# MUNICIPAL SETTINGS DESIGNATIONS (MSDs) WHAT IS AN MSD AND WHAT ARE THE BENEFITS OF HAVING AN MSD, THEIR LIMITATIONS, AND THEIR MISCONCEPTIONS



### **Kevin W. Almaguer, P.G. Program Director – P2/Mitigation**

cell (214) 392-7179 email kevin@envirophase.com

337 Oaks Trail, Ste. 225, Garland TX 75043

in Follow Us on LinkedIn | www.envirophase.com

### The Municipal Settings Designation (MSD)

- The MSD is a Deed Restriction that prohibits use of Groundwater for potable (Drinking Water) purposes and is supported by City Council Ordinance or Resolution of Support and Texas Commission on Environmental Quality (TCEQ) Certification.
  - Recognizes that shallow groundwater is not used in most urban settings for potable purposes.
  - Prevents groundwater on the property from being used for potable purposes.
  - Eliminates the need to cleanup groundwater to potable purposes.
  - o To be eligible for an MSD
    - Groundwater must be affected above the groundwater Protective Concentration Level (PCL).
    - Potable water supplied to MSD property and Public Water Distribution System exists within 0.5 Miles



### The MSD Process

- $\overline{3}$
- Pre-MSD meeting with City
- Application to City
- City Review and Deemed Complete
- Public Meeting
- City Council Hearing
- City issues MSD Ordinance or Resolution of Support
- Obtain Resolution of Support from City Council for each Municipality located within 0.5 mile of MSD Boundary, or which has a Water Well within 5 miles of MSD Boundary
- Obtain support each Retail Public Utility that has Water Well within 5 miles of MSD Boundary
- MSD Application to TCEQ
- MSD Certification by TCEQ

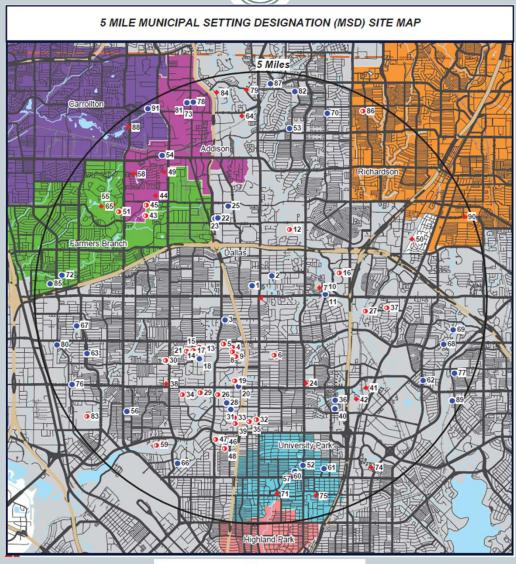


4

- \$1,000 Application Fee
- Mailings
  - Notifications to Water Well Owners within a 5-Mile Radius
    - × 3 Attempts Required for Non-Deliverable Mailings
      - First 2 attempts via Certified Mail
      - If Certified Mailings undeliverable 3<sup>rd</sup> attempt via USPS Mail with Delivery Confirmation
      - Other attempts via hand delivery with Signed Delivery Confirmation
    - Research Appraisal District Records
    - × Google Search
  - Signed Delivery Receipts for all Mailings
- Map showing Public Water Distribution System within 0.5 Mile Radius of MSD Property
- Map showing MSD Property within City Boundary
- Warrantee Deed for Property(ies)
- MSD Survey (Property Boundary or Beyond per City MSD Requirement)





