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February 3, 2006

Ms. Normita Callison
Corporate Environmental Specialist
Pacific Coast Companies, Inc.
10600 White Rock Road
Rancho Cordova, CA 95670

Re: Interim Remedial Action Plan
879 Wright Road, N, Santa Rosa, CA
SCDHS-EHD # 0001844

Dear Ms. Callison:

Based on your request, Bay Consulting Services, (Bay) has prepared this Interim Remedial Action Plan. The Plan evaluates the residual impact on site with respect to previous investigations conducted in soil and groundwater and discusses interim remedial options to progress this site toward closure. In a letter dated December 7, 2005, the County of Sonoma Department of Health Services requested further investigation to define the contaminant plume. Previous investigation conducted in 1995 evaluated the extent of soil and groundwater impact. This report evaluates these results and current groundwater trends for plume definition.

SITE BACKGROUND

The site is utilized as a light industrial/commercial facility for the resale of roofing and construction supplies as Alcal Santa Rosa, a division of Alcal Arcade Contracting, Inc., under the parent company Pacific Coast Companies, Inc. The property is located on the southwest corner of Wright Road and Sebastopol Freeway (Interstate 12), Santa Rosa, California (Figure 1). Local topography is flat and the site elevation is approximately 95 feet (ft) above mean sea level. Site facilities include a commercial store/office, several maintenance building and several warehouses (Figure 2). The property is owned by Pacific Coast Companies, Inc. The surrounding land use is light industrial and commercial. A water supply well is located on the northern portion of the property, (Figure 2), supplies the facility with water. This well is screened from 27 to 47 feet bgs. The nearest surface water to the site is two unnamed tributaries to the Luguna de Santa Rosa located approximately 1,000 feet northwest and 3,000 feet south, respectively from the site.

Site Geology: The soil encountered at the site consists primarily of silty clay to approximately 7 to 10 feet below ground surface (bgs). Interbedded silty sand, poorly graded sand and gravel were encountered to the total explored depth of 20 feet bgs (Figure 3 and Attachment A).

Site Hydrogeology: Groundwater monitoring has been performed periodically at the site from August 1995 to present. During drilling, groundwater at the site was encountered at approximately 10 to 18 feet bgs and stabilized up to 2 to 6 feet bgs. Historically, depth to groundwater in the monitoring wells has varied from 8.33 feet bgs (MW-3 on December 5, 1995) to 1.73 feet bgs (MW-3 on January 15, 1998). The groundwater flow direction beneath the site is generally to the west and fluctuates from northwest to southwest at an average gradient of 0.003 to 0.008 ft/ft. Tables 1 and 2 summarize the historical soil and groundwater results collected on site. Table 3 presents the onsite historical groundwater gradient and flow direction.

SITE HISTORY

December 1993 Tank Removal: Two fuel underground storage tanks consisting of 2,000-gallon diesel and 2,000-gallon gasoline were removed in December 1993. Groundwater was encountered during tank removal at 7.5 feet bgs. Approximately 600 gallons of liquid was removed from the excavation and transported to a recycling facility. Laboratory analysis of soil samples collected from the excavation indicated up to 140 parts per million (ppm) of total petroleum hydrocarbons as gasoline (TPHg) and 240 ppm total petroleum hydrocarbons as diesel (TPHd). Laboratory results of one grab water sample collected from the tank excavation in 1993 reported up to 1,700,000 parts per billion (ppb) TPHd and 150,000 ppb TPHg.

March 1995 Preliminary Investigation: In 1995, ACC Environmental Consultants (ACC) conducted a preliminary investigation of the open tank excavation. One grab water sample and 10 sidewall soil samples collected from the excavation indicated no detectable concentrations of constituents above laboratory reporting limits. Approximately 10,000 gallons of liquid was removed from the excavation and discharged under permit into the sanitary sewer. The tank excavation was backfilled will clean imported fill material.

July 1995 Well Installation: In July 1995, ACC conducted a subsurface investigation and installed three groundwater monitoring wells (MW-1 through MW-3). Laboratory results of soil collected during drilling indicated up to 14 ppm TPHg and 4.7 ppm TPHd.

June 2003, Well Installation: In June 2003, Bay conducted a subsurface investigation and installed one additional monitoring well (MW-4). Laboratory results of soil collected during drilling indicated below laboratory detection limits of TPHg and BTEX and 0.1 ppm MtBE.

Groundwater Monitoring: Periodic groundwater monitoring and sampling began in 1995. A summary of the groundwater monitoring data is presented in Table 2. Three monitoring wells (MW-1 through MW-3) were sampled on a quarterly basis in 1995 and two quarters in 1996. In 1996, the sampling frequency was changed to semi-annual and included sampling the on-site waster supply well.

Site Conceptual Model: The site background and site conceptual model were presented in the *Conceptual Model* dated August 1, 2003. As part of the Conceptual Model, a sensitive receptor survey was conducted. Results of the survey indicated that 8 water supply wells exist within 1,000 feet of the site. The approximate locations are presented in the Vicinity Map, Figure 1. All the wells identified in the area are screened below 26 feet bgs. No supply wells were identified that are screened into the shallow water-bearing zone (between 10 to 20 feet bgs), which is currently monitored by the existing monitoring well network. No municipal water supply wells were identified within 2,000 feet of the site. The onsite domestic well is located over 115 feet north and east of the former tank location and is cross gradient of the plume. This well also has a 15-foot seal and is screened from 27 to 47 feet bgs. Based on the well log presented for the domestic well, a 23-foot thick clay unit was encountered from 10 to 33 feet bgs. The surface seal and 23-foot thick clay unit likely minimizes shallow subsurface groundwater from impacting the deeper water-bearing zone.

Subsurface Utilities: The only subsurface conduit reported on site is the sanitary sewer line located northeast of the existing office building. Due to the location of the utility on site, and the distance to the groundwater plume, it is unlikely that the sanitary sewer could act as a conduit to groundwater flow. No vertical conduits were encountered within the plume area that could act as preferential pathways for hydrocarbon migration into the deeper water-bearing zones.

