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May 3, 2007
Slide Show Presentation
for the
Jones Road Public Meeting

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Jones Road Groundwater Plume Superfund Site

Community Meeting

May 3, 2007

Site Update

Marilyn Czimer Long, P.G.

Site Background

- Chemical of concern is Tetrachloroethylene or PCE
- PCE is a chlorinated solvent
- PCE is a Dense Nonaqueous Phase Liquid or DNAPL

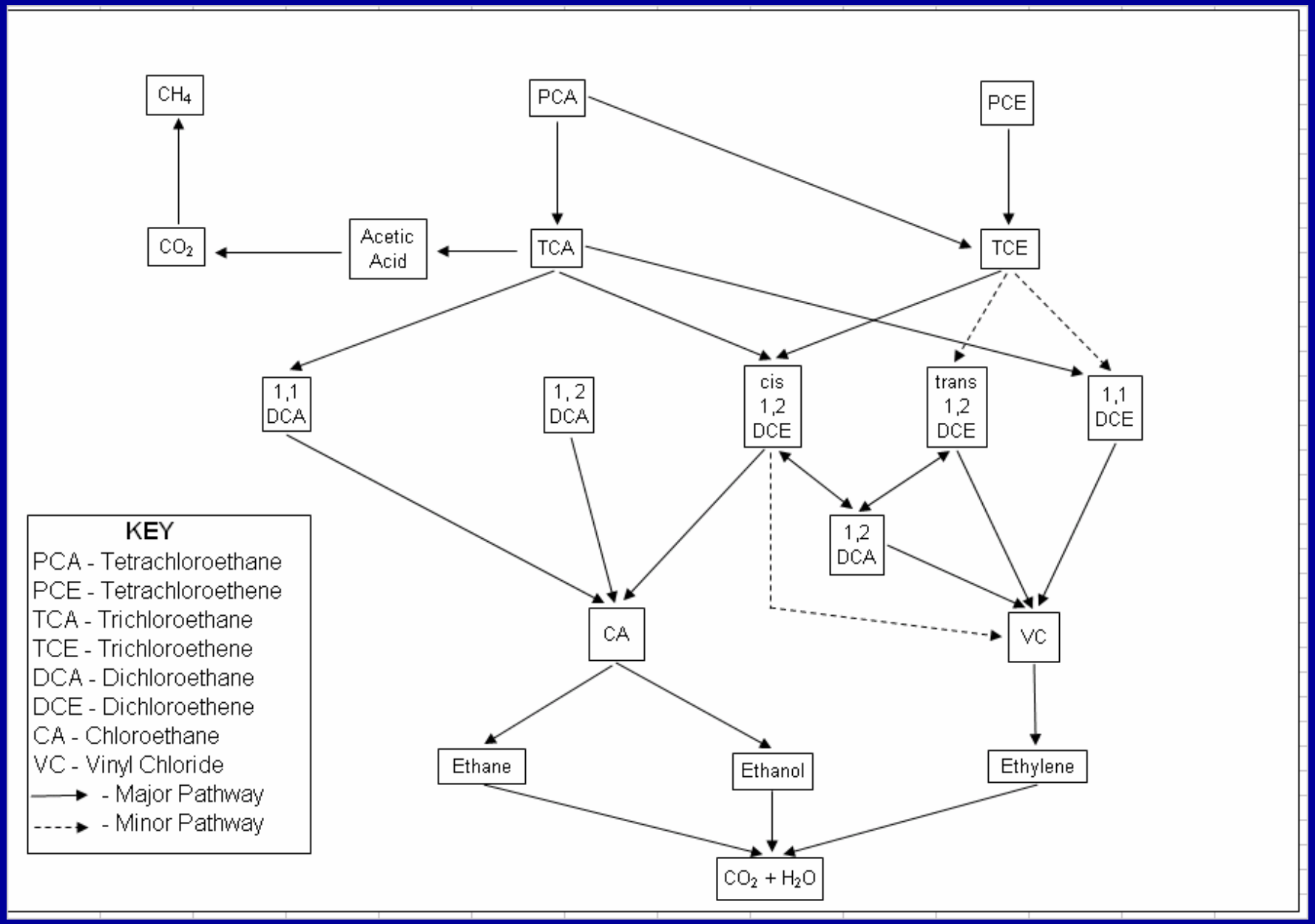
What do we know?

