

**Environmental
Resources
Management**

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30 April 2008

Ms. Elizabeth Allen
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612



Subject: First Quarter 2008 Monitoring Report
Hookston Station Site
Pleasant Hill, California

Dear Ms. Allen:

On behalf of the Hookston Station Responsible Parties (RPs), ERM-West, Inc. (ERM) has prepared this *First Quarter 2008 Monitoring Report* for the Hookston Station site in Pleasant Hill, California. The Hookston Station RPs include Union Pacific Railroad Company (UPRR), Daniel C. and Mary Lou Helix, Elizabeth Young, John V. Hook, Steven Pucell, Nancy Ellicock, and the Contra Costa Redevelopment Agency.

This report has been completed in accordance with the Self-Monitoring Program described in the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) Order No. R2-2007-0009, *Adoption of Final Site Cleanup Requirements and Rescission of Order Nos. R2-2003-0035 and R2-2004-0081* (30 January 2007). The overall monitoring objectives and scope of work are described in the *Phase I Remedial Investigation Sampling and Analysis Plan* (ERM, 2000) and *Soil Vapor Probe Installation and Sampling Workplan* (ERM, 2005).

This report has been divided into the following sections:

- Purpose;
- Ground water monitoring activities;
- Ground water monitoring results;
- Soil vapor monitoring results; and
- Project status and upcoming activities.

PURPOSE

The purpose of this *First Quarter 2008 Monitoring Report* is to:

- Present the ground water and soil vapor data collected during the First Quarter 2008; and
- Describe activities planned for the Second Quarter 2008.

GROUND WATER MONITORING ACTIVITIES

As described in previous reports, based on the observed stratigraphy and vertical chemical distribution, the ground water sampling data are divided into three hydrostratigraphic zones: the A-Zone, B-Zone, and C-Zone. Dissolved volatile organic compounds (VOCs) are primarily observed in the coarse-grained deposits of the A- and B-Zones found above approximately 70 feet below ground surface.

The current Hookston Station monitoring network includes 31 A-Zone monitoring wells, 16 B-Zone monitoring wells, and three C-Zone monitoring wells. Figure 1 shows the current Hookston Station monitoring well network as well as monitoring wells that are no longer included in the network (MW-20A, -20B, -21A, -21B, -22A, and -22B). Performance monitoring wells and injection wells associated with the selected B-Zone ground water remedy (chemical oxidation) have recently been installed. The installation and sampling of those wells will be documented in the forthcoming *B-Zone Chemical Oxidation Implementation Report*.

First Quarter 2008 ground water monitoring was performed from 25 January to 14 February 2008, and included the following activities:

- Measuring depth-to-water measurements at all Hookston Station monitoring wells.
- Collecting ground water samples for VOC analysis at all current Hookston Station monitoring wells. Samples were collected from most locations using passive diffusion techniques with passive diffusion bags (PDBs). Ground water samples collected at MW-1, -11A, -14A, -17B, -20B, -21A, and -22B were collected with a bailer using traditional purge-and-sample techniques. Ground water samples from MW-8B, -11B, -12B, and -13B were collected by a low-flow purge technique to

collect water quality parameters for the B-Zone chemical oxidation baseline monitoring event.

FIRST QUARTER 2008 GROUND WATER MONITORING RESULTS

Ground water elevation data collected during the First Quarter 2008 are summarized in Table 1. Ground water elevation contour maps for the three hydrostratigraphic zones, based on data collected on 25 January 2008, are provided as Figures 2 through 4. The observed ground water flow direction in the three zones is toward the northeast, consistent with historical measurements. The overall hydraulic gradients observed during the First Quarter 2008 event were 0.004 foot per foot (ft/ft) in the A- and B-Zones, and 0.003 ft/ft in the C-Zone.

Analytical results for VOCs in ground water are summarized in Table 2. Note that Table 2 only presents results for those VOCs most frequently detected historically within the mixed ground water plume, including tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (cis-1,2-DCE); 1,1-dichloroethene (1,1-DCE); and vinyl chloride. The distribution of these VOCs in A- and B-Zone ground water is depicted on Figures 5 through 14.

ERM performed a data quality review of all ground water analytical results. The quality of the data was assessed and any necessary qualifiers were applied following the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999. The data summarized on Table 2 have been qualified as necessary based on the review (Attachment A).

The ground water monitoring results for First Quarter 2008 were generally consistent with historical ground water concentrations. Notable differences compared to historical data include:

- TCE concentrations are reportedly higher in A-Zone ground water at MW-30A, -30A2, and -32A2. Ground water samples collected from these wells during Third and Fourth Quarters 2007 were collected with bailers using traditional purge-and-sample techniques and reported concentrations of 110 to 390 micrograms per liter ($\mu\text{g}/\text{L}$) TCE. Ground water samples collected from these same wells during First Quarter 2008 were collected by passive diffusion technique with PDBs and

reported concentrations of 1,500 to 1,900 µg/L TCE. Future samples from these wells and nearby wells MW-31A, -31A2, -32A, -33A, -33A2, and -15A2 will be collected by passive diffusion techniques. During the Second Quarter 2008 monitoring event, ground water samples will be collected from multiple PDBs in wells MW-15A2, -27A, -30A, -30A2, -31A, -31A2, -32A, -32A2, -33A, and -33A2 to determine the appropriate sample interval for future monitoring events. The appropriate sample interval for other Hookston Station wells sampled by passive diffusion techniques has previously been evaluated.

- Increasing TCE concentrations are noted in B-Zone ground water at MW-23B. First Quarter 2008 reported the highest TCE concentration in this well since monitoring began at this location in June 2004.

SOIL VAPOR MONITORING RESULTS

The current Hookston Station soil vapor probe monitoring network consists of 14 vapor probes, shown on Figure 15. Soil vapor samples for VOC analyses were collected from all probes, except SVP-4, between 7 and 13 February 2008. Soil vapor samples could not be collected from SVP-4 during First Quarter 2008 due to water within the probe.

The results of the soil vapor sampling completed during the First Quarter 2008 are summarized on Table 3. Note that Table 3 only presents those results for VOCs most frequently detected historically within the commingled ground water plume, including PCE; TCE; cis-1,2-DCE; 1,1-DCE; and vinyl chloride. The compound 2-propanol is utilized for leak-detection purposes during sample collection and is also included on Table 3. Soil vapor results for PCE; TCE; cis-1,2-DCE; 1,1-DCE; and vinyl chloride are shown on Figures 16 through 20, respectively.

The soil vapor results from the First Quarter 2008 monitoring event are generally consistent with historical results.

ERM performed a data quality review of all soil vapor data collected during the First Quarter 2008. The data summarized on Table 3 have been qualified as necessary based on the review, which is provided in Attachment A.

PROJECT STATUS AND UPCOMING ACTIVITIES

The following activities are planned for the Second Quarter 2008:

- Quarterly soil vapor and ground water monitoring activities will be completed in accordance with the Self-Monitoring Program.
- The Preferential Pathway Investigation will be implemented. All investigation activities will be completed in accordance with ERM's *Workplan for Preferential Pathway Investigation* (28 January 2008), which the Water Board approved on 11 March 2008.
- The *B-Zone Chemical Oxidation Implementation Report* will be submitted.
- Performance ground water monitoring activities associated with the B-Zone chemical oxidation remediation program will be conducted.

CLOSING

I certify that the information provided in this report is true and correct to the best of my knowledge. If you have any questions regarding this report, please feel free to call either of us at (925) 946-0455.

Sincerely,



Brian S. Bjorklund, P.G.
Project Manager



Kimberly L. Lake, P.G.
Project Geologist

BSB/kl/0077457.4

enclosures: Tables 1 through 3
Figures 1 through 20
Attachment A - Data Quality Reviews

cc: Mr. Daniel Helix
Mr. Michael Grant, UPRR
Mr. Jim Kennedy, Contra Costa County Redevelopment Agency
Ms. Lucy Goodell, Colony Park Neighbor's Association
Mr. Steve Campbell, Mt. Diablo Unified School District (e-copy)
Mr. Todd Teachout, City of Pleasant Hill (e-copy)
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Pleasant Hill Library
Contra Costa County Health Services Department,
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Contra Costa County Health Services Department, Public
Health Division (e-copy)
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Environmental Health Division (e-copy)

Tables

Table 1
Ground Water Elevations - First Quarter 2008
Hookston Station Site
Pleasant Hill, California

Location	Date	Screen Interval (ft bgs)	Top of Casing Elevation (ft amsl)	Depth to Water (feet)	Ground Water Elevation (ft amsl)
<i>A-Zone Monitoring Wells</i>					
MW-01	1/25/2008	10-20	65.06	14.06	51.00
MW-02*		11-21	68.48	NM	NC
MW-03	1/25/2008	10-20	65.56	15.33	50.23
MW-04	1/25/2008	11-21	64.95	15.01	49.94
MW-05	1/25/2008	10-30	68.58	15.82	52.76
MW-06	1/25/2008	15-35	72.80	17.46	55.34
MW-07	1/25/2008	15-35	65.18	15.11	50.07
MW-08A	1/25/2008	10-25	66.80	15.19	51.61
MW-11A	1/25/2008	10-25	70.05	15.76	54.29
MW-12A	1/25/2008	10-25	70.13	15.69	54.44
MW-13A	1/25/2008	18-33	67.67	15.41	52.26
MW-14A	1/25/2008	29-34	64.71	15.01	49.70
MW-15A	1/25/2008	14.5-24.5	63.68	15.23	48.45
MW-15A2	1/25/2008	28-38	63.57	14.98	48.59
MW-16A	1/25/2008	15-25	61.15	14.68	46.47
MW-17A	1/25/2008	20.7-30.7	64.61	22.20	42.41
MW-18A	1/25/2008	14.7-24.7	69.10	17.91	51.19
MW-19A	1/25/2008	14-24	67.32	20.70	46.62
MW-20A	1/25/2008	10-20	66.47	12.21	54.26
MW-21A	1/25/2008	10-20	65.81	12.46	53.35
MW-22A	1/25/2008	15-25	64.11	14.68	49.43
MW-23A	1/25/2008	17-27	63.74	17.16	46.58
MW-24A	1/25/2008	19.5-29.5	61.04	16.41	44.63
MW-25A	1/25/2008	18-28	65.37	21.59	43.78
MW-27A	1/25/2008	16-26	62.59	13.86	48.73
MW-28A	1/25/2008	17-27	60.37	13.05	47.32
MW-29A	1/25/2008	17-32	64.44	19.75	44.69
MW-30A	1/25/2008	15-25	64.00	15.49	48.51
MW-30A2	1/25/2008	28-38	63.90	15.30	48.60
MW-31A	1/25/2008	11-26	63.36	14.71	48.65
MW-31A2	1/25/2008	28-38	63.44	14.64	48.80
MW-32A	1/25/2008	14.5-29.5	66.70	18.22	48.48
MW-32A2	1/25/2008	29.5-39.5	66.81	18.34	48.47
MW-33A	1/25/2008	15-30	63.71	15.14	48.57
MW-33A2	1/25/2008	30-40	63.92	15.25	48.67
<i>B-Zone Monitoring Wells</i>					
MW-08B**	1/25/2008	45-60	66.65	15.96	50.69
MW-09B**	1/25/2008	50.5-60.5	61.74	14.80	46.94
MW-10B**	1/25/2008	40-50	64.21	17.06	47.15
MW-11B	1/25/2008	40-50	70.22	15.80	54.42
MW-12B	1/25/2008	50-60	70.15	17.93	52.22
MW-13B	1/25/2008	45-55	67.61	16.32	51.29
MW-14B	1/25/2008	40-50	64.69	14.99	49.70
MW-15B	1/25/2008	49-59	64.23	15.96	48.27

Table 1
Ground Water Elevations - First Quarter 2008
Hookston Station Site
Pleasant Hill, California

Location	Date	Screen Interval (ft bgs)	Top of Casing Elevation (ft amsl)	Depth to Water (feet)	Ground Water Elevation (ft amsl)
MW-16B	1/25/2008	35-45	61.06	14.86	46.20
MW-17B	1/25/2008	44-54	64.53	22.15	42.38
MW-18B	1/25/2008	32-42	69.27	18.12	51.15
MW-19B	1/25/2008	29-39	66.67	20.83	45.84
MW-20B	1/25/2008	30.5-40.5	66.46	12.16	54.30
MW-21B	1/25/2008	29-39	65.88	12.51	53.37
MW-22B	1/25/2008	40-50	64.44	15.90	48.54
MW-23B	1/25/2008	48-58	63.94	17.54	46.40
MW-24B	1/25/2008	39.5-49.5	61.09	16.67	44.42
MW-25B	1/25/2008	48-58	66.04	23.08	42.96
MW-26B	1/25/2008	40-50	63.13	15.65	47.48
<i>C-Zone Monitoring Wells</i>					
MW-15C	1/25/2008	90-95	64.39	15.93	48.46
MW-19C	1/25/2008	70-80	66.86	19.87	46.99
MW-23C	1/25/2008	93-103	64.00	16.65	47.35

Notes:

ft bgs = Feet below ground surface.

ft amsl = Feet above mean sea level.

* Well is inaccessible due to damage and has not been used for monitoring since 1995.

** MW-01D, MW-02D and MW-03D were renamed MW-08B, MW-09B and MW-10B, respectively, as of October 2003.

NM = Depth to water measurement was not measured.

NC = Ground water elevation was not calculated.

