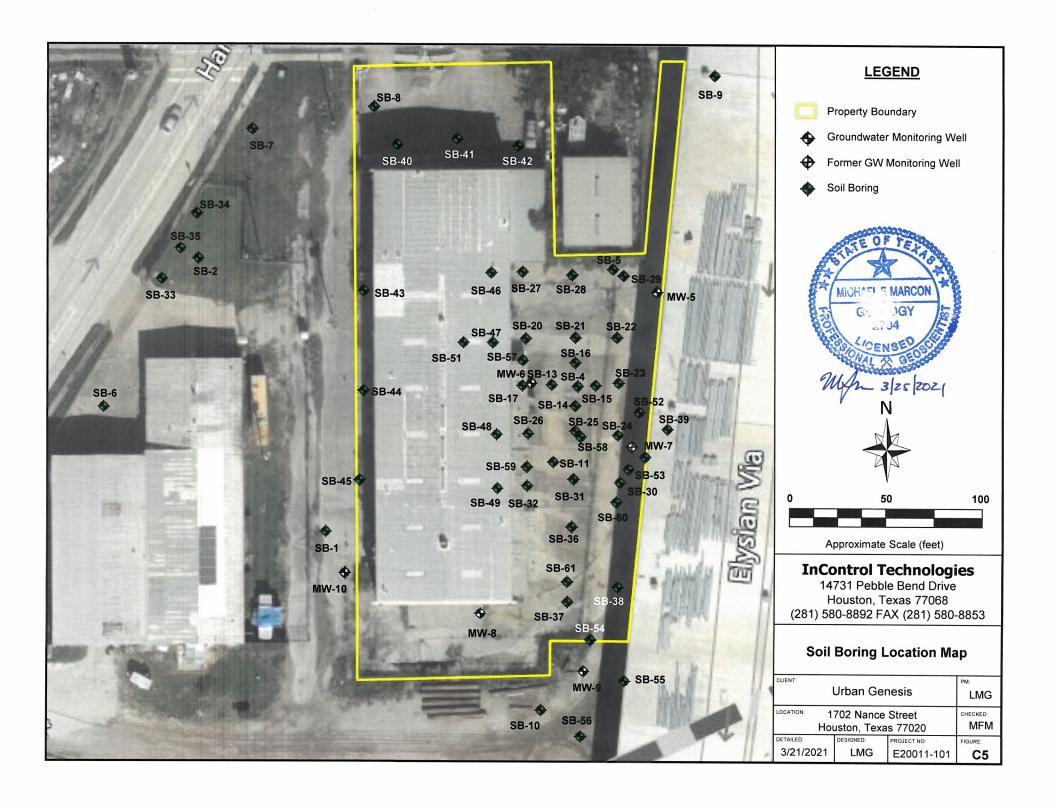
Source: Harris	County	Flood	Control	District
----------------	--------	-------	---------	----------

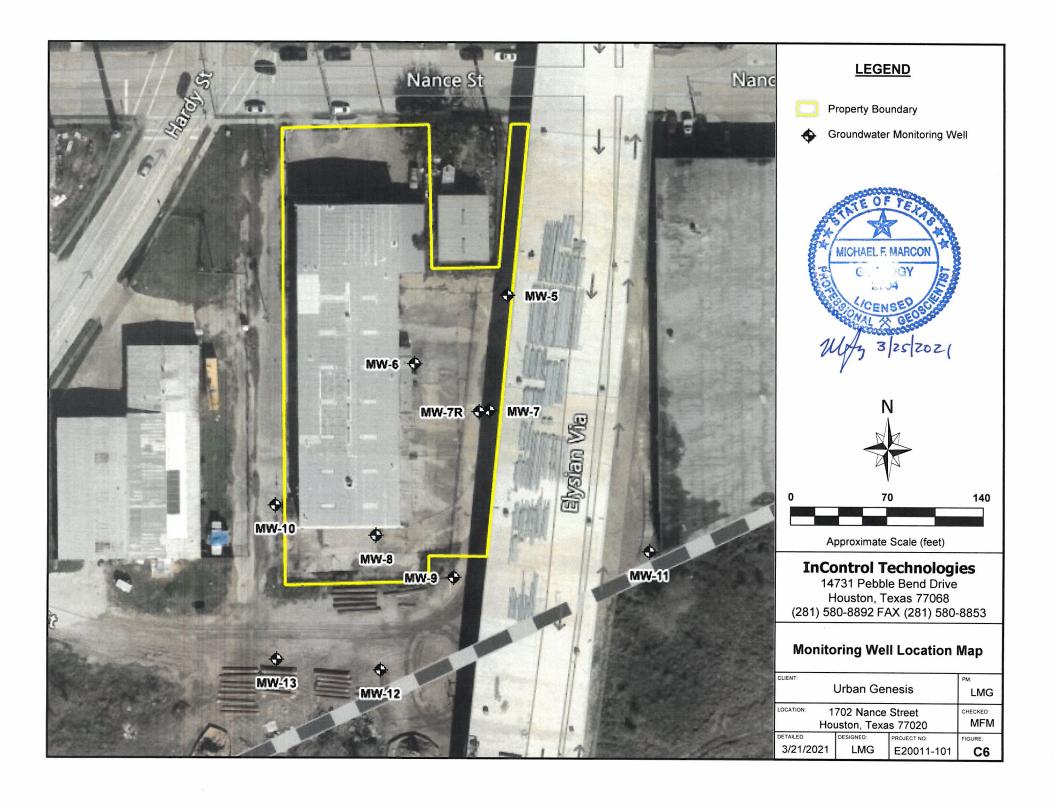


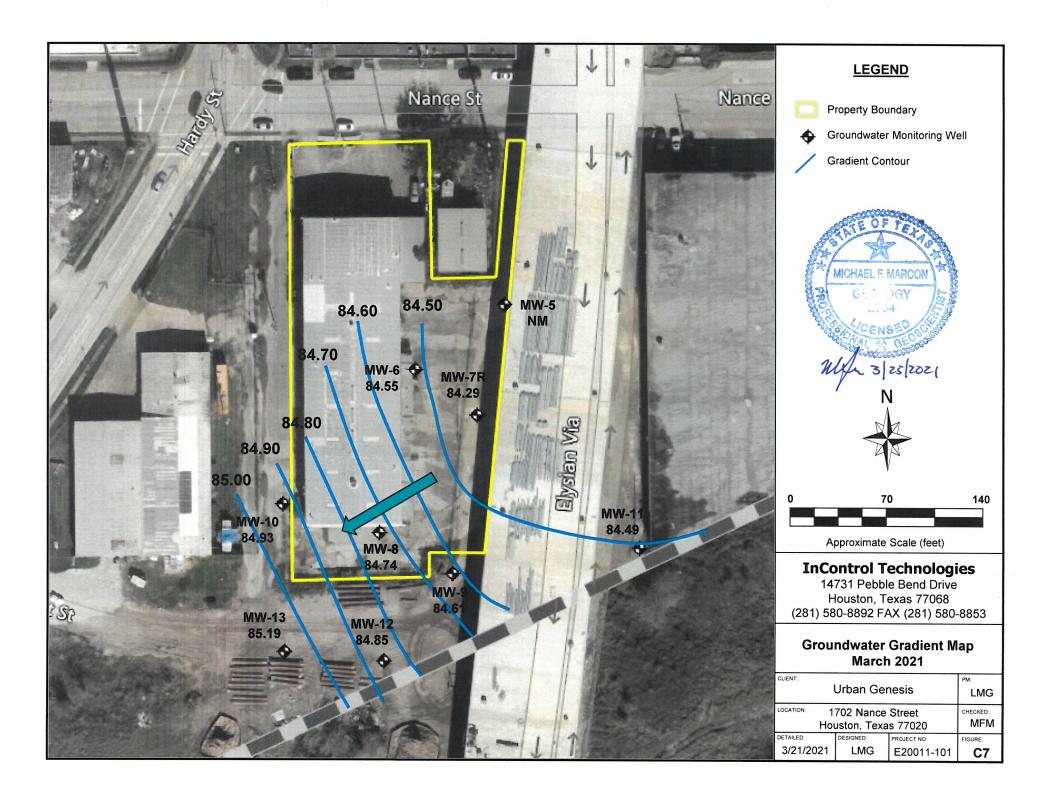












Appendix D

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).

Protective Concentration Level Exceedence (PCLE) Zone – A review of recent groundwater sampling data indicates that the COCs that exceed the Tier 1 ^{GW}GW_{Ing} PCLs are tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE).

The PCLE zones are depicted on **Figures C4a through C4c** and are discussed in more detail below. The area of affected groundwater has been delineated horizontally in all directions and the plume appears to be stable. The current overall PCLE zone is approximately 175-feet long by 70-ft wide. A comparison of the groundwater sampling results with applicable non-ingestion PCLs (AirGWInh-V) indicates that none of the groundwater samples reported a COC concentration above the AirGWInh-V PCL. Therefore, based on the recent groundwater monitoring results, there is no non-ingestion protective concentration level exceedance zone within the proposed MSD boundary.

A comparison of the groundwater sampling results with applicable non-ingestion protective concentration levels (AirGW_{Inh-V}) indicates that none of the groundwater samples reported any COC above a AirGW_{Inh-V} PCL. Therefore, based on the recent groundwater monitoring results, besides the GWGW_{Ing} exceedances, there are no other protective concentration level exceedance zones within the proposed MSD boundary.

The first groundwater bearing unit is comprised of sand and is encountered at a depth of approximately 15-feet below ground surface (ft bgs) during drilling. The base of the first groundwater bearing unit is encountered at a depth of approximately 29-ft bgs and is underlain by a sandy clay. The average static depth to groundwater in the monitoring wells is 15.5-ft bgs.

COC: To	etrachloroethene
Maximum Concentration from analytical data	0.15 mg/L (MW-8; June 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.005 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 175 ft
	Width: 75 ft
	Vertical Extent: 15ft – 30ft below ground surface (bgs)
Non-Ingestion-Based PCL (AirGWInh-V)	500 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemica	I/ Physical Properties
Molecular Weight	165.8 g/mol
Specific Gravity	1.623
Solubility in Water	206 mg/L @ 25°C
Groundwater Migration	along groundwater gradient

COC:	Trichloroethene
Maximum Concentration from analytical data	0.022 mg/L (MW-8; June 2020)
Ingestion-Based PCL (Residential GWGWIng)	0.005 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 35 ft
	Width: 35 ft
	Vertical Extent: 15ft – 30ft below ground surface (bgs)
Non-Ingestion-Based PCL (AirGW _{Inh-V})	24 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemica	l/ Physical Properties
Molecular Weight	131.4 g/mol
Specific Gravity	1.46
Solubility in Water	soluble
Groundwater Migration	along groundwater gradient

COC: Cis-	1,2-Dichloroethene
Maximum Concentration from analytical data	0.33 mg/L (MW-8; June 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.07 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 35 ft
	Width: 35 ft
	Vertical Extent: 15ft – 30ft below ground surface (bgs)
Non-Ingestion-Based PCL (AirGWInh-V)	1200 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemica	I/ Physical Properties
Molecular Weight	96.96 g/mol
Specific Gravity	1.2837
Solubility in Water	6.41X10+3 mg/L at 25 °C
Groundwater Migration	along groundwater gradient

Appendix E

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/L units.
- b. The critical protective concentration level without the municipal setting designation, highlighting any exceedences.

Appendix E contains tables summarizing the concentration levels for the primary chemicals of concern in soil and groundwater. The tables include the concentration level, the ingestion protective concentration limits (^{GW}Soil_{Ing} for soil and ^{GW}GW_{Ing} for groundwater), the non-ingestion protective concentration limits for soil (^{Tot}Soil_{Comb} and ^{Air}Soil_{Inh-V}) and groundwater (^{Air}GW_{Inh-V}), the critical protective concentration limits assuming no MSD is in place (^{GW}Soil_{Ing} for soil and ^{GW}GW_{Ing} for groundwater), and the critical PCLs assuming that an MSD is in place (^{Tot}Soil_{Comb} for soil and ^{Air}GW_{Inh-V} for groundwater). The following is a list of the tables in **Appendix E**.