- PCE degrades to vinyl chloride
- Vinyl chloride is soluble and mobile in groundwater
- Vinyl chloride “moves” ahead of PCE due to its solubility

How Does PCE Relate to Vinyl Chloride?

- PCE degradation products include:
- Trichloroethylene (TCE)
- Dichloroethylene (DCE)
- Vinyl chloride (VC)
- PCE $\rightarrow$ TCE $\rightarrow$ DCE $\rightarrow$ VC
- Each degradation product is unique – solubility, density & mobility
- Each degradation product will behave differently in the subsurface

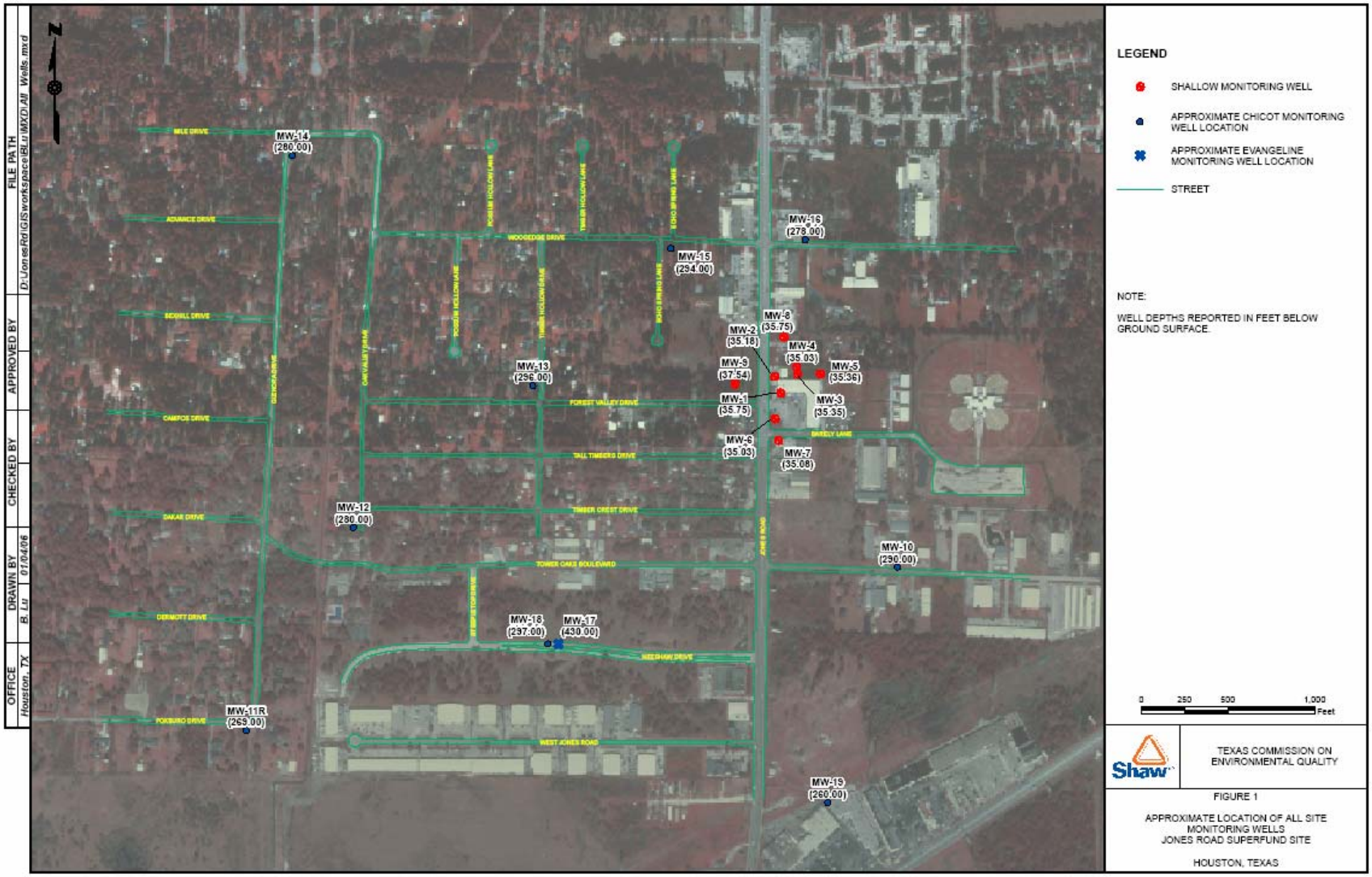
Transformations of chlorinated aliphatic hydrocarbons



What are the safe drinking water levels for these chemicals?