Residual Impact

***Chemicals of Concern*:** The chemicals of concern (COCs) in site soil and groundwater are petroleum hydrocarbons (TPHg and BTEX), and fuel oxygenates (MtBE and TBA). TBA is considered a secondary site COC since it is a breakdown product of MtBE when natural attenuation is occurring. The COCs are apparently associated with the former gasoline UST. Table A presents a summary of the analytical results for the COCs in the soil.

Table A – Summary of Chemicals of Concern and Detected Analytes in Soil.

Analyte	Frequency of Detection	Highest Concentration Mg/kg	Sample Location and Date
TPHg	5/36 (14%)	**140**	Tank excavation @ 7.5' bgs, 2KGE 12/93
TPHd	3/35 (9%)	**240**	Tank excavation @ 7.5' bgs, 2KDS 12/93
Benzene	8/36 (22%)	**0.39**	Tank excavation @ 7.5' bgs, 2KGE 12/93
Toluene	1/36 (3%)	0.007	Boring B2 @ 5' bgs 7/1995
Ethylbenzene	4/36 (11%)	1.3	Tank excavation @ 7.5' bgs, 2KGE 12/93
Xylenes	4/36 (11%)	1.8	Tank excavation @ 7.5' bgs, 2KGE 12/93
MtBE	5/34 (15%)	**20**	Borings B8 @ 8' bgs and MW2 @ 10.5' bgs 7/95

Notes: Highlighted concentrations exceed the proposed cleanup goals to protect groundwater from soil leaching.

Sampling results with sampling depths are presented in Table 1, attached.

Extent of Soil Impact: Based on the previous investigations conducted, the lateral extent of impact in the soil is limited to the area around the former tank excavation and bound by monitoring wells MW2 and MW3. The hydrocarbon distribution in the soil is adequately defined by the investigations conducted in 1995; whereas, the detectable concentrations were reported in the soil in the tank excavation and borings B2, B8, MW2, and MW3. Figures 3 and 4 illustrate the extent of soil impact on site. The vertical extent of soil impact does not appear to extend beyond 12 feet in depth, the limit of the tank excavation.

Constituents in Water: Table B presents a summary of the analytical results for the COCs in water from 1995 through January 2006.

Table B – Summary of Chemicals of Concern and Detected Analytes in Water.

Analyte	Frequency of Detection	Highest Concentration µg/L	Sample Location and Date
TPHg	27/72 (37.5%)	280,000	Boring B8, 7/1995
TPHd	2/9 (22%)	81,000	Boring B8, 7/1995
Benzene	22/72 (30.5%)	2,000	Boring B8, 7/1995
Toluene	10/72 (14%)	280	Boring B8, 7/1995
Ethylbenzene	17/72 (24%)	1,000	Boring B2, 7/1995
Total Xylenes	14/72 (19%)	1,300	Boring B2, 7/1995
MtBE	49/72 (15%)	510	Boring B8, 7/1995
TBA*	4/32 (12.5%)	130	MW4, 7/2005

*Notes: * Sampling for TBA was initiated in 2003.*
Sampling results are presented in Tables 1 and 2, attached.

Extent of Water Impact: Based on the 1995 investigation work, the highest concentrations of constituents were reported in grab water samples collected from borings B2 and B8, up to 100,000 and 280,000 ppb, respectively for TPHg. Low to no detection concentrations of constituents were reported in the groundwater collected from borings B1, B3 – B7, and B9 which defines the limits of the groundwater hydrocarbon plume. The extent of the groundwater plume is confirmed by the current monitoring well concentrations as illustrated on Figures 5 through 8. Based on the groundwater concentrations reported in the existing monitoring wells, the groundwater impact is limited in extent to the area around the former tank excavation and extends laterally to the west, toward MW3. Figures 6 through 8 illustrate the approximate extent of ground impact for TPHg, Benzene, and MtBE, respectively.

To evaluate if residual source exists around the former tank excavation, over purging of each monitoring well was conducted during the 3rd quarter 2005 and 1st quarter 2006 groundwater

monitoring events. Results of the overpurging efforts indicated that groundwater concentrations increased in MW4, located adjacent to the former tank excavation, whereas concentrations in MW1 through MW3 have decreased over time. This confirms that residual impact in soil around the former tank excavation is likely contributing to the groundwater impact.

Cleanup and Remedial Goals

The chemicals of concern for the site have been defined as TPHg, BTEX, MtBE, and TBA based on reported residual impacts on site. The cleanup levels for soil are based on prevention of soil constituents from leaching and impacting groundwater resources. The cleanup levels for groundwater are based on the Basin Plan for the Regional Water Quality Control Board, North Coast Region which generally uses Water Quality Objectives to define recommended environmental limits for groundwater. The Water Quality Objectives for TPHg and TBA in groundwater are 21 and 12, respectively, based on the toxicity to humans using the EPA Superfund Provisional Cancer Slope Factor. The cleanup goals for BTEX in groundwater is based on the California Primary Maximum Contaminant Levels (MCLs) as the cleanup goals, as documented in the California Code of Regulations, Title 22, Chapter 15, Section 64444, *Maximum Contaminant Levels Organic Chemicals* or secondary MCLs. Table C presents recommended cleanup goals compared with the maximum soil and current groundwater concentrations at the site.

Table C – Recommended Cleanup Goals

	Soil mg/Kg		Water µg/L	
Analyte	**Highest Concentration**	**Cleanup Goals**	**Maximum well Concentration**	**Cleanup Goals**
TPHg	**140**	100	**210**	21
Benzene	**0.39**	0.042	**1.6**	1
Toluene	0.007	2.9	<0.5	150
Ethylbenzene	1.3	3.3	0.56	700
Total Xylenes	1.8	2.3	<0.5	1,750
MtBE	**20**	0.023	**33**	5
TBA	NT	0.073	**24**	12

Notes: NT = not tested
Onsite concentrations in the soil and water that exceed the proposed cleanup goals are highlited.