Table E1 RCRA Metals in Soil

 Table E2
 Volatile Organic Compounds (VOCs) in Soil

 Table E3
 RCRA Metals in Groundwater

 Table E4
 Volatile Organic Compounds (VOCs) in Groundwater

Table E1
Summary of Metals in Soil
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

								7CF NO. 3001								
Sample ID	Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil Comb		15	24	8100	38	52	33000	1300	500	8.3 *	840	310	97	5.3	9900
	Background		1	5.9	300	1.5		30	15	15	0.04	10	0.3		0.7	30
							ONSITE SO	IL BORING LO	CATIONS							
SB-3	0.5-1.5	12/3/2019	1.03	4.73	97.7	0.789	<0.565	15.7	23.7	108	0.0595	9.1	2.56	<0.565	<0.565	174
	2-4	12/3/2019	<0.564	2.48	105	0.928	<0.564	14.2	9.51	35.8	0.378	7.22	2.55	<0.564	<0.564	53.6
	10-12	12/3/2019	<0.561	1.23	12.5	<0.561	<0.561	4.29	1.37	3.56	<0.00401	2.31	1.06	<0.561	<0.561	5.9
	30-32	12/3/2019	<0.564	4.86	74.8	0.935	<0.564	22.1	9.06	7.97	<0.00412	20.1	2.23	<0.564	<0.564	37.4
SB-4	0.5-1.5	12/3/2019	2.72	6.24	354	0.762	<0.558	16.6	226	523	0.0221	15.4	2.19	<0.558	<0.558	765
	2-4	12/3/2019	<0.563	2.52	88.7	0.725	<0.563	16.1	20.7	34.6	0.0166	8.38	1.72	<0.563	<0.563	60.9
	18-20	12/3/2019	<0.624	0.986	60.4	<0.624	<0.624	8.06	3.52	8.35	0.012	4.07	1.39	<0.624	<0.624	12.6
SB-5	0.5-1.5	12/3/2019	<0.561	2.5	100	<0.561	<0.561	9.96	7.63	52.1	0.0285	6.23	1.86	<0.561	<0.561	47.1
	1.5-3.5	12/3/2019	<0.549	2.42	83.3	0.917	<0.549	17.1	10.7	26.2	0.00836	9.17	2.02	<0.549	<0.549	30.6
	13-15	12/3/2019	<0.521	<0.521	9.1	<0.521	<0.521	4.89	2.82	5.63	<0.00409	1.91	0.706	<0.521	<0.521	6.02
	30-32	12/3/2019	<0.579	5.8	90.8	0.855	<0.579	16	9.76	12.9	0.00423	16.3	3.85	<0.579	<0.579	31.8
SB-8	0.5-1.5	12/3/2019	<0.517	0.701	10.6	<0.517	<0.517	4.03	1.22	5.48	<0.00377	1.79	0.629	<0.517	<0.517	9.07
	2-4	12/3/2019	<0.5	0.75	9.94	<0.5	<0.5	5.36	0.952	3.98	<0.00363	1.95	0.962	<0.5	<0.5	6.18
	18-20	12/3/2019	<0.539	3.09	50.5	<0.539	<0.539	5.15	2.62	3.98	<0.00406	7.84	1.81	<0.539	<0.539	8.02
SB-13	0.5-1.5	12/20/2019	-	-	-	-	-	-	-	3360	-	-	-	-	-	-
	2-4	12/20/2019	-	-	-	-	-	-	-	1170	-	-	-	-	-	-
	6-8	12/20/2019	-	-	-	-	-	-	-	39.5	-	-	-	-	-	-
SB-14	0.5-1.5	12/20/2019	-	-	-	-	-	-	-	107	-	-	-	-	-	-
	2-4	12/20/2019	-	-	-	-	-	-	-	12.4	-	-	-	-	-	-
	6-8	12/20/2019	-	-	-	-	-	-	-	88.3	-	-	-	-	-	-
SB-15	0.5-1.5	12/20/2019	-	-	-	-	-	-	-	466	-	-	-	-	-	-
	2-4	12/20/2019	-	-	-	-	-	-	-	10.4	-	-	-	-	-	-
	6-8	12/20/2019	-	-	-	-	-	-	-	248	-	-	-	-	-	-
SB-16	0.5-1.5	12/20/2019	-	-	-	-	-	-	-	322	-	-	-	-	-	-
	2-4	12/20/2019	-	-	-	-	-	-	-	166	-	-	-	-	-	-
	6-8	12/20/2019	-	-	-	-	-	-	-	497	-	-	-	-	-	-
SB-17	0.5-1.5	12/20/2019	-	-	-	-	-	-	-	935	-	-	-	-	-	-
	2-4	12/20/2019	-	-	-	-	-	-	-	1120	-	-	-	-	-	-
	6-8	12/20/2019	-	-	-	-	-	-	-	1770	-	-	-	-	-	-
SB-20	1-2	3/6/2020	-	11.5	124	-	0.673	13.7	-	1270	0.416	-	1.89	0.582	-	-
	4-5	3/6/2020	-	1.86	34.3	-	0.0647 J	13.7	-	27.6	0.013	-	0.227 J	0.0557 J	-	-
	8-10	3/6/2020	-	3.12	113	-	1.03	9.79	-	700	0.342	-	0.228 J	0.392 J	-	-
SB-21	1-2	3/6/2020	-	11.9	142	-	0.356 J	14.1	-	562	0.201	-	1.4	0.225 J	-	-
	3-4	3/6/2020	-	2.6	128	-	0.0393 J	14.9	-	9.71	0.00326 J	-	<0.102	0.0171 J	-	-
	8-10	3/6/2020	-	2.28	80.6	-	0.947	14.7	-	172	0.313	-	0.312 J	0.198 J	-	-

Table E1
Summary of Metals in Soil
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

								7CF NO. 3001								
Sample ID	Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	TotSoil _{Comb}		15	24	8100	38	52	33000	1300	500	8.3 *	840	310	97	5.3	9900
	Background		1	5.9	300	1.5		30	15	15	0.04	10	0.3		0.7	30
SB-22	2-3	3/6/2020	-	31.4	113	-	21.2	14.4	-	23300	1.29	-	1.47	11.1	-	-
	4-5	3/6/2020	-	1.23	50.1	-	0.175 J	10.7	-	136	0.0531	-	0.185 J	0.0834 J	-	-
	8-10	3/6/2020	-	3.56	131	-	0.121 J	8.95	-	82.8	0.171	-	0.96	0.161 J	-	-
SB-23	4-5	3/6/2020	-	18.2	152	-	11.4	16.8	-	15900	0.716	-	0.896	7.2	-	-
	6-7	3/6/2020	-	1.23	43.7	-	0.802	9.61	-	453	0.0379	-	0.151 J	0.241 J	-	-
	8-10	3/6/2020	-	1.51	145	-	0.268 J	13.7	-	29.5	0.0337	-	0.417 J	0.0378 J	-	-
SB-24	4-5	3/6/2020	-	20.2	10600	-	13.4	50.9	-	6770	0.552	-	<0.0993	1.44	-	-
	6-7	3/6/2020	-	0.785	145	-	<0.0293	8.89	-	11.7	0.00839	-	0.146 J	0.0326 J	-	-
	8-10	3/6/2020	-	0.618	76.2	-	<0.0296	9.47	-	13.3	0.00741	-	0.105 J	0.0268 J	-	-
SB-25	1-2	3/6/2020	-	45.3	1060	-	15.6	48.1	-	29300	0.195	-	1.69	14.4	-	-
	3-4	3/6/2020	-	0.971	105	-	0.101 J	13.9	-	104	0.0103	-	0.267 J	0.0848 J	-	-
	8-10	3/6/2020	-	4.54	110	-	0.577	5.92	-	611	0.546	-	0.197 J	0.419 J	-	-
SB-26	1-2	3/6/2020	-	7.74	426	-	0.852	16.3	-	747	0.222	-	0.343 J	0.769	-	-
	3-4	3/6/2020	-	4.22	115	-	0.21 J	7.18	-	247	0.839	-	0.247 J	0.2 J	-	-
	8-10	3/6/2020	ı	5.48	109	-	0.308 J	7.42	-	224	0.179	-	0.133 J	0.564	-	-
SB-27	1-2	3/6/2020	-	6.2	338	-	1.79	14.1	-	1430	0.261	-	0.334 J	1.58	-	-
	3-4	3/6/2020	-	4.46	355	-	2.03	16.4	-	1300	0.483	-	0.837	0.523 J	-	-
	8-10	3/6/2020	-	2.15	70.6	-	0.109 J	6.65	-	52.3	0.149	-	0.173 J	0.1 J	-	-
SB-28	2-3	3/6/2020	-	2.45	188	-	1.17	11.8	-	558	0.512	-	0.31 J	0.471 J	-	-
	4-5	3/6/2020	-	1.51	20	-	0.174 J	4.95	-	17.8	0.0357	-	0.11 J	0.0485 J	-	-
	8-10	3/6/2020	-	2.49	116	-	0.0334 J	13.9	-	12.3	0.00537	-	0.167 J	0.0282 J	-	-
SB-29	3-4	3/6/2020	-	32.5	128	-	25	19.8	-	33000	0.456	-	1.73	10.4	-	-
	5-6	3/6/2020	-	1.29	44.1	-	0.191 J	7.59	-	130	0.0442	-	0.135 J	0.0752 J	-	-
	8-10	3/6/2020	-	0.906	45.5	-	<0.0309	11.5	-	16.6	0.00642	-	0.186 J	0.0231 J	-	-
SB-30	1-2	3/6/2020	-	17.3	365	-	6.01	24.5	-	4000	0.192	-	<0.196	4.39	-	-
	3-4	3/6/2020	-	2.41	61.2	-	1.02	14.4	-	389	0.0326	-	0.291 J	0.276 J	-	-
	8-10	3/6/2020	-	2.86	85.3	-	0.785	9.99	-	612	0.14	-	0.21 J	0.264 J	-	-
SB-31	3-4	3/6/2020	-	3.54	167	-	0.49 J	11.3	-	379	0.0801	-	0.257 J	0.19 J	-	-
	5-6	3/6/2020	-	2.25	100	-	0.507 J	13.7	-	70.5	0.192	-	0.292 J	0.0873 J	-	-
	8-10	3/6/2020	-	2.72	144	-	0.214 J	12.8	-	305	0.528	-	0.258 J	0.352 J	-	-
SB-32	1-2	3/6/2020	-	24.5	420	-	21.8	15.6	-	28800	0.406	-	1.51	11.6	-	-
	4-5	3/6/2020	-	5.65	152	-	0.181 J	17.5	-	174	0.172	-	0.268 J	0.168 J	-	-
	8-10	3/6/2020	-	8.97	121	-	7.13	10.2	-	7270	0.0832	-	0.525 J	3.1	-	-
SB-36	1-2	3/6/2020	-	15.7	937	-	9.76	34.1	-	6230	0.787	-	<0.533	5.91	-	-
SB-37	2-3	3/6/2020	-	25.1	887	-	6.1	58.5	-	1920	0.709	-	<0.198	4.18	-	-
SB-38	1-2	3/6/2020	-	4.47	50	-	0.0576 J	11.9	-	61.5	0.0602	-	0.17 J	0.0398 J	-	-

Table E1
Summary of Metals in Soil
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