Table 2
 Summary of Ground Water Volatile Organic Compound Results - First Quarter 2008
 Hookston Station Site
 Pleasant Hill, California

Sample Location and Sample Identification	Sample Date	Well Diameter (inches)	Sample Depth (feet bgs)	Sample Type	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	1,1,2-TCA	1,2-DCA	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
California State MCL:					5	5	6	10	6	0.5	200	5	5	0.5	1	150	700	20	5
Hookston Station Ground Water Cleanup Standard:					n/a	5	6	10	6	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hookston Station Ground Water Cleanup Standard (for vapor intrusion):					n/a	530	6,200	6,700	6,300	3.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A-Zone Monitoring Wells																			
MW-1	01/29/2008	2	10-20	Traditional	770	76	63	< 5.0	< 5.0	9.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-3	01/29/2008	2	16.7-17.9	Passive	< 5.0	660	34	< 5.0	12	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-4	01/29/2008	2	17.7-18.9	Passive	84	11	17	< 1.0	< 1.0	5.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-5	01/29/2008	2	23.2-24.4	Passive	< 0.50	3.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-6	01/28/2008	2	21.9-23.1	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-7	01/29/2008	2	27.9-29.1	Passive	190	32	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-8A	01/29/2008	1	19.5-23	Passive	< 2.5	220	8.4	< 2.5	3.3	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-11A	01/28/2008	1	10-25	Traditional	< 0.50	3.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.61	< 0.50	< 0.50	< 1.0
MW-12A	01/25/2008	1	19.8-23.3	Passive	< 1.0	85	70	< 1.0	< 1.0	52	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-13A	01/29/2008	1	29.4-32.9	Passive	< 12	1,100	86	< 12	32	< 12	< 12	< 12	< 12	< 12	< 12	< 12	< 12	< 12	< 25
MW-14A	01/30/2008	2	29-34	Traditional	< 100	8,800	770	< 100	750	290	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 200
MW-15A	01/29/2008	2	17.6-18.8	Passive	< 2.5	180	14	< 2.5	5.4	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-15A2	01/29/2008	2	32.9-34.1	Passive	< 10	1,400	< 10	< 10	81	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-16A	01/29/2008	2	19.9-21.1	Passive	< 0.50	44	20	0.52	< 0.50	60	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-17A	01/28/2008	2	23.8-25	Passive	< 2.0	220	< 2.0	< 2.0	3.7	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
MW-18A	01/28/2008	2	20.2-21.4	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-18A DUP	01/28/2008	2	20.2-21.4	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-19A	01/28/2008	2	22-23.2	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-20A	01/29/2008	2	15.1-16.3	Passive	490	25	7.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-21A	01/29/2008	2	10-20	Traditional	390	42	36	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-22A	01/28/2008	2	21.1-22.3	Passive	< 0.50	5	7.3	< 0.50	< 0.50	1.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	74
MW-23A	01/28/2008	2	24.5-25.7	Passive	0.65	1.2	< 0.50	< 0.50	< 0.50	< 0.50	0.68	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-24A	01/28/2008	2	25.1-26.3	Passive	< 0.50	64	0.62	< 0.50	2.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-25A	01/28/2008	2	23.3-24.5	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-27A	01/28/2008	2	21-22.2	Passive	< 1.2	110	12	< 1.2	3.4	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 2.5
MW-28A	01/28/2008	2	21.9-23.1	Passive	< 5.0	480	34	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-29A	01/29/2008	2	24.5-25.7	Passive	< 2.5	320	< 2.5	< 2.5	4.4	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-30A	01/29/2008	2	19.9-21.1	Passive	< 10	1,500	12	< 10	120	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-30A DUP	01/29/2008	2	19.9-21.1	Passive	< 10	1,600	13	< 10	130	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-30A2	01/29/2008	2	33-34.2	Passive	< 10	1,800	< 10	< 10	120	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-31A	01/29/2008	2	16-17.2	Passive	< 2.5	210	15	< 2.5	6.3	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-31A2	01/30/2008	2	33-34.2	Passive	< 10	1,700	14	< 10	140	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-32A	01/29/2008	2	22.5-23.7	Passive	< 5.0	460	24	< 5.0	6.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-32A2	01/29/2008	2	35.2-36.4	Passive	< 10	1,900	14	< 10	150	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-33A	01/29/2008	2	22.2-23.4	Passive	< 5.0	380	14	< 5.0	11	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-33A2	01/29/2008	2	35-36.2	Passive	< 5.0	340	13	< 5.0	17	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
B-Zone Monitoring Wells																			
MW-8B	02/14/2008	2	n/a	Low-Flow	< 3.3	370	7.8	< 3.3	6.6	< 3.3	< 3.3	7.6	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 6.7
MW-8B DUP	02/14/2008	2	n/a	Low-Flow	< 3.3	360	8	< 3.3	6.9	< 3.3	< 3.3	7.4	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 6.7
MW-9B	01/28/2008	2	57.4-58.6	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-10B	01/29/2008	2	44.6-45.8	Passive	< 10	1,400	< 10	< 10	68	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-11B	02/14/2008	1	n/a	Low-Flow	< 120	13,000	1,200	< 120	780	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 120	< 250
MW-12B	02/14/2008	1	n/a	Low-Flow	< 10	19	1,200	< 10	91	120	< 10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-13B	02/14/2008	1	n/a	Low-Flow	< 8.4	76	920	< 8.4	< 8.4	150	< 8.4	11	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 17
MW-14B	01/30/2008	2	42.9-44.1	Passive	< 20	2,600	< 20	< 20	140	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40
MW-15B	01/29/2008	2	50.9-52.1	Passive	< 10	1,600	84	< 10	83	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-15B DUP	01/29/2008	2	50.9-52.1	Passive	< 10	1,600	82	< 10	86	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20
MW-16B	01/29/2008	2	37.9-39.1	Passive	< 6.2	890	21	< 6.2	25	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2	< 12
MW-17B	01/30/2008	2	44-54	Traditional	< 2.5	490	< 2.5	< 2.5	11	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 5.0
MW-18B	01/28/2008	2	35.8-37	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-18B DUP	01/28/2008	2	35.8-37	Passive	< 0.50	< 0.50	< 0.5												

Table 2
Summary of Ground Water Volatile Organic Compound Results - First Quarter 2008
Hookston Station Site
Pleasant Hill, California

Sample Location and Sample Identification	Sample Date	Well Diameter (inches)	Sample Depth (feet bgs)	Sample Type	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	1,1,2-TCA	1,2-DCA	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
<i>California State MCL:</i>					5	5	6	10	6	0.5	200	5	5	0.5	1	150	700	20	5	
<i>Hookston Station Ground Water Cleanup Standard:</i>					n/a	5	6	10	6	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
<i>Hookston Station Ground Water Cleanup Standard (for vapor intrusion):</i>					n/a	530	6,200	6,700	6,300	3.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
MW-22B	01/28/2008	2	40-50	Traditional	< 2.5	250	7.8	< 2.5	22	2.6	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	28	
MW-23B	01/28/2008	2	52-53.2	Passive	< 2.0	210	< 2.0	< 2.0	29	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
MW-24B	01/29/2008	2	45.1-46.3	Passive	< 5.0	580	5.1	< 5.0	25	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10
MW-25B	01/28/2008	2	52.5-53.7	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-26B	01/28/2008	2	46.4-47.6	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
C-Zone Monitoring Wells																				
MW-15C	01/28/2008	2	92.3-93.5	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-15C DUP	01/28/2008	2	92.3-93.5	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-19C	01/28/2008	2	75.1-76.3	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
MW-23C	01/28/2008	2	97.6-98.8	Passive	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0

Notes:

All results reported in micrograms per liter (µg/L).

California State MCL = Maximum Contaminant Level for drinking water from Title 22 of the California Code of Regulations.

Hookston Station Ground Water Cleanup Standard and Ground Water Cleanup Standard for Vapor Intrusion are established in the *Final Site Cleanup Requirements for the Hookston Station Site (California Regional Water Quality Control Board, San Francisco Bay Region, 22 November 2006)*.

Highlighting indicates the detected concentration is greater than the California MCL or Hookston Station Ground Water Cleanup Standard.

Sample Type = 'Traditional' indicates samples were collected by traditional purge-and-sample techniques; 'passive' indicates samples were collected with passive diffusion bags. 'Low Flow' indicates samples collected using low flow purge technique.

< = Not detected.

Chemicals:

PCE = Tetrachloroethene

TCE = Trichloroethene

c-1,2-DCE = cis-1,2-Dichloroethene

t-1,2-DCE = trans-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

1,1-DCA = 1,1-Dichloroethane

1,1,2-TCA = 1,1,2-Trichloroethane

1,2-DCA = 1,2-Dichloroethane

MTBE = Methyl tert butyl ether

Table 3
Summary of Soil Vapor Volatile Organic Compound Results - First Quarter 2008
Hookston Station Site
Pleasant Hill, California

Sample Location	Date	PCE (µg/m ³)	TCE (µg/m ³)	cis-1,2-DCE (µg/m ³)	trans-1,2-DCE (µg/m ³)	1,1-DCE (µg/m ³)	Vinyl Chloride (µg/m ³)	Benzene (µg/m ³)	Toluene (µg/m ³)	Ethylbenzene (µg/m ³)	m,p-Xylene (µg/m ³)	o-Xylene (µg/m ³)	2-Propanol ^a (µg/m ³)
<i>RWQCB Soil Vapor ESL for Residential Land Use:</i>		410	1,200	7,300	15,000	49	31	84	63,000	210,000	21,000 ^b	21,000 ^b	N/A
<i>Hookston Station Soil Vapor Cleanup Standard:</i>		N/A	1,200	7,300	15,000	42,000	32	N/A	N/A	N/A	N/A	N/A	N/A
Soil Vapor Probes													
SVP-1	2/7/2008	42	830	<3.1	<3.1	4.1	<2	<2.5	<3	<3.4	<3.4	<3.4	<7.8
SVP-2	2/7/2008	84	6,000	<13	<13	97	<8.6	<11	<13	<14	<14	<14	<33
SVP-3	2/7/2008	<130	350	12,000	640	<78	3,500	96	<74	<86	<86	<86	<190
SVP-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SVP-5	2/7/2008	<130	24,000	900	81	740	<50	<63	<74	<86	<86	<86	<190
SVP-6	2/7/2008	<5.9	28	<3.5	<3.5	<3.5	<2.2	<2.8	<3.3	<3.8	<3.8	<3.8	16
SVP-6-DUP	2/7/2008	11	55	<3.5	<3.5	<3.5	<2.3	<2.8	<3.3	<3.8	<3.8	<3.8	<8.6
SVP-7	2/7/2007	<5.5	<4.3	<3.2	<3.2	<3.2	<2	<2.6	<3	<2.5	<3.5	<3.5	<7.9
SVP-8	2/7/2007	<4.9	<3.9	<2.8	<2.8	<2.8	<1.8	<2.3	<2.7	<3.1	<3.1	<3.1	<7.1
SVP-9	2/7/2008	<5.4	<4.2	<3.1	<3.1	<3.1	<2	<2.5	<3	<3.4	<3.4	<3.4	<7.8
SVP-10	2/13/2008	21	<4.2	<3.1	<3.1	<3.1	<2	<2.5	4	<3.4	3.5	<3.4	<7.8
SVP-11	2/13/2008	<920	<730	<540	<540	<540	<350	980	<510	<590	<590	<590	<1300
SVP-12	2/8/2008	<5.4	<4.2	<3.1	<3.1	<3.1	<2	<2.5	<3	<3.4	<3.4	<3.4	<7.8
SVP-13	2/8/2008	<5.4	<4.2	<3.1	<3.1	<3.1	<2	<2.5	<3	<3.4	<3.4	<3.4	<7.8
SVP-14	2/8/2008	<5.2	<4.1	9	<3	<3	<1.9	5.9	<2.9	4.2	6.1	<3.3	<7.5
Ambient Air													
Ambient Air 2-07-08	2/7/2008	<5.2	<4.1	<3.0	<3.0	<3.0	<1.9	<2.4	<2.9	<3.3	<3.3	<3.3	<7.5

Notes:

Results reported in micrograms per cubic meter (µg/m³).

Hookston Station Soil Vapor Cleanup Standards are established in the *Final Site Cleanup Requirements for the Hookston Station Site (California Regional Water Quality Control Board, San Francisco Bay Region, 22 November 2006)*.

RWQCB ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Volume 1*, Interim Final November 2007.

Highlighting indicates concentrations greater than the Hookston Station Soil Vapor Cleanup Standard or RWQCB (for chemicals without a Hookston Station Soil Vapor Cleanup Goal).

^a 2-Propanol is used as a leak-detection compound.

^b ESL for total xylenes.

N/A = Not Available. SVP-4 could not be sampled due to water within the soil vapor probe.

Chemicals:

PCE = Tetrachloroethene

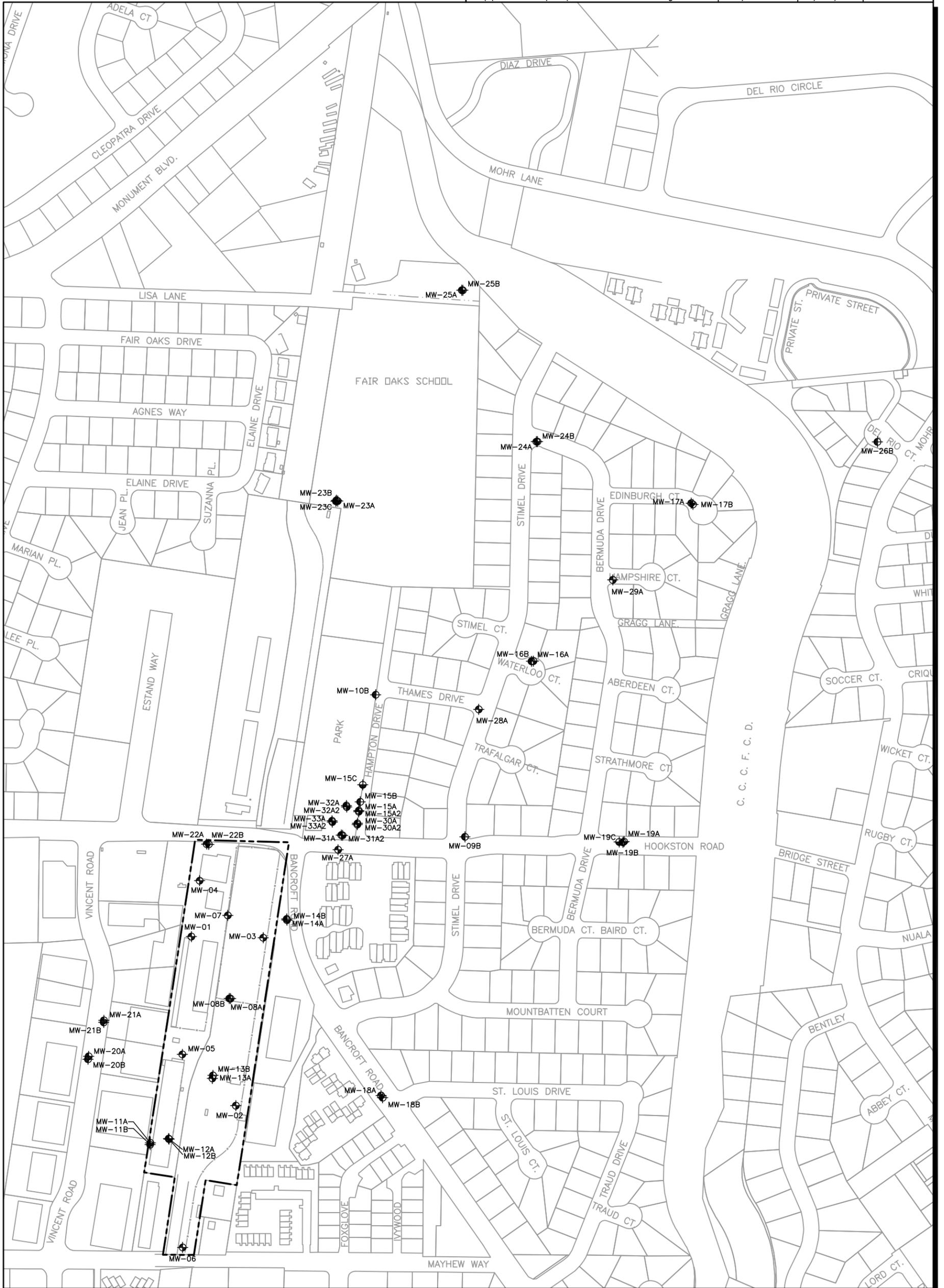
TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

Figures



LEGEND

- A-Zone Monitoring Well
- B-Zone Monitoring Well
- C-Zone Monitoring Well
- Hookston Station Parcel Property Boundary