The remedial objectives for the site is to reduce the absorbed and dissolved phase hydrocarbon concentrations in the limited source area to a level where natural attenuation processes will continue to degrade the residual hydrocarbons to meet the cleanup goals for groundwater in a reasonable timeframe.

Evaluation of Remedial Alternatives

Based on comparison of the maximum concentrations on site with water quality objectives, the chemicals of concern that exceed the objectives include TPHg, Benzene, MtBE, and TBA. These constituents are volatile. Therefore, are readily treatable by extraction methods including soil vapor and groundwater extraction techniques. However, fine-grain material consisting of clay and silty clay existing in the shallow soils at the site may reduce the effectiveness of soil vapor and groundwater extraction methods. Alternative technologies including enhanced biodegradation, while effective, may require longer operation and maintenance time than other alternatives. Our evaluation of remedial technologies and their applicability at the site is summarized in Table D

Table D – Potentially Applicable Remedial Technologies

Potentially Applicable Technology	Applicability to Impacted Media		Relative Cost	Comments
	Soil	Groundwater		
Natural Attenuation	Moderate	Moderate	Groundwater monitoring (quarterly) $15,000/year	Natural attenuation involves allowing hydrocarbons to biodegrade naturally and implementing a long-term groundwater monitoring plan. Given the presence of elevated dissolved phase hydrocarbons beneath the site in the source area, a long time frame is anticipated to reach the cleanup goals
Excavation	High	Low	Soil removal and disposal $65,000	Excavation is most appropriate for the removal of shallow impacted soil as on site. The majority of impact is in the shallow soil immediately adjacent to the former tank excavation at approximately 5 to 10 feet bgs.
Groundwater Extraction (GWE)	Low	High	GWE from excavation $35,000	GWE should be effective in hydraulically controlling dissolved phase hydrocarbons, with limited effectiveness for TPH and benzene compounds. GWE alone will have limited success in reducing the source area contaminants in the soil.
Soil Vapor Extraction (SVE)	Moderate	Low	install/operate equipment $65,000 for 1st year and $15,000 for subsequent years	SVE is effective in vadose zone for removal of volatile hydrocarbons. However, the elevated groundwater levels and fine-grain, low permeable soil at the site in the vadose zone would reduce the viability of this technology.
Dual-Phase Extraction (DPE)	Moderate	High	Convert wells and install/operate equipment $100,000 for 1st year and $35,000 for subsequent years	DPE involves applying a high vacuum to extract impacted groundwater and soil vapor, simultaneously. DPE can be effective in elevated groundwater conditions. However, the majority of residual source is in the low permeable soil in the shallow vadose zone on site. Groundwater at the site occurs within a permeable sandy zone at approximately 10 to 12 feet bgs which stabilized up to 2 feet bgs seasonally. To be effective, DPE may require a longer extraction times before cleanup goals are reached and therefore may be more costly in the long run then soil excavation and groundwater extraction combined.

Discussion: Based on the evaluation above, the most cost effective approach would be natural attenuation. However, based on the increasing MtBE concentrations over time in the groundwater in well MW4, residual source exists in the soil that appears to contribute to the on-going impact in the groundwater. Therefore, an estimate on when groundwater will reach the water quality objectives through natural attenuation can not be determined. To reduce the contributing source it is therefore recommended to perform interim active remediation technologies. Active remedial technologies can be expensive. However, SVE, DPE, and GWE would require long-term operations, maintenance, and energy requirements. Whereas excavation is a beneficial approach, through fairly rapid site remediation, thereby reducing ongoing monitoring requirements and controlling lifecycle costs.

To progress the site toward closure more rapidly, active interim remedial approaches are warranted. Excavation is a proven and effective technique for remediating shallow petroleum hydrocarbons in low permeability soil, where other insitu remedial techniques are generally ineffective. In addition, the site is used as a building supply manufacture with limited space for long-term storage of remedial equipment.

Proposed Remedial Action

Scope of Work: At this time we are recommending that interim remedial action for source removal include limited excavation around the former tank area combined with groundwater removal from the excavation. The proposed excavation will be approximately 10 feet in depth and will target the elevated petroleum hydrocarbon impact area between boring locations B2 and B8. The excavation will begin approximately where the former excavation in 1993 ended and may be extended as necessary to remove significantly impacted source material encountered. It is estimated that 300 cubic yard of soil will be generated and profiled for off-site disposal. The proposed excavation limits is illustrated on Figure 2. After excavation, the groundwater encountered in the pit will be removed and stored on site pending profiling and discharge to the sanitary sewer under permit.

Site Safety Plan and Excavation Preparation: A site safety plan will be prepared to protect site workers. The plan will be reviewed and kept on site during field activities. The proposed excavation area will be marked and underground services alert will be contacted to locate subsurface utilities prior to conducting any subsurface activities.

Permitting: Permits will be acquired through local agencies to allow excavation and water discharge.

Soil Excavation: A contractor will excavate the impacted soil to a depth of 10 feet bgs. Soil will be stockpiled on site temporarily pending profiling for disposal. The excavation will be secured with a fence during water removal and pending profiling of the material. Once the stockpiled material is profiled, the soil will be hauled for proper disposal.

Sampling: Soil and water samples will be collected from the excavation. Once the impacted soil is excavated, soil will be obtained for sampling with the use of the backhoe bucket. Samples will be collected every 20 linear feet along the excavation sidewalls. Once obtained from a sidewall, a pre-cleaned brass or stainless tube will be pushed in the soil from between the teeth of the backhoe bucket. The ends of the sample will be covered with Teflon tape, capped, labeled and stored on ice pending transport to an EPA certified laboratory for analysis under chain of custody protocol. In addition, soil samples will be collected from the stockpiled material for profiling. Water samples will be obtained from the excavation with the use of pre-clean disposal bailers. Once obtained from the excavation, the water will be decanted into laboratory supplied vials, without head space, labeled, and stored on ice pending transport the an analytical laboratory for analysis. Water samples will be collected from the excavation prior to groundwater removal, and after each 10,000 gallons have been removed. All samples will be analyzed for TPHg, BTEX, and fuel oxygenates (MtBE, TBA, DIPE, ETBE, and TAME) by EPA test method 8260B.