_																
Sample ID	Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil Comb		15	24	8100	38	52	33000	1300	500	8.3 *	840	310	97	5.3	9900
	Background		1	5.9	300	1.5		30	15	15	0.04	10	0.3		0.7	30
SB-40	3-4	3/30/2020	-	0.705	8.69	-	<0.0293	4.02	-	4.83	0.00774	-	0.153 J	0.0384 J	-	-
SB-41	3-4	3/30/2020	-	2.15	40.8	-	0.059 J	9.75	-	9.58	0.0156	-	0.146 J	0.0347 J	-	-
SB-42	3-4	3/30/2020	-	1.04	26.3	-	<0.0285	6.79	-	5.91	0.00224 J	-	0.21 J	0.0227 J	-	-
SB-43	3-4	3/30/2020	-	1.36	54.3	-	<0.0298	12.1	-	6.7	0.00316 J	-	0.186 J	0.0261 J	-	-
SB-44	3-4	3/30/2020	-	0.533 J	54.3	-	<0.0293	9.21	-	7.67	0.00198 J	-	0.184 J	0.0218 J	-	-
SB-45	3-4	3/30/2020	-	1.4	82.1	-	<0.0316	14.6	-	8.31	0.00417	-	0.446 J	0.0204 J	-	-
SB-46	2-3	4/28/2020	-	-	-	-	-	-	-	1100	-	-	-	-	-	-
	4-5	4/28/2020	-	-	-	-	-	-	-	827	-	-	-	-	-	-
SB-47	2-3	4/28/2020	-	-	-	-	-	-	-	247	-	-	-	-	-	-
SB-48	2-3	4/28/2020	-	-	-	-	-	-	-	886	-	-	-	-	-	-
	4-5	4/28/2020	-	-	-	-	-	ı	-	4750	-	-	-	-	-	-
SB-49	2-3	4/28/2020	-	-	-	-	-	-	-	277	-	-	-	-	-	-
	4-5	4/28/2020	-	-	-	-	-	ı	-	267	-	-	-	-	-	-
SB-51	2-3	4/28/2020	-	-	-	-	-	-	-	139	-	-	-	-	-	-
	4-5	4/28/2020	-	-	-	-	-	-	-	655	-	-	-	-	-	-
SB-57	12	2/12/2021								6.41						
SB-58	12	2/12/2021								30.8						
SB-59	12	2/12/2021								76.4						
SB-60	12	2/12/2021								5.64						
SB-61	12	2/12/2021		1.26												
MW-5	1-2	3/4/2020	-	4.36	377	-	1.64	26.9	-	1170	5.01	-	0.54 J	0.598	-	-
	2-3	3/4/2020	-	1.57	44.5	-	0.0455 J	16.4	-	21.8	0.0331	-	0.227 J	0.0354 J	-	-
	8-10	3/4/2020	-	1.73	31.5	-	<0.0327	8.86	-	7.06	0.00438	-	0.128 J	0.0198 J	-	-
MW-6	1-2	3/5/2020	-	5.18	142	-	0.866	10.9	-	725	1.03	-	0.506 J	0.432 J	-	-
	3-4	3/5/2020	-	2.92	120	-	0.353 J	16.1	-	359	0.094	-	0.281 J	0.23 J	-	-
	8-10	3/5/2020	-	1.71	33.2	-	0.121 J	7.05	-	99.6	0.0477	-	0.161 J	0.0823 J	-	-
MW-7	1-2	3/4/2020	-	33.1	1960	-	5.94	56.1	-	3530	0.677	-	0.169 J	8.59	-	-
	3-4	3/4/2020	-	2.54	156	-	0.263 J	13.6	-	73.1	0.0448	-	0.192 J	0.195 J	-	-
	8-10	3/4/2020	-	0.501 J	14	-	0.295 J	5.64	-	8.12	0.00814	-	<0.106	0.0256 J	-	-
MW-8	1-2	3/5/2020	-	1.34	50.6	-	<0.0297	15.3	-	10.1	0.0144	-	0.203 J	0.0181 J	-	-
	4-5	3/5/2020	-	0.746	20.2	-	<0.0294	7.38	-	5.14	0.00371 J	-	0.14 J	0.0183 J	-	-
	8-10	3/5/2020	-	0.724	22.1	-	<0.0294	4.84	-	3.79	0.00431	-	0.111 J	<0.0163	-	-

Table E1
Summary of Metals in Soil
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

								701 140. 3001								
Sample ID	Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil Comb		15	24	8100	38	52	33000	1300	500	8.3 *	840	310	97	5.3	9900
	Background		1	5.9	300	1.5		30	15	15	0.04	10	0.3		0.7	30
							OFFSITE SO	OIL BORING LC	CATIONS							
SB-1	0.5-1.5	12/3/2019	<0.578	1.42	67.2	<0.578	<0.578	16.4	6.75	12	0.00524	6.27	1.66	<0.578	<0.578	22.2
	2-4	12/3/2019	<0.543	1.97	56.2	0.695	<0.543	12.9	4.44	7.11	<0.00413	6.08	1.71	<0.543	<0.543	15.5
	12-14	12/3/2019	<0.536	0.737	61.7	<0.536	<0.536	9.15	1.98	4.52	<0.00401	4.12	1.39	<0.536	<0.536	8.47
	30-32	12/3/2019	<0.569	10.6	141	1.29	<0.569	24.9	13.1	12	<0.00413	24.4	2.73	<0.569	<0.569	44.4
SB-2	0.5-1.5	12/3/2019	<0.517	1.08	72.7	<0.517	<0.517	9.09	2.62	6.39	0.00929	3.91	1.16	<0.517	<0.517	13.1
	2-4	12/3/2019	<0.549	2.7	35.3	<0.549	<0.549	7.59	9.13	37	0.0148	6.41	1.42	<0.549	<0.549	46.6
	11-13	12/3/2019	<0.532	1.99	13.1	<0.532	<0.532	2.99	1.97	4.44	<0.00389	1.87	1.31	<0.532	<0.532	4.31
	30-32	12/3/2019	<0.518	12.3	109	<0.518	<0.518	6.15	3.06	2.84	<0.00405	5.49	0.863	<0.518	<0.518	7.83
SB-6	0.5-1.5	12/3/2019	<0.594	2.13	40.2	<0.594	<0.594	15.4	5.4	9.58	0.00828	4.31	1.32	<0.594	<0.594	14.6
	2-4	12/3/2019	<0.558	2	103	1.03	<0.558	17.2	7.86	15	0.00488	6.65	2.55	<0.558	<0.558	22.4
	18-20	12/3/2019	<0.554	2.29	132	1	<0.554	10.9	5.02	20.4	<0.00427	15.3	3.05	<0.554	<0.554	16.3
SB-7	0.5-1.5	12/3/2019	< 0.539	1.34	87.9	<0.539	<0.539	12.9	5.67	20.3	0.0311	4.86	1.64	<0.539	<0.539	27.6
	2-4	12/3/2019	<0.551	1.75	88.5	<0.551	<0.551	12.9	4.62	12.7	0.0115	5.05	2.01	<0.551	<0.551	20.6
	18-20	12/3/2019	<0.538	5.57	43	1.22	<0.538	8.28	4.57	7.86	<0.00399	16.5	18.3	<0.538	<0.538	14.2
SB-9	0.5-1.5	12/3/2019	< 0.514	1.35	36.3	<0.514	<0.514	4.28	6	183	0.1	2.41	0.812	<0.514	<0.514	37
	2-4	12/3/2019	<0.554	1.25	150	<0.554	<0.554	9.58	2.82	7.44	0.00429	5.06	1.71	<0.554	<0.554	12
	14-16	12/3/2019	<0.561	<0.561	9.09	<0.561	<0.561	3.34	1.26	2.36	<0.00416	3.68	0.897	<0.561	<0.561	4.84
SB-10	0.5-1.5	12/3/2019	<0.544	4.39	83.2	<0.544	<0.544	9.99	35.4	58.2	0.265	6.56	1.53	<0.544	<0.544	60.7
	4-6	12/3/2019	<0.539	5.13	113	<0.539	0.846	11.5	28.6	101	0.108	6.55	1.33	<0.539	<0.539	230
	16	12/3/2019	<0.543	<0.543	9.44	<0.543	<0.543	3.01	1.03	2.69	<0.00414	1.18	0.634	<0.543	<0.543	3.68
SB-33	1-2	3/6/2020	-	1.14	32.9	-	0.35 J	2.13	-	52.8	0.0828	-	< 0.0936	0.12 J	-	-
	3-4	3/6/2020	-	1.7	37.5	-	0.0391 J	10.7	-	9.92	0.0207	-	0.158 J	0.027 J	-	-
	8-10	3/6/2020	-	0.87	19.8	-	<0.0291	4.87	-	4.68	0.00533	-	0.124 J	<0.0161	-	-
SB-34	1-2	3/6/2020	-	0.939	47.1	-	0.121 J	4.24	-	121	0.0903	-	0.138 J	0.192 J	-	-
	3-4	3/6/2020	-	1.2	25	-	<0.0295	13.5	-	9.21	0.00387 J	-	0.336 J	<0.0164	-	-
	8-10	3/6/2020	-	0.548 J	19	-	<0.0301	8.99	-	6.36	0.00178 J	-	0.115 J	< 0.0167	-	-
SB-35	1-2	3/6/2020	-	2.03	122	-	0.358 J	5.29	-	349	0.894	-	<0.0951	0.197 J	-	-
	3-4	3/6/2020	-	1.25	34	-	<0.0299	13	-	8.86	0.00406	-	0.239 J	<0.0166	-	-
	8-10	3/6/2020	-	0.307 J	13	-	<0.0284	7.67	-	3.39	0.00327 J	-	<0.0956	<0.0158	-	-
SB-39	1-2	3/6/2020	-	4.7	70.4	-	0.41 J	5.58	-	282	0.205	-	0.113 J	0.109 J	-	-
MW-9	1-2	3/4/2020	-	18.9	768	-	3.39	38.6	-	3720	0.598	-	0.199 J	3.79	-	-
	4-5	3/4/2020	-	2.1	104	-	0.0773 J	10.5	-	70.2	0.192	-	0.258 J	0.0986 J	-	-
	8-10	3/4/2020	-	1.9	83.6	-	0.219 J	7.09	-	146	0.446	-	0.268 J	0.148 J	-	-

Table E1 Summary of Metals in Soil 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil Comb		15	24	8100	38	52	33000	1300	500	8.3 *	840	310	97	5.3	9900
	Background		1	5.9	300	1.5		30	15	15	0.04	10	0.3		0.7	30
MW-10	3-4	3/30/2020	-	1.88	71.6	-	<0.0295	14.4	-	7.44	0.0082	-	0.457 J	0.0413 J	-	-
	8-10	3/30/2020	1	0.681	21.3	-	<0.0306	3.6	-	4.49	0.00303 J	-	<0.103	0.0305 J	-	-
MW-11	4-5	3/30/2020	-	20.4	238	-	1.49	24.7	-	826	0.271	-	0.415 J	0.53	-	-
	10-11	3/30/2020	-	1.56	32.4	-	<0.0303	5.06	-	26.6	0.0395	-	0.153 J	0.049 J	-	-
	14-15	3/30/2020	-	0.621	33.4	-	<0.0297	12.5	-	11.1	0.00408 J	-	0.157 J	0.0219 J	-	-

Notes:

Exceeds Tot Soil Comb

<: Analyte was not detected at or above the reported sample detection limit

J: Analyte was detected at the concentration less than the method detection limit

^{*} Sample SB-13 (0.5-1.5) was analyzed for pH. This sample reported a pH of 9.81. The Total Soil Combined PCL for mercury was elevated from 3.6 mg/kg to 8.3 mg/kg.