- Maximum Contaminant Level (MCL) represents a safe drinking water level
- MCL for: PCE = 5 parts per billion (ppb)
  TCE = 5 ppb
  DCE = 70 ppb
  VC = 2 ppb

Monitor Well Location Map



Vinyl chloride has been detected in the shallow monitor wells

JONES ROAD MONITOR WELLS QUARTERLY SAMPLING RESULTS

Updated: April 24, 2007

Tetrachloroethene (PCE) (MCL: 5 ppb)

Location ID	Date Drilled	Depth (ft)	May 2003	Aug 2003	Nov 2003	Feb 2004	May 2004	Aug 2004	Nov 2004	Feb 2005	May 2005	Aug 2005	Nov 2005	Feb. 2006	May 2006	Aug. 2006	Nov. 2006	Feb. 2007	Additional Comments
MW-1		35	24,100	3,800	15,000	28,000	7,500	3,300	23,000	19,000	14,000	6,040	5,500	5,640	11,400	11,700	19200 R	12,500	
MW-2		35	104	18	110	320	310	330	370	790	400	300	430	590	1,060	944	690	820	
MW-3		35	6.0	ND	ND	13	48	22	31	43	32	61.0	37	35.8	49.0	34.6	34.6	42.0	
MW-4		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-5		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.6 J	0.10 J	ND	0.10 LJ	ND	ND	ND	
MW-6		35	NS	6,600	3,800	2,200	5,800	6,200	NS	5200	7600	6800	NS	NS	NS	5800	NS	4400	Not enough water to sample in Nov 2004, Nov. 2005, Feb. 2006, May 2006, and Nov. 2006.
MW-7	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	
MW-8	XW2003	35	NS	NS	ND	ND	ND	18	1 J	ND	ND	ND	0.61	0.29 LJ	0.29 LJ	ND	ND	ND	
MW-9	XW2003	37	NS	NS	ND	ND	ND	0.62	ND	ND	ND	ND	0.92 J	ND	ND	ND	1.7	ND	

Trichloroethene (MCL: 5 ppb)

Location ID	Date Drilled	Depth (ft)	May 2003	Aug 2003	Nov 2003	Feb 2004	May 2004	Aug 2004	Nov 2004	Feb 2005	May 2005	Aug 2005	Nov 2005	Feb. 2006	May 2006	Aug. 2006	Nov. 2006	Feb. 2007	Additional Comments
MW-1		35	2,340	1,100	2,200	3,700	1,200	1,200	3,400	2900 J	2600	312	1200	290	1,320	1,500	1,340	1190	
MW-2		35	55.1	14	41	85 J	83 J	130	91	100	110	89.0	92	101	108	170	120	100	
MW-3		35	16.0	7	ND	13	15	36	23	20	32	61.0	26	26.4	20.00 J	20.2	20.6	45.5	
MW-4		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-5		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-6		35	NS	220	230	160	200 J	450	NS	400 LJ	570	511	NS	NS	NS	511	NS	200	Not enough water to sample in Nov 2004, Nov. 2005, Feb. 2006, May 2006, and Nov. 2006.
MW-7	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.038 J	ND	ND	ND	ND	ND	
MW-8	XW2003	35	NS	NS	ND	ND	ND	3.5	ND	ND	ND	ND	0.58	0.31 LJ	0.29 LJ	ND	ND	ND	
MW-9	XW2003	37	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.055 J	ND	ND	ND	ND	ND	

cis-1,2 Dichloroethene (MCL: 70 ppb)