Soil Disposal: Soil will be hauled for disposal to a licensed accepting facility. It is anticipated that the material will be disposed of as Class II or Class III non-hazardous soil.

Water Removal: After excavation, groundwater that has accumulated in the excavation will be removed via extraction pump and stored into an onsite storage container pending profiling. Upon acceptance, water will be discharged into the sanitary sewer under permit. If the water is not accepted through the sanitary sewer, then the water will be hauled to an off-site licensed accepting facility for disposal. It is anticipated that approximately 20,000 to 30,000 gallons of water will be removed during the work.

Backfilling: Prior to backfilling, slurry of Oxygen Releasing Compound® (ORC) and water will be added to the excavation sidewalls to assist in oxygen production and natural attenuation. After the ORC is added, the excavation will be backfilled with drain rock to above the groundwater level then class II imported clean fill will be backfilled and compacted and the excavation will be resurfaced with reinforced asphalt or concrete to match existing.

Interim Remedial Action Report: Upon completion of the work, a report will be prepared documenting activities completed. The report will include a description of work completed and include waste disposal profile sheets and weight tags, and tabulated summary of all analytical results, laboratory reports and chain of custody.

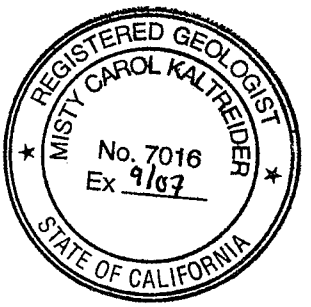
Post Remedial Monitoring: Groundwater sampling and monitoring will continue to be conducted on the existing monitoring wells to evaluate the effectiveness of the remedial efforts and document groundwater trends over time. The groundwater monitoring will be performed on a quarterly basis for the constituents of concern including TPHg, BTEX, and fuel oxygenates and additives by EPA test method 8260B.

Schedule: This facility is the busiest during the summer months at the peak of construction season. Therefore, remedial efforts should be performed in the spring or late fall. Upon acceptance of the scope, the work will commence in April or May of 2006 and be completed within 20 to 30 days. The report can be submitted within 45 days after receipt of the laboratory data and disposal receipts.

CLOSING

If you have any questions or comments regarding this report, please call me at (707) 252-2107 or (707) 337-3768 (cell phone).

Sincerely,
Bay Consulting Services LLC



Misty C. Kaltreider, P.G.
Principal Geologist

CC: Cliff Ives, County of Sonoma, Department of Health Services

Tables:
1 – Soil Sample Results
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7 – Iso-Contours of Benzene in Groundwater
8 - Iso-Contours of MtBE in Groundwater

TABLES

TABLE 1 - SOIL SAMPLE RESULTS
Alcal, 879 Wright Road, Santa Rosa, CA
Results in mg/kg, (parts per million - ppm), unless noted

Sample ID	Sample Date	Depth (feet)	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MtBE (ppm)	TPHd (ppm)	Lead (ppm)
Tank Removal, 1993 – BRC & Associates, Ltd										
2KGE	12/16/93	7.5	140	<0.5	<0.5	0.52	1.8	NT	41	<0.25
2KDS	12/15/93	7.5	110	0.39	<0.12	1.3	1.0	NT	240	NT
Stockpile Soil Samples, 1993 – BRC & Associates, Ltd										
SP (a-d)	12/15/93	--	2500	36	56	11	120	NT	640	NT
SP 2	12/16/93	--	2400	14	4.6	22	63	NT	250	7.1
Soil Borings, 1995, ACC Environmental Consultants										
B1-5	7/12/95	5	<1	<0.005	<0.005	<0.005	<0.005	0.024	<1	--
B1-8	7/12/95	8	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B1-10	7/12/95	10	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B2-5	7/12/95	5	2.9	0.038	0.007	<0.005	<0.005	<0.005	<1	--
B2-9	7/12/95	9	14	0.12	<0.005	0.038	0.030	0.0061	4.7	--
B3-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B3-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B4-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B4-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B5-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B5-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B6-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B6-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B7-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B7-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B8-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B8-8	7/12/95	8	<1	0.023	<0.005	<0.005	<0.005	20	<1	--
B9-6	7/12/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
B9-9	7/12/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
Well Installation, 1995 – ACC Environmental Consultants										
MW1-5.5	8/25/95	5.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW1-10.5	8/25/95	10.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-4.5	8/25/95	4.5	<1	0.023	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-6	8/25/95	6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-7.5	8/25/95	7.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--

TABLE 1 - SOIL SAMPLE RESULTS
Alcal, 879 Wright Road, Santa Rosa, CA
Results in mg/kg, (parts per million - ppm), unless noted

Sample ID	Sample Date	Depth (feet)	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MtBE (ppm)	TPHd (ppm)	Lead (ppm)
MW2-9	8/25/95	9	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-10.5	8/25/95	10.5	<1	0.023	<0.005	<0.005	<0.005	20	<1	--
MW2-12	8/25/95	12	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-13.5	8/25/95	13.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-15	8/25/95	15	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-16.5	8/25/95	16.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW2-18	8/25/95	18	<1	0.023	<0.005	<0.005	<0.005	<0.005	<1	--
MW3-5.5	8/25/95	5.5	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<1	--
MW3-10.9	8/25/95	10.5	9.6	<0.005	<0.005	0.21	0.38	<0.005	<1	--
Stockpiled Soil, 1995 – ACC Environmental Consultants										
SS-1	1995	--	<1	<0.005	<0.005	<0.005	<0.005	<0.005	110	--
SS-2	1995	--	<1	<0.005	<0.005	<0.005	<0.005	<0.005	160	--
SS-3	1995	--	<1	<0.005	<0.005	<0.005	<0.005	<0.005	400	--
SS-4	1995	--	<1	<0.005	<0.005	<0.005	<0.005	<0.005	110	--
Well Installation, 2003 – Bay Consulting Services										
MW4-5.5	6/13/03	5.5	<1	<0.005	<0.005	<0.005	<0.005	0.1	--	--