Table E2 Summary of Volatile Organic Compounds in Soil 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

						10.	NO. 3081							
Sample ID	Depth (ft)	Date	a کار Span Tetrachloroethene	m Trichloroethene	a % cis-1,2-Dichloroethene	a پ پ trans-1,2-Dichloroethene	By/ga Winyl chloride	a 1,1-Dichloroethene	mg/kg	mg/kg	g Carbon disulfide	methyl acetate	Maphthalene	Tolnene
Residential	Tot Soil Comb		710	18	140	590	3.7	2300	66000	120	4600	82000	220	5900
Residential	^{GW} Soil _{Ing}		0.05	0.034	0.25	0.49	0.022	0.05	43	0.026	14	49	31	8.2
	•			•	•	ONSITE BOR	ING LOCATI	ONS		•			•	
SB-3	0.5-1.5	12/3/2019	0.022	<0.0051	<0.0051	<0.0051	<0.0021	<0.0051	<0.021	<0.0051	<0.01	<0.0051	-	<0.0051
	2-4	12/3/2019	0.025	<0.0048	<0.0048	<0.0048	<0.0019	<0.0048	<0.019	<0.0048	<0.0097	<0.0048	-	<0.0048
	10-12	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0092	<0.0046	-	<0.0046
	30-32	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0092	<0.0046	-	<0.0046
SB-4	0.5-1.5	12/3/2019	<0.0051	<0.0051	<0.0051	<0.0051	<0.002	<0.0051	<0.02	<0.0051	<0.01	<0.0051	-	<0.0051
	2-4	12/3/2019	<0.0052	<0.0052	<0.0052	<0.0052	<0.0021	<0.0052	<0.021	<0.0052	<0.01	<0.0052	-	<0.0052
	18-20	12/3/2019	<0.0055	<0.0055	<0.0055	<0.0055	<0.0022	<0.0055	<0.022	<0.0055	<0.011	<0.0055	-	<0.0055
SB-5	0.5-1.5	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0019	<0.0046	<0.019	<0.0046	<0.0093	<0.0046	-	<0.0046
	1.5-3.5	12/3/2019	<0.0051	<0.0051	<0.0051	<0.0051	<0.002	<0.0051	<0.02	<0.0051	<0.01	<0.0051	-	<0.0051
	13-15	12/3/2019	<0.0044	<0.0044	<0.0044	<0.0044	<0.0018	<0.0044	<0.018	<0.0044	<0.0088	<0.0044	-	<0.0044
	30-32	12/3/2019	<0.0044	<0.0044	<0.0044	<0.0044	<0.0018	<0.0044	<0.018	<0.0044	<0.0089	<0.0044	-	<0.0044
SB-8	0.5-1.5	12/3/2019	<0.0043	<0.0043	<0.0043	<0.0043	<0.0017	<0.0043	<0.017	<0.0043	<0.0085	<0.0043	-	<0.0043
	2-4	12/3/2019	<0.0042	<0.0042	<0.0042	<0.0042	<0.0017	<0.0042	<0.017	<0.0042	<0.0085	<0.0042	-	<0.0042
	18-20	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0091	<0.0046	-	<0.0046
SB-11	0.5-1.5	12/20/2019	<0.0044	<0.0044	<0.0044	<0.0044	<0.0018	<0.0044	<0.018	<0.0044	<0.0089	<0.0044	-	<0.0044
	2-4	12/20/2019	0.0056	<0.0044	<0.0044	<0.0044	<0.0017	<0.0044	<0.017	<0.0044	<0.0087	<0.0044	-	<0.0044
	12-14	12/20/2019	0.017	<0.0055	<0.0055	<0.0055	<0.0022	<0.0055	<0.022	<0.0055	<0.011	<0.0055	-	<0.0055
	30-32	12/20/2019	<0.0045	<0.0045	<0.0045	<0.0045	<0.0018	<0.0045	<0.018	<0.0045	<0.0091	<0.0045	-	<0.0045
MW-5	1-2	3/4/2020	<0.00068	<0.00058	<0.00077	<0.00048	<0.00077	<0.00048	<0.0019	<0.00048	<0.00058	NAF	0.13	<0.00058
	2-3	3/4/2020	<0.00066	<0.00056	<0.00075	<0.00047	<0.00075	<0.00047	<0.0019	<0.00047	<0.00056	NAF	<0.00075	<0.00056
	8-10	3/4/2020	<0.00072	<0.00062	<0.00082	<0.00051	<0.00082	<0.00051	<0.002	<0.00051	<0.00062	NAF	<0.00082	<0.00062
MW-6	1-2	3/5/2020	<0.00094	<0.0008	<0.0011	<0.00067	<0.0011	<0.00067	<0.0027	<0.00067	<0.0008	NAF	<0.0011	<0.0008
	3-4	3/5/2020	0.0012 J	<0.00064	<0.00085	<0.00053	<0.00085	<0.00053	<0.0021	<0.00053	<0.00064	NAF	<0.00085	<0.00064
	8-10	3/5/2020	<0.00065	<0.00056	<0.00074	<0.00046	<0.00074	<0.00046	<0.0019	<0.00046	<0.00056	NAF	<0.00074	0.0016 J
MW-7	1-2	3/4/2020	0.19	<0.00085	<0.0011	<0.00071	<0.0011	<0.00071	<0.0028	0.0022 J	<0.00085	NAF	<0.0011	0.0019 J
	3-4	3/4/2020	0.0053	<0.0006	<0.0008	<0.0005	<0.0008	<0.0005	<0.002	<0.0005	<0.0006	NAF	<0.0008	<0.0006
	8-10	3/4/2020	0.0013 J	<0.00063	<0.00083	<0.00052	<0.00083	<0.00052	<0.0021	<0.00052	<0.00063	NAF	<0.00083	<0.00063
MW-8	1-2	3/5/2020	0.021	0.0018 J	0.0013 J	<0.00048	<0.00076	<0.00048	<0.0019	<0.00048	<0.00057	NAF	<0.00076	<0.00057
	4-5	3/5/2020	0.0022 J	<0.00056	<0.00074	<0.00046	<0.00074	<0.00046	<0.0019	<0.00046	<0.00056	NAF	<0.00074	<0.00056
	8-10	3/5/2020	<0.0007	<0.0006	0.0015 J	<0.0005	<0.0008	<0.0005	<0.002	<0.0005	<0.0006	NAF	<0.0008	<0.0006

Table E2 Summary of Volatile Organic Compounds in Soil 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

							NO. 3081							
Sample ID Residential	Depth (ft) TotSoil _{Comb}	Date	Tetrachloroethene	mg/kg Trichloroethene	mg/kg 140	06 galans-1,2-Dichloroethene	Mg/kg 3.7	mg/kg 1,1-Dichloroethene	Mg/kg Mcetone	mg/kg 120	ga/gm gw/gm 4000	methyl acetate	Maphthalene mg/kg 220	mg/kg 5900
Residential	^{GW} Soil _{Ing}		0.05	0.034	0.25	0.49	0.022	0.05	43	0.026	14	49	31	8.2
						OFFSITE BOF	RING LOCATI	IONS						
SB-1	0.5-1.5	12/3/2019	<0.0047	<0.0047	<0.0047	<0.0047	<0.0019	<0.0047	<0.019	<0.0047	<0.0093	<0.0047	-	<0.0047
	2-4	12/3/2019	<0.0047	<0.0047	<0.0047	<0.0047	<0.0019	<0.0047	<0.019	<0.0047	<0.0093	<0.0047	-	<0.0047
	12-14	12/3/2019	<0.0049	<0.0049	<0.0049	<0.0049	<0.002	<0.0049	<0.02	<0.0049	<0.0099	<0.0049	-	<0.0049
	30-32	12/3/2019	<0.0045	<0.0045	<0.0045	<0.0045	<0.0018	<0.0045	<0.018	<0.0045	<0.0089	<0.0045	-	<0.0045
SB-2	0.5-1.5	12/3/2019	<0.0048	<0.0048	<0.0048	<0.0048	<0.0019	<0.0048	<0.019	<0.0048	<0.0096	0.0067	-	<0.0048
	2-4	12/3/2019	<0.0045	<0.0045	<0.0045	<0.0045	<0.0018	<0.0045	<0.018	<0.0045	<0.009	<0.0045	-	<0.0045
	11-13	12/3/2019	<0.0053	<0.0053	<0.0053	<0.0053	<0.0021	<0.0053	<0.021	<0.0053	<0.011	<0.0053	-	<0.0053
	30-32	12/3/2019	<0.0043	<0.0043	<0.0043	<0.0043	<0.0017	<0.0043	<0.017	<0.0043	<0.0087	<0.0043	-	<0.0043
SB-6	0.5-1.5	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	0.032	<0.0046	<0.0091	<0.0046	-	<0.0046
	2-4	12/3/2019	<0.0044	<0.0044	<0.0044	<0.0044	<0.0018	<0.0044	0.047	<0.0044	<0.0088	<0.0044	-	<0.0044
	18-20	12/3/2019	<0.0049	<0.0049	<0.0049	<0.0049	<0.002	<0.0049	<0.02	<0.0049	<0.0098	<0.0049	-	<0.0049
SB-7	0.5-1.5	12/3/2019	<0.0045	<0.0045	<0.0045	<0.0045	<0.0018	<0.0045	<0.018	<0.0045	<0.009	<0.0045	-	<0.0045
	2-4	12/3/2019	<0.0046	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0091	<0.0046	-	<0.0046
	18-20	12/3/2019	<0.0045	<0.0045	<0.0045	<0.0045	<0.0018	<0.0045	<0.018	<0.0045	<0.0089	<0.0045	-	<0.0045
SB-9	0.5-1.5	12/3/2019	0.009	<0.0048	<0.0048	<0.0048	<0.0019	<0.0048	<0.019	<0.0048	<0.0097	<0.0048	-	<0.0048
	2-4	12/3/2019	0.0065	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0091	<0.0046	-	<0.0046
	14-16	12/3/2019	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.02	<0.005	<0.01	<0.005	-	<0.005
SB-10	0.5-1.5	12/3/2019	0.13	<0.0047	<0.0047	<0.0047	<0.0019	<0.0047	<0.019	<0.0047	<0.0094	<0.0047	-	<0.0047
	4-6	12/3/2019	0.19	<0.0048	<0.0048	<0.0048	<0.0019	<0.0048	<0.019	<0.0048	<0.0097	<0.0048	-	<0.0048
	14-16	12/3/2019	0.015	<0.0043	<0.0043	<0.0043	<0.0017	<0.0043	<0.017	<0.0043	<0.0086	<0.0043	-	<0.0043
SB-12	0.5-1.5	12/20/2019	0.047	<0.0053	<0.0053	<0.0053	<0.0021	<0.0053	<0.021	<0.0053	<0.011	<0.0053	-	<0.0053
	2-4	12/20/2019	0.033	<0.0046	<0.0046	<0.0046	<0.0018	<0.0046	<0.018	<0.0046	<0.0092	<0.0046	-	<0.0046
	12-14	12/20/2019	<0.0054	<0.0054	<0.0054	<0.0054	<0.0021	<0.0054	<0.021	<0.0054	<0.011	<0.0054	-	<0.0054
	30-32	12/20/2019	<0.0044	<0.0044	<0.0044	<0.0044	<0.0017	<0.0044	<0.017	<0.0044	<0.0087	<0.0044	-	<0.0044
SB-52	5	2/12/2021	<0.0008	<0.00069	<0.00092	<0.00057	<0.00092	<0.00057	NAF	NAF	NAF	NAF	NAF	NAF
SB-53	5	2/12/2021	<0.00065	<0.00056	<0.00075	<0.00047	<0.00075	<0.00047	NAF	NAF	NAF	NAF	NAF	NAF
SB-54	5	2/12/2021	0.075	0.0014 J	<0.00076	<0.00047	<0.00076	<0.00047	NAF	NAF	NAF	NAF	NAF	NAF
SB-55	5	2/12/2021	<0.0007	<0.0006	<0.0008	<0.0005	<0.0008	<0.0005	NAF	NAF	NAF	NAF	NAF	NAF
SB-56	5	2/12/2021	0.0054 J	<0.00066	<0.00087	<0.00055	<0.00087	<0.00055	NAF	NAF	NAF	NAF	NAF	NAF