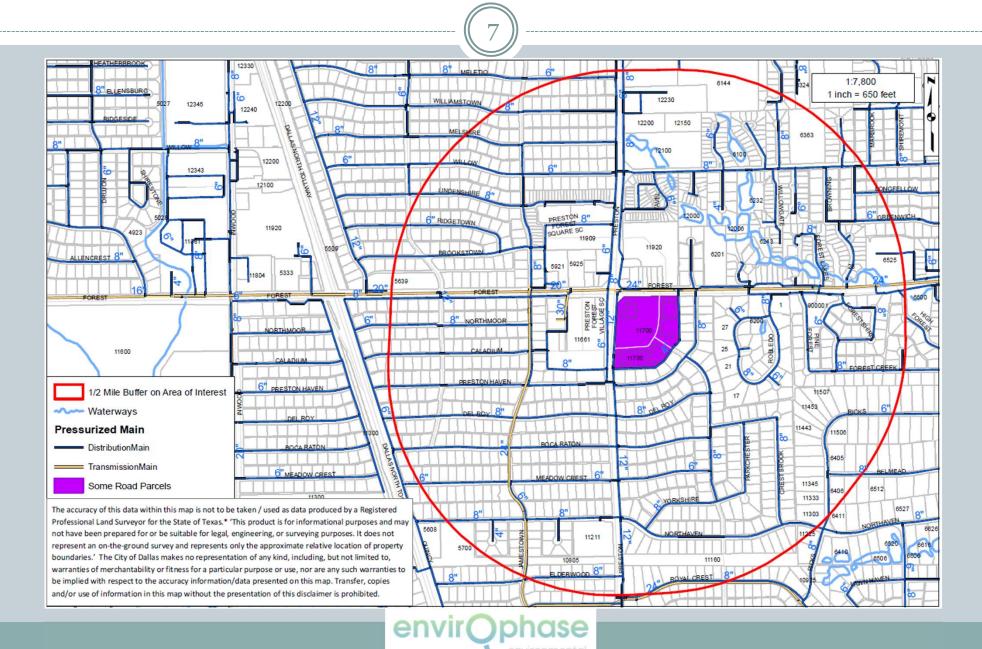


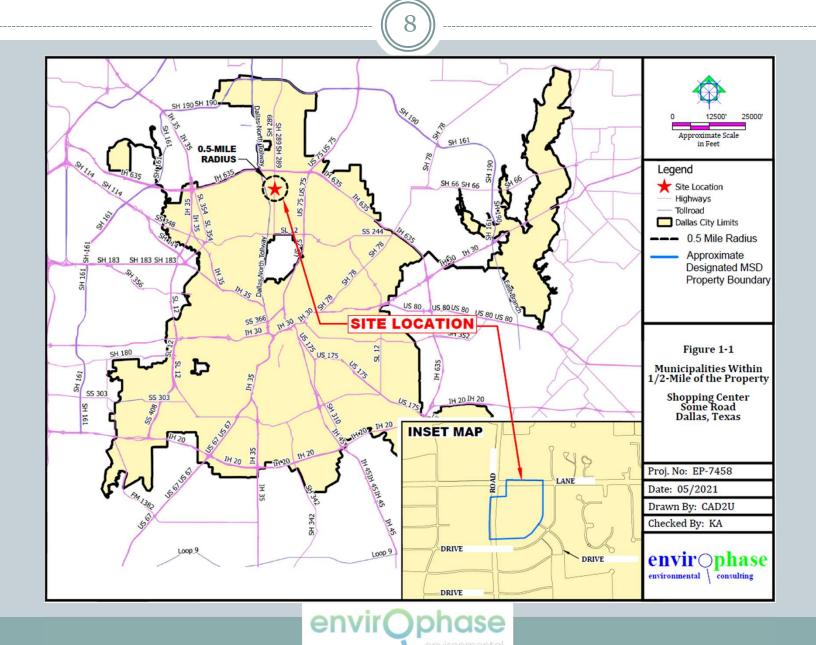


,	6	
		1

1st Notice		3rd Notice	4th Notice	Mary St	dance is	Well ID	Site Name	Well Address	Well City	Well	Well	Current Owner	Muit Address	Mail City	Mail	Mail Zip	Water Unage	Depth
18t Notice	2nd Notice	1000	Complete	map it.	Page #	7X159400	JOHN NEL	SOS WILLOW IN	DALLAS	State	Zip	JACKS FAMILY REVOCTRUST THE	FOR WILLOW IN	DATE LAS	State	75230-2154	Water Unage	Drift
Yes	- 2	Yes	-	- 4		TX196409	ROBERT H. YOUNG CO, INC	6144 CHURCHILL WAY	DALLAS	TX		ST ALCUIN MONTESSORI SCHOOL	8144 CHURCHILL WAY	DALLAS	TX	75230-2154	IRRIGATION	1057
Tell	Yes		X 3	- 2		TX196402	MR LONG	5040 NORTHAVEN RD	DALLAS	TX		CONGDON JENNIFER	5240 NORTHAVEN RD	DALLAS	TX	75230-1604	IRRIGATION	1007
	Yes		9 6	1		7X111710	Fred White	5431 LOBELLO DR	DALLAS	TX	76220	TRESTER JAMES M & HOLLY M	S4STLOBELLO DR	DALLAS	118	75229-5518	IRRIGATION	830
Yes	7.04		9 6		7	TX412540	Tower Homes	5214 ROYAL LN	DALLAS:	TX		THOMPSON BRUCE T & MICHELLE D	5214 ROYAL IN	DALLAS	TX	75229-6525	ERRIGATION:	820
Yes*			9	- 8		TX142298	Beth Montgomery	6311 NORTHPORT DR	DALLAS	TX		MONTGOMERY THOMAS A & BET	8311 NORTHPORT	DALLAS	TX	75230-4010	IRRIGATION:	820
-	Ves	Yes	X 8	- 7		33-02-902	ELECTRONIC DATA SYSTEM	7171 FOREST LANE	DALLAS	TX:		MM SWAN LAKE LLC	1800 VALLEY VIEW LN STE 300	FARMERS BRANC	TX	75234-8945	IRRIGATION	1047
	A - A	Yes	8 - ē	- 6	11	TX111712	Robert Lutz	5431 URBULA LN	DALLAS	TX:	75229	GALARDI DAVID A & JENNIFER	5431 URSULA LN	DALLAS	TX	75229-8425	IRRIGATION:	820
Yes	8 V		X ê			TX123634	Jerry Smith	5531 PALOMAR LN	DALLAS	TX.	75229	CLARK VICTOR ELLIS	5531 PALOMAR LN	DALLAS	TX	75229-8415	IRRIGATION	740
Yes	S 8		X - a	- 10	14	33-02-603	ELECTRONIC DATA SYSTEM	7447 FOREST LANE	CALLAS	TX.	76230	LAKE FOREST COMMUNITY ASSOCIATION INC	12700 HELCREST RD STE 294	OALLAS:	TX S	75230-2157	IRRIGATION	1031
Yes	Q 0		2 1			7X158084	JOHN GRANT	7100 FOREST LN	DALLAS	TX.	75230	LAKE FOREST COMMUNITY	12700 HELCREST RD STE 234	CALLAS	TX	75230-2157	HOUSEHOLD .	36
-	Yes		å <u>3</u> 1	12		TX398590	Northwood Country Club	6524 ALPHA RD	DALLAS	TX.		NORTHWOOD CLUB	8524 ALPHA RD	DALLAS	TX	75204-3541	RRIGATION	820 1740
Yes	3 9		á – 11	.13		7X297114	Richard Majouf	50711 STRAIT LN	DALLAS	TX :		MM 10711 STRAIT LN LLC	1800 VALLEY VIEW LN STE 300		HTX :	75234-8945	IRRIGATION	
Yes	Ø 9		2 3			TX156833	J. K. Hersh	50714 LENNOX LN	DALLAS	£X.		HERBH KENNETH A	3505 TURTLE CREEK BLVD APT 18B	DALLAS	TX	75219-5562	IRRIGATION	800
: : <del>=</del> :	3) <del></del>	Yes	0.0			TX198410	JOHN BILVERTHORN	10640 LENNOX LN	DALLAS	TX.		CRAFTBRIDGE LP	10640 LENNOX LN	DALLAS	TX (	75229-5418	IERIGATION:	1100
14	S = 3	10-	tio			TX305825	LINBECKIT. Boone Pickens Hospice I		DALLAS	TX:		PRESBYTERIAN COMMUNITIES & SERVICES	840 W SOUTHLAKE BLVD	BOUTHLAKE	TX	76062-8023	STOCK	1860
S 37	S = 3	Yes	§ 7.	- 17	27	TX116105	Goldstein	4809 HARRYS LN	DALLAS	DX:		GOLDSTEIN ROBERT & AMANDA	4609 HARRYS LN	DALLAS	TX	75229-5408	IRRIGATION	845
Yes	S 0		0 10	16	30	TX198404	MIKE ANDERSON	10540 LENNOX LN	DALLAS	TA		ANDERSON MICHAEL SCOTT	PO BOX 2549	VICTORIA	TX	77902-2540	IRRIGATION	170e
S 20	Yes	749	§ 10			TX74625	CENE PHILLIPS	10300 GAYWOOD RD	DALLAS	TA		BENEFIT OF THE FGH RESIDENTIAL QUALIFYING TRUST	10900 GAYWOOD RD	DALLAS	TX	75229-6607	DOMESTIC	875
Yes	S		2 - 7			TX198408	TOM HICKS	5523 WALNUT HILL UN	DALLAS	TX .		MM CRESPI ESTATES LLC	1800 VALLEY VIEW LN		TX	75234-8922	IRRIGATION	1750
-	S - 1	Yes				TX482795	ANDREW SUMMERMAN	4515 HARRYS LN	DALLAS	TX :		SOMMERMAN ANDREW B & WANG RUISHU	4515 HARRYS LN	DALLAS	TX	75229-5405	IRRIGATION	600
-	N - 1	( ) = - ·	Yan	- 2	38	TX196399	MR. MCKEE	13727 NOEL RD	DALLAS	TX :	/5240	GALLERIA NORTH II LP	222 S RIVERSIDE PLZ 26TH FLR	CHICAGO	150	60605-5808	HOUSEHOLD:	40
Yes	Si 3		3 9	- 25		TX198398	ALLIED STEEL COMPANY	19710 DALLAS PKWY	DALLAS	TX	/5240	GALLERIA ALPHA PLAZA LTD	2001 PRESTON RD 1500 MARILLA DR	PLANO	TX	75093-2313	INDUSTRIAL	40
Yes	8 0	_	2 2	- 24	63	7334024904 730228677	BILL BEDARD	14000 NOEL RD	DALLAS	TX	70230	COTY OF DALIAS CONCHESTER POTES LTD	1500 MARILLA DR 10040 REGENCY CIR # 200	DALLAS	ALC:	68114-3734	INJECTION	240
Yes	9 9		2 2			TX229677 TX430613	Eric Steele			TX.			10040 REGENCY CIR # 200 6806 IWWOOD RD		TX.	76220-2131		