Explanation: TPHg = Total Petroleum Hydrocarbons as gasoline
MtBE = Methyl tert-Butyl Ether
NA = Not analyzed
TPHd = Total Petroleum Hydrocarbons as diesel

TABLE 1
GROUNDWATER SAMPLES COLLECTED FROM BORINGS
Alcal, 879 Wright Road, Santa Rosa, CA
Results in µg/L, (parts per billion - ppb), unless noted

Sample ID	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MtBE (ppb)	TPHd (ppb)	Lead (ppb)
Grab Water Sample from Tank Excavation, 1993 – BCR & Associates									
1	12/16/93	150,000	6,800	1,900	1,400	6,300	--	170,000	--
Grab Water Sample from Excavation, 1995 – ACC Environmental Consultants									
Water	3/3/95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
Grab Water Sample from Borings, 1995 – ACC Environmental Consultants									
B1-H2O	7/12/95	<50	<0.3	<0.3	<0.3	<0.3	290	<50	--
B2-H2O	7/12/95	100,000	950	<60	1,000	1,300	410	<50	--
B3-H2O	7/12/95	<50	<0.3	<0.3	<0.3	<0.3	<5.0	<50	--
B4-H2O	7/12/95	<50	0.6	0.7	<0.3	0.5	18	<50	--
B5-H2O	7/12/95	<50	<0.3	<0.3	<0.3	<0.3	32	411	--
B6-H2O	7/12/95	<50	<0.3	<0.3	<0.3	<0.3	21	<50	--
B7-H2O	7/12/95	<50	<0.3	<0.3	<0.3	<0.3	21	<50	--
B8-H2O	7/12/95	280,000	2,000	280	570	1,000	510	81,000	--
B9-H2O	7/12/95	<50	0.4	0.8	<0.3	0.4	<5	<50	--

Explanation: TPHg = Total Petroleum Hydrocarbons as gasoline
MtBE = Methyl tert-Butyl Ether
Concentrations in parenthesis indicate MtBE analysis by EPA Method 8260B
TPHd = Total Petroleum Hydrocarbons as diesel

TABLE 2
Groundwater Monitoring Data and Analytical Results
Alcal Santa Rosa, 879 Wright Road, Santa Rosa

Well ID	Sample Date	TOC (Ft.)	DTW (ft.)	GWE (msl)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	E. benzene (ppb)	Xylenes (ppb)	MtBE (ppb)	TBA (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	1.2-DCA (ppb)	EDB (ppb)
MW-1	8/31/1995[1]	93.64	7.85	85.79	<50	<0.3	<0.3	<0.3	<0.3	44						
	12/5/1995	93.64	8.78	84.86	<50	<0.3	<0.3	<0.3	<0.3	25						
	3/5/1996	93.64	2.12	91.52	<50	<0.3	<0.3	<0.3	<0.3	44						
	6/5/1996	93.64	3.62	90.02	<50	<0.3	<0.3	<0.3	<0.3	24						
	12/13/1996	93.64	2.98	90.66	NA	NA	NA	NA	NA	NA						
	6/23/1997	93.64	6.66	86.98	NA	NA	NA	NA	NA	NA						
	1/15/1998	93.64	1.78	91.86	NA	NA	NA	NA	NA	NA						
	7/20/1998	93.64	5.32	88.32	NA	NA	NA	NA	NA	NA						
	2/1/1999	93.64	2.96	90.68	NA	NA	NA	NA	NA	NA						
	8/12/1999	93.64	7.00	86.64	NA	NA	NA	NA	NA	NA						
	2/1/2000	93.64	2.52	91.12	NA	NA	NA	NA	NA	NA						
	7/28/2000	93.64	6.56	87.08	NA	NA	NA	NA	NA	NA						
	1/26/2001	93.64	2.98	90.66	NA	NA	NA	NA	NA	NA						
	9/28/2001	93.64	8.29	85.35	<50	<0.5	<0.5	<0.5	<0.5	2.8						
	3/12/2002	93.64	3.33	90.31	NA	NA	NA	NA	NA	NA						
	9/16/2002	93.64	7.99	85.65	<50	<0.5	<0.5	<0.5	<0.5	4.1						
	2/13/2003	93.64	3.84	89.80	<50	<0.5	<0.5	<0.5	<0.5	5.7	<10	<5	<5	<5	<2	<2
	6/26/2003[2]	93.56	5.07	88.49	<50	<0.5	<0.5	<0.5	<0.5	5.7	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004	93.56	3.76	89.80	<50	<0.5	<0.5	<0.5	<0.5	3.4	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/24/2004	93.56	Not Measured		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2004	93.56	7.81	85.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/21/2005	93.56	4.44	89.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/25/2005	93.56	4.88	88.68	<50	<0.5	<0.5	<0.5	<0.5	1.5	<5	<0.5	NA	NA	NA	NA
	1/11/2006	**93.56**	**4.2**	**89.36**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**1.2**	**<5**	**<0.5**	**NA**	**NA**	**NA**	**NA**
MW-2	8/31/1995	93.50	7.69	85.81	<50	<0.3	<0.3	<0.3	<0.3	<0.3						
	12/5/1995	93.50	8.63	84.87	<50	<0.3	<0.3	<0.3	<0.3	<0.3						
	3/5/1996	93.50	2.13	91.37	<50	<0.3	<0.3	<0.3	<0.3	<0.3						
	6/5/1996	93.50	3.51	89.99	<50	<0.3	<0.3	<0.3	<0.3	<0.3						
	12/13/1996	93.50	3.00	90.50	NA	NA	NA	NA	NA	NA						
	6/23/1997	93.50	6.49	87.01	NA	NA	NA	NA	NA	NA						
	1/15/1998	93.50	1.79	91.71	NA	NA	NA	NA	NA	NA						
	7/20/1998	93.50	5.22	88.28	NA	NA	NA	NA	NA	NA						
	2/1/1999	93.50	2.95	90.55	NA	NA	NA	NA	NA	NA						
	8/12/1999	93.50	6.88	86.62	NA	NA	NA	NA	NA	NA						
	2/1/2000	93.50	2.58	90.92	NA	NA	NA	NA	NA	NA						
	7/28/2000	93.50	6.40	87.10	NA	NA	NA	NA	NA	NA						
	1/26/2001	93.50	2.98	90.52	NA	NA	NA	NA	NA	NA						
	9/28/2001	93.50	8.16	85.34	<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	3/12/2002	93.50	3.33	90.17	NA	NA	NA	NA	NA	NA						
	9/16/2002	93.50	7.82	85.68	<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	2/13/2003	93.50	3.77	89.73	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<5	<2	<2
	6/26/2003[2]	93.47	4.82	88.65	<50	<0.5	<0.5	<0.5	<0.5	1.3	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004	93.47	4.03	89.44	<50	<0.5	<0.5	<0.5	<0.5	1.2	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/24/2004	93.47	Not Measured		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2
Groundwater Monitoring Data and Analytical Results
Alcal Santa Rosa, 879 Wright Road, Santa Rosa