Table E2 Summary of Volatile Organic Compounds in Soil 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Depth	Date	. Tetrachloroethene	, Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	, Vinyl chloride	. 1,1-Dichloroethene	Acetone	Benzene	, Carbon disulfide	. Methyl acetate	. Naphthalene	, Toluene
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	^{Tot} Soil _{Comb}		710	18	140	590	3.7	2300	66000	120	4600	82000	220	5900
Residential	^{GW} Soil _{Ing}		0.05	0.034	0.25	0.49	0.022	0.05	43	0.026	14	49	31	8.2
MW-9	1-2	3/4/2020	0.12	0.0024 J	<0.00079	<0.0005	<0.00079	<0.0005	<0.002	<0.0005	<0.0006	NAF	<0.00079	<0.0006
	4-5	3/4/2020	0.029	<0.00058	<0.00077	<0.00048	<0.00077	<0.00048	< 0.0019	<0.00048	<0.00058	NAF	<0.00077	<0.00058
	8-10	3/4/2020	0.042	0.0057 J	0.0015 J	<0.00064	<0.001	<0.00064	<0.0025	<0.00064	<0.00076	NAF	<0.001	<0.00076
MW-10	3-4	3/30/2020	<0.00073	<0.00063	<0.00084	<0.00052	<0.00084	<0.00052	<0.0021	<0.00052	<0.00063	NAF	<0.00084	<0.00063
	8-10	3/30/2020	<0.00068	<0.00059	<0.00078	<0.00049	<0.00078	<0.00049	<0.002	<0.00049	<0.00059	NAF	<0.00078	<0.00059
MW-11	4-5	3/30/2020	0.012	<0.00071	<0.00094	<0.00059	<0.00094	<0.00059	<0.0024	0.0012 J	0.012	NAF	0.19	<0.00071
	10-11	3/30/2020	<0.00073	<0.00062	<0.00083	<0.00052	<0.00083	<0.00052	<0.0021	<0.00052	<0.00062	NAF	<0.00083	<0.00062
	14-15	3/30/2020	<0.00063	<0.00054	<0.00072	<0.00045	<0.00072	<0.00045	<0.0018	<0.00045	<0.00054	NAF	<0.00072	<0.00054

Notes:

Exceeds ^{GW}Soil_{Ing}

<: Analyte was not detected at or above the reported sample detection limit

J: Analyte was detected at the concentration less than the method detection limit

NAF: Not Analyzed For

Table E3
Summary of Metals in Groundwater
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

Sample ID	Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	$^{\sf GW} {\sf GW}_{\sf Ing}$	0.01	2	0.005	0.1	0.015	0.002	0.05	0.12
Residential	^{Air} GW _{Inh-V}						7.3		
MW-5	3/9/2020	0.00247	0.192	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	6/29/2020	0.00201	0.176	<0.0002	<0.0004	<0.0006	<0.00003	0.0101	<0.0002
	9/21/2020	0.00174 J	0.174	<0.0002	<0.0004	<0.0006	<0.00003	0.0184	<0.0002
	12/11/2020	0.00191 J	0.164	<0.0002	<0.0004	0.000714 J	0.000764	0.0303	0.000209 J
	3/9/2021	0.00146 J	0.17	<0.0002	<0.0004	<0.0006	0.000093 J	0.028	<0.0002
MW-6	3/9/2020	0.00101 J	0.296	<0.0002	<0.0004	<0.0006	0.00007 J	0.00615	<0.0002
	6/24/2020	0.0139	0.638	<0.0002	<0.0004	<0.0006	<0.00003	0.0018 J	<0.0002
	9/18/2020	0.0032	0.336	<0.0002	<0.0004	<0.0006	<0.00003	0.00212	<0.0002
	12/11/2020	0.00533	0.362	<0.0002	<0.0004	<0.0006	0.000037 J	0.00409	<0.0002
	3/4/2021	0.00359	0.253	<0.0002	<0.0004	<0.0006	<0.00003	0.00354	<0.0002
MW-7	3/9/2020	0.000591 J	0.195	0.000365 J	0.00069 J	0.00126 J	0.000112 J	0.00388	<0.0002
	6/29/2020	0.00263	0.31	0.000356 J	0.0067	0.054	<0.00003	0.0052	<0.0002
	9/15/2020	-	-	-	-	0.00195 J	-	-	-
	9/18/2020	0.000677 J	0.246	<0.0002	0.000417 J	0.00352	<0.00003	0.00363	<0.0002
	12/11/2020		0.35	0.000294 J	0.00304 J	0.0281	0.000075 J	0.00542	<0.0002
MW-7R	3/4/2021	0.00082 J	0.183	<0.0002	<0.0004	<0.0006	<0.00003	0.00706	<0.0002
MW-8	3/9/2020	0.008	0.336	0.000281 J	0.0197	0.0372	0.000119 J	0.0137	<0.0002
	3/30/2020	0.000438 J	0.132	<0.0002	<0.0004	<0.0006	<0.00003	0.00752	<0.0002
	6/24/2020	0.000678 J	0.181	<0.0002	<0.0004	<0.0006	<0.00003	0.0227	<0.0002
	9/18/2020	<0.0004	0.133	<0.0002	<0.0004	<0.0006	<0.00003	0.0132	<0.0002
	12/11/2020		0.159	<0.0002	<0.0004	<0.0006	0.000196 J	0.00603	<0.0002
	3/4/2021	0.000474 J	0.153	<0.0002	<0.0004	<0.0006	0.000118 J	0.00956	<0.0002
	3/4/2021	0.000453 J	0.138	<0.0002	<0.0004	<0.0006	0.000093 J	0.00924	<0.0002
MW-9	3/9/2020	<0.0004	0.165	<0.0002	<0.0004	<0.0006	<0.00003	0.00336	<0.0002
	6/24/2020	0.00042 J	0.218	<0.0002	0.00148 J	<0.0006	<0.00003	<0.0011	<0.0002
	9/18/2020		0.19	<0.0002	0.00646	<0.0006	<0.00003		<0.0002
	12/11/2020 3/4/2021	0.000516 J 0.000422 J	0.244	<0.0002 <0.0002	<0.0004	<0.0006 <0.0006	0.000483 < 0.00003	0.00214 0.00215	<0.0002 <0.0002
NAVA / 10						0.000869 J			
MW-10	3/31/2020 6/24/2020	0.000444 J 0.000823 J	0.114	<0.0002 <0.0002	<0.0004 0.000409 J	<0.0006	<0.00003	<0.0011	<0.0002 <0.0002
	9/18/2020	0.000823 J	0.126	<0.0002	< 0.000409 J	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020		0.162	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	3/4/2021	< 0.000303	0.102	<0.0002	<0.0004	0.0115	<0.00003	0.0011	<0.0002
MW-11	3/31/2020	0.00138 J	0.211	<0.0002	0.000871 J	0.00208	<0.00003	<0.0011	<0.0002
14144 77	6/24/2020	0.00284	0.237	<0.0002	0.000571J	0.000609 J	<0.00003	<0.0011	<0.0002
	9/18/2020	0.00219	0.162	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020		0.204	<0.0002	0.00124 J	0.00519	0.000033 J	<0.0011	<0.0002
	3/4/2021	0.00153 J	0.225	<0.0002	<0.0004	<0.0006	<0.00003	0.0018 J	<0.0002

Table E3 Summary of Metals in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	$^{\sf GW}{\sf GW}_{\sf Ing}$	0.01	2	0.005	0.1	0.015	0.002	0.05	0.12
Residential	AirGW _{Inh-V}						7.3		
MW-12	8/21/2020	0.00081 J	0.118	<0.0002	0.0259	<0.0006	0.000039 J	<0.0011	<0.0002
	9/18/2020	0.000745 J	0.122	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020	0.000857 J	0.109	0.000223 J	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	3/4/2021	0.000647 J	0.118	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
MW-13	3/4/2021	0.000996 J	0.221	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002

Notes: Exceeds ^{GW}GW_{Ing}

<: Analyte was not detected at or above the reported sample detection limit

J: Analyte was detected at the concentration less than the method detection limit

Table E4 Summary of Volatile Organic Compounds in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	ਤੋਂ Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	چ اح trans-1,2-Dichloroethene	Vinyl chloride	J,1-Dichloroethene	a 1,1-Dichloroethane
Residential	$^{\sf GW}\!{\sf GW}_{\sf Ing}$	0.005	0.005	0.07	0.1	0.002	0.007	4.9
Residential	Air GW _{Inh-V}	500	24	1200	770	3.8	1700	43000
MW-5	3/9/2020	0.00081 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/29/2020	0.00063 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/21/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.00063 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/9/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-6	3/9/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-7	3/9/2020	0.0098	0.0019 J	0.0026 J	<0.0004	<0.0004	<0.0005	<0.0004
	6/29/2020	0.013	0.0014	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/18/2020	0.01	0.0011 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.0071	0.001 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-7R	3/4/2021	0.0089	0.0014 J	0.0015 J	<0.0004	<0.0004	<0.0005	<0.0004
MW-8	3/9/2020	0.066	0.0082	0.11	0.00083 J	<0.0004	<0.0005	0.00043 J
	6/24/2020	0.15	0.022	0.33	0.0023 J	<0.0004	<0.0005	0.0015 J
	9/18/2020	0.13	0.018	0.25	0.0015 J	<0.0004	<0.0005	0.00094 J
	12/11/2020	0.038	0.0034 J	0.037	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	0.051	0.0063	0.082	0.00047 J	<0.0004	<0.0005	<0.0004
	3/4/2021	0.05	0.0066	0.08	0.00072 J	<0.0004	<0.0005	<0.0004
MW-9	3/9/2020	0.0037 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	0.011	0.00081 J	0.00064 J	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	0.0087	0.00066 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.0049 J	0.00063 J	0.0009 J	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	0.0023 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-10	3/31/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020		<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004

Table E4 Summary of Volatile Organic Compounds in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl chloride	1,1-Dichloroethene	1,1-Dichloroethane
	GW a	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	^{GW} GW _{Ing}	0.005	0.005	0.07	0.1	0.002	0.007	4.9
Residential	Air GW _{Inh-V}	500	24	1200	770	3.8	1700	43000
MW-11	3/31/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-12	8/21/2020	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-13	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004

Notes: Exceeds GW GW Ing

<: Analyte was not detected at or above the reported sample detection limit

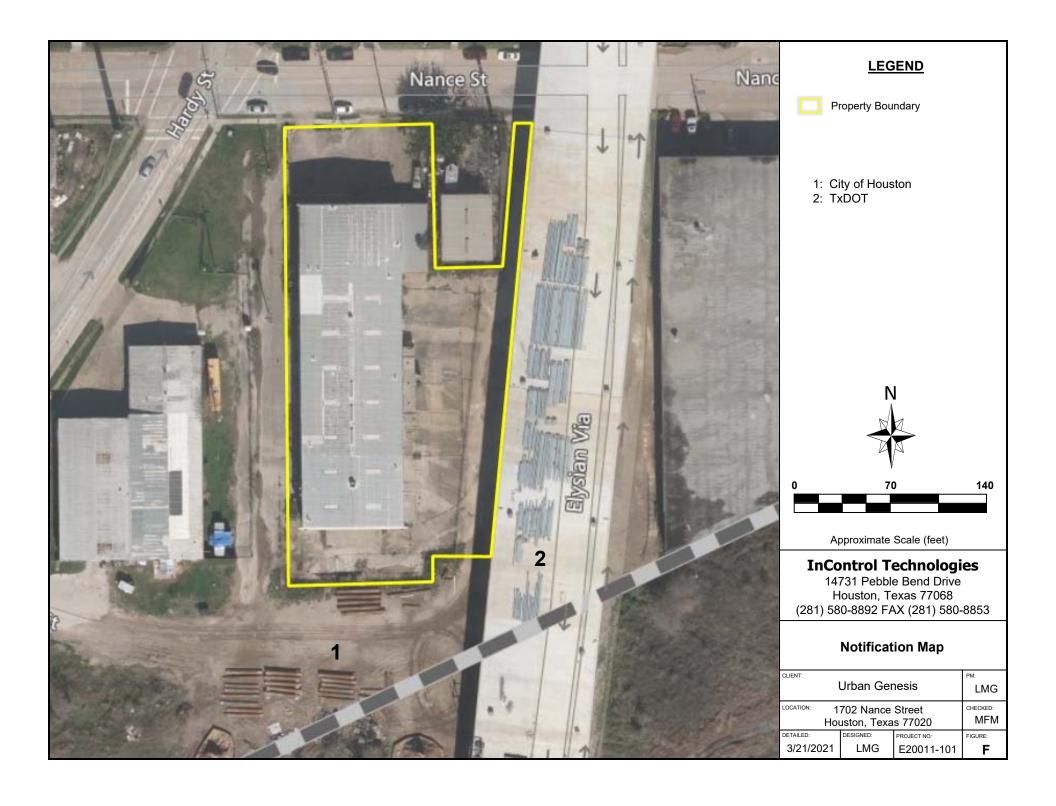
J: Analyte was detected at the concentration less than the method detection limit

Appendix F

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 the 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.*

Based on the results of the most recent groundwater monitoring and sampling event conducted in March 2021, the area of affected groundwater extends off-site to the south and east. Notification letters were sent to the following property owners informing them of the potential impact to their property. The property owners are identified on **Figure F**.