Location ID	Date Drilled	Depth (ft)	May 2003	Aug 2003	Nov 2003	Feb 2004	May 2004	Aug 2004	Nov 2004	Feb 2005	May 2005	Aug 2005	Nov 2005	Feb. 2006	May 2006	Aug. 2006	Nov. 2006	Feb. 2007	Additional Comments
MW-1		35	3,920	2,300	3,200	3,300	1,300	1,800	3,800	2600	6100	1600	2000	1400	2620	2710	1,400	1,210	
MW-2		35	115	37	63	130	67 J	85	39 J	150	140	116	47 J	46.7	125	119	53.4	211	
MW-3		35	104	58	71	65	61 J	100	78	90	210	119	42	150	500 J	219	140	270	
MW-4		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-5		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-6		35	NS	500	300	350	350	3,400	NS	900 LJ	1700	1510	NS	NS	NS	1800	NS	510	Not enough water to sample in Nov 2004, Nov. 2005, Feb. 2006, May 2006, and Nov. 2006.
MW-7	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-8	XW2003	35	NS	NS	2	ND	ND	2.8	1 J	ND	ND	ND	1.8	0.38	1.1	1.1	1.5	ND	
MW-9	XW2003	37	NS	NS	ND	ND	ND	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

trans-1,2 Dichloroethene (MCL: 100 ppb)

Location ID	Date Drilled	Depth (ft)	May 2003	Aug 2003	Nov 2003	Feb 2004	May 2004	Aug 2004	Nov 2004	Feb 2005	May 2005	Aug 2005	Nov 2005	Feb. 2006	May 2006	Aug. 2006	Nov. 2006	Feb. 2007	Additional Comments
MW-1		35	35	9 J	ND	27	34	26	28	18	23 J	29.2	ND	18	32	30.8	ND	20.2	
MW-2		35	0.8	ND	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	1.9	
MW-3		35	1	ND	ND	ND	ND	1.1 J	ND	ND	ND	ND	ND	ND	6.2	ND	ND	2.1	
MW-4		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-5		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-6		35	NS	ND	3	3 J	7 J	12	NS	7 LJ	ND	27.3	NS	NS	NS	7	NS	ND	Not enough water to sample in Nov 2004, Nov. 2005, Feb. 2006, May 2006, and Nov. 2006.
MW-7	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-8	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-9	XW2003	37	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Vinyl chloride (MCL: 2 ppb)

Location ID	Date Drilled	Depth (ft)	May 2003	Aug 2003	Nov 2003	Feb 2004	May 2004	Aug 2004	Nov 2004	Feb 2005	May 2005	Aug 2005	Nov 2005	Feb. 2006	May 2006	Aug. 2006	Nov. 2006	Feb. 2007	Additional Comments
MW-1		35	420	110	420	330 J	320 J	20	220 J	300 J	150	95.3	180	55	214	159	111	192	
MW-2		35	5.0	ND	ND	1 J	ND	ND	ND	2 LJ	3 J	ND	ND	ND	2.6	2.8	ND	2.5	
MW-3		35	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	
MW-4		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-5		35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-6		35	NS	25	500	87	120	280	NS	250 J	200	173	NS	NS	NS	151	NS	193	Not enough water to sample in Nov 2004, Nov. 2005, Feb. 2006, May 2006, and Nov. 2006.
MW-7	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-8	XW2003	35	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-9	XW2003	37	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Results >= MCL (RED)
Results < MCL and >= 0.5 ppb (YELLOW)
Results < 0.5 ppb or Undetect (GREEN)
NS = Not Sampled

Vinyl chloride has been detected in five “deep” monitor wells

JONES ROAD MONITOR WELLS QUARTERLY SAMPLING RESULTS

Updated: April 24, 2007

Tetrachloroethene (PCE) (MCL: 5 ppb)

Location ID	Date Drilled	Depth TD	May 1993	Aug 1993	Nov 1993	Feb 1994	May 1994	Aug 1994	Nov 1994	Feb 1995	May 1995	Aug 1995	Nov 1995	Feb. 1996	May 1996	Aug. 1996	Nov. 1996	Feb. 1997	Additional Comments
MW-10	7/7/1993	357	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-11R	1/7/1993	295	ND	NS	ND	ND	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	
MW-12	1/14/1993	301	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-13	1/19/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-14	1/22/1993	294	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-15	1/25/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-16	1/28/1993	315	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-17	6/11/1993	445	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-18	6/12/1993	304	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-19	11/5/1993	312	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	

Trichloroethene (MCL: 5 ppb)