Well ID	Sample Date	TOC (Ft.)	DTW (ft.)	GWE (msl)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	E. benzene (ppb)	Xylenes (ppb)	MtBE (ppb)	TBA (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	1.2-DCA (ppb)	EDB (ppb)
MW-2	9/9/2004	93.47	7.18	86.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/21/2005	93.47	4.21	89.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/25/2005	93.47	4.97	88.50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<5	<0.5	NA	NA	NA	NA
	1/11/2006	**93.47**	**4.15**	**89.32**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**0.94**	**<5**	**<0.5**	**NA**	**NA**	**NA**	**NA**
MW-3	12/5/1995	93.15	8.33	84.82	480	36	<0.3	<0.3	27	330						
	3/5/1996	93.15	2.06	91.09	240	19	<0.3	<0.3	<0.3	<0.5						
	6/5/1996	93.15	3.42	89.73	95	6.8	<0.3	5.3	2.5	74						
	12/13/1996	93.15	2.92	90.23	240	8.4	<0.5	12	3.5	93						
	6/23/1997	93.15	6.30	86.85	390	16	<0.5	26	6.9	44						
	1/15/1998	93.15	1.73	91.42	180	5.3	2.6	7.3	1.2	29						
	7/20/1998	93.15	4.93	88.22	<50	<0.5	<0.5	<0.5	<0.5	13						
	2/1/1999	93.15	2.81	90.34	130	0.62	3.3	1.2	1.1	15						
	8/12/1999	93.15	6.78	86.37	120	0.9	1.9	3.0	0.9	21						
	2/1/2000	93.15	2.50	90.65	190	0.82	2.0	4.0	0.61	4.1						
	7/28/2000	93.15	6.24	86.91	320	1.9	<0.5	1.0	<0.5	10						
	1/26/2001	93.15	2.64	90.51	100	<0.5	<0.5	1.5	<0.5	<0.5						
	9/28/2001	93.15	8.10	85.05	180	0.8	2.8	2.2	0.7	13						
	3/12/2002	93.15	3.03	90.12	83	1.0	1.2	<0.5	<0.5	7.4						
	9/16/2002	93.15	7.79	85.36	130	1.6	<0.5	0.8	<0.5	10						
	2/13/2003	93.15	3.43	89.72	180	2.2	0.6	0.5	<0.5	9.2	<10	<5	<5	<5	<2	<2
	6/26/2003[2]	93.12	4.56	88.56	110	<0.5	<0.5	<0.5	<0.5	9.2	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004	93.12	3.78	89.34	270	2.5	<0.5	0.56	<0.5	8.3	<5	0.53	<0.5	<0.5	<0.5	<0.5
	8/24/2004	93.12	7.30	85.82	110	<0.5	<0.5	<0.5	<0.5	17	<5	<0.5	NA	NA	NA	NA
	9/9/2004	93.12	7.66	85.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/21/2005	93.12	3.71	89.41	190	<0.5	<0.5	<0.5	<0.5	4.7	<5	<0.5	NA	NA	NA	NA
	7/25/2005	93.12	4.45	88.67	180	0.72	<0.5	0.64	<0.5	10	<5	<0.5	NA	NA	NA	NA
	1/11/2006	**93.12**	**4.00**	**89.12**	**210**	**1.6**	**<0.5**	**0.56**	**<0.5**	**4.6**	**<5**	**<0.5**	**NA**	**NA**	**NA**	**NA**
MW-4	6/26/2003	93.86	5.28	88.58	61	<0.5	<0.5	<0.5	<0.5	51	23	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004	93.86	4.17	89.69	<50	<0.5	<0.5	<0.5	<0.5	15	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/24/2004	93.86	7.79	86.07	<50	<0.5	<0.5	<0.5	<0.5	68	15	<0.5	NA	NA	NA	NA
	9/9/2004	93.86	8.01	85.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/21/2005	93.86	4.14	89.72	<50	<0.5	<0.5	<0.5	<0.5	11	<5	<0.5	NA	NA	NA	NA
	7/25/2005	93.86	5.09	88.77	350	<0.5	<0.5	<0.5	<0.5	130	130	<0.5	NA	NA	NA	NA
	1/11/2006	**93.86**	**4.35**	**89.51**	**57**	**0.73**	**<0.5**	**<0.5**	**<0.5**	**33**	**24**	**<0.5**	**NA**	**NA**	**NA**	**NA**
Domestic Well																
	12/13/1996		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	6/23/1997		NM		<50	<0.5	<0.5	<0.5	<0.5	<20						
	1/15/1998		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	7/20/1998		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	2/1/1999		NM		<50	<0.5	<0.5	<0.5	<0.5	1.9						
	8/12/1999		NM		<50	<0.5	<0.5	<0.5	0.6	<0.5						
	2/1/2000		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	7/28/2000		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	1/26/2001		NM		67	<0.5	<0.5	<0.5	<0.5	<0.5						