Property ID	Property owner name	Physical property address, city, zip	Property owner mailing address, city, state, zip
1	City of Houston	Right-of Way	611 Walker St., Houston, TX 77002
2	Texas Dept of Transportation	Right-of Way	7600 Washington Ave., Houston, TX 77007



Appendix G

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.

The subject property is located within the area of the Hardy Street Railyards and historical commercial industrial operations. Historically, the subject property was residential from at least 1890 through the 1960s. It was developed into a commercial business in the 1970s to support sales and distribution of oilfield equipment. The property was most recently occupied by Advanced Control Systems, LLC. This company provided a wide range of electrical and energy equipment for applications and operations in the drilling, marine, and industrial markets. Prior to that, the facility was occupied by Wilson Industries. This business was suspected to be similar to the Advanced Control Systems, LLC operations. InControl Technologies does not believe that any manufacturing operations were ever conducted on the subject property.

Shallow groundwater is affected by dissolved phase chemicals including tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). The source of the chlorinated solvents is unknown, but it is possible that they originate from the former railyard to the east of the subject property. Chlorinated solvents were likely used during the railcar repairs. However, it is unlikely that these solvents were used during the tenure of the railroad locomotive repair activities. While no manufacturing operations were ever documented on the subject property the chlorinated solvents were a common industrial solvent used at oil tool facilities. The presence of chlorinated solvents in onsite soils suggest that these chemicals may have been used onsite. The property is currently vacant. There is no longer a source for any chlorinated solvents on the subject site.

Groundwater sampling of the existing monitoring well network began in March 2020. The monitoring wells are currently sampled on a quarterly basis. Only three monitoring wells (MW-7, MW-8, and MW-9) have ever reported chemicals of concern above a ^{GW}GW_{Ing} PCL. With the installation of monitoring well MW-13, the chlorinated solvent plume is laterally delineated, and the groundwater data show stable to decreasing trends across the site.

Mann-Kendall Test for Statistical Trend

InControl Technologies conducted a statistical trend analysis to determine if chemicals of concern were increasing, decreasing or remaining stable over time. The primary chemicals of concern include tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). InControl Technologies used the Mann-Kendall Statistical Test for Trends to conduct the trend analysis. The statistical analysis was conducted using QualStat 6.0, a commercially available software package.

The purpose of the Mann-Kendall test is to statistically assess if there is a monotonic upward or downward trend of the variable of interest over time. A monotonic upward (downward) trend means that the variable consistently increases (decreases) through time, but the trend may or may not be linear. The Mann-Kendall test is used in place of a parametric linear regression analysis since the criteria for this test are generally violated with temporal environmental data. The regression analysis requires that the residuals from the

fitted regression line be normally distributed; an assumption not required by the Mann-Kendall test since the Mann-Kendall test is a non-parametric or distribution-free statistical test.

Assumptions

The following assumptions underlie the Mann-Kendall test:

- When no trend is present, the measurements (observations or data) obtained over time are independent and identically distributed. The assumption of independence means that the observations are not serially correlated over time.
- The observations obtained over time are representative of the true conditions at the various sampling times.
- The sample collection, handling, and measurement methods provide unbiased and representative observations of the underlying populations over time.

There is no requirement that the measurements be normally distributed or that the trend, if present, is linear. The Mann-Kendall test can be computed if there are missing values and values below the sample detection limit. The assumption of independence requires that the time between samples be sufficiently large so that there is no correlation between measurements collected at different times.

Calculations

The Mann-Kendall Statistical test tests whether to reject the null hypothesis (H_o) and accept the alternative hypothesis (H_a), where:

- Ho: No monotonic trend
- Ha: Monotonic trend is present

The Mann-Kendall test is conducted as follows:

- 1. List the data in the order in which they were collected over time, x_1, x_2, \ldots, x_n , which denote the measurements obtained at times 1, 2, ..., n, respectively.
- 2. Determine the sign of all n(n-1)/2 possible differences $x_j x_k$, where j > k. These differences are $x_2 x_1, x_3 x_1, \dots, x_n x_1, x_3 x_2, x_4 x_2, \dots, x_n x_2, \dots, x_n x_{n-2}, x_n x_{n-1}$.
- 3. Let sgn $(x_j x_k)$ be the indicator function that takes on the value s 1, 0, or -1 according to the sign of x_j - x_k , that is:

$$\begin{aligned} & \textbf{Error! Bookmark not defined.} \, \text{sgn}(x_j - x_k) \begin{cases} 1 & \textit{if} \quad x_j - x_k > 0 \\ 0 & \textit{if} \quad x_j - x_k = 0 \\ -1 & \textit{if} \quad x_j - x_k < 0 \end{cases} \end{aligned}$$

4. Compute the statistic $S = \sum_{k=1}^{n-1} \sum_{j=k+1}^{n} \operatorname{sgn}(x_j - x_k)$ which is the number of positive differences minus

the number of negative differences. If **S** is a positive number, observations obtained later in time tend to be larger than observations made earlier. If **S** is a negative number, then observations made later in time tend to be smaller than observations made earlier.

5. Compute the variance of **S** as follows:

$$Var(S) = \frac{1}{18} \left[n(n-1)(2n+5) - \sum_{p=1}^{g} t_p(t_p-1)((2t_p+5)) \right]$$

Where g is the number of tied groups and t_p is the number of observations in the p^{th} group. When there are ties in the data due to equal values or non-detects, Var(S) is adjusted by the tie correction method described in Helsel (2005, p. 191) and included in the formula above.

6. Compute the Mann-Kendall test statistic, Z_{MK}, as follows:

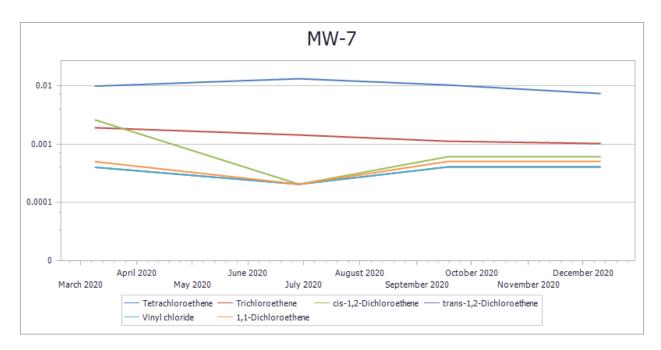
$$Z_{MK} \begin{cases} \frac{s-1}{\sqrt{Var(S)}} & if \quad S > 0 \\ 0 & if \quad S = 0 \\ \frac{S+1}{\sqrt{Var(S)}} & if \quad S < 0 \end{cases}$$

A positive (negative) value of Z_{MK} indicates that the data tend to increase (decrease) with time. To determine if a trend exists at the Type I error rate α , where $0 < \alpha < 0.5$. (Note that α is the tolerable probability that the Mann Kendall test will falsely reject the null hypothesis.), then the Ho is rejected and the Ha is accepted if $Z_{MK}>Z_{1-\alpha}$, where $Z_{1-\alpha}$ is the $100(1-\alpha)$ percentile of the standard normal distribution. Following standard TRRP Guidance, InControl Technologies used an α of 0.05. If the calculated probability (p) is less than 0.05, the Ho hypothesis (no monotonic trend) is rejected in favor of the Ha hypothesis (a monotonic trend exists in the data. The following sections discuss the results of the Mann-Kendall Statistical Analysis on a well by well basis.

Results from Statistical Trend Analysis

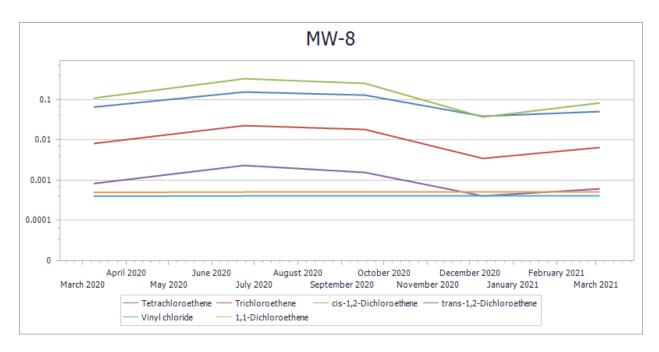
A Statistical Trend Analysis was conducted for each well reporting a chemical of concern above the Tier 1 Residential Protective Concentration Level. Only chemicals with historically detected concentrations exceeding the target PCL within a given well are discussed. Compounds that are below the Tier 1 Residential PCL are not discussed.

PCE is the only compound that exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-7. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for PCE.



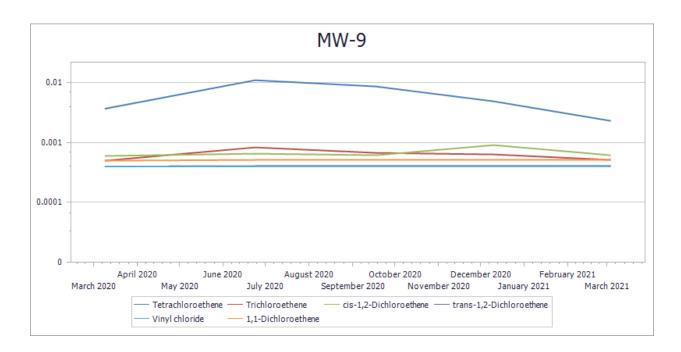
Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	4	-2.0	8.6667	-0.34	36.70	No Trend
Trichloroethene	4	-6.0	8.6667	-1.70	4.47	Decreasing
cis-1,2-Dichloroethene	4	-1.0	7.6667	0.00	50.00	No Trend
trans-1,2-Dichloroethene	4	1.0	5.0000	0.00	50.00	No Trend
Vinyl chloride	4	1.0	5.0000	0.00	50.00	No Trend
1,1-Dichloroethene	4	1.0	5.0000	0.00	50.00	No Trend

PCE, TCE, and cis-1,2-DCE exceeded their respective Tier 1 Residential PCLs for groundwater ingestion during the monitoring history for MW-8. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for any of these compounds.



Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	6	-5.0	28.3333	-0.75	22.62	No Trend
Trichloroethene	6	-7.0	28.3333	-1.13	12.98	No Trend
cis-1,2-Dichloroethene	6	-5.0	28.3333	-0.75	22.62	No Trend
trans-1,2-Dichloroethene	6	-7.0	28.3333	-1.13	12.98	No Trend
Vinyl chloride	6	0.0	0.0000	0.00	50.00	No Trend
1,1-Dichloroethene	6	0.0	0.0000	0.00	50.00	No Trend

PCE is the only compound that exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-9. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for any of these compounds. PCE has remained below the Tier 1 PCL for two consecutive sampling events.



Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	5	-4.0	16.6667	-0.73	23.12	No Trend
Trichloroethene	5	-3.0	15.6667	-0.51	30.67	No Trend
cis-1,2-Dichloroethene	5	1.0	13.0000	0.00	50.00	No Trend
trans-1,2-Dichloroethene	5	0.0	0.0000	0.00	50.00	No Trend
Vinyl chloride	5	0.0	0.0000	0.00	50.00	No Trend
1,1-Dichloroethene	5	0.0	0.0000	0.00	50.00	No Trend

Table E3
Summary of Metals in Groundwater
1702 Nance Vacant Commercial Site
1702 Nance Street, Houston, TX 77020
VCP No. 3081

Sample ID	Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	$^{\sf GW} {\sf GW}_{\sf Ing}$	0.01	2	0.005	0.1	0.015	0.002	0.05	0.12
Residential	^{Air} GW _{Inh-V}						7.3		
MW-5	3/9/2020	0.00247	0.192	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	6/29/2020	0.00201	0.176	<0.0002	<0.0004	<0.0006	<0.00003	0.0101	<0.0002
	9/21/2020	0.00174 J	0.174	<0.0002	<0.0004	<0.0006	<0.00003	0.0184	<0.0002
	12/11/2020	0.00191 J	0.164	<0.0002	<0.0004	0.000714 J	0.000764	0.0303	0.000209 J
	3/9/2021	0.00146 J	0.17	<0.0002	<0.0004	<0.0006	0.000093 J	0.028	<0.0002
MW-6	3/9/2020	0.00101 J	0.296	<0.0002	<0.0004	<0.0006	0.00007 J	0.00615	<0.0002
	6/24/2020	0.0139	0.638	<0.0002	<0.0004	<0.0006	<0.00003	0.0018 J	<0.0002
	9/18/2020	0.0032	0.336	<0.0002	<0.0004	<0.0006	<0.00003	0.00212	<0.0002
	12/11/2020	0.00533	0.362	<0.0002	<0.0004	<0.0006	0.000037 J	0.00409	<0.0002
	3/4/2021	0.00359	0.253	<0.0002	<0.0004	<0.0006	<0.00003	0.00354	<0.0002
MW-7	3/9/2020	0.000591 J	0.195	0.000365 J	0.00069 J	0.00126 J	0.000112 J	0.00388	<0.0002
	6/29/2020	0.00263	0.31	0.000356 J	0.0067	0.054	<0.00003	0.0052	<0.0002
	9/15/2020	-	-	-	-	0.00195 J	-	-	-
	9/18/2020	0.000677 J	0.246	<0.0002	0.000417 J	0.00352	<0.00003	0.00363	<0.0002
	12/11/2020		0.35	0.000294 J	0.00304 J	0.0281	0.000075 J	0.00542	<0.0002
MW-7R	3/4/2021	0.00082 J	0.183	<0.0002	<0.0004	<0.0006	<0.00003	0.00706	<0.0002
MW-8	3/9/2020	0.008	0.336	0.000281 J	0.0197	0.0372	0.000119 J	0.0137	<0.0002
	3/30/2020	0.000438 J	0.132	<0.0002	<0.0004	<0.0006	<0.00003	0.00752	<0.0002
	6/24/2020	0.000678 J	0.181	<0.0002	<0.0004	<0.0006	<0.00003	0.0227	<0.0002
	9/18/2020	<0.0004	0.133	<0.0002	<0.0004	<0.0006	<0.00003	0.0132	<0.0002
	12/11/2020		0.159	<0.0002	<0.0004	<0.0006	0.000196 J	0.00603	<0.0002
	3/4/2021	0.000474 J	0.153	<0.0002	<0.0004	<0.0006	0.000118 J	0.00956	<0.0002
	3/4/2021	0.000453 J	0.138	<0.0002	<0.0004	<0.0006	0.000093 J	0.00924	<0.0002
MW-9	3/9/2020	<0.0004	0.165	<0.0002	<0.0004	<0.0006	<0.00003	0.00336	<0.0002
	6/24/2020	0.00042 J	0.218	<0.0002	0.00148 J	<0.0006	<0.00003	<0.0011	<0.0002
	9/18/2020		0.19	<0.0002	0.00646	<0.0006	<0.00003		<0.0002
	12/11/2020 3/4/2021	0.000516 J 0.000422 J	0.244	<0.0002 <0.0002	<0.0004	<0.0006 <0.0006	0.000483 < 0.00003	0.00214 0.00215	<0.0002 <0.0002
NAVA / 10						0.000869 J			
MW-10	3/31/2020 6/24/2020	0.000444 J 0.000823 J	0.114	<0.0002 <0.0002	<0.0004 0.000409 J	<0.0006	<0.00003	<0.0011	<0.0002 <0.0002
	9/18/2020	0.000823 J	0.126	<0.0002	< 0.000409 J	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020		0.162	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	3/4/2021	< 0.000303	0.102	<0.0002	<0.0004	0.0115	<0.00003	0.0011	<0.0002
MW-11	3/31/2020	0.00138 J	0.211	<0.0002	0.000871 J	0.00208	<0.00003	<0.0011	<0.0002
14144 77	6/24/2020	0.00284	0.237	<0.0002	0.000571J	0.000609 J	<0.00003	<0.0011	<0.0002
	9/18/2020	0.00219	0.162	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020		0.204	<0.0002	0.00124 J	0.00519	0.000033 J	<0.0011	<0.0002
	3/4/2021	0.00153 J	0.225	<0.0002	<0.0004	<0.0006	<0.00003	0.0018 J	<0.0002

Table E3 Summary of Metals in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	$^{\sf GW}{\sf GW}_{\sf Ing}$	0.01	2	0.005	0.1	0.015	0.002	0.05	0.12
Residential	AirGW _{Inh-V}						7.3		
MW-12	8/21/2020	0.00081 J	0.118	<0.0002	0.0259	<0.0006	0.000039 J	<0.0011	<0.0002
	9/18/2020	0.000745 J	0.122	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	12/11/2020	0.000857 J	0.109	0.000223 J	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
	3/4/2021	0.000647 J	0.118	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002
MW-13	3/4/2021	0.000996 J	0.221	<0.0002	<0.0004	<0.0006	<0.00003	<0.0011	<0.0002

Notes: Exceeds ^{GW}GW_{Ing}

<: Analyte was not detected at or above the reported sample detection limit

J: Analyte was detected at the concentration less than the method detection limit

Table E4 Summary of Volatile Organic Compounds in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	ਤੋਂ Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	چ اح trans-1,2-Dichloroethene	Vinyl chloride	J,1-Dichloroethene	a 1,1-Dichloroethane
Residential	$^{\sf GW}\!{\sf GW}_{\sf Ing}$	0.005	0.005	0.07	0.1	0.002	0.007	4.9
Residential	Air GW _{Inh-V}	500	24	1200	770	3.8	1700	43000
MW-5	3/9/2020	0.00081 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/29/2020	0.00063 J	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/21/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.00063 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/9/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-6	3/9/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-7	3/9/2020	0.0098	0.0019 J	0.0026 J	<0.0004	<0.0004	<0.0005	<0.0004
	6/29/2020	0.013	0.0014	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/18/2020	0.01	0.0011 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.0071	0.001 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-7R	3/4/2021	0.0089	0.0014 J	0.0015 J	<0.0004	<0.0004	<0.0005	<0.0004
MW-8	3/9/2020	0.066	0.0082	0.11	0.00083 J	<0.0004	<0.0005	0.00043 J
	6/24/2020	0.15	0.022	0.33	0.0023 J	<0.0004	<0.0005	0.0015 J
	9/18/2020	0.13	0.018	0.25	0.0015 J	<0.0004	<0.0005	0.00094 J
	12/11/2020	0.038	0.0034 J	0.037	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	0.051	0.0063	0.082	0.00047 J	<0.0004	<0.0005	<0.0004
	3/4/2021	0.05	0.0066	0.08	0.00072 J	<0.0004	<0.0005	<0.0004
MW-9	3/9/2020	0.0037 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	0.011	0.00081 J	0.00064 J	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	0.0087	0.00066 J	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	0.0049 J	0.00063 J	0.0009 J	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	0.0023 J	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-10	3/31/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020		<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004

Table E4 Summary of Volatile Organic Compounds in Groundwater 1702 Nance Vacant Commercial Site 1702 Nance Street, Houston, TX 77020 VCP No. 3081

Sample ID	Date	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl chloride	1,1-Dichloroethene	1,1-Dichloroethane
	GW a	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential	^{GW} GW _{Ing}	0.005	0.005	0.07	0.1	0.002	0.007	4.9
Residential	Air GW _{Inh-V}	500	24	1200	770	3.8	1700	43000
MW-11	3/31/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	6/24/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-12	8/21/2020	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	9/18/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	12/11/2020	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004
MW-13	3/4/2021	<0.0006	<0.0005	<0.0006	<0.0004	<0.0004	<0.0005	<0.0004

Notes: Exceeds GW GW Ing

<: Analyte was not detected at or above the reported sample detection limit

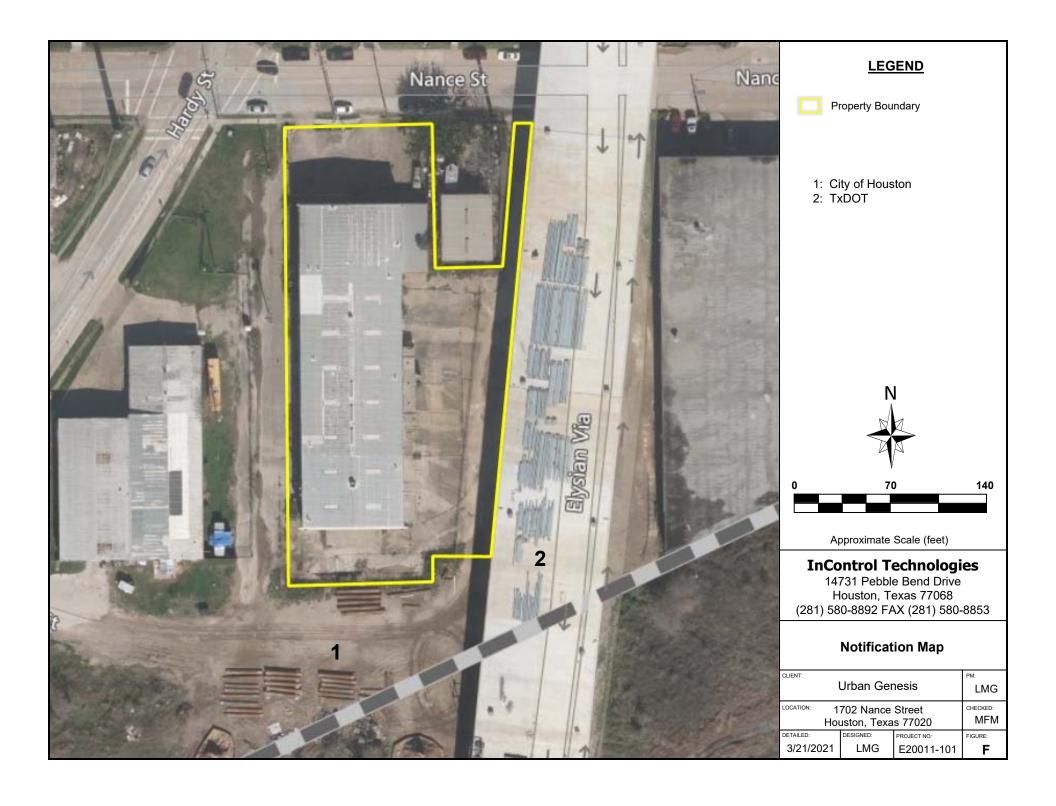
J: Analyte was detected at the concentration less than the method detection limit

Appendix F

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 the 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.*

Based on the results of the most recent groundwater monitoring and sampling event conducted in March 2021, the area of affected groundwater extends off-site to the south and east. Notification letters were sent to the following property owners informing them of the potential impact to their property. The property owners are identified on **Figure F**.