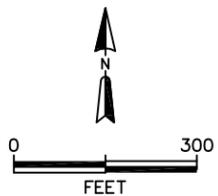
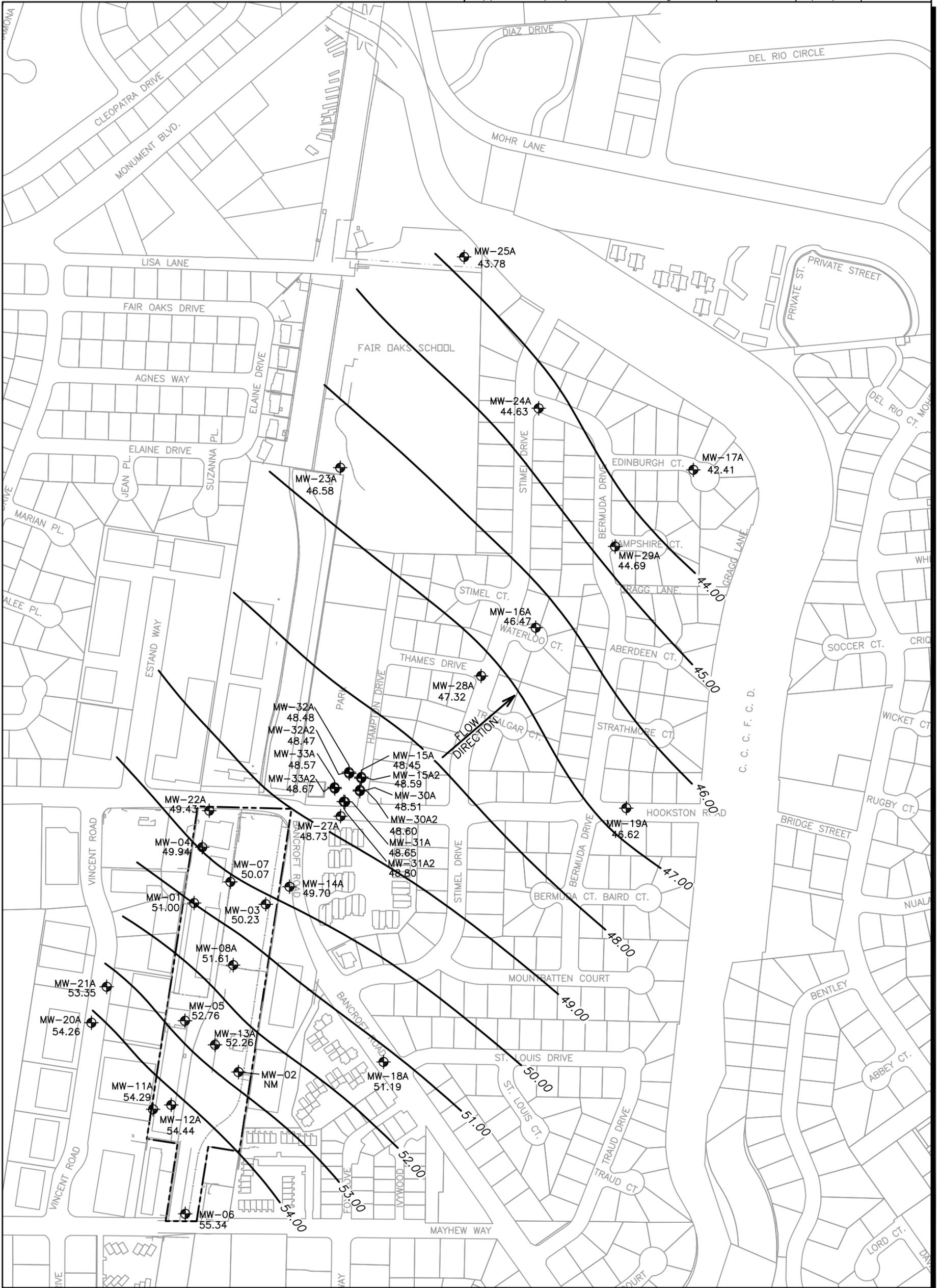


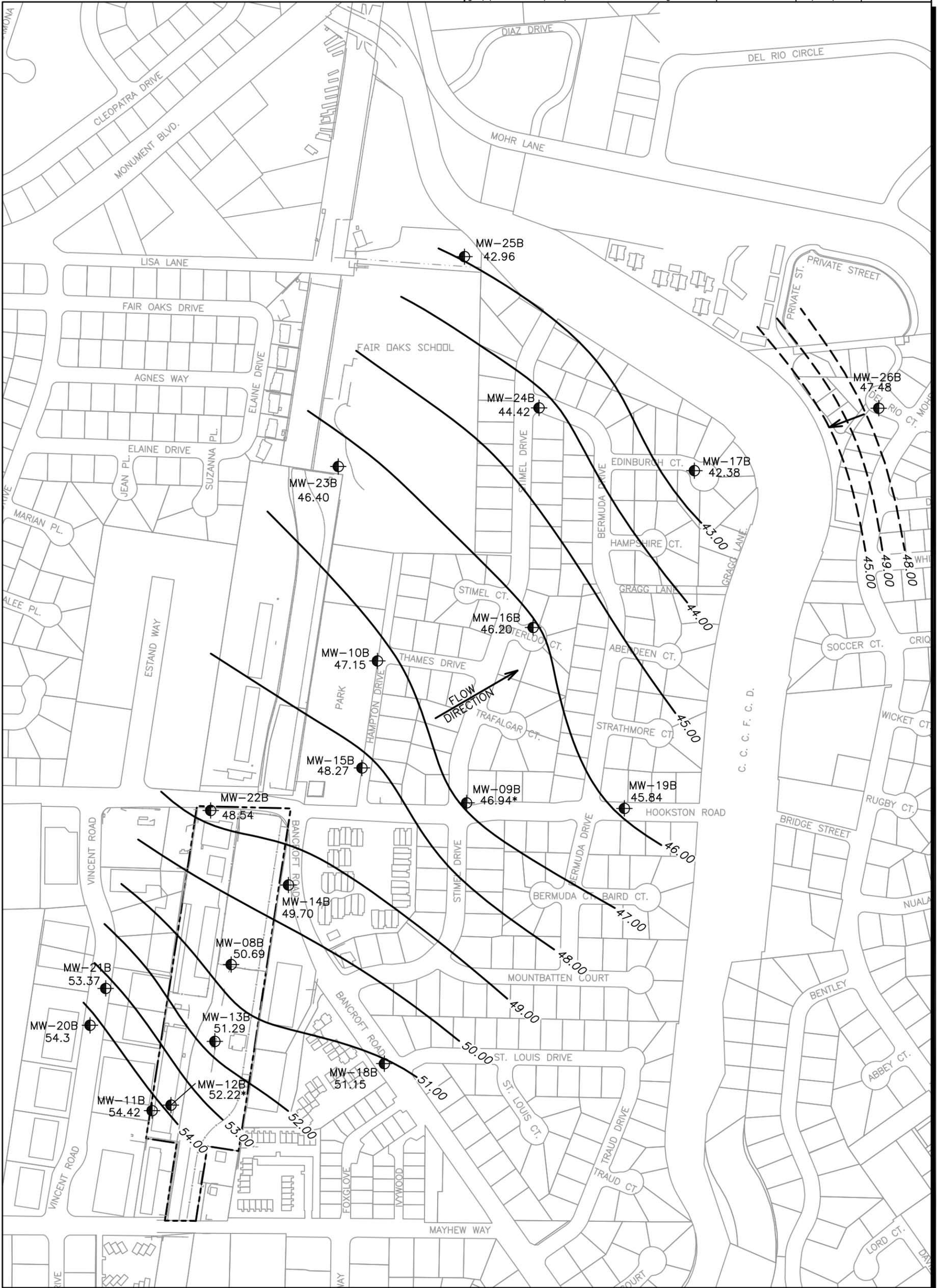
Figure 1
Well Location Map
Hookston Station
Pleasant Hill, California



LEGEND

- A-Zone Monitoring Well
- Hookston Station Parcel Property Boundary
- Ground Water Elevation Contour; 1.0 Foot Interval
- Ground Water Flow Direction
- Not Measured

Figure 2
Ground Water Elevation Map, A-Zone
25 January 2008
Hookston Station
Pleasant Hill, California



LEGEND

- B-Zone Monitoring Well
- Hookston Station Parcel Property Boundary
- Ground Water Elevation Contour; 1.0 Foot Interval; Dashed Where Inferred
- Ground Water Flow Direction
- Datum Not Used for Contouring

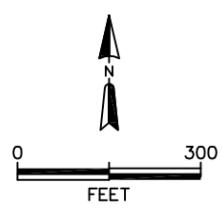
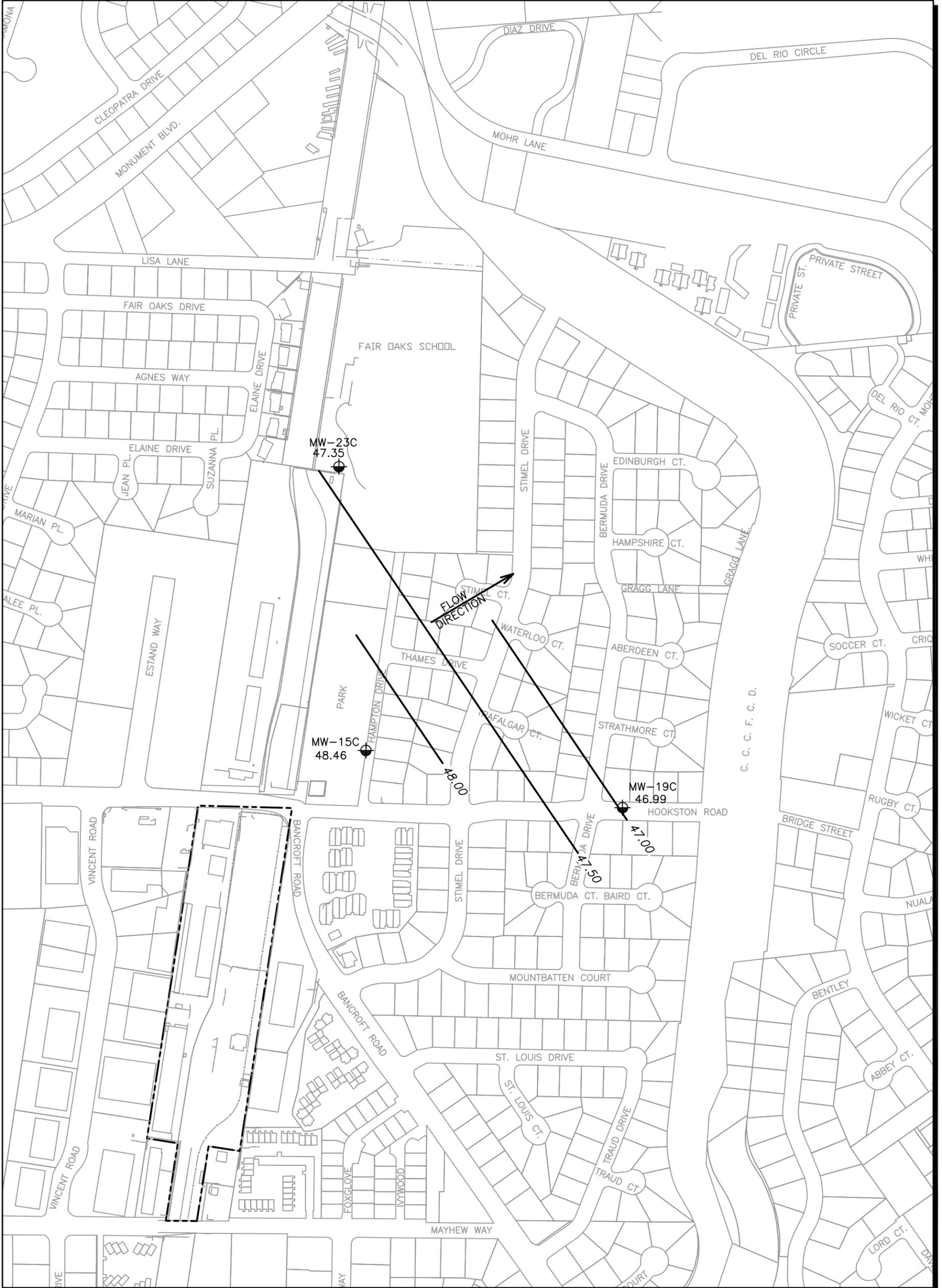


Figure 3
Ground Water Elevation Map, B-Zone
 25 January 2008
 Hookston Station
 Pleasant Hill, California



LEGEND

-  C-Zone Monitoring Well
-  Hookston Station Parcel Property Boundary
-  Ground Water Elevation Contour; 0.5 Foot Interval
-  Ground Water Flow Direction

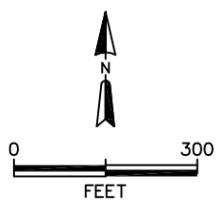
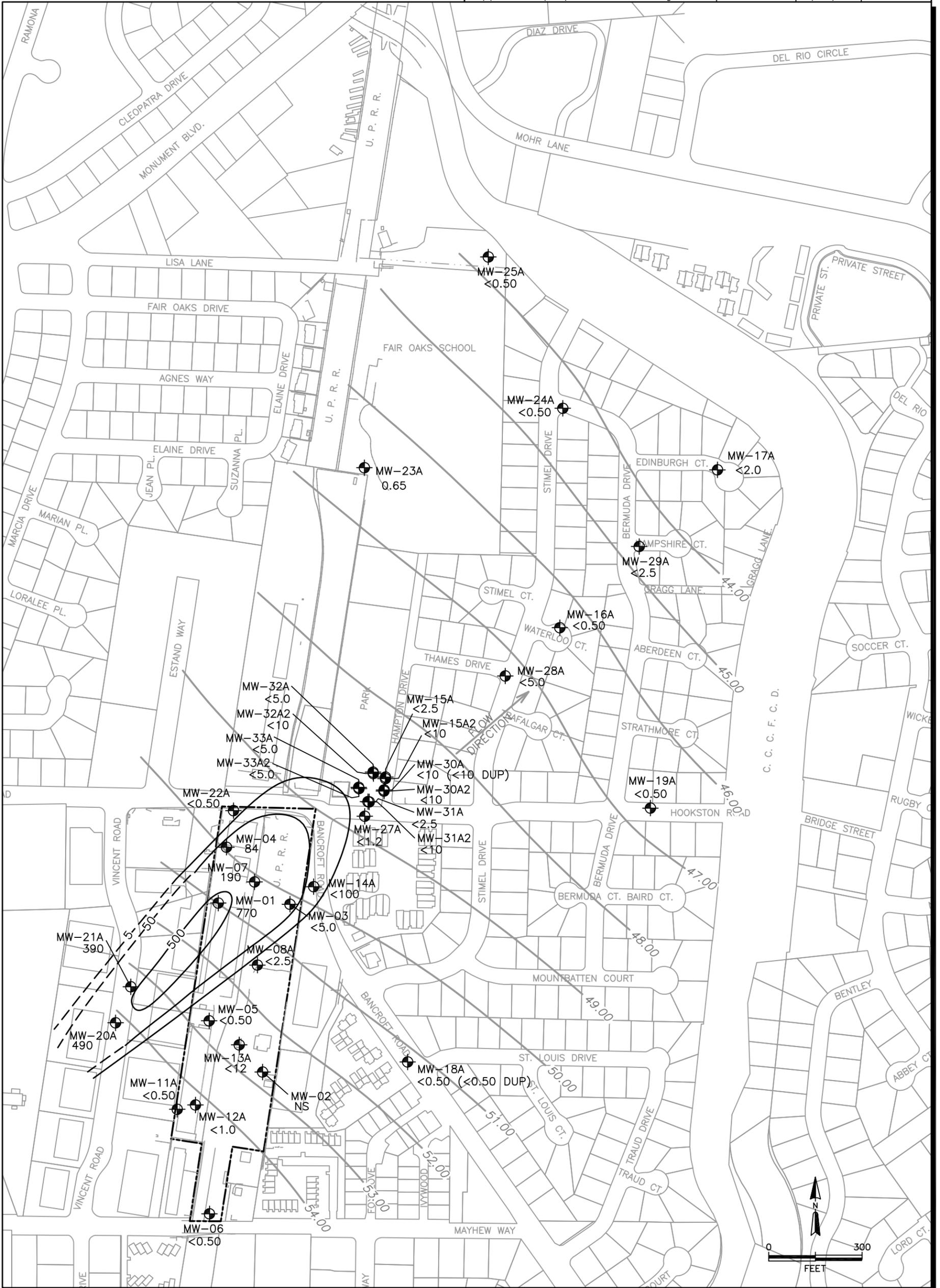