Yes	2 2	Mari	3 0				LIRBAN RESERVE HOA	9808 INWOOD RD	DALLAS	TX	75/220	9606 INWOOD ROAD TRUST URBAN RESERVE HOA INC	9806 IWWOOD RD 8360 I BJ FRWY STE 300	DALLAS DALLAS	TX	75220-2131	IRRIGATION	800
Yes*	- 0	Yes	2 0		44	TX456576	LARRY LACERTE	SON DADO IN	DALLAS	10	70/219	OWNER WITHHELD	KINDEDO KAN LIGTEN	MANUFACTURE OF THE PARTY OF THE	NA	1:2243-1:100	IRRIGATION	940
	S 4		2 0			7X349860	David And Coleen Have	4884 MEADWOOD RD	DALLAS	100	76-200	HAYES COLLEN A & DAVID W HAYES	4664 MEADOWOOD RD	DALLAS	TV	70793 7045	DOMESTIC .	1990
Yes	2 - 2					TX349669 TX348648	Devid And College Hays Deflas Episcopal School	4100 MERRELL RD	DALLAS	TX		EPISCOPAL SCHOOL DALLAS INC	4100 MERRELL RD	DALLAS	TX	75220-2015 75229-8217	IRRIGATION	1660
Yes*	9 3		2 2			7X198104	MR & MRS T PEARLMAN	5404 PARK LN	DALLAS	TX		PEARLMAN ELANE	5404 PARK LN	DALLAS	TX	75220-6217	IRRIGATION	1721
Yes	9		1			TX81013	Fred Baron	5950 DELOACHE AVE	DALLAS	TX		15950 DELOACHELLC	S00 CRESCENT CT STE 700	DALLAS	11X	75201-7849	IRRIGATION	860
Yes	- 1		1	90	60	TX459054	Royal	5506 DELCACHE AVE	DALLAS	TX		ROYALL HRAM WALKER & ROYALL JENNIFER AN	5056 SHERRY LN STE 1250	DALLAS	TX	75225-8089	IRRIGATION	760
Yes*	9 - 3		2 - 2			TX427796	Bob Schlegel	4404 VALLEY RIDGE RD	DALLAS	12		SCHLEGEL ROBERT J & 700 HERITAGE SQUARE	2501 N HARWOOD ST #2500	DALLAS	TX	75201-1618	IRRIGATION	1660
Yes	2 1		3 3			TX100634	The Lake Doctor	8787 JOLEDAN WAY	DALLAS	10		BARNES H DOUG	8787 JOURDAN WAY	DALLAS	TX	75225-3108	IRRIGATION	760
100	Yas		3 3			TX409292	Prestyterien Village North	8600 SKYLINE DR	DALLAS	TX.		PRESBYTERIAN VILLAGE NORTH	8100 COLWELL BLVD STE 225	IRVING	TX	75039-3147	STOCK	1160
Yes	100		S 5			33-02-701	CITY OF DALLAS	4141 WALNUT HILL LN	DALLAS	18		CITY OF DALLAS	1500 MARILLA DR	DALLAR	10	75201-6318	UNUSED	1636
Yes	7 5		3 3			TX529416	Chatham Hills	SSOS CHATHAM HILL RO	DALLAS	77		BR TRUST THE	DACCHILL WOO'D PKWY STE 300	FORT WORTH	TX	78177-1562	TESTWELL	300
Yes	9		3 3			33-02-005	REYNOLDS CHILDRENS HOME	8200 WALNUT HILL UN	DALLAS	TX		PRESBYTERIAN HEALTHCARE SYSTEM	612 E LAMAR BLVD FL 6	ARLINGTON	TX	76011-4121	UNUSED	1020
-	Yes		9			33-02-906	GLEN LAKES COUNTRY CLUB	9800 GOLF LAKES TRL	DALLAS	TX		9800 GOLF LAKES TRAIL LLC & WARMSIDE LAKESIDE RENTALS LL	2015 MANHATTAN BEACH BLVD #100	REDONDO BEACH	CA	90278-1230	UNUSED	1125
Yes	0 - V		V 93	43	55	TX276112	City Of Addison	4101 BIOMA RO	DALLAS	TX:		PARISH DAY SCHOOL THE OF THE EPISCOPAL C	4101 SIGMA RD	DALLAS	TX	75244	IRRIGATION	850
Yes	0 0		Ø 93	44	56	33-02-401	GREENHILL SCHOOL	4141 SPRING VALLEY RD	ADDISON	TX		GREENHILL SCHOOL	4141 SPRING VALLEY RD	ADDISON	TX	75001-3515	UNUSED	1656
Yes	0 0		9	48	56	TX346544	EDWARD B.FRANKEL	3950 SPRING VALLEY RD	FARMERS BRANCH	TX:		LAKEVIEW AT PARKSIDE	1800 E DEERE AVE	SANTA ANA	CA	92705-5721	IRRIGATION	1705
Yes	8 8		X ê	47	67	TX321575	Godwin Construction-Surrey Circle	5339 SURREY CIR	DALLAS	TX:	76200	TAYLOR CATHERINE 2016 REVOCABLE FAMILY T	5600 LOVERS LANE STE 116-386	DALLAS	TX	75209-4330	IRRIGATION:	780
-	3 4 7	Yes	7 ê			TX413082	Godwin Construction	5540 FARQUHAR LN	DALLAS	TX:	76200	EDGEMON TRACY & EDGEMON KARAN	5540 FARQUHAR LN	DALLAS	TX	75209-3508	IRRIGATION	780
-	3 = 8	Yes	V ê			33-02-405	C.S. HAMILTON	14775 MIDWAY RD	ADDISON	TX.		ELAHINEJAD HABIBOLLAH	5835 CORBIN AVE	TARZANA.	CA.	91356-1004	DOMESTIC:	800
Yes	8 4		X a			33-03-403	RESTLAND MEMORIAL PARK	9001 RESTLAND RD	DALLAS	TX.		NORTHBTAR CEMETERY SERVICES OF TEXAS LLC	1900 ST JAMES PLACE STE 300	HOUSTON	TX	77056-4128	UNUSED	1166
Yes	3 3		2 a			TX414872	Kevts Caldwell	14127 TANGLEWOOD DR	FARMERS BRANCH	TX.		CALDWELL KEVIN LEE & KIRK MARY KATHERIN	14127 TANGLEWOOD DR	FARMERS BRANC	HTX	75234-3851	IRRIGATION	640
Yes	13		2 1			TX198415	C.F. VERBICK	5231 MEADOWCREEK DR	DALLAS	TX.		ASCP RC	5231 MEADOWCREEK DR	DALLAS	TX	75248-4048	HOUSEHOLD	20
Yes	0		2 1	54	65	TX198411	FRED HARRINGTON	4135 BELT LINE RD	DALLAS	TX:	75001	RUTTER & WILLBANKS CORP	PO BOX 2492	MIDLAND	TX	79702-2492	DOMESTIC	920 2600
-	Yes		2 1	- 56	68	33-02-403	BROOKHAVEN COUNTRY CLUB		FARMERS BRANCH	£X :		MUSGRAVE A C JR	14131 MIDWAY RD 1200	ADDISON	TX	75001-3801	IRRIGATION	2600
7 (4)	20 8 9	-	700			TX198103	CHAS TUCKER	9731 LAUOYADR	DALLAS	£X.		RISEMAN DEVELOPMENT CO	3731 LA JOYA DR	DALLAS	TX	75220-3633	DOMESTIC:	41.