Location ID	Date Drilled	Depth TD	May 1993	Aug 1993	Nov 1993	Feb 1994	May 1994	Aug 1994	Nov 1994	Feb 1995	May 1995	Aug 1995	Nov 1995	Feb. 1996	May 1996	Aug. 1996	Nov. 1996	Feb. 1997	Additional Comments
MW-10	7/7/1993	357	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-11R	1/7/1993	295	ND	NS	ND	ND	NS	NS	NS	NS	ND	NS	0.473 J	ND	ND	ND	ND	ND	
MW-12	1/14/1993	301	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-13	1/19/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-14	1/22/1993	294	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-15	1/25/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-16	1/28/1993	315	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-17	6/11/1993	445	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	0.473 J	ND	ND	ND	ND	ND	
MW-18	6/12/1993	304	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-19	11/5/1993	312	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	

cis-1,2 Dichloroethene (MCL: 70 ppb)

Location ID	Date Drilled	Depth TD	May 1993	Aug 1993	Nov 1993	Feb 1994	May 1994	Aug 1994	Nov 1994	Feb 1995	May 1995	Aug 1995	Nov 1995	Feb. 1996	May 1996	Aug. 1996	Nov. 1996	Feb. 1997	Additional Comments
MW-10	7/7/1993	357	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-11R	1/7/1993	295	ND	NS	ND	ND	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	
MW-12	1/14/1993	301	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-13	1/19/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-14	1/22/1993	294	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-15	1/25/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-16	1/28/1993	315	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-17	6/11/1993	445	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-18	6/12/1993	304	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-19	11/5/1993	312	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	

trans-1,2 Dichloroethene (MCL: 100 ppb)

Location ID	Date Drilled	Depth TD	May 1993	Aug 1993	Nov 1993	Feb 1994	May 1994	Aug 1994	Nov 1994	Feb 1995	May 1995	Aug 1995	Nov 1995	Feb. 1996	May 1996	Aug. 1996	Nov. 1996	Feb. 1997	Additional Comments
MW-10	7/7/1993	357	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-11R	1/7/1993	295	ND	NS	ND	ND	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	ND	ND	
MW-12	1/14/1993	301	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-13	1/19/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-14	1/22/1993	294	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-15	1/25/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-16	1/28/1993	315	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-17	6/11/1993	445	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-18	6/12/1993	304	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-19	11/5/1993	312	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	

Vinyl chloride (MCL: 2 ppb)