Figure 4
Ground Water Elevation Map, C-Zone
 25 January 2008
 Hookston Station
 Pleasant Hill, California

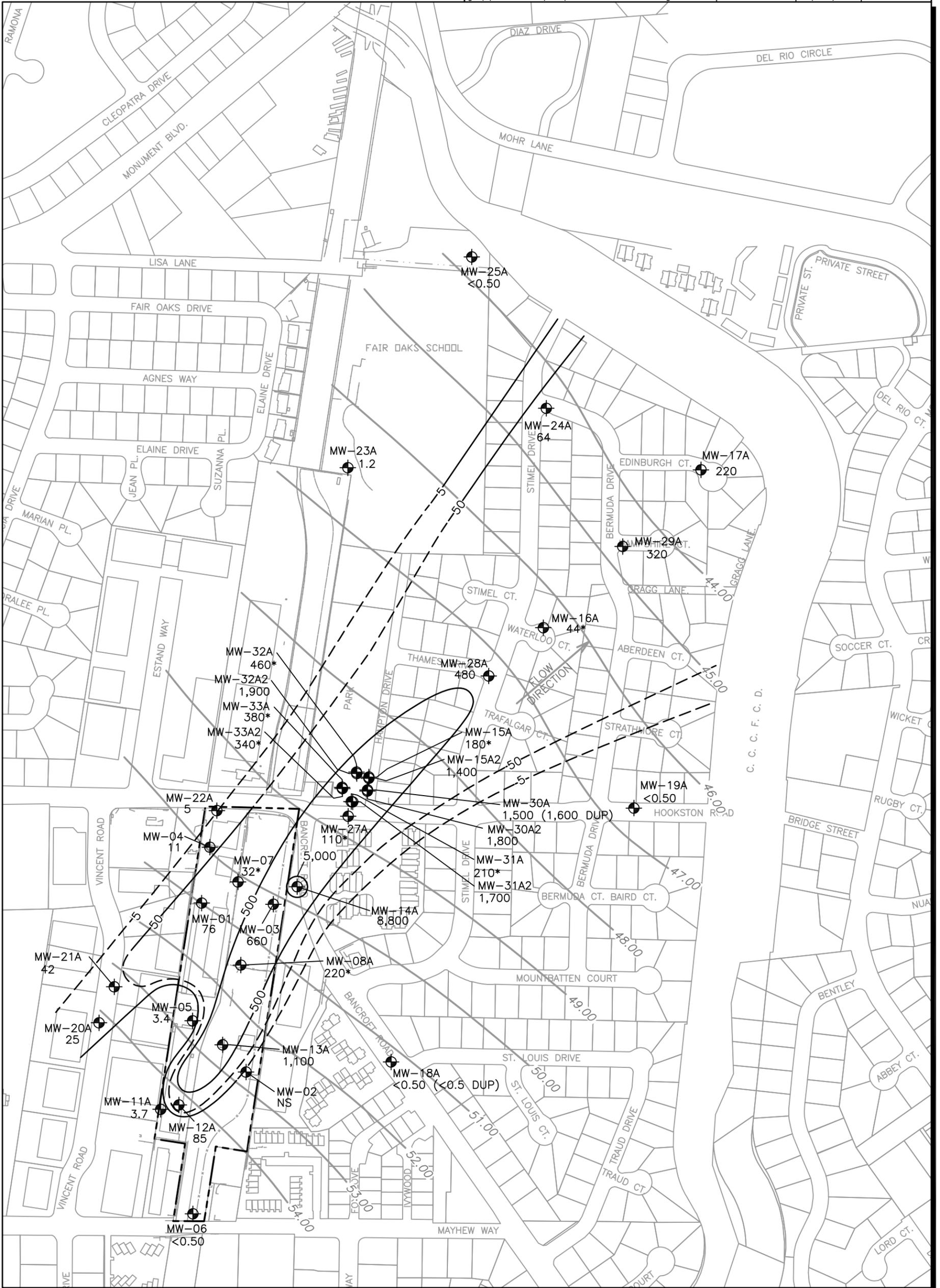


LEGEND

	Monitoring Well Location		NS Not Sampled
170	PCE Concentration ($\mu\text{g/L}$)		
50	PCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.		
49.00	Ground Water Elevation Contour, A-Zone, 25 January 2008 (feet above mean sea level)		
	Hookston Station Parcel Property Boundary		

PCE is not a chemical of concern for the Hookston Station site; therefore there is no Hookston Station ground water cleanup goal for PCE. The Maximum Contaminant Level for PCE in drinking water is 5 $\mu\text{g/L}$.

Figure 5
PCE Isoconcentration Map
A-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND	
	Monitoring Well Location
48	TCE Concentration (µg/L)
NS	Not Sampled
50	TCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
49.00	Ground Water Elevation Contour, A-Zone, 25 January 2008 (feet above mean sea level)
	Hookston Station Parcel Property Boundary
	The Maximum Contaminant Level for TCE in drinking water and Hookston Station TCE ground water cleanup goal is 5 µg/L.
*	Datum Not Used for Contouring

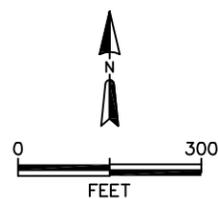
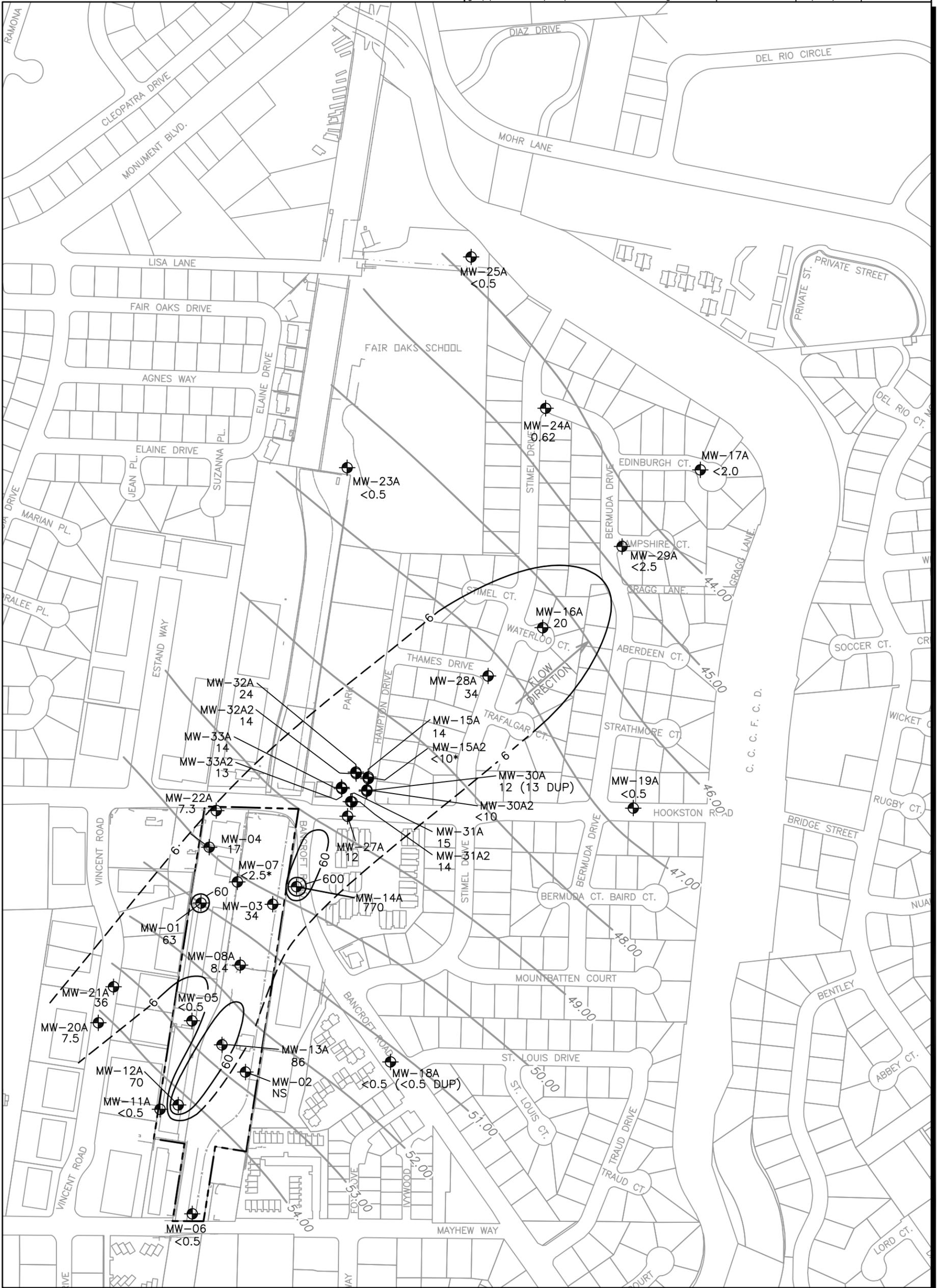


Figure 6
TCE Isoconcentration Map
A-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- Monitoring Well Location
- 12 cis-1,2-DCE Concentration ($\mu\text{g/L}$)
- NS Not Sampled
- 60 cis-1,2-DCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00 Ground Water Elevation Contour, A-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

* Datum Not Used for Contouring

The Maximum Contaminant Level for cis-1,2-DCE in drinking water and Hookston Station ground water cleanup goal for cis-1,2-DCE is 6 $\mu\text{g/L}$.

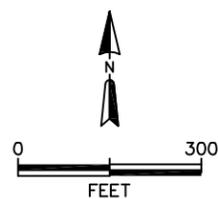
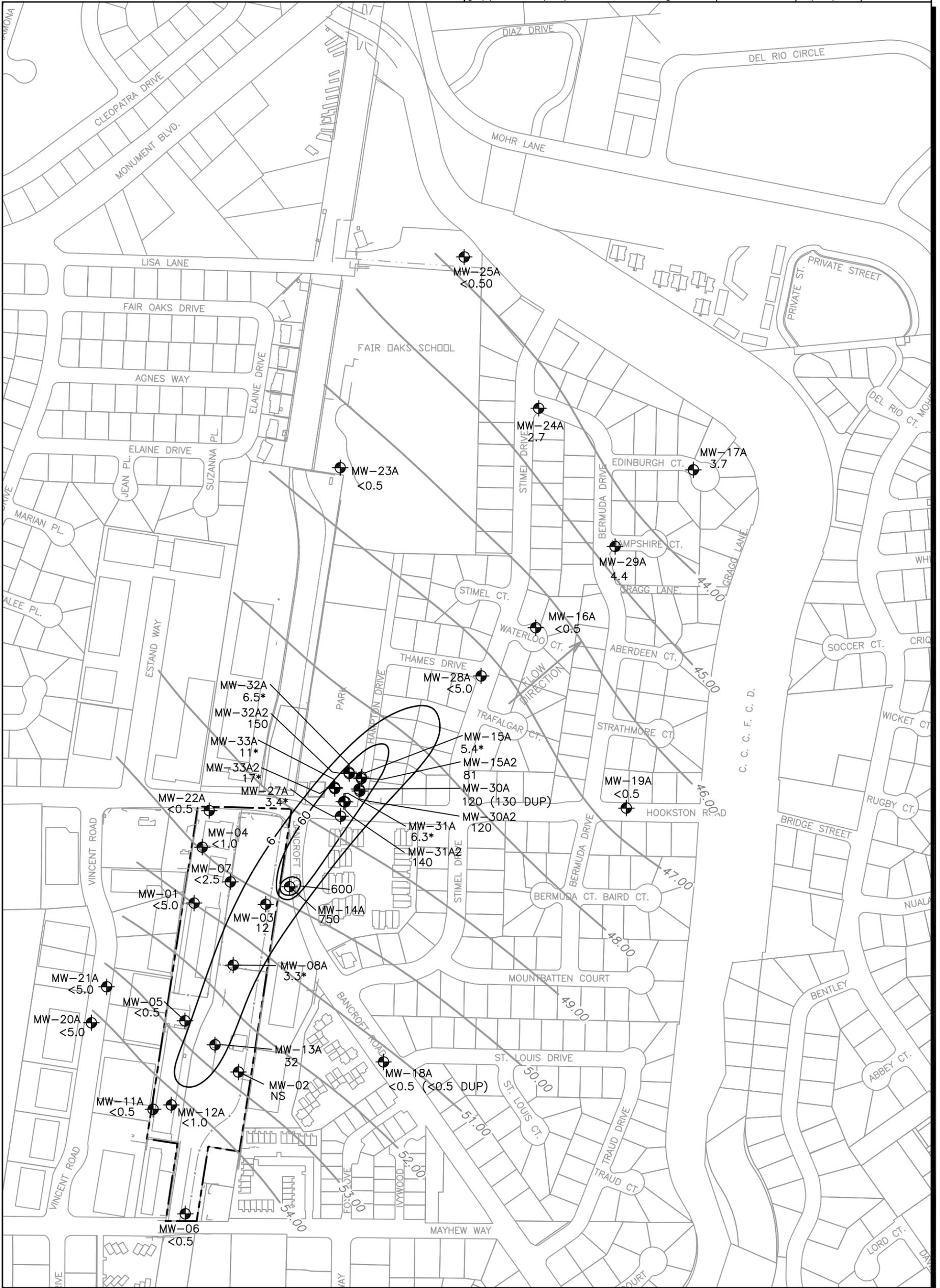


Figure 7
cis-1,2-DCE Isoconcentration Map
A-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

	Monitoring Well Location	NS	Not Sampled
70	1,1-DCE Concentration ($\mu\text{g/L}$)	*	Datum Not Used for Contouring
60	1,1-DCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.		
49.00	Ground Water Elevation Contour, A-Zone, 25 January 2008 (feet above mean sea level)		
	Hookston Station Parcel Property Boundary		

The Maximum Contaminant Level for 1,1-DCE in drinking water and Hookston Station ground water cleanup goal for 1,1-DCE is 6 $\mu\text{g/L}$.