Yes	30 3	784700	. 22			33-02-408	LES LACS VILLAGE, INC.	3702 PARK PL	ADDISON	TX:		WENDORFF JUDITH	3742 PARK PL	ADDISON	TX	75001-4401	IRRIGATION	1610
Well	S = 0	Yes		96		TX459943 TX196608	Mr. Etlet WILLIAM A. MCDONALD	4047 COCHRAN CHAPEL RD 10541 ROYAL CLUB LN	DALLAS DALLAS	TX:		BARON LISA B	4047 COCHRAN CHAPEL RD 10541 ROYAL CLUB LN	DALLAS DALLAS	TX	75229-1501 75229-5048	IRRIGATION HOME YARD WATERIN	700
Yes	9		-	50		33-02-202	WILLIAM A. MCCOUNALD	5800 KELLER SPRINGS RO	DALLAS	178	75048	RAMIREZ TONY & CONCEPTION KELLER SPRINGS ESTATE LTD	4161 MCKINNEY AVE #5	DALLAS	TX	75204-8096	THANK TAND WATERIN	ACC 50
Yes	9		0 0			33-02-402	BROOKHAVEN COUNTRY CLUB	2227 BROOKHAVEN CLUB D		TX		BROOKHAVEN COUNTRY CLUB	PO BOX 2539	BAN ANTONIO	17%	78299-2539	IRRIGATION	2565
Yes	8 9		0 6			TX196827	MR M.G. ROGERS	3134 BATBUMA DR	DALLAS	TX		ALVARADO MARGARITA	3134 SATSUMA DR	DALLAS	TX	75229-3748		76
	S + 3	Yes	8 6			TX196400	FAULINER ROBERT & CAROL	7606 EL PASTEL DR	DALLAS	TX		FAULKNER ROBERT & CAROL	7806 EL PASTEL DR	DALLAS	TX	75248-3119		50-
Yes	8 7		0 6	73	82	TX196412	NORMAN CHANDLER	12411 VERONICA CIR	FARMERS BRANCH	TX		HOUGEN JERRY & DONNA	12411 VERONICA CIR	FARMERS BRANC	HTX	75234-6403	HOME YARD WATERIN	
Yes	<del>11 1</del>		0 6	75	82	33-02-201	CITY OF ADDISON	15999 ADDISON RD	ADDISON	TX		ADDISON CITY OF	PO BOX 9009	ADDISON	TX	75001-9009	UNUSED	2778
Yes	2 N		3 0 5	74	82	33-10-301	VILLAGE COUNTRY CLUB	6061 VILLAGE BEND DR	DALLAS	TX		FM VILLAGE FIXED RATE ILC	2000 MCKINNEY AVE BTE 1000	DALLAS	TX	75201-2027	IRRIGATION	1154
	3 1		No			33-10-302	SOUTHERN METHODIST UNIV.	3125 DANIEL AVE	DALLAS	TX.		SOUTHERN METHODIST UNIVERSITY	6425 BOAZ LN	DALLAS	TX	75205	UNUSED	2960
	Yes	-	A			TX186757	C.W. CAVE	10008 GOODYEAR DR	DALLAS	TX		CHAVEZ ADALBERTO & ANA CALLEJAS	10008 GOODYEAR DR	DALLAS	TX	75229-5819		38
Yes	2 2		V 8	177	53,68	TX 198044	F. A. GAHAM	6450 CHURCH RD	DALLAS	TX		DALLAS CITY OF	1500 MARILLA ST	CALLAS	TX	75201-6318	HOUSEHOUD	40
1-6	Chiras		8 28			TX196419	W.M. WAKEFIELD	16280 ADDISON RD	DALLAS	TX		COLE MORGAN LTD	PO BOX 800729	DALLAS	TX	75380-0729	HOUSEHOLD	50
-		Yes	\$ 0		80		HR-33-02-206	9009 PRESTON TRAIL DR	DALLAS	TX.	75248		8360 LBJ FWY STE 300	DALLAS	TX.	75243-1100		3 88
Yes	Q= W	11.50	Maria B			TX196828	MR. DEAN A. RAMSAY	16761 BROCKBANK CT	DALLAS	TX.		REUTER HENZ E	4310 VALLEY RIDGE RD	DALLAS	TX	75220-1028	NOT REPORTED	60
-	ú <u>-</u>	- 20 <b>-</b> 20	No	81	92	TX198417	WILSON CO	18401 ADDISON RD	DALLAS	TX.		RSP MOMT SERVICES INC	PO BOX 7066	DALLAS	TX		INDUSTRIAL	1000
-	Yes	-27-1	de manage	- 80	97	TX196401	RICHARDSON I S D	8767 BRENTFIELD DR	DALLAS	TX.		RICHARDSON I 8 D	420 S OREENVILLE AVE	RICHARDSON	TX	75081-4107	NOT REPORTED	950
Yes			Carrier Co	- 83	97	TX465979	Calvary Hit Cemetary	3235 LOMBARDY LN	DALLAS	TX.		CALVARY HILL CEMETERY	PO BOX 190507	DALLAS	TX	75219-0507	IRRIGATION	1520
	S 30		No	84	98	33-02-204	BENT TREE COUNTRY CLUB	5030 WESTGROVE DR	DALLAS	TX :	75248	ACUITY HOLDINGS INC	5055 KELLER SPRINGS RD STE 250	ADDISON	TX	75001-8219	IRRIGATION	2786
-	Yes	PACE I	the service	- 65	104	TX196825	MR. O.W. STANDIFER	2884 MEADOW PORT DR	DALLAS	TX :		HUANG KENNETH & WYNKAY MICHELLE	2884 MEADOW PORT DR	DALLAS	TX	75234-7408	WATER LAWN	50
Yes	X -11-3		6 0	- 60	105	TX333030	PETER TING	1304 SEMINOLE DR	RICHARDSON	TX :	75080	TING PETER & MAY	1304 SEMINOLE DR	RICHARDSON	TX	75080-3735	DOMESTIC	300
Yes	O		N a			TX198416	PAT SMITH	6350 KELLER SPRINGS R	DALLAS	TX		AV PRESTONWOOD TRAILS LLC	286 N MAIN ST	SPRING VALLEY	NY	10977-9704	DOMESTIC	60
	St	Yes	5 0	- 66	108	33-02-103	WARREN CLARK DEV.	1827 LAKECREST CIR	CARROLLTON	TX.	75008	EBENRICK KENNETH & KAYLEIGH	1827 LAKECREST CIR	CARROLLTON	TX	75006-4701	IRRIGATION	1566
-	Yes	1	2 9	- 66		7X198040	JACK PRICE	9525 WHITE ROCK TRU	DALLAS	TX.		SW WHITE ROCK TRAIL OWNER LLC	4145 TRAVIS ST 8TE 300	DALLAS	TX	75204-1690	DOMESTIC	71
			9 60	100	244	33-03-404	CITY OF RICHARDSON	501 BUCKINGHAM	RICHARDSON	TX :		RICHARDSON, CITY OF	411 W ARAPAHO RD	RICHARDSON FRISCO	TX		PUBLIC SUPPLY	1254
Yes	30 0 0					TX198420	H.F. WELLS	3221 KELLER SPRINGS RD	DALLAS	TX		3221 KELLER SPRINGS ROAD OWNER LLC	2600 NETWORK BLVD STE 500		TX		HOUSEHOLD	