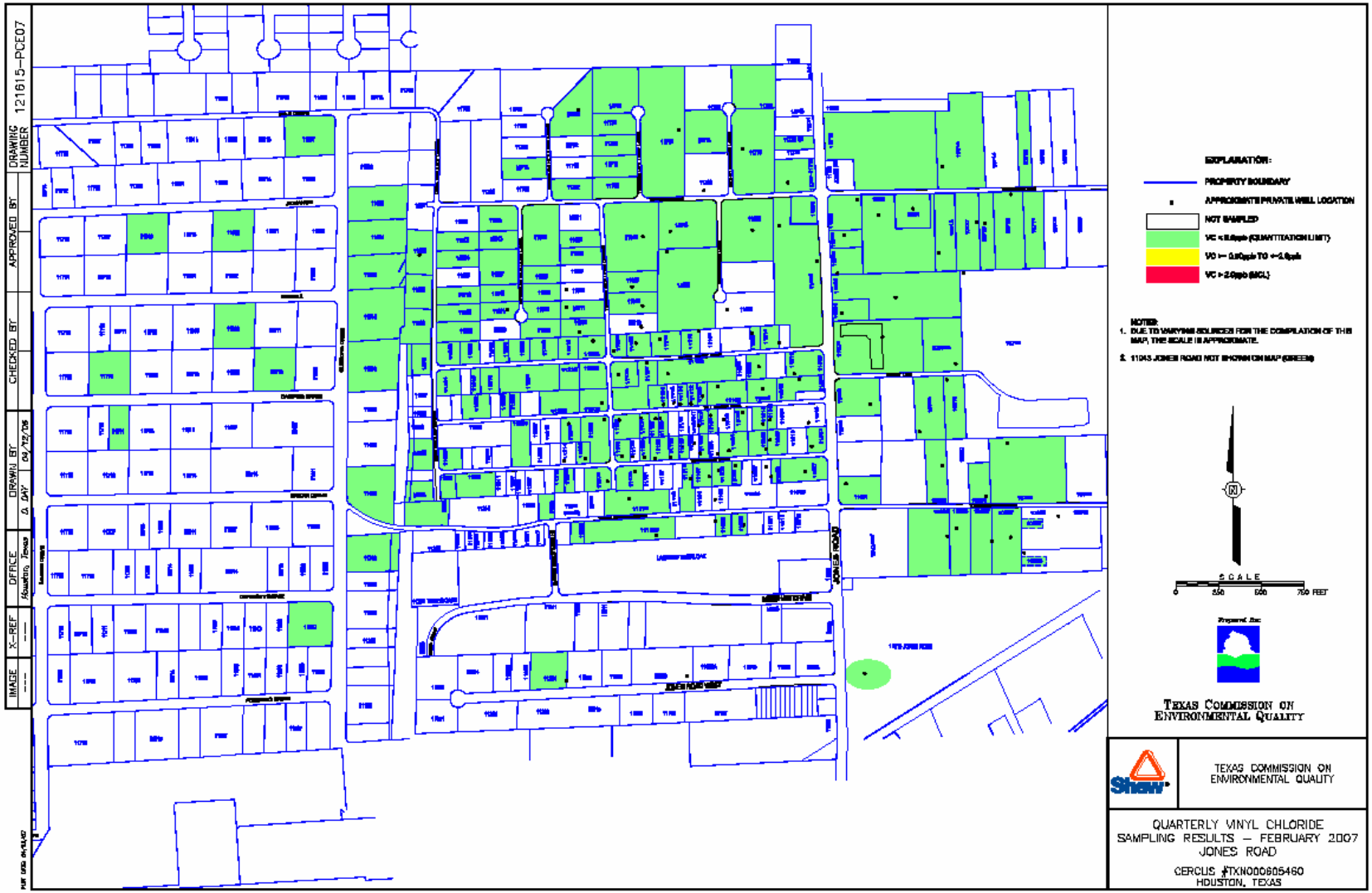
Location ID	Date Drilled	Depth TD	May 1993	Aug 1993	Nov 1993	Feb 1994	May 1994	Aug 1994	Nov 1994	Feb 1995	May 1995	Aug 1995	Nov 1995	Feb. 1996	May 1996	Aug. 1996	Nov. 1996	Feb. 1997	Additional Comments
MW-10	7/7/1993	357	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	
MW-11R	1/7/1993	295	ND	NS	ND	ND	NS	NS	NS	NS	ND	NS	ND	0.31 J	0.58	ND	2.2	ND	
MW-12	1/14/1993	301	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	0.85	1.1	1.3	1.8	2.6	2.3	
MW-13	1/19/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	1.1	ND	1.2	ND	ND	ND	
MW-14	1/22/1993	294	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	1.2	ND	0.22 J	1	ND	1.8	
MW-15	1/25/1993	305	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	0.68	1.2	1.8	2.2	1.7	
MW-16	1/28/1993	315	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	0.49	0.93	1.4	1.1	2.7	ND	
MW-17	6/11/1993	445	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	0.64	ND	ND	ND	ND	
MW-18	6/12/1993	304	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	0.54	1.4	2.1	2.2	1.8	
MW-19	11/5/1993	312	ND	NS	ND	ND	NS	NS	NS	NS	ND	ND	ND	ND	0.43 J	ND	1.1	ND	Nov. '96 duplicate sample ND.

Results >= MCL (RED)
Results < MCL and >= 0.5 ppb (YELLOW)
Results < 0.5 ppb or Undetect (GREEN)
NS = Not Sampled

Have you seen vinyl chloride in our wells?

- Trace concentrations of vinyl chloride have been detected in several wells located in the PCE plume area
- Many wells in the PCE plume are on filtration systems