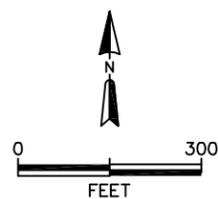
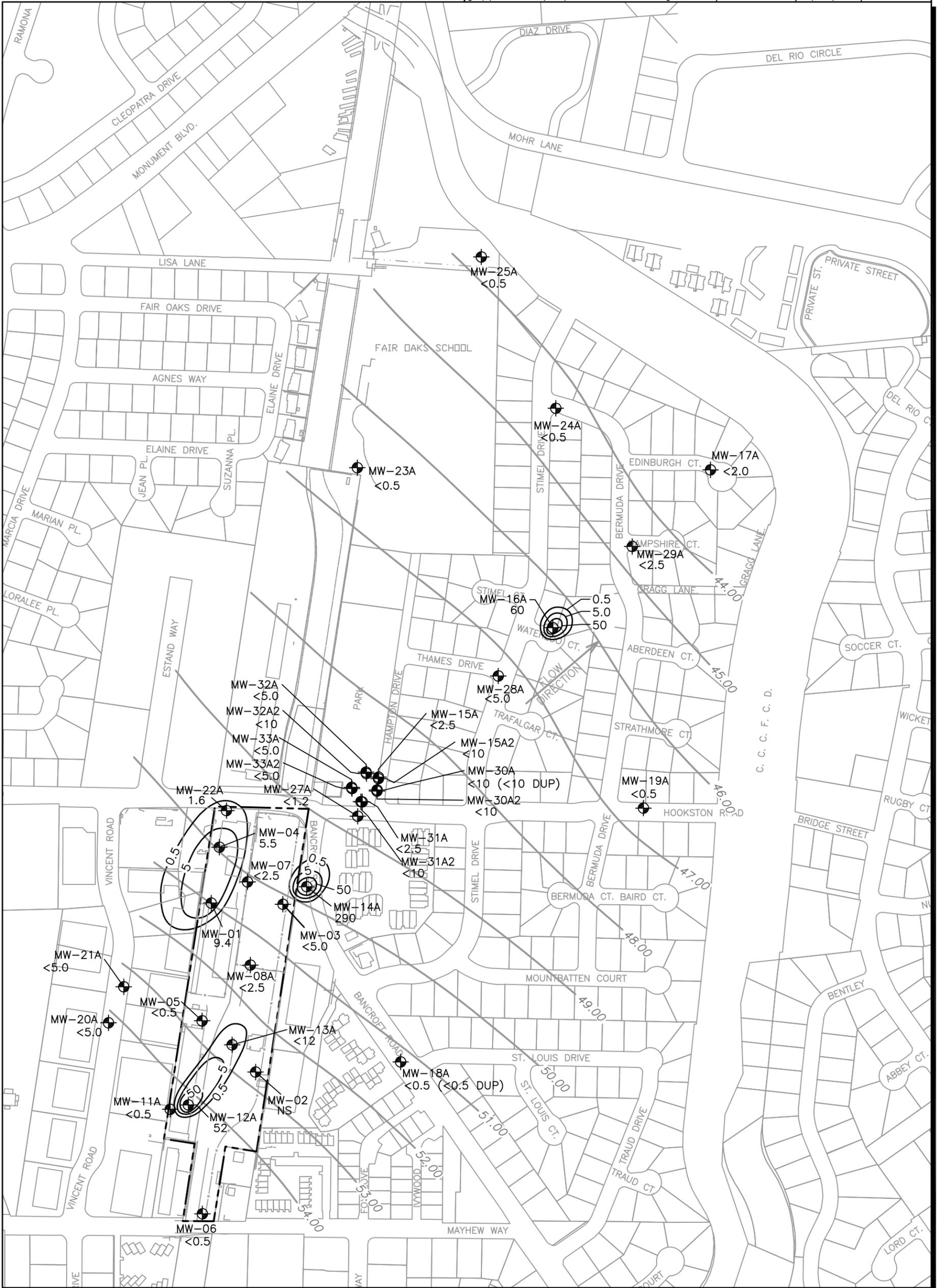


Figure 8
 1,1-DCE Isoconcentration Map
 A-Zone Ground Water
 First Quarter 2008
 Hookston Station
 Pleasant Hill, California



LEGEND

- Monitoring Well Location
- Vinyl Chloride Concentration ($\mu\text{g/L}$)
- Vinyl Chloride in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- Ground Water Elevation Contour, A-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary
- NS Not Sampled

The Maximum Contaminant Level for Vinyl Chloride in drinking water and Hookston Station ground water cleanup goal for Vinyl Chloride is $0.5 \mu\text{g/L}$.

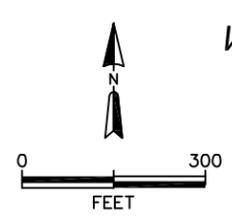
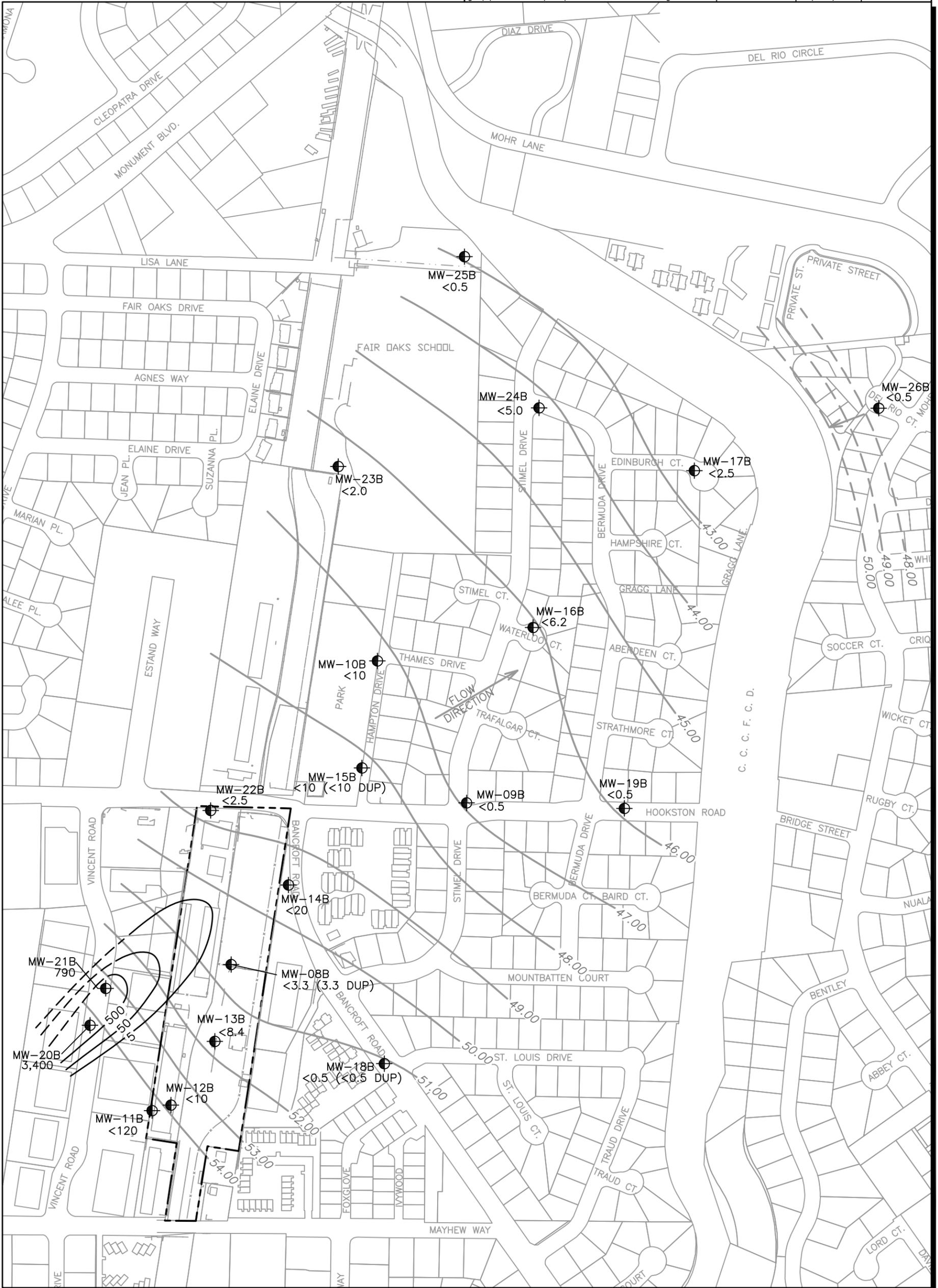


Figure 9
Vinyl Chloride Isoconcentration Map
A-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- Monitoring Well Location
- 4.1 PCE Concentration ($\mu\text{g/L}$)
- 50 PCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00 Ground Water Elevation Contour, B-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

PCE is not a chemical of concern for the Hookston Station site; therefore there is no Hookston Station ground water cleanup goal for PCE. The Maximum Contaminant level for PCE in drinking water is 5 $\mu\text{g/L}$.

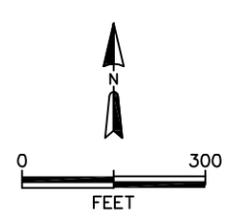
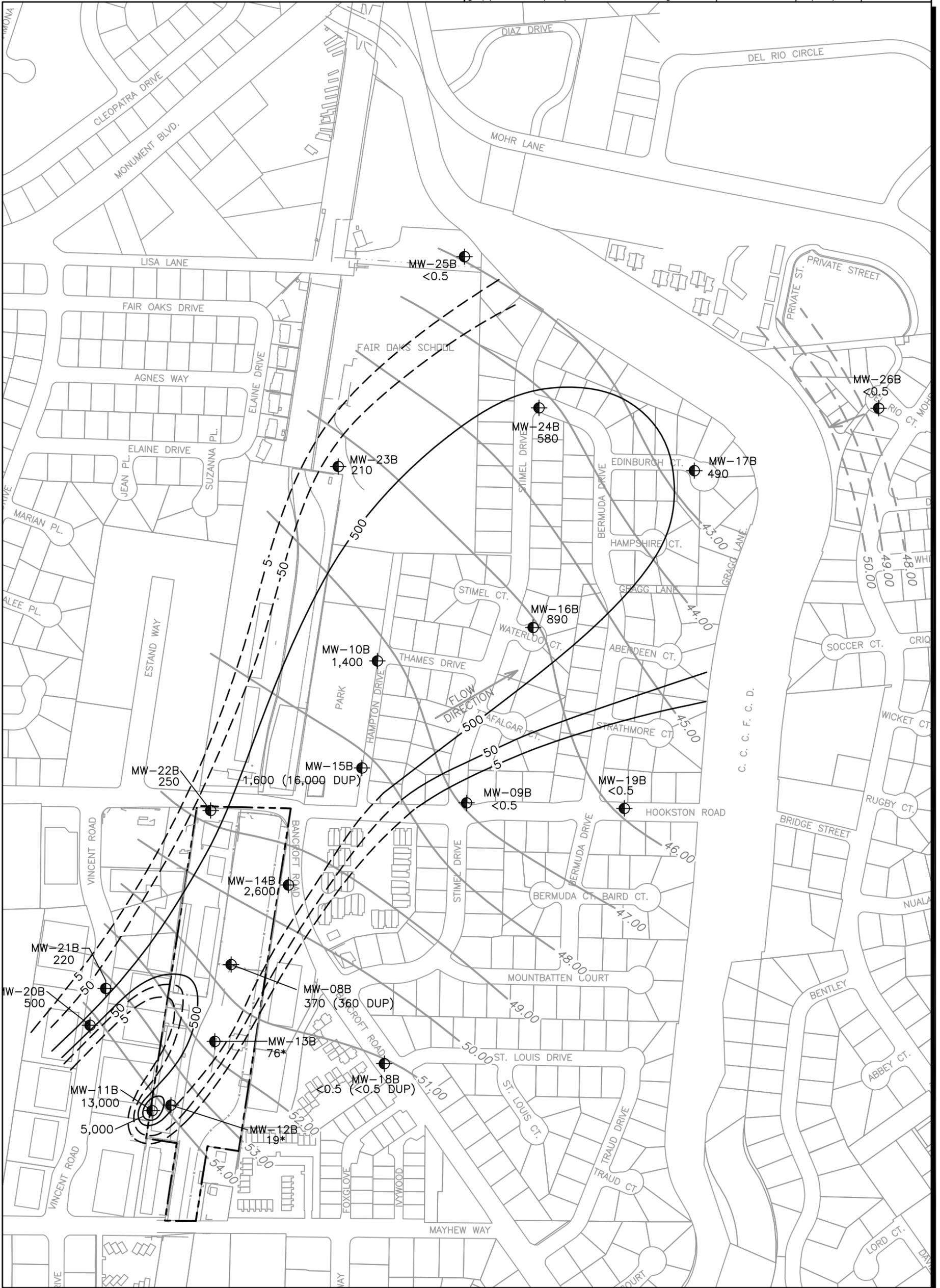


Figure 10
*PCE Isoconcentration Map
 B-Zone Ground Water
 First Quarter 2008
 Hookston Station
 Pleasant Hill, California*



LEGEND

- Monitoring Well Location
- TCE Concentration ($\mu\text{g/L}$)
- * Not Used for Contouring
- 50 TCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00 Ground Water Elevation Contour, B-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

The Maximum Contaminant Level for TCE in drinking water and Hookston Station TCE ground water cleanup goal is $5 \mu\text{g/L}$.