- Texas Risk Reduction Program (TRRP) Protective Cleanup Levels (PCLs) are based on people potentially using groundwater for Drinking Water Purposes and tend to be pretty stringent.
- Without an MSD, the following PCLs for the groundwater ingestion exposure pathways are applicable:  $^{GW}$ Soil $_{Ing}$ ,  $^{GW}$ Soil $_{Class3}$ ,  $^{GW}$ GW $_{Ing}$ ,  $^{GW}$ GW $_{Class3}$
- With an MSD, PCLs for groundwater ingestion exposure pathways are no longer applicable.
- With an MSD, alternative PCLs can then be developed based on the following non-groundwater ingestion exposure pathways: TotSoil<sub>Comb</sub> and AirGW<sub>Inh-V</sub>





### Table 1 Tier 1 Residential Soil PC

Last Revised: May 10, 2023

		0.5 acre source area										
Chemical of Concern	CAS	<sup>Tot</sup> Soil <sub>Comb</sub> <sup>2</sup> (mg/kg)	note <sup>3</sup>	<sup>GW</sup> Soil <sub>Ing</sub> (mg/kg)	note <sup>3</sup>	<sup>GW</sup> Soil <sub>Class 3</sub> (mg/kg)	note <sup>3</sup>	<sup>Air</sup> Soil <sub>Inh-V</sub> <sup>4</sup> (mg/kg)	note <sup>3</sup>	<sup>Air</sup> GW-Soil <sub>Inh-V</sub> (mg/kg)		
Dichloroethylene, 1,1-	75-35-4	2.3E+03	n	5.0E-02	m	5.0E+00	m	5.2E+03	n	1.2E+04		
Dichloroethylene, cis-1,2-	156-59-2	1.4E+02	n	2.5E-01	m	2.5E+01	m	9.2E+02	n	4.4E+03		
Dichloroethylene, trans-1,2	156-60-5	5.9E+02	n	4.9E-01	m	4.9E+01	m	9.2E+02	n	3.8E+03		
Tetrachloroethylene [PCE]	127-18-4	7.1E+02	С	5.0E-02	m	5.0E+00	m	9.4E+02	С	5.0E+03		
Trichloroethylene [TCE]	79-01-6	1.8E+01	n	3.4E-02	m	3.4E+00	m	3.1E+01	n	1.6E+02		
Vinyl chloride	75-01-4	3.7E+00	c	2.2E-02	m	2.2E+00	m	4.3E+01	С	4.2E+01		
Vinylcyclohexane	695-12-5	4.1E+04	n	1.4E+03	n >S	1.4E+05	n >S	-	_	_		
Warfarin	81-81-2	2.0E+01	n	2.8E-01	n	2.8E+01	n	-	-	-		
Xylene, m-	108-38-3	8.9E+03	n	1.1E+02	m	1.1E+04	m >S	9.4E+03	n	1.1E+05		
Xylene, o-	95-47-6	4.8E+04	n	7.1E+01	m	7.1E+03	m >S	6.8E+04	n	1.0E+06		
Xylene, p-	106-42-3	8.9E+03	n	1.5E+02	m	1.5E+04	m >S	9.4E+03	n	1.4E+05		
Xylenes	1330-20-7	6.0E+03	n	1.2E+02	m	1.2E+04	m >S	9.4E+03	n	1.3E+05		
Zinc	7440-66-6	9.9E+03	n	2.4E+03	n >S	2.4E+05	n >S	-	_	_		
6 C aliphatics (TPH) (>53% n-hexane content)	NA	3.3E+03	n	1.7E+02	n	1.7E+04	n >S	1.0E+04	n	1.2E+04		
6 C aliphatics (TPH) (<53% n-hexane content)	NA	4.8E+03	n	1.7E+02	n	1.7E+04	n >S	2.8E+05	n	3.4E+05		
>6-8 C aliphatics (TPH) (>53% n-hexane content)	NA	3.3E+03	n	4.2E+02	n	4.2E+04	n >S	1.0E+04	n	2.0E+04		
>6-8 C aliphatics (TPH) (<53% n-hexane content)	NA	4.8E+03	n	4.2E+02	n	4.2E+04	n >S	2.8E+05	n	5.6E+05		





#### Table 3

#### Tier 1 Groundwater PCLs - Residential and Comm

Last Revised: May 10, 2023

		Residential											
				The second secon		AirGW <sub>Inh-V</sub>		AirGW <sub>Inh-V</sub> 30 acre					
Chemical of Concern		GWGW <sub>Ing</sub> <sup>2</sup>	. 4	GWGW <sub>Class3</sub> 3	-	0.5 acre source	. 4	source area					
	CAS	(mg/L)	note <sup>4</sup>		note*	area (mg/L)	note <sup>4</sup>	(mg/L)					
Dichloroethylene, 1,1-	75-35-4	7.0E-03	m	7.0E-01	m	1.7E+03	n	2.2E+02					
Dichloroethylene, cis-1,2-	156-59-2	7.0E-02	m	7.0E+00	m	1.2E+03	n	1.6E+02					
Dichloroethylene, trans-1,2	156-60-5	1.0E-01	m	1.0E+01	m (	7.7E+02	n	9.9E+01					
Tetrachloroethylene [PCE]	127-18-4	5.0E-03	m	5.0E-01	m	5.0E+02	c >S	6.4E+01					
Trichloroethylene [TCE]	79-01-6	5.0E-03	m	5.0E-01	m	2.4E+01	n	3.1E+00					
Vinyl chloride	75-01-4	2.0E-03	m	2.0E-01	m	3.8E+00	С	4.9E-01					
Vinylcyclohexane	695-12-5	1.2E+01	n >S	1.2E+03	n >S		_	_					
Warfarin	81-81-2	7.3E-03	n	7.3E-01	n	-	_	_					
Xylene, m-	108-38-3	1.0E+01	m	1.0E+03	m >S	1.1E+04	n >S	1.4E+03					
Xylene, o-	95-47-6	1.0E+01	m	1.0E+03	m >S	7.6E+05	n >S	9.8E+04					
Xylene, p-	106-42-3	1.0E+01	m	1.0E+03	m >S	9.4E+03	n >S	1.2E+03					
Xylenes	1330-20-7	1.0E+01	m	1.0E+03	m >S	1.0E+04	n >S	1.3E+03					
Zinc	7440-66-6	7.3E+00	n >S	7.3E+02	n >S	i—i	_	_					
6 C aliphatics (TPH) (>53% n-hexane content)	NA	1.5E+00	n	1.5E+02	n >S	1.1E+02	n >S	1.4E+01					
6 C aliphatics (TPH) (<53% n-hexane content)	NA	1.5E+00	n	1.5E+02	n >S	2.9E+03	n >S	3.8E+02					
>6-8 C aliphatics (TPH) (>53% n-hexane content)	NA	1.5E+00	n	1.5E+02	n >S	7.1E+01	n >S	9.1E+00					
>6-8 C aliphatics (TPH) (<53% n-hexane content)	NA	1.5E+00	n	1.5E+02	n >S	1.9E+03	n >S	2.5E+02					
>8-10 C aliphatics (TPH)	NA	2.4E+00	n >S	2.4E+02	n >S	3.3E+01	n >S	4.3E+00					
>10-12 C aliphatics (TPH)	NA	2.4E+00	n >S	2.4E+02	n >S	2.2E+01	n >S	2.8E+00					
>12-16 C aliphatics (TPH)	NA	2.4E+00	n >S	2.4E+02	n >S	5.1E+00	n >S	6.6E-01					
>16-21 C aliphatics (TPH)	NA	4.9E+01	n >S	4.9E+03	n >S	_	_	_					
>16-21 C aliphatics (TPH) (for transformer mineral oil	NA NA	3.9E+01	n >S	3.9E+03	n >S	-	_	_					