TABLE 2
Groundwater Monitoring Data and Analytical Results
Alcal Santa Rosa, 879 Wright Road, Santa Rosa

Well ID	Sample Date	TOC (Ft.)	DTW (ft.)	GWE (msl)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	E. benzene (ppb)	Xylenes (ppb)	MtBE (ppb)	TBA (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	1.2-DCA (ppb)	EDB (ppb)
	9/28/2001		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	3/12/2002		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
Domestic	9/16/2002		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5						
Well	2/13/2003		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<5	<2	<2
	6/26/2003[2,3]		NM		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/26/2003[4]		6.20		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004[3]		3.16		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/10/2004[4]		3.16		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/24/2004		8.69		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	NA	NA	NA	NA
	9/9/2004		8.88		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/21/2005		3.52		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	NA	NA	NA	NA
	7/25/2005		6.28		<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	NA	NA	NA	NA
	1/11/2006		**2.75**		**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5**	**<0.5**	**NA**	**NA**	**NA**	**NA**

Notes: Groundwater Monitoring Data and analytical results prior to 6/26/2003 were compliled from reports prepared by ACC Environmental Consultants.
Current results are highlited

TOC = Top of Casing surveyed elevation
(ft.) = Feet
GWE = Groundwater Elevation
msl = Mean Sea Level
DTW = Depth to Water
TPHd = Total Petroleum Hydrocarbons as Diesel

TPHg = Total Petroleum Hydrocarbons as gasoline
(ppb) = Parts per billion
NA = Not analyzed
MtBE = Methyl tertiary butyl ether
TBA = Tertiary butyl alcohol
DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
1,2-DCA = 1,2-Dichlorothane
EDB = 1,2-Dibromoethane
NM = Not Measured

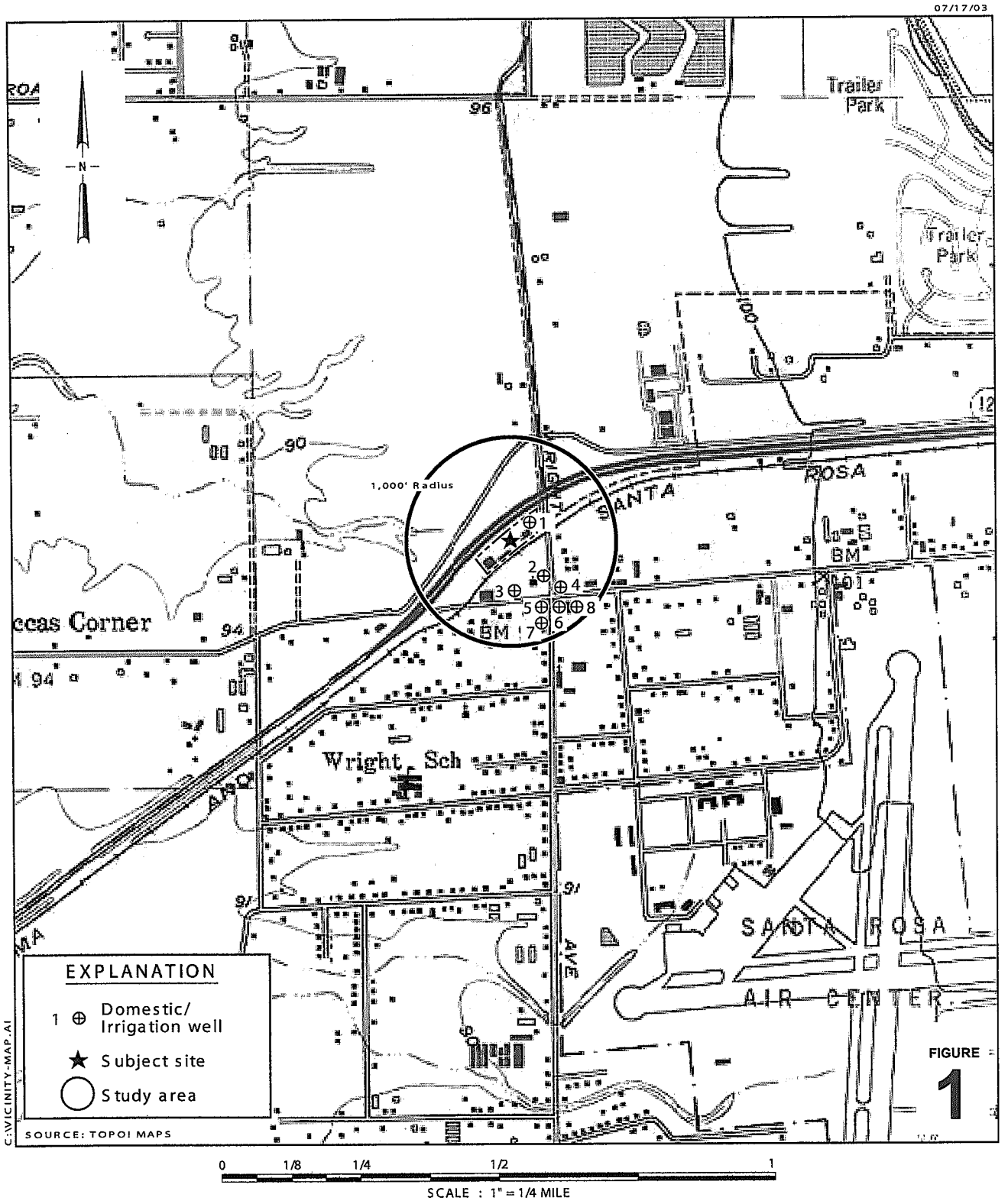
1 The original surveyed elevation (TOC) for well MW-1 was 93.64 (Ron Archer, 8/29/95). Whereas the groundwater monitoring reports prepared by ACC identified the TOC for well MW-1 as 94.64.
2 The wells were resurveyed by Virgil Chavez Land Surveying on 6/24/2003.
3 Sample collected from the domestic well, prior to the pressure tank and treatment system.
4 Sample collected from the domestic well, post pressure and treatment system.