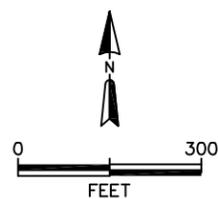
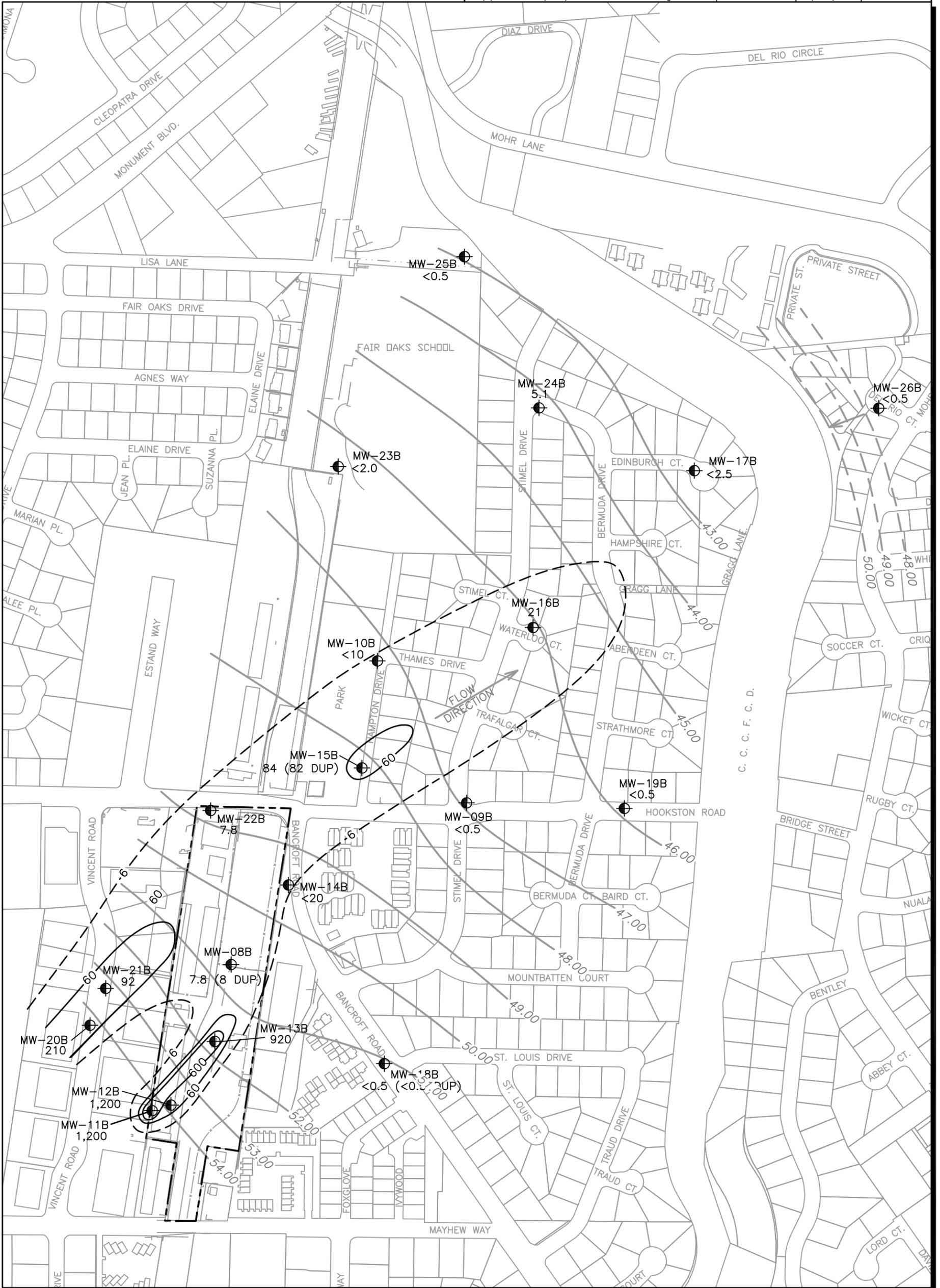


Figure 11
TCE Isoconcentration Map
B-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- Monitoring Well Location
- cis-1,2-DCE Concentration ($\mu\text{g/L}$)
- 60 cis-1,2-DCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00 Ground Water Elevation Contour, B-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

The Maximum Contaminant Level for cis-1,2-DCE in drinking water and Hookston Station ground water cleanup goal for cis-1,2-DCE is $6\ \mu\text{g/L}$.

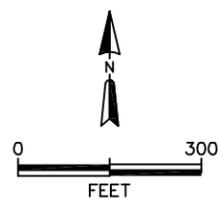
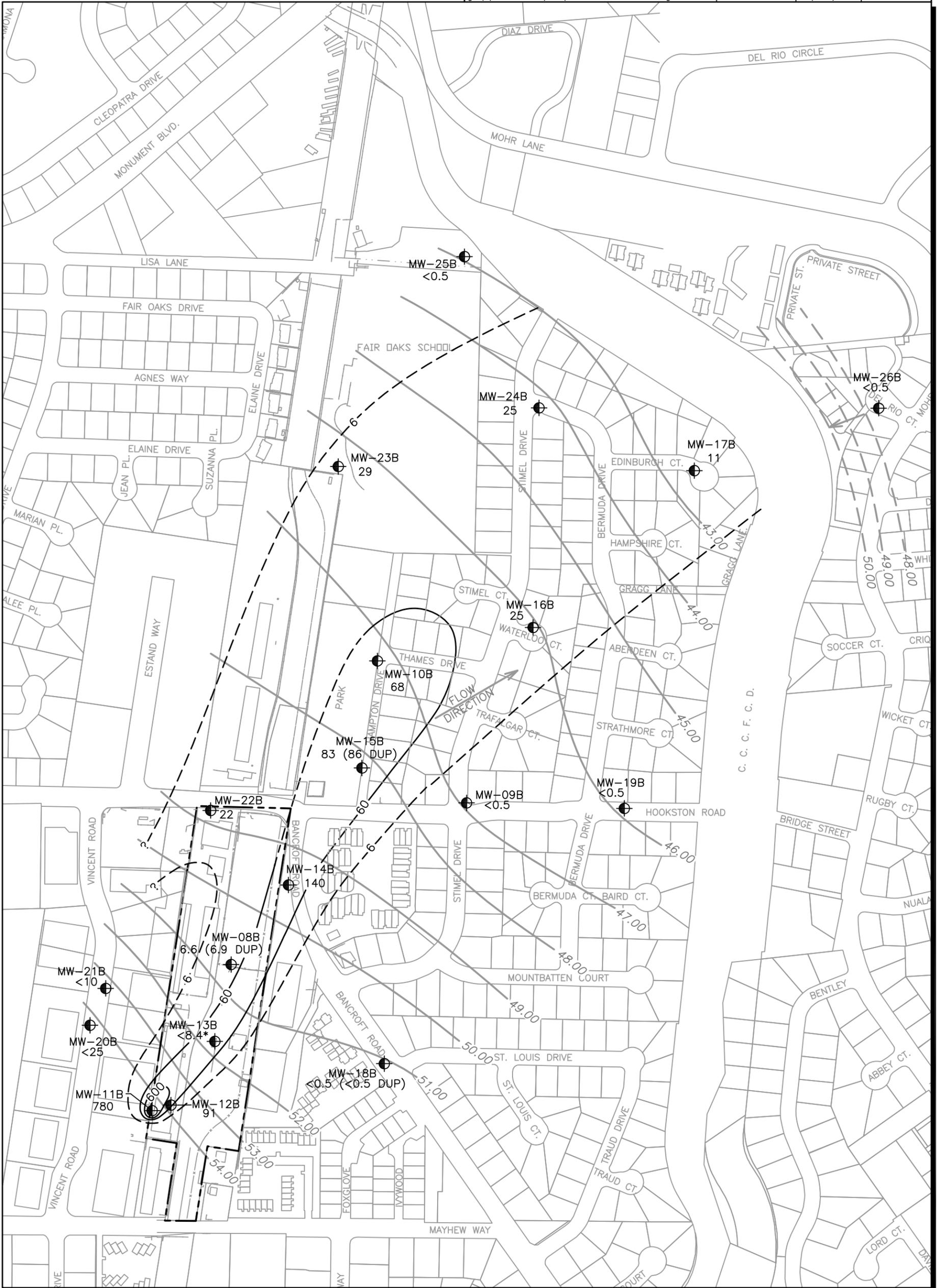


Figure 12
cis-1,2-DCE Isoconcentration Map
B-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- Monitoring Well Location
- 38** 1,1-DCE Concentration ($\mu\text{g/L}$)
- *** Not Used for Contouring
- 60** ——— 1,1-DCE in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00** ——— Ground Water Elevation Contour, B-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

The Maximum Contaminant Level for 1,1-DCE in drinking water and Hookston Station ground water cleanup goal for 1,1-DCE is $6 \mu\text{g/L}$.

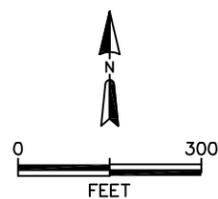
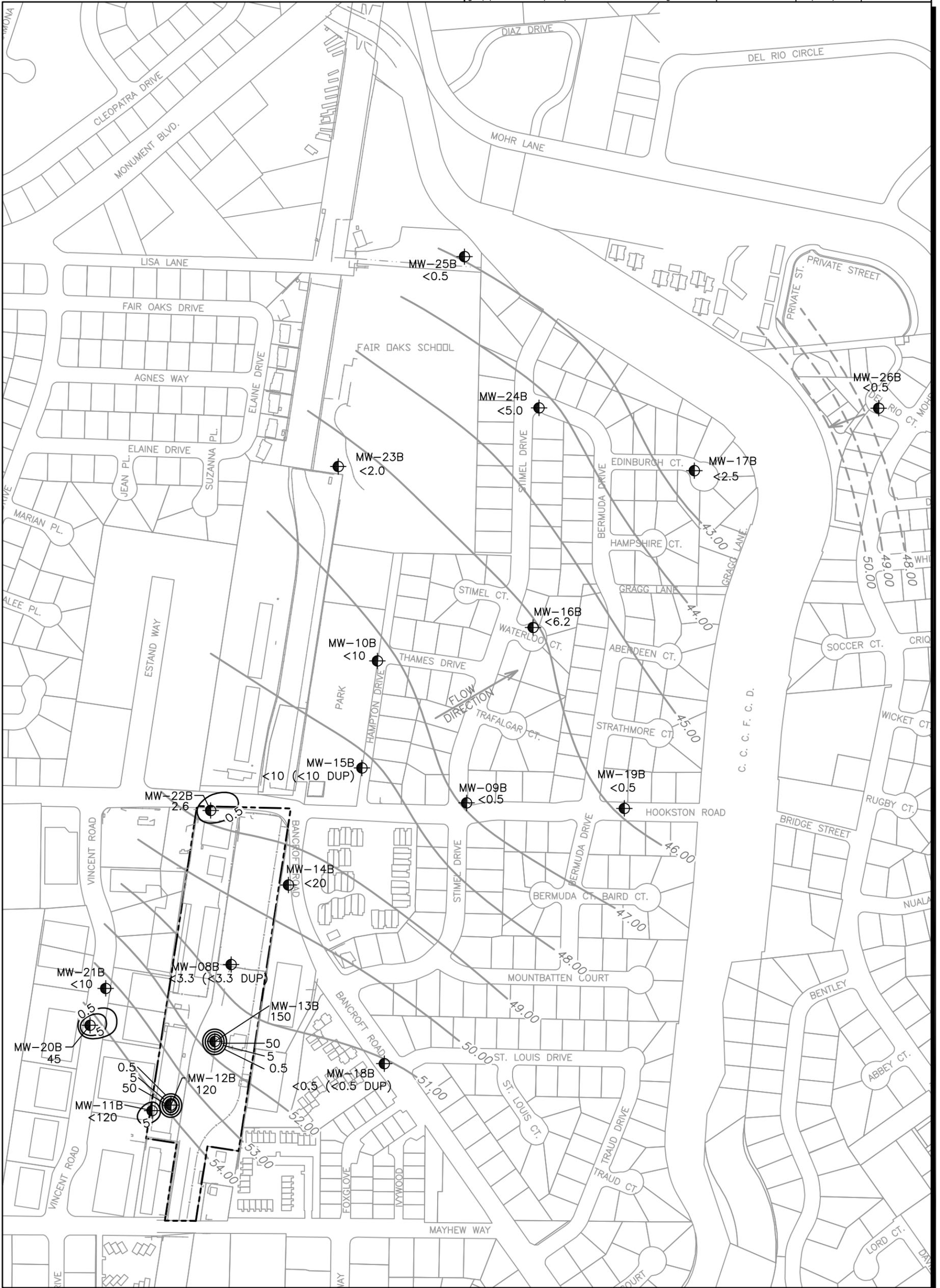


Figure 13
1,1-DCE Isoconcentration Map
B-Zone Ground Water
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- Monitoring Well Location
- 2.7 Vinyl Chloride Concentration ($\mu\text{g/L}$)
- 5 Vinyl Chloride in Ground Water Contour, Solid Based on First Quarter 2008 Monitoring Well Data, Dashed Where Inferred from Historical Grab Ground Water Sampling or Investigation Data Collected at Nearby Properties by Others.
- 49.00 Ground Water Elevation Contour, B-Zone, 25 January 2008 (feet above mean sea level)
- Hookston Station Parcel Property Boundary

The Maximum Contaminant Level for Vinyl Chloride in drinking water and Hookston Station ground water cleanup goal for Vinyl Chloride is $0.5 \mu\text{g/L}$.

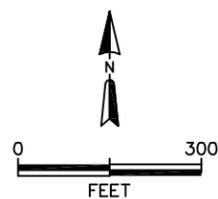
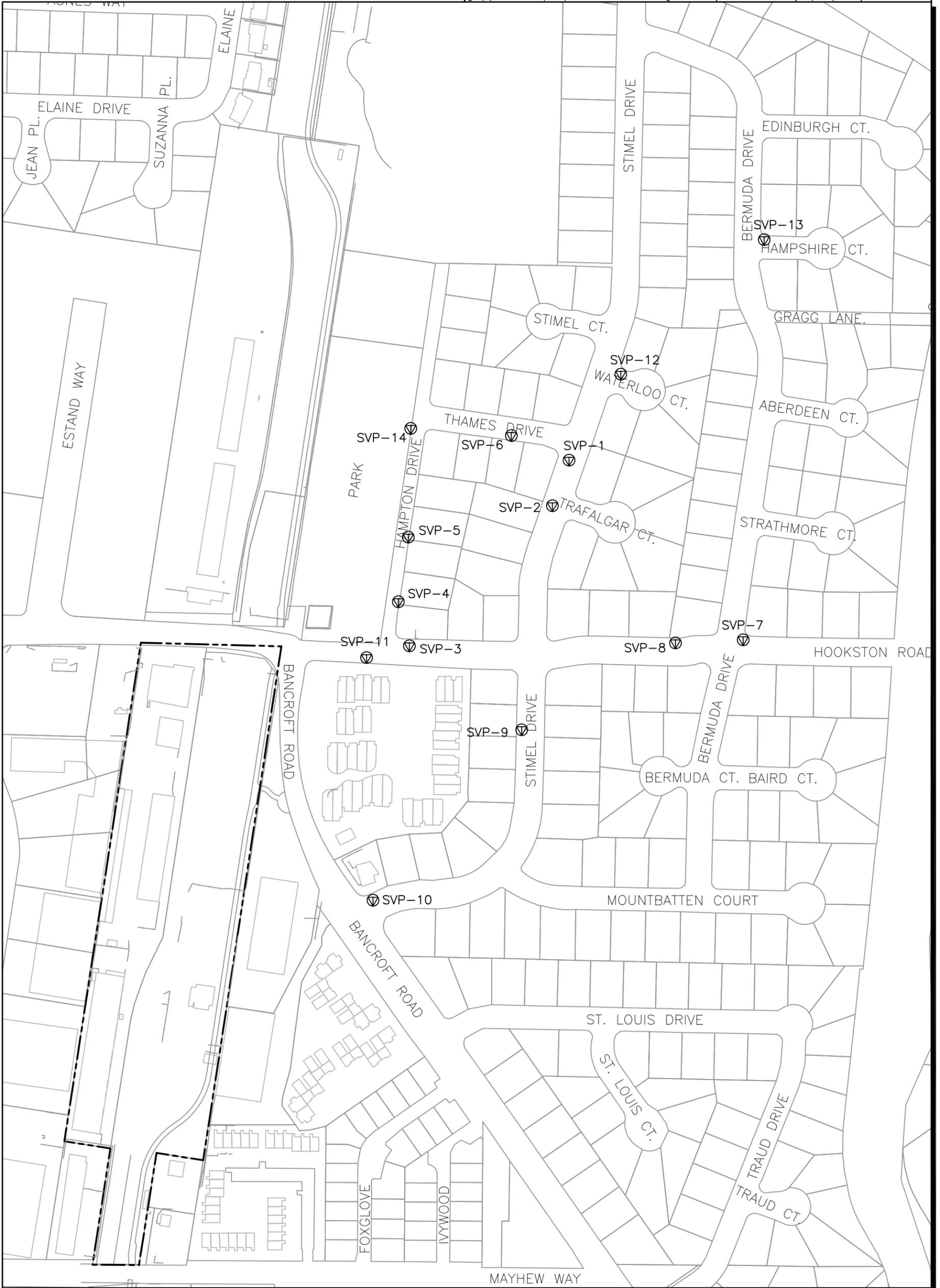