#### TABLE 4D SOIL DATA SUMMARY - VOCs

Commercial Property XYZ Road Dallas, TX

Sample ID	Sample Date	Tetrachloro- ethene (mg/kg)	Trichloro- ethene (mg/kg)	cis-1,2- Dichloro- ethene (mg/kg)	trans-1,2- Dichloro- ethene (mg/kg)	l,l- Dichloro- ethene (mg/kg)	Vinyl Chloride (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	sec-Butyl- benzene (mg/kg)	n-Butyl- benzene (mg/kg)	p-Cymene (mg/kg)	1,2- Dichloro- benzene (mg/kg)	Isopropyl- benzene (mg/kg)	Methylene Chloride (mg/kg)	n-Propyl benzene (mg/kg)	1,2,4- Trimethyl- benzene (mg/kg)	1,3,5- Trimethyl- benzene (mg/kg)
TRRP Tier I Groundwate ( <sup>GW</sup> Soil <sub>ing</sub> )		0.05	0.034	0.25	0.49	0.05	0.022	0.026	8.2	7.6	120	0.62	85	150	230	18	350	0.013	45	33	36
TRRP Tier 1 Class 3 Gro (GWSoil <sub>Class</sub> )	undwater	15	3.4	25	49	5	2.2	2.6	820	760	12,000	62	8,500	15,000	23,000	1,800	35,000	1.3	4,500	3,300	3,600
TRRP Tier 1 PCL (TelSoil		710	18	140	590	2,300	3.7	120	5,900	6,400	6,000	800	3,300	3,300	8,200	720	4,300	1,600	2,200	1,600	1,500
TRRP Tier I Subsurface ( <sup>Air</sup> Soil <sub>Inh-1</sub> )		940	31	920	920	5,200	43	160	63,000	29,000	9,400	1,400	N/A	N/A	N/A	800	9,200	13,000	6,300	4,000	3,500
TMW-1 (6)	12/09/19	<0.000546	<0.000730	<0.000445	<0.000641	<0.000410	<0.000652	<0.000306	<0.00148	<0.000496	<0.000646	0.00269 J	<0.000386	<0.000405	<0.000471	<0.000425	<0.000257	<0.00624	<0.000423	<0.000377	<0.000427
TMW-2 (4)	12/09/19	0.0251	<0.000500	<0.000305	<0.000439	<0.000281	<0.000447	<0.000210	<0.00101	<0.000340	<0.000442	0.000527 J	<0.000264	<0.000277	<0.000323	<0.000291	<0.000176	<0.00427	<0.000290	<0.000258	<0.000293
TMW-3 (4)	12/09/19	0.000818 J	<0.000546	<0.000332	<0.000480	<0.000306	<0.000488	<0.000229	<0.00111	<0.000371	<0.000483	<0.000452	<0.000288	<0.000303	<0.000352	<0.000318	<0.000192	<0.00466	<0.000316	<0.000282	<0.000319
TMW-4 (6)	12/09/19	<0.000347	<0.000464	<0.000283	<0.000408	<0.000260	<0.000415	<0.000195	<0.000940	<0.000316	<0.000410	<0.000384	<0.000245	<0.000257	<0.000299	<0.000270	<0.000163	<0.00397	<0.000269	<0.000240	<0.000272
MW-1 (4')	02/24/20	<0.000388	<0.000518	<0.000315	<0.000455	<0.000291	<0.000463	<0.000217	<0.00105	<0.000352	<0.000458	<0.000429	<0.000274	<0.000287	<0.000334	<0.000302	<0.000182	<0.00443	<0.000300	<0.000268	<0.000303
MW-1 (9')	02/24/20	<0.000346	<0.000462	<0.000281	<0.000406	<0.000259	<0.000413	<0.000194	<0.000936	<0.000314	<0.000409		<0.000244	<0.000256	<0.000298	<0.000269	<0.000163	<0.00395			<0.000270
MW-1 (19')	02/24/20	0.0138	<0.000500	0.000547 J	<0.000440		<0.000447	<0.000210	<0.00101	0.000436 J	0.00193	HETERS FURCE OF	<0.000264		0.000466 J	DIVINOSAN	<0.000176	<0.00427	The second second		0.000932 J
MW-2 (7')	02/24/20	0.0197	0.0114	0.0151		<0.000294	<0.000468	9	<0.00106	<0.000356	<0.000463		<0.000277	<0.000290	<0.000338		<0.000184	<0.00447	<0.000303	<0.000270	<0.000306
MW-2 (14')	02/24/20	368	6.19	<0.211	<0.304	<0.194	<0.309	<0.145	<0.701	<0.235	<0.306	<0.286	<0.183	<0.192	<0.223	0.252 J	<0.122	<2.96	<0.200	0.266 J	<0.203
MW-2 (19') MW-3 (6')	02/24/20	0.996	0.0371 J 0.000726 J	<0.00865 0.00220 J	<0.0125	<0.00797	<0.0127	<0.00596	0.0653 J <0.00102	<0.00966	<0.0126 <0.000447	<0.0118	<0.00751 <0.000267	<0.00788	0.00978 J <0.000326	<0.00828 0.000542 J	<0.00500	0.233 J <0.00432	<0.00823	0.0342 J <0.00266	0.0127 J <0.000296
MW-3 (11')	02/24/20	4.71	0.000726 J	0.00220 J	<0.000444	<0.000283	<0.000708	<0.00983	0.0746 J	<0.0159	0.0242 J	<0.0194	0.0218 J	<0.0130	<0.00526	< 0.0137	0.0266 J	0.344 J	0.0323 J	0.0641 J	0.0285 J
MW-3 (18')	02/24/20	<0.00907	<0.000473	<0.00738	<0.0107	<0.00680	<0.0108	<0.00508	0.0697 J	0.0317	0.0862	<0.0100	<0.00640	0.0223 J	0.0489 J	<0.00706	0.00663 J		0.0241 J	0.170	0.0653 J