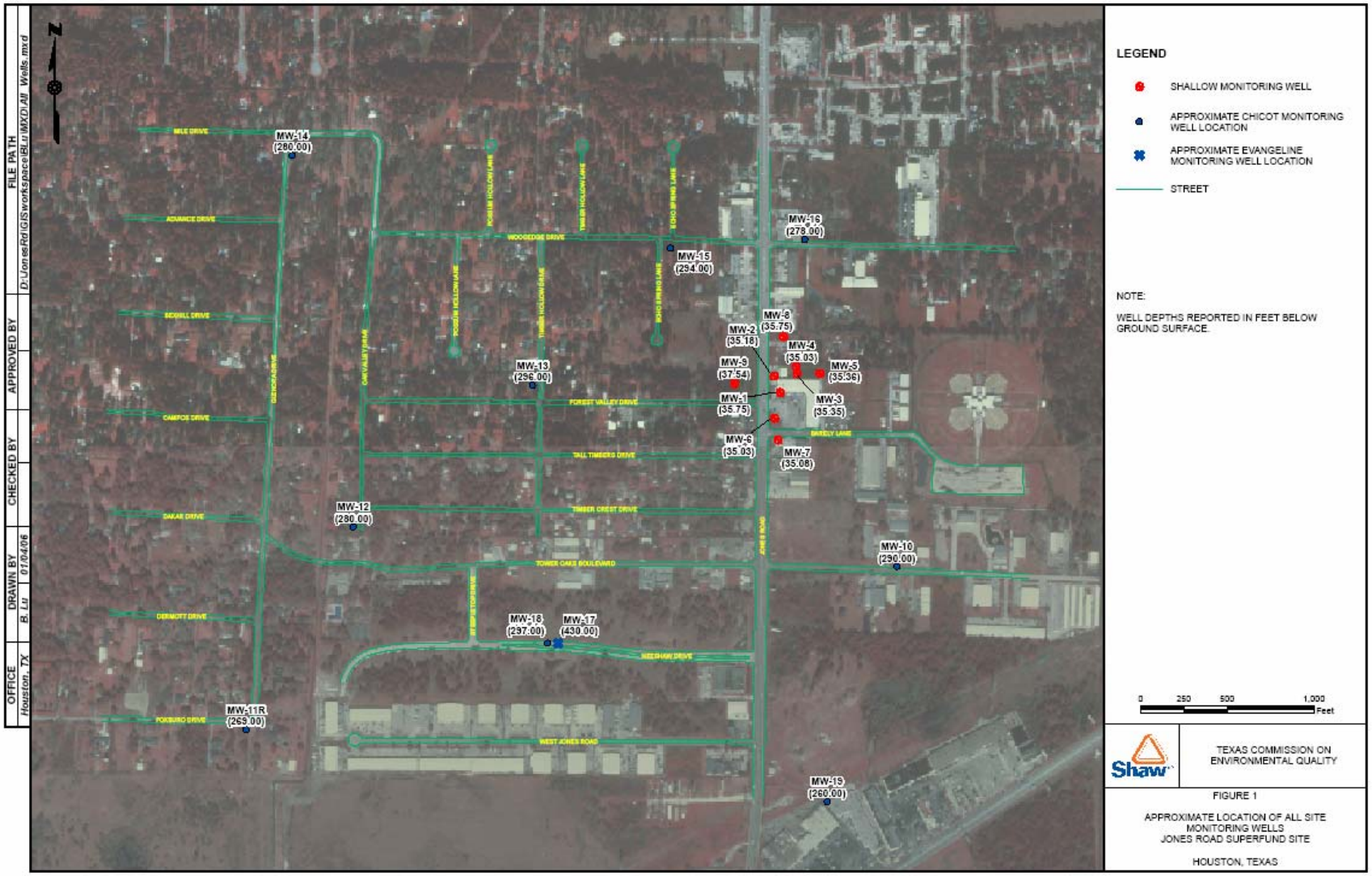
February 2007 Sampling Event



Are the filtration systems effective?

Based on the laboratory data from our quarterly monitoring events the filtration systems have been effective.