Figure 14
 Vinyl Chloride Isoconcentration Map
 B-Zone Ground Water
 First Quarter 2008
 Hookston Station
 Pleasant Hill, California



LEGEND

- ⊙ Soil Vapor Monitoring Probe Location
- Hookston Station Parcel Property Boundary

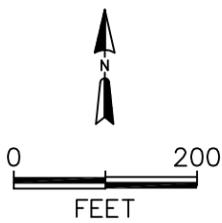
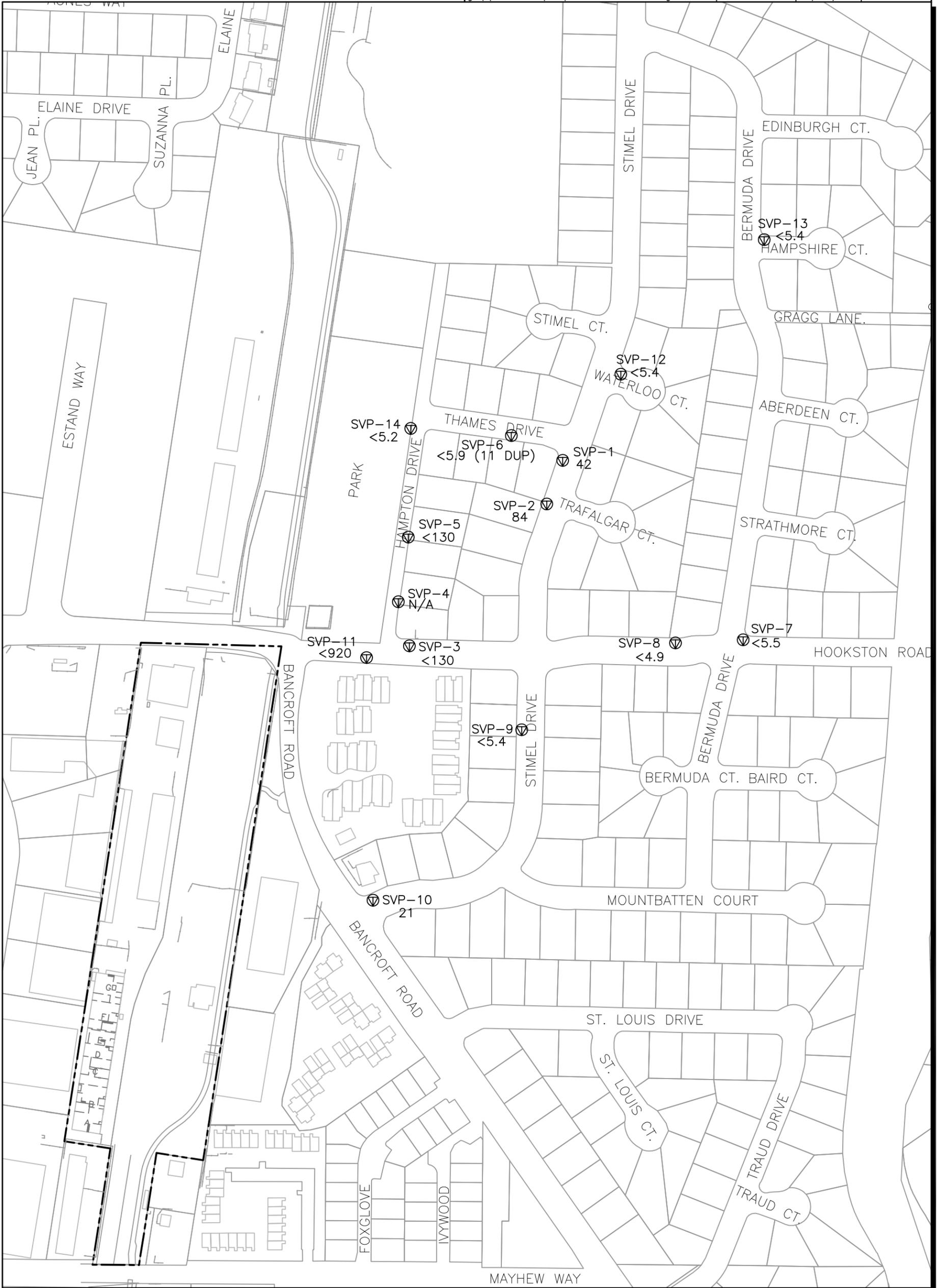


Figure 15
Soil Vapor Probe Location Map
Hookston Station
Pleasant Hill, California



LEGEND

- SVP-11 Soil Vapor Monitoring Probe Location
- < 1,000 PCE Soil Vapor Concentration ($\mu\text{g}/\text{m}^3$)
- N/A Not Analyzed Due to Water in Soil Vapor Probe
- Hookston Station Parcel Property Boundary

PCE is not a chemical of concern for the Hookston Station site; therefore, there is no Hookston Station soil vapor cleanup goal for PCE. The San Francisco Bay Regional Water Quality Control Board environmental screening level for PCE in soil vapor in a residential setting = $410 \mu\text{g}/\text{m}^3$. The PCE ESL was not exceeded during First Quarter 2008.

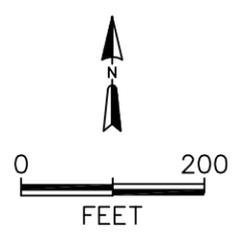
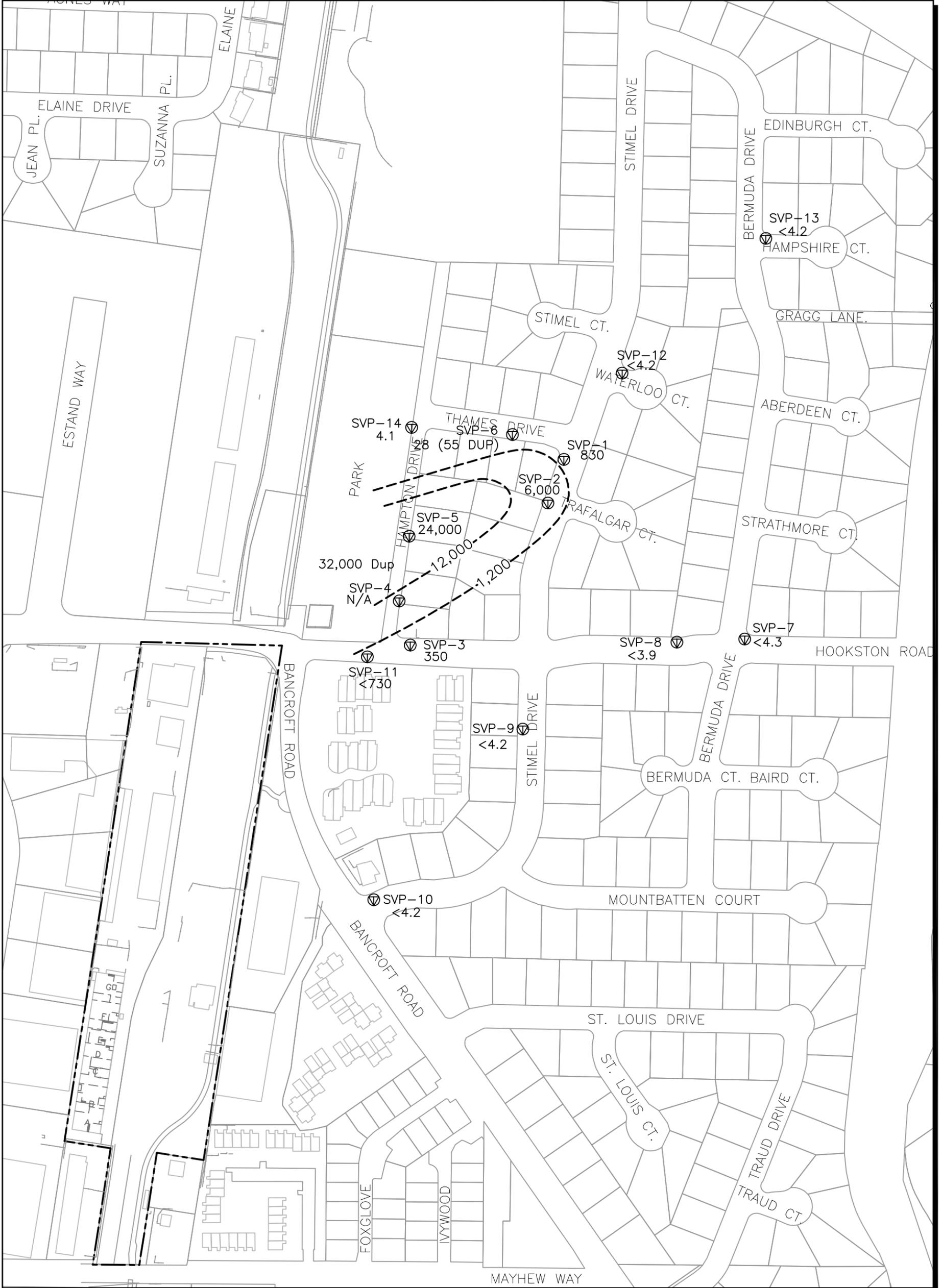


Figure 16
PCE in Soil Vapor
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND	
SVP-11	Soil Vapor Monitoring Probe Location
<730	TCE Soil Vapor Concentration ($\mu\text{g}/\text{m}^3$)
N/A	Not Analyzed Due to Water in Soil Vapor Probe
1,200	TCE Soil Vapor Concentration Contour ($\mu\text{g}/\text{m}^3$)
---	Hookston Station Parcel Property Boundary
The Hookston Station off-site soil vapor cleanup standard for TCE = $1,200 \mu\text{g}/\text{m}^3$.	

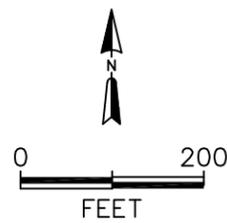
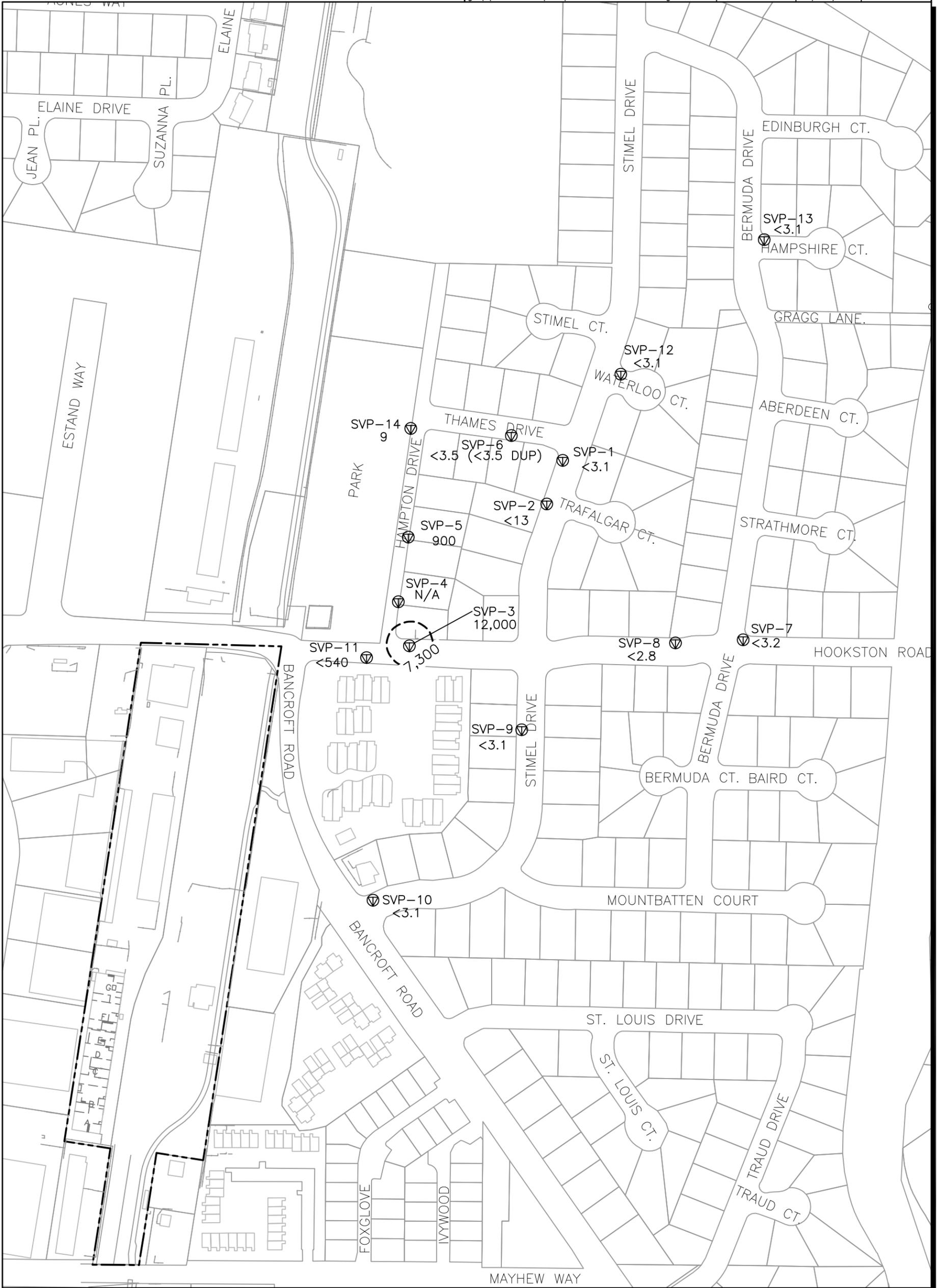


Figure 17
TCE in Soil Vapor
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- SVP-11 Soil Vapor Monitoring Probe Location
- <590 cis-1,2-DCE Soil Vapor Concentration ($\mu\text{g}/\text{m}^3$)
- N/A Not Analyzed Due to Water in Soil Vapor Probe
- 7,300 cis-1,2-DCE Soil Vapor Concentration Contour ($\mu\text{g}/\text{m}^3$)
- Hookston Station Parcel Property Boundary

The Hookston Station off-site soil vapor cleanup standard for cis-1,2-DCE = 7,300 $\mu\text{g}/\text{m}^3$.