### TABLE 2 GROUNDWATER DATA SUMMARY - VOCs

Commcercial Property XYZ Road Dallas, TX

Sample ID	Sample Date	Tetrachloro- ethene (mg/L)	Trichloro- ethene (mg/L)	cis-1,2- Dichloro- ethene (mg/L)	trans-1,2- Dichloro- ethene (mg/L)	1,1- Dichloro- ethene (mg/L)	Vinyl Chloride (mg/L)	1,2- Dichloro- benzene (mg/L)	Benzene (mg/L)	Chloro- methane (mg/L)	Methylene Chloride (mg/L)	Naphthalene (mg/L)	All Other VOCs (mg/L)			
TRRP Tier 1 PCL ( <sup>GW</sup> GW)	ing)	0.005	0.005	0.07	0.1	0.007	0.002	0.6	0.005	0.07	0.005	0.49 Varies				
TRRP Tier 1 PCL for Clas Groundwater ( <sup>GW</sup> GW <sub>Class3</sub> )	3.3	0.5	0.5	7	10	0.7	0.2	60	0.5	7	0.5	49	Varies			
Tier 1 Non-Ingestion PCL (AirGW <sub>Inh-V</sub> ) - 0.5 acre sour	ce area	500	24	1,200	770	1,700	3.8	1,200	180	36	21,000	320	Varies			
	03/10/20	0.0110	<0.00100	<0.00100	<0.00100	<0.00100	<0.000400	<0.00100	< 0.00100	<0.00100	< 0.00500	<0.00200	BDL			
MW-1	04/01/21	0.0659	0.00130 J	0.00419	0.000585 J	< 0.000216	< 0.000234	<0.000236	< 0.000214	0.000698 J	< 0.00191	< 0.00200	BDL			
IVI VV -1	10/19/21	0.0618	0.00211 J	0.00410	< 0.000256	< 0.000216	< 0.000234	<0.000236	< 0.000214	<0.000318	< 0.00191	<0.00200	BDL			
	04/05/22	0.0596	0.00209 J	0.00383	0.000570 J	< 0.000216	< 0.000234	<0.000236	< 0.000214	<0.000318	< 0.00191	<0.00200	BDL			
	03/10/20	Well was dry during sampling														
	03/23/20	1.01	0.0479	0.00157	< 0.00100	<0.00100	0.00175 J	<0.00100	<0.00100	<0.00100	<0.00500	0.00855 J	BDL			
MW-2	04/06/20	Not sampled														
	04/01/21	1.55	0.374	0.0809	0.00342	0.000643 J	0.00624	0.000240 J	<0.000214	0.000604 J	< 0.00191	<0.00200	BDL			
	10/19/21	2.42	0.396	0.183	< 0.00512	<0.00433	< 0.00467	<0.00471	< 0.00429	<0.00635	<0.0383	<0.0400	BDL			
	04/05/22	2.37	0.280	0.0560	0.00369	0.000578 J	0.00416	0.000268 J	<0.000214	<0.000318	<0.00191	<0.00200	BDL			
	03/10/20	Well was dry during sampling  Well was dry during sampling														
	03/23/20	0.0168 [U]	<0.00100	0.0123	0.00224	<0.00100	<0.000400	<0.00100	<0.00100	<0.00100	0.00713 J	<0.00200	BDL			
MW-3	04/06/20	0.102	0.00586	0.0123	0.00224	<0.00100	0.00154 J	<0.00100	0.00110	<0.00100	<0.007133	<0.00200	BDL			
	10/19/21	0.102	0.0105	0.132	0.0133	<0.000216	0.001343	<0.000236	0.00110	<0.000318	<0.00191	<0.00200	BDL			
	04/05/22	0.0825	0.00332 J	0.0632	0.00887	< 0.000216	< 0.00117	<0.000236	0.00253 0.000574 J	<0.000318	<0.00191	<0.00200	BDL			
	04/01/21	0.0020			3,00001		Well was dry				*******					
MW-4	10/19/21	0.00256	< 0.000424	< 0.000174	< 0.000256	< 0.000216	<0.000234	<0.000236	<0.000214	<0.000318	< 0.00191	<0.00200	BDL			
22.77	04/05/22	<0.000500	<0.000424	0.000231 J	<0.000256	<0.000216	<0.000234	<0.000236	< 0.000214	<0.000318	<0.00191	<0.00200	BDL			