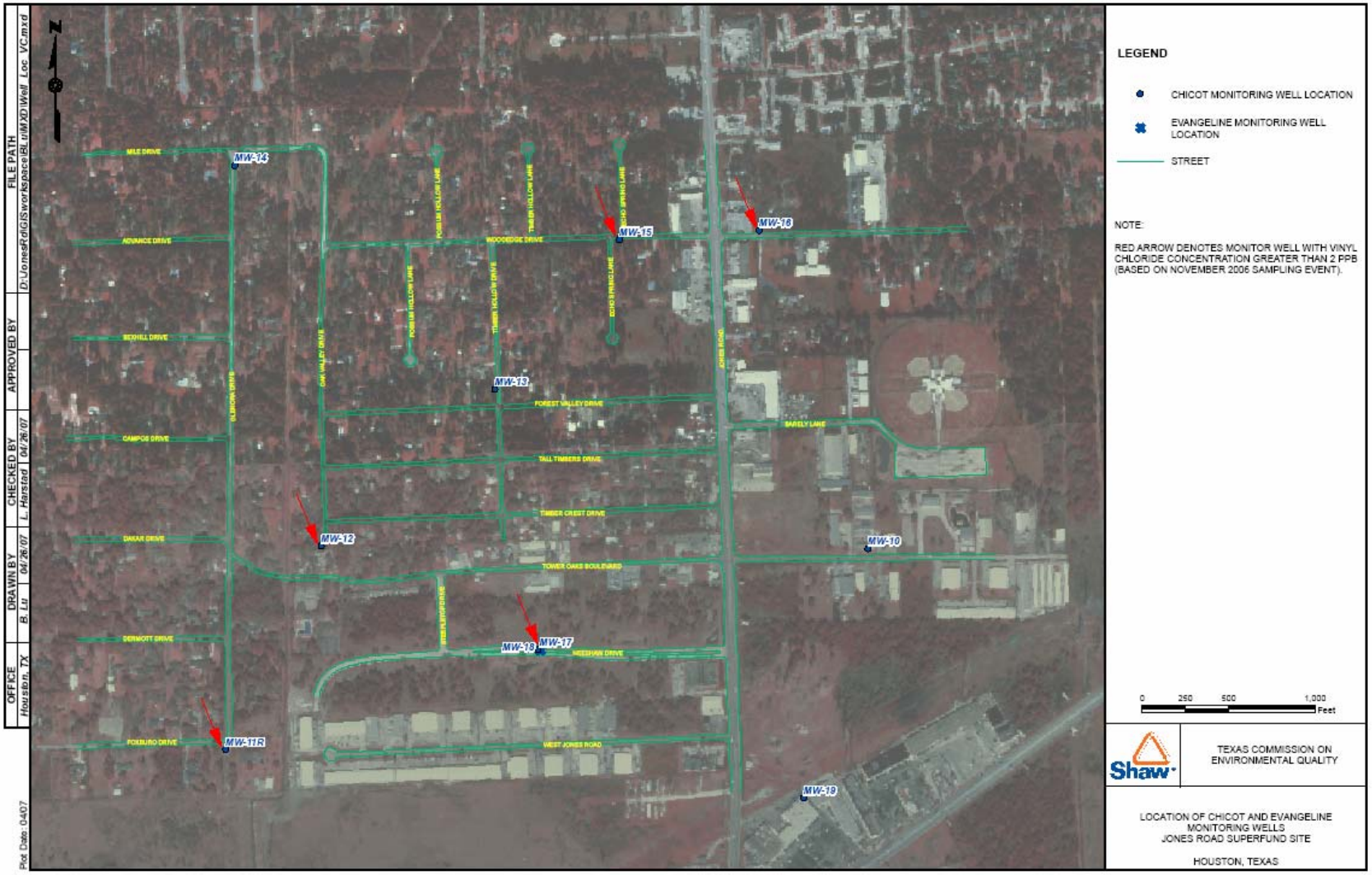
Monitor Well Location Map



Which monitor wells detected vinyl chloride?

- MW-11R, MW-12, MW-15, MW-16, MW-18
- These monitor wells were listed in the TCEQ notification letter and community newsletter

Monitor Well Location Map (VC > MCL)



What is the purpose of the "deep" monitor wells?

- Obtain geologic information
- Monitor groundwater chemistry
- Monitor groundwater levels
- Provide data to support groundwater modeling efforts

TCEQ Vinyl Chloride Notification

- State Officials
- Local Officials
- State Agencies
- Subsidence District
- MUDs & Utility Districts
- Community – mailed 1,274 notification letters

Why did TCEQ send the notification?

- Change in groundwater plume characteristics
- Communication with the community
- Vinyl chloride exceeded the federal drinking water standard of 2 ppb
- Vinyl chloride exceeded 2 ppb in 5 “deep” monitor wells

What now?

- Quarterly monitoring
- Filtration systems
- Water line (EPA – TCEQ)
- Data collection in support of treatability studies, pending pilot studies & groundwater modeling to identify potential remedies

Jones Road Groundwater Plume Superfund Site web site

www.tceq.state.tx.us/remediation/superfund/jonesroad/index.html

Contact the Project Team toll-free at 1-800-633-9363

Marilyn Czimer Long, P.G.

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Emily Mirkin

John Flores (Bilingual-English/Spanish)

Thank you