Property ID	Property owner name	Physical property address, city, zip	Property owner mailing address, city, state, zip
1	City of Houston	Right-of Way	611 Walker St., Houston, TX 77002
2	Texas Dept of Transportation	Right-of Way	7600 Washington Ave., Houston, TX 77007



Appendix G

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.

The subject property is located within the area of the Hardy Street Railyards and historical commercial industrial operations. Historically, the subject property was residential from at least 1890 through the 1960s. It was developed into a commercial business in the 1970s to support sales and distribution of oilfield equipment. The property was most recently occupied by Advanced Control Systems, LLC. This company provided a wide range of electrical and energy equipment for applications and operations in the drilling, marine, and industrial markets. Prior to that, the facility was occupied by Wilson Industries. This business was suspected to be similar to the Advanced Control Systems, LLC operations. InControl Technologies does not believe that any manufacturing operations were ever conducted on the subject property.

Shallow groundwater is affected by dissolved phase chemicals including tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). The source of the chlorinated solvents is unknown, but it is possible that they originate from the former railyard to the east of the subject property. Chlorinated solvents were likely used during the railcar repairs. However, it is unlikely that these solvents were used during the tenure of the railroad locomotive repair activities. While no manufacturing operations were ever documented on the subject property the chlorinated solvents were a common industrial solvent used at oil tool facilities. The presence of chlorinated solvents in onsite soils suggest that these chemicals may have been used onsite. The property is currently vacant. There is no longer a source for any chlorinated solvents on the subject site.

Groundwater sampling of the existing monitoring well network began in March 2020. The monitoring wells are currently sampled on a quarterly basis. Only three monitoring wells (MW-7, MW-8, and MW-9) have ever reported chemicals of concern above a ^{GW}GW_{Ing} PCL. With the installation of monitoring well MW-13, the chlorinated solvent plume is laterally delineated, and the groundwater data show stable to decreasing trends across the site.

Mann-Kendall Test for Statistical Trend

InControl Technologies conducted a statistical trend analysis to determine if chemicals of concern were increasing, decreasing or remaining stable over time. The primary chemicals of concern include tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). InControl Technologies used the Mann-Kendall Statistical Test for Trends to conduct the trend analysis. The statistical analysis was conducted using QualStat 6.0, a commercially available software package.

The purpose of the Mann-Kendall test is to statistically assess if there is a monotonic upward or downward trend of the variable of interest over time. A monotonic upward (downward) trend means that the variable consistently increases (decreases) through time, but the trend may or may not be linear. The Mann-Kendall test is used in place of a parametric linear regression analysis since the criteria for this test are generally violated with temporal environmental data. The regression analysis requires that the residuals from the

fitted regression line be normally distributed; an assumption not required by the Mann-Kendall test since the Mann-Kendall test is a non-parametric or distribution-free statistical test.

Assumptions

The following assumptions underlie the Mann-Kendall test:

- When no trend is present, the measurements (observations or data) obtained over time are independent and identically distributed. The assumption of independence means that the observations are not serially correlated over time.
- The observations obtained over time are representative of the true conditions at the various sampling times.
- The sample collection, handling, and measurement methods provide unbiased and representative observations of the underlying populations over time.

There is no requirement that the measurements be normally distributed or that the trend, if present, is linear. The Mann-Kendall test can be computed if there are missing values and values below the sample detection limit. The assumption of independence requires that the time between samples be sufficiently large so that there is no correlation between measurements collected at different times.

Calculations

The Mann-Kendall Statistical test tests whether to reject the null hypothesis (H_o) and accept the alternative hypothesis (H_a), where:

- Ho: No monotonic trend
- Ha: Monotonic trend is present

The Mann-Kendall test is conducted as follows:

- 1. List the data in the order in which they were collected over time, x_1, x_2, \ldots, x_n , which denote the measurements obtained at times 1, 2, ..., n, respectively.
- 2. Determine the sign of all n(n-1)/2 possible differences $x_j x_k$, where j > k. These differences are $x_2 x_1, x_3 x_1, \dots, x_n x_1, x_3 x_2, x_4 x_2, \dots, x_n x_2, \dots, x_n x_{n-2}, x_n x_{n-1}$.
- 3. Let sgn $(x_j x_k)$ be the indicator function that takes on the value s 1, 0, or -1 according to the sign of x_j - x_k , that is:

$$\begin{aligned} & \textbf{Error! Bookmark not defined.} \, \text{sgn}(x_j - x_k) \begin{cases} 1 & \textit{if} \quad x_j - x_k > 0 \\ 0 & \textit{if} \quad x_j - x_k = 0 \\ -1 & \textit{if} \quad x_j - x_k < 0 \end{cases} \end{aligned}$$

4. Compute the statistic $S = \sum_{k=1}^{n-1} \sum_{j=k+1}^{n} \operatorname{sgn}(x_j - x_k)$ which is the number of positive differences minus

the number of negative differences. If **S** is a positive number, observations obtained later in time tend to be larger than observations made earlier. If **S** is a negative number, then observations made later in time tend to be smaller than observations made earlier.

5. Compute the variance of **S** as follows:

$$Var(S) = \frac{1}{18} \left[n(n-1)(2n+5) - \sum_{p=1}^{g} t_p(t_p-1)((2t_p+5)) \right]$$

Where g is the number of tied groups and t_p is the number of observations in the p^{th} group. When there are ties in the data due to equal values or non-detects, Var(S) is adjusted by the tie correction method described in Helsel (2005, p. 191) and included in the formula above.

6. Compute the Mann-Kendall test statistic, Z_{MK}, as follows:

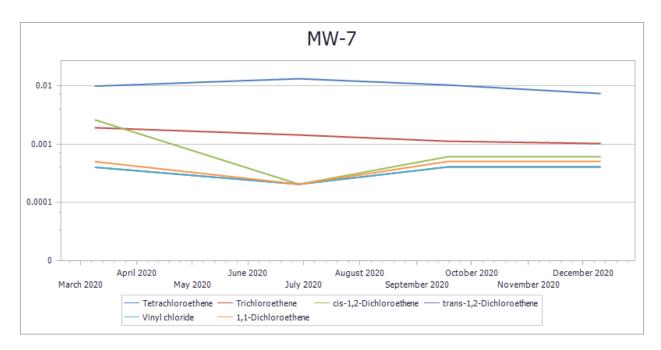
$$Z_{MK} \begin{cases} \frac{s-1}{\sqrt{Var(S)}} & if \quad S > 0 \\ 0 & if \quad S = 0 \\ \frac{S+1}{\sqrt{Var(S)}} & if \quad S < 0 \end{cases}$$

A positive (negative) value of Z_{MK} indicates that the data tend to increase (decrease) with time. To determine if a trend exists at the Type I error rate α , where $0 < \alpha < 0.5$. (Note that α is the tolerable probability that the Mann Kendall test will falsely reject the null hypothesis.), then the Ho is rejected and the Ha is accepted if $Z_{MK}>Z_{1-\alpha}$, where $Z_{1-\alpha}$ is the $100(1-\alpha)$ percentile of the standard normal distribution. Following standard TRRP Guidance, InControl Technologies used an α of 0.05. If the calculated probability (p) is less than 0.05, the Ho hypothesis (no monotonic trend) is rejected in favor of the Ha hypothesis (a monotonic trend exists in the data. The following sections discuss the results of the Mann-Kendall Statistical Analysis on a well by well basis.

Results from Statistical Trend Analysis

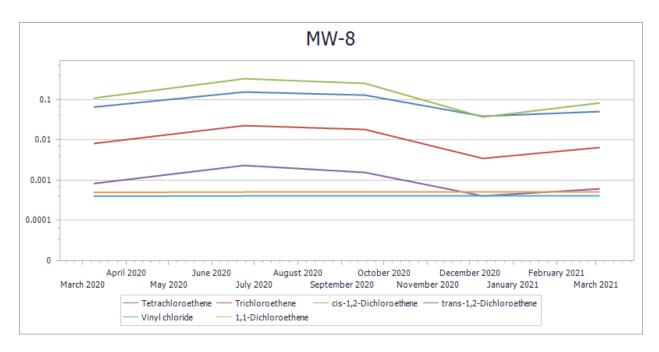
A Statistical Trend Analysis was conducted for each well reporting a chemical of concern above the Tier 1 Residential Protective Concentration Level. Only chemicals with historically detected concentrations exceeding the target PCL within a given well are discussed. Compounds that are below the Tier 1 Residential PCL are not discussed.

PCE is the only compound that exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-7. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for PCE.



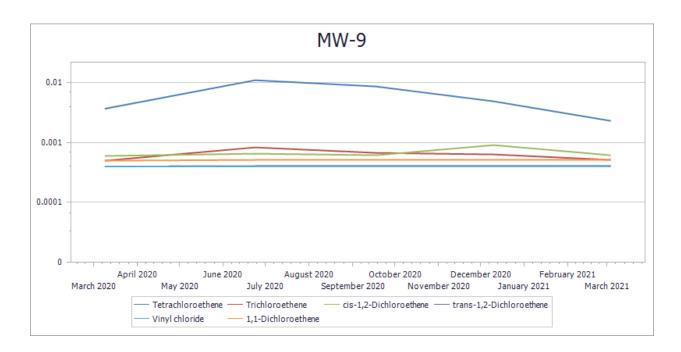
Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	4	-2.0	8.6667	-0.34	36.70	No Trend
Trichloroethene	4	-6.0	8.6667	-1.70	4.47	Decreasing
cis-1,2-Dichloroethene	4	-1.0	7.6667	0.00	50.00	No Trend
trans-1,2-Dichloroethene	4	1.0	5.0000	0.00	50.00	No Trend
Vinyl chloride	4	1.0	5.0000	0.00	50.00	No Trend
1,1-Dichloroethene	4	1.0	5.0000	0.00	50.00	No Trend

PCE, TCE, and cis-1,2-DCE exceeded their respective Tier 1 Residential PCLs for groundwater ingestion during the monitoring history for MW-8. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for any of these compounds.



Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	6	-5.0	28.3333	-0.75	22.62	No Trend
Trichloroethene	6	-7.0	28.3333	-1.13	12.98	No Trend
cis-1,2-Dichloroethene	6	-5.0	28.3333	-0.75	22.62	No Trend
trans-1,2-Dichloroethene	6	-7.0	28.3333	-1.13	12.98	No Trend
Vinyl chloride	6	0.0	0.0000	0.00	50.00	No Trend
1,1-Dichloroethene	6	0.0	0.0000	0.00	50.00	No Trend

PCE is the only compound that exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-9. The following table shows the results for the Mann-Kendall Statistical Test for trends for all groundwater monitoring data since the well was first installed. No trend is reported for any of these compounds. PCE has remained below the Tier 1 PCL for two consecutive sampling events.



Compound	Count	S Statistic	S Variance	Z Value	Prob	Trend
Tetrachloroethene	5	-4.0	16.6667	-0.73	23.12	No Trend
Trichloroethene	5	-3.0	15.6667	-0.51	30.67	No Trend
cis-1,2-Dichloroethene	5	1.0	13.0000	0.00	50.00	No Trend
trans-1,2-Dichloroethene	5	0.0	0.0000	0.00	50.00	No Trend
Vinyl chloride	5	0.0	0.0000	0.00	50.00	No Trend
1,1-Dichloroethene	5	0.0	0.0000	0.00	50.00	No Trend