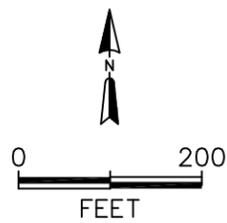
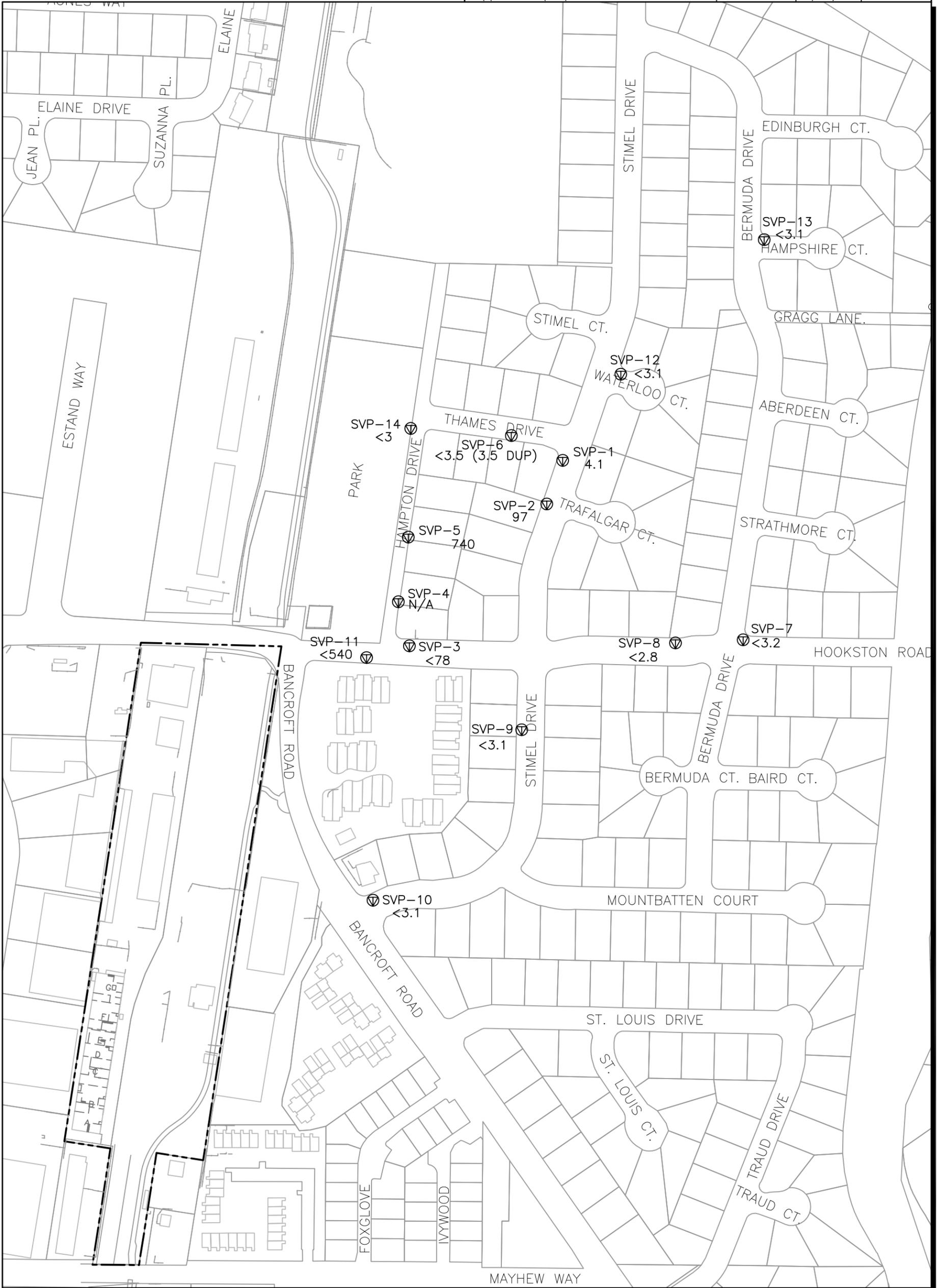


Figure 18
cis-1,2-DCE in Soil Vapor
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND

- SVP-11 Soil Vapor Monitoring Probe Location
- <590 1,1-DCE Soil Vapor Concentration ($\mu\text{g}/\text{m}^3$)
- N/A Not Analyzed Due to Water in Soil Vapor Probe
- Hookston Station Parcel Property Boundary

The Hookston Station off-site soil vapor cleanup standard for 1,1-DCE = 42,000 $\mu\text{g}/\text{m}^3$.
The 1,1-DCE cleanup standard was not exceeded during First Quarter 2008

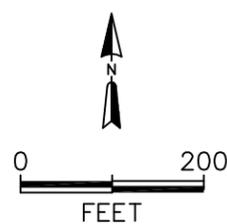
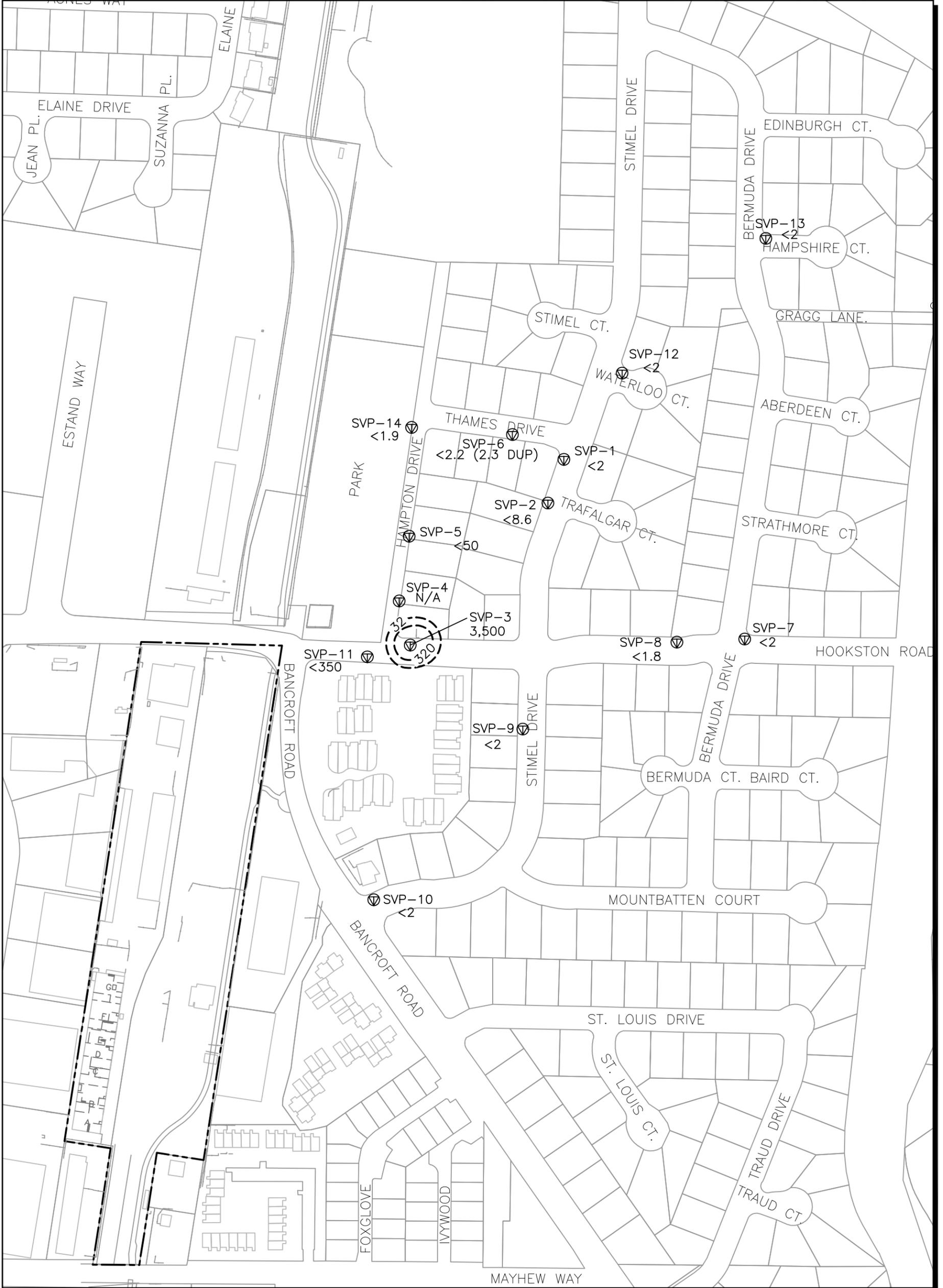


Figure 19
1,1-DCE in Soil Vapor
First Quarter 2008
Hookston Station
Pleasant Hill, California



LEGEND	
SVP-11	Soil Vapor Monitoring Probe Location
<380	Vinyl Chloride Soil Vapor Concentration ($\mu\text{g}/\text{m}^3$)
N/A	Not Analyzed Due to Water in Soil Vapor Probe
320 - - - -	Vinyl Chloride Soil Vapor Concentration Contour ($\mu\text{g}/\text{m}^3$)
- - - - -	Hookston Station Parcel Property Boundary
Hookston Station off-site soil vapor cleanup standard for Vinyl Chloride = $32 \mu\text{g}/\text{m}^3$.	

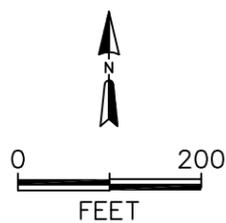


Figure 20
Vinyl Chloride in Soil Vapor
First Quarter 2008
Hookston Station
Pleasant Hill, California

Attachment A
Data Quality Review

Memorandum

Environmental
Resources
Management

To: Kimberly Lake

From: Maria Barajas-Albalawi

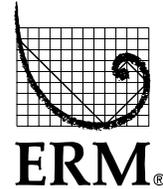
Date: 13 March 2008

Subject: Data Review of Hookston Station Samples Collected
January and February 2008

Project Number: 0077457.4

Data Package: Accutest Laboratories Data Packages 59414, 59422,
and 59442; Air Toxics LTD. Data Packages 0802358,
0802354, 0802359R1, 0802360, and 0802361

2525 Natomas Park Drive,
Suite 350
Sacramento, CA 95833
(916) 924-9378
(916) 920-9378 (fax)



The quality of the data was assessed and any necessary qualifiers were applied following the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

HOLDING TIME AND PRESERVATION EVALUATION

The sample shipments were received at the laboratory within the method prescribed temperature preservation requirements. The samples were prepared and analyzed within the method prescribed time period from the date of collection.

CANISTER VACUUM EVALUATION

The canister vacuums were received at acceptable pressures, therefore none of the data were qualified based on canister vacuum pressure exceedances.

BLANK EVALUATION

The method and trip blank sample results were nondetected for each of the target analytes. None of the data required qualification based on blank results.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) recoveries were within the laboratory's limits of acceptance with a few exceptions. The percent recoveries of two analytes in the LCS data were outside the lower control limits. The data are qualified as estimated nondetected (UJ) and presented in Table 1.

MATRIX SPIKE EVALUATION

The matrix spike (MS)/matrix spike duplicate (MSD) recoveries were within the laboratory's limits of acceptance, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

FIELD DUPLICATE EVALUATION

Six samples were submitted in duplicate. ERM calculated the relative percent difference (RPD) between detected results. The USEPA has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision. The RPDs are presented in Table 2.

LAB DUPLICATE EVALUATION

Two soil vapor samples were analyzed in duplicate for volatiles. ERM calculated the RPDs between detected results. The USEPA has not established control criteria for duplicate samples; therefore, sample data are not qualified on the basis of duplicate imprecision. All RPDs in the lab duplicates were less than 20 percent, indicating acceptable precision.

CONTINUING CALIBRATION VERIFICATION EVALUATION

The laboratory noted that the continuing calibration verification recoveries for methyl tert-butyl ether and 1,2,4-trichlorobenzene were outside the method criteria. However, no qualifications are required for data associated with the methyl tert-butyl ether exceedance. The result associated with the 1,2,4-trichlorobenzene exceedance is qualified as estimated nondetected (UJ) and is listed in Table 3.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications to the data were made. The surrogate recoveries indicate minimal matrix interference in the samples.

OVERALL ASSESSMENT

No data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Spike Recoveries Outside of Acceptable Limits
UPRR Hookston Station
Pleasant Hill, California

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Sample Result	Units	ERM Qualifier
LCS										
0802361	Batch LCS (2/22)	See below	1,2,4-Trichlorobenzene	58	70-130	NA	NA	See below	See below	See below
0802361	--	Trip Blank	1,2,4-Trichlorobenzene	NA	NA	NA	NA	ND	μG/m ³	UJ
0802361	Batch LCS (2/22)	See below	Hexachlorobutadiene	66	70-130	NA	NA	See below	See below	See below
0802361	--	Trip Blank	Hexachlorobutadiene	NA	NA	NA	NA	ND	μG/m ³	UJ

Key:

LCS= Laboratory control sample

UJ= Estimated nondetected

μG/m³= Micrograms per cubic meter

NA= Not applicable

ND= Nondetected

RPD = Relative percent difference

Table 2
Field Duplicate Results and Calculated Relative Percent Differences
UPRR Hookston Station
Pleasant Hill, California

Lab Package	Sample ID	Compound	Concentration		Reporting Limit	Units	RPD (%)
			Sample	Duplicate			
59422	MW-30A	1,1-Dichloroethene	120	130.0	10	µg/L	8.0
59422	MW-30A	cis-1,2-Dichloroethene	12	13	10	µg/L	8.0
59422	MW-30A	Trichloroethene	1500	1600	10	µg/L	6.5
59422	MW-15B	1,1-Dichloroethene	83	86	10	µg/L	3.6
59422	MW-15B	cis-1,2-Dichloroethene	84	82	10	µg/L	2.4
59422	MW-15B	Trichloroethene	1600	1600	10	µg/L	0.0
0802359R1	SVP-6	Acetone	13	12	8.3	µG/m ³	8.0
0802359R1	SVP-6	2-Propanol	16	<8.6	8.6	µG/m ³	NC
0802359R1	SVP-6	Methylene Chloride	20	<3.0	3.0	µG/m ³	NC
0802359R1	SVP-6	Trichloroethene	28	55	4.7	µG/m ³	65
0802359R1	SVP-6	4-Methyl-2-pentanone	5.0	<3.6	3.6	µG/m ³	NC
0802359R1	SVP-6	Freon 11	<4.9	5.8	4.9	µG/m ³	NC
0802359R1	SVP-6	Tetrachloroethene	<5.9	11	5.9	µG/m ³	NC

Key:

µg/L= Micrograms per liter

µG/m³= Micrograms per cubic meter

RPD = Relative percent difference

ND= Nondetected

NC = Not calculated, one result was detected and the other result was nondetected

*Table 3
Continuing Calibration Verification
UPRR Hookston Station
Pleasant Hill, California*

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	Sample Result	Units	ERM Qualifier
802358	Batch CCV	NA	Methyl tert-butyl ether	134	70-130	NA	NA	NA
802361	Batch CCV	See below	1,2,4-Trichlorobenzene	60	70-130	See below	NA	See below
802361	--	Trip blank	1,2,4-Trichlorobenzene	NA	NA	ND	μG/m ³	UJ

Key:

CCV= Continuing calibration verification

UJ= Estimated nondetected

μG/m³= Micrograms per cubic meter

ND= Nondetected

NA= Not applicable