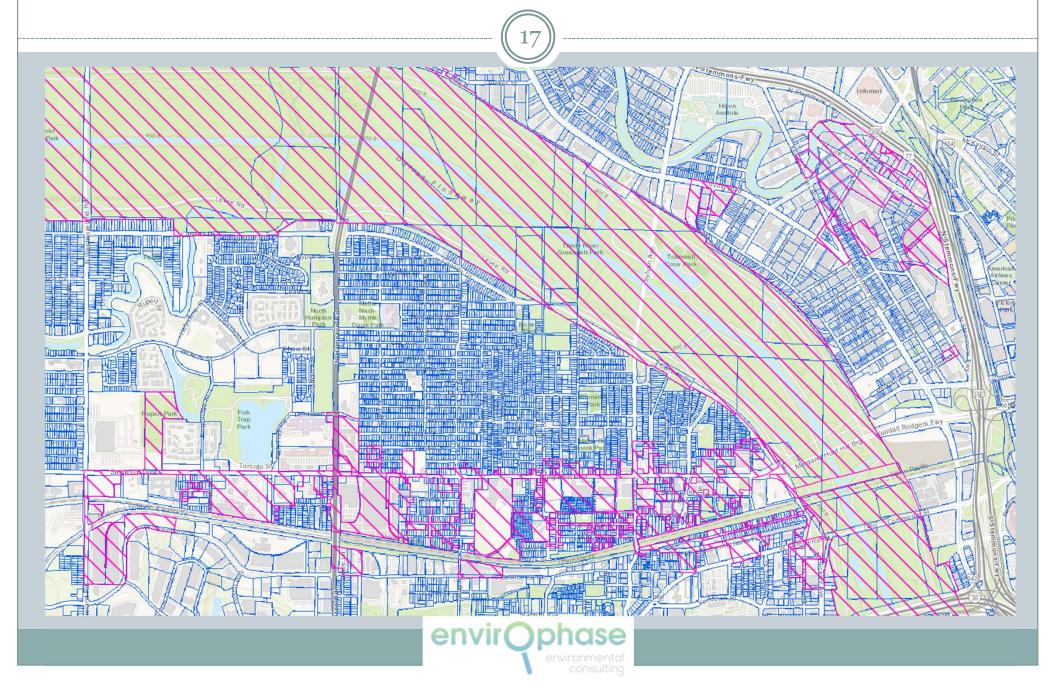


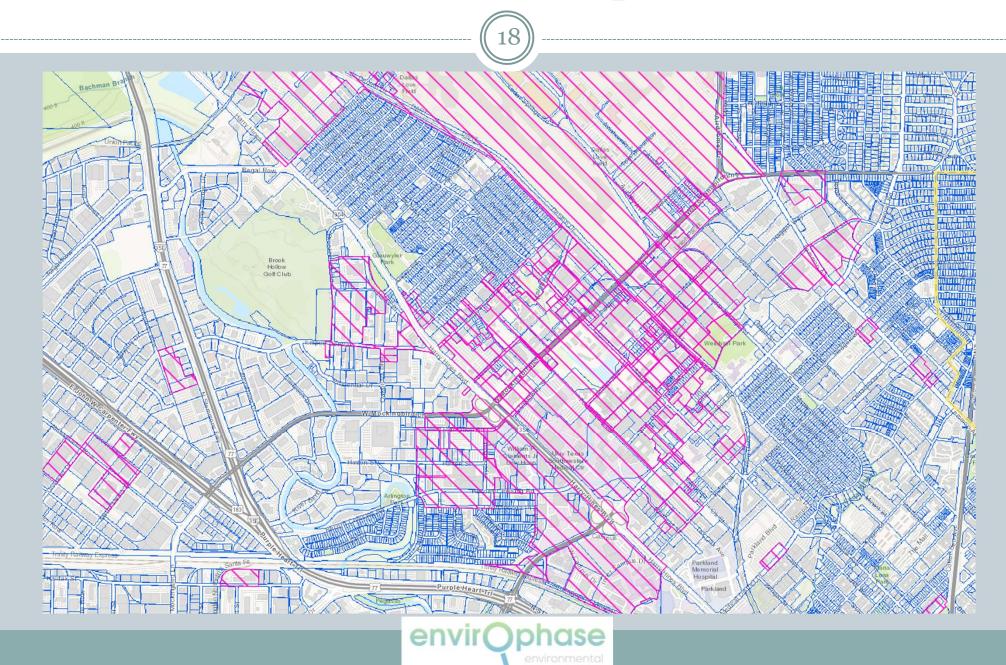


### Misconception - MSD Coverage = Case Closure

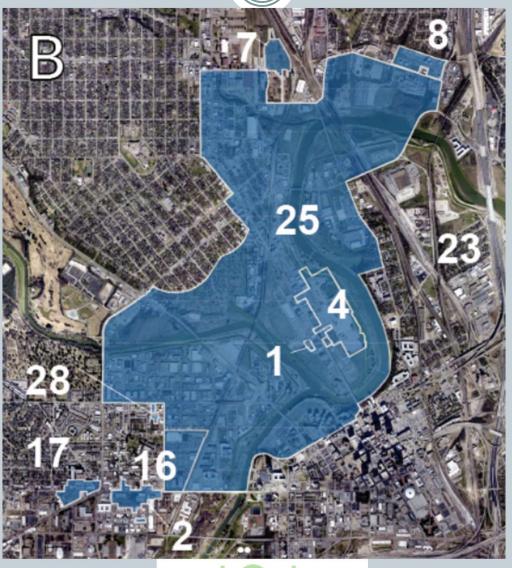
- MSD coverage does not equal Case Closure (COC or NFA).
  - The MSD is just a Deed Restriction that prohibits the use of shallow groundwater for drinking water purposes.
  - MSDs can cover multiple properties and some cities have MSDs that cover large areas known for industrial use.
    - Just because a property is located within an MSD Boundary does not necessarily mean that the property is negatively affected.
    - There is sometimes an anchor property that is in a TCEQ Program (VCP or Corrective Action Program) and is the basis for the MSD and other properties were grouped in on the MSD coverage.
- o Investigations should still be performed on sites where Phase I Environmental Site Assessment (Phase I ESA) identifies Recognized Environmental Conditions (RECs) due to historical property use.
  - There is still a possibility that concentrations could exceed non-ingestion PCLs TotSoil<sub>Comb</sub> PCLs in soil or AirGW<sub>Inh-V</sub> PCLs in groundwater.
    - Example 1: TCE was contaminant released and broke down to vinyl chloride. The VC concentration in groundwater exceeded the  $^{\rm Air}GW_{\rm Inh-V}$  PCL and remediation still had to be performed. Cost was \$900,000 even with MSD.
    - Example 2: Lead levels in soil exceed the total soil combine PCL of 500 mg/kg (Residential) or 1,600 mg/kg (C/I) would still need mitigate soils problems excavation of soils >500 mg/kg or 1,600 mg/kg could cost \$20,000+













20

	Àfou	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl chloride	1,1-Dichloroethene	1,1-Dichloroethane	Benzene	Toluene	Ethylbenzene	Xylenes,Total
Residential	AirGW <sub>Inh-V</sub>	498	23.7	1229	768	3.81	1666	43047	180	63590	29732	10225
Sample	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-1	7/22/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8/12/2013	< 0.00124	<0.00158	0.00322 J	<0.00088	<0.00085	<0.00076	<0.0005	< 0.00056	< 0.00055	< 0.00129	<0.00198
MW-2/2R	7/22/2013	<0.001	0.48	589	1.75	164	1.43	3.74	0.0183	4.07	0.56	0.748
	8/12/2013	< 0.062	0.368	647	<4.4	221	1.54	4.09	<0.028	3.71	0.401	0.507
	10/26/2013	<0.000196	0.455	203	0.873	101	0.83	3.18	0.0154	2.97	0.304	0.401
	1/28/2014	<0.1	<0.05	335	0.932	170	1.13	3.02	<0.05	3.77	0.486	0.611
MW-3	7/22/2013	<0.001	<0.001	8.82	0.0416	12.3	0.0707	0.221	0.0072	0.011	<0.001	<0.001
	8/12/2013	< 0.00124	0.00193 J	10.4	<0.22	17.3	0.108	0.279	0.013	0.0156	< 0.00129	<0.00198
MW-4	7/22/2013	<0.001	< 0.001	0.0203	<0.001	0.0044	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8/12/2013	< 0.00124	<0.00158	0.0225	<0.00088	0.00409 J	<0.00076	<0.0005	< 0.00056	<0.00055	< 0.00129	<0.00198
MW-5	7/22/2013	<0.001	0.0562	0.0134	<0.001	0.0023	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8/12/2013	<0.00124	0.0624	0.00768	<0.00088	<0.00085	<0.00076	<0.0005	< 0.00056	<0.00055	<0.00129	<0.00198
MW-6	10/26/2013	< 0.000196	0.00081 J	14.5	0.0349	24	0.0537	0.0932	0.00377 J	0.03	0.00154 J	0.00183 J
	1/28/2014	<0.002	<0.001	26.5	0.0732	31.7	0.086	0.0811	0.00282 J	0.0305	0.0019 J	< 0.001
MW-7	10/26/2013	< 0.000196	0.00118 J	0.00159 J	< 0.000113	0.00094 J	< 0.000111	<0.000103	< 0.000097	0.00024 J	<0.00008	< 0.000103
	1/28/2014	< 0.002	0.00936	0.0218	<0.001	0.00199 J	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-8	10/26/2013	<0.000196	<0.00013	0.0842	0.0016 J	0.0405	<0.000111	0.00104 J	0.00011 J	<0.000164	<0.00008	< 0.000103
	1/28/2014	<0.002	<0.001	0.389	0.00805	0.0482	<0.001	0.00395 J	<0.001	<0.001	<0.001	<0.001
MW-9	11/4/2013	<0.000196	<0.00013	<0.000118	<0.000113	<0.000102	<0.000111	0.00024 J	0.00448 J	0.00157 J	<0.00008	<0.000103
	1/28/2014	<0.002	<0.001	<0.001	<0.001	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-10	10/26/2013	<0.000196	0.00147 J	0.00048 J	<0.000113	<0.000102	<0.000111	<0.000103	<0.000097	< 0.000164	<0.00008	<0.000103
	1/28/2014	<0.002	<0.001	<0.001	<0.001	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW-11	1/28/2014	< 0.002	< 0.001	0.167	0.00633	0.0405	0.00142 J	0.001 J	< 0.001	< 0.001	< 0.001	<0.001
MW-9 MW-10	1/28/2014 11/4/2013 1/28/2014 10/26/2013 1/28/2014	<0.002 <0.000196 <0.002 <0.000196 <0.002	<0.001 <0.00013 <0.001 <b>0.00147 J</b> <0.001	0.389 <0.000118 <0.001 0.00048 J <0.001	0.00805 <0.000113 <0.001 <0.000113 <0.001	0.0482 <0.000102 <0.004 <0.000102 <0.004	<0.001 <0.000111 <0.001 <0.000111 <0.001	0.00395 J 0.00024 J <0.001 <0.000103 <0.001	<0.001 0.00448 J <0.001 <0.00097 <0.001	<0.001 0.00157 J <0.001 <0.000164 <0.001	<0.001 <0.0008 <0.001 <0.0008 <0.001	<(



### Why MSDs are a good Tool on Pollution Cases



### Why MSDs are a good Tool on Pollution Cases



- The timing to obtain closure using remedial technologies could require many years to complete cleanup with years of subsequent confirmation groundwater sampling and could involve substantial costs to satisfy state regulators.
  - The MSD allows for predictability in costs and timing involved to obtain regulatory closure (COC or NFA).
  - Regulatory closure issued with an MSD can withstand repeated scrutiny over time.



### Resources

TCEQ MSD Website:

https://www.tceq.texas.gov/remediation/msd.html

City of Dallas MSD Website:

https://dallascityhall.com/departments/OEQ/Pages/msd.aspx

City of Fort Worth Website:

https://www.fortworthtexas.gov/departments/code-compliance/ environmental-quality/services/msd

City of Houston MSD Website:

https://www.publicworks.houstontx.gov/msd

### QUESTIONS

## **Kevin W. Almaguer, P.G. Program Director – P2/Mitigation**

cell (214) 392-7179 email kevin@envirophase.com