TABLE 3
Historical Groundwater Gradient and Flow Direction

Date Monitored	Gradient (foot/foot)	Flow Direction
8/31/1995	0.003	West
12/5/1995	0.001	Southwest
3/5/1996	0.009	Northwest
6/5/1996	0.006	West/Northwest
12/13/1996	0.008	Northwest
6/23/1997	0.003	West
1/15/1998	0.009	Northwest
7/20/1998	0.001	West/Northwest
2/1/1999	0.007	Northwest
8/12/1999	0.006	West/Northwest
2/1/2000	0.008	Northwest
7/28/2000	0.008	West
1/26/2001	0.008	North/Northwest
9/28/2001	0.006	West/Northwest
3/12/2002	0.004	Northwest
9/16/2002	0.006	West/Northwest
2/13/2003	0.001	Northwest
6/26/2003	0.003	Southwest
2/10/2004	0.01-0.02	Northwest - Northeast
9/9/2004	0.0026	West
2/22/2005	0.017	Southwest-South
7/25/2005	0.01-0.002	Southwest-South
1/11/2006	0.004 - 0.007	Southwest-South

Notes: Groundwater Gradient and Flow directions prior to 6/26/2003 were adjusted according to the resurveyed elevations.

FIGURES



0 1/8 1/4 1/2 1

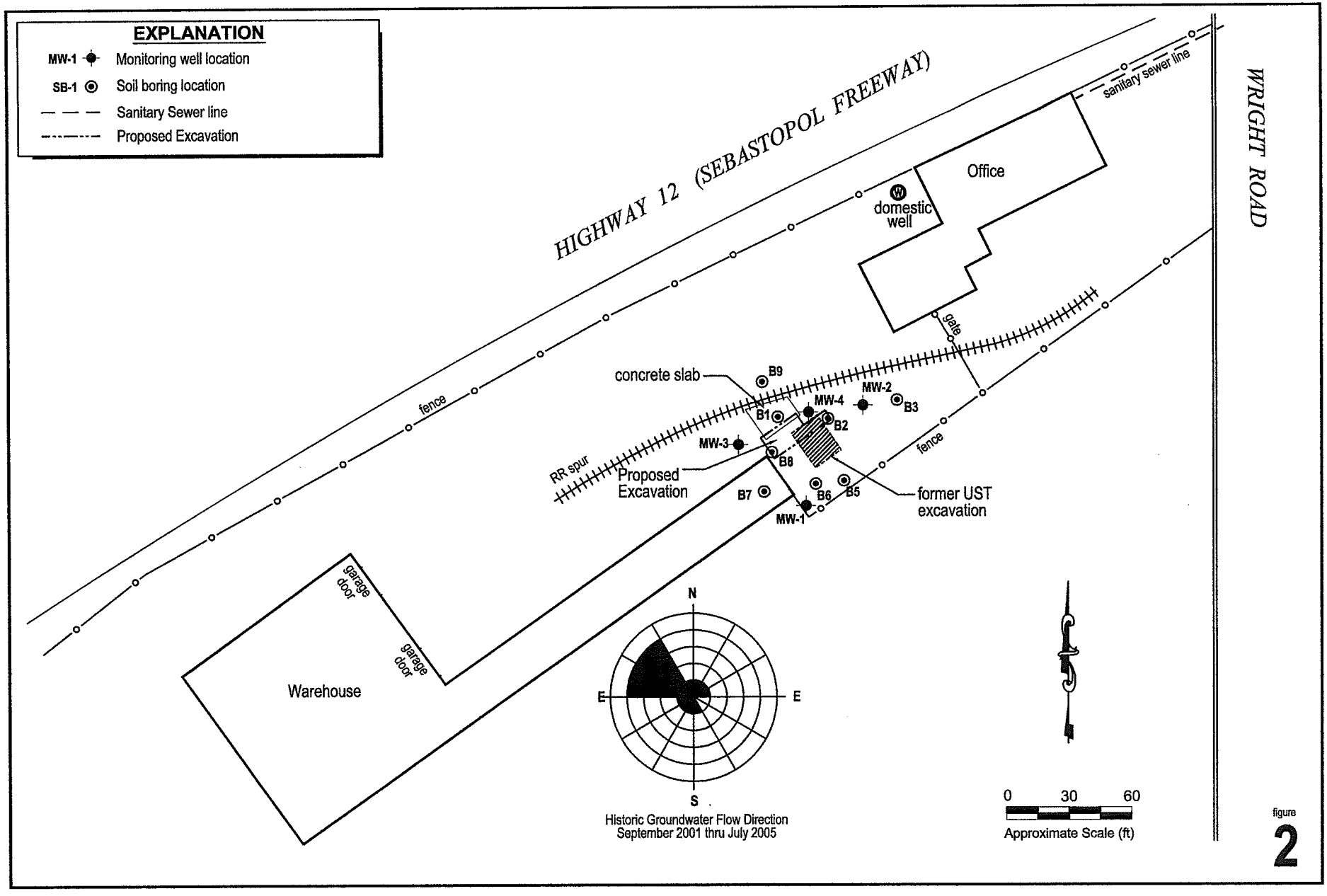
SCALE : 1" = 1/4 MILE

Vicinity Map

879 Wright Road

Santa Rosa, California

1,000 Foot Radius



Site Plan

879 Wright Road
Santa Rosa, California

December 29, 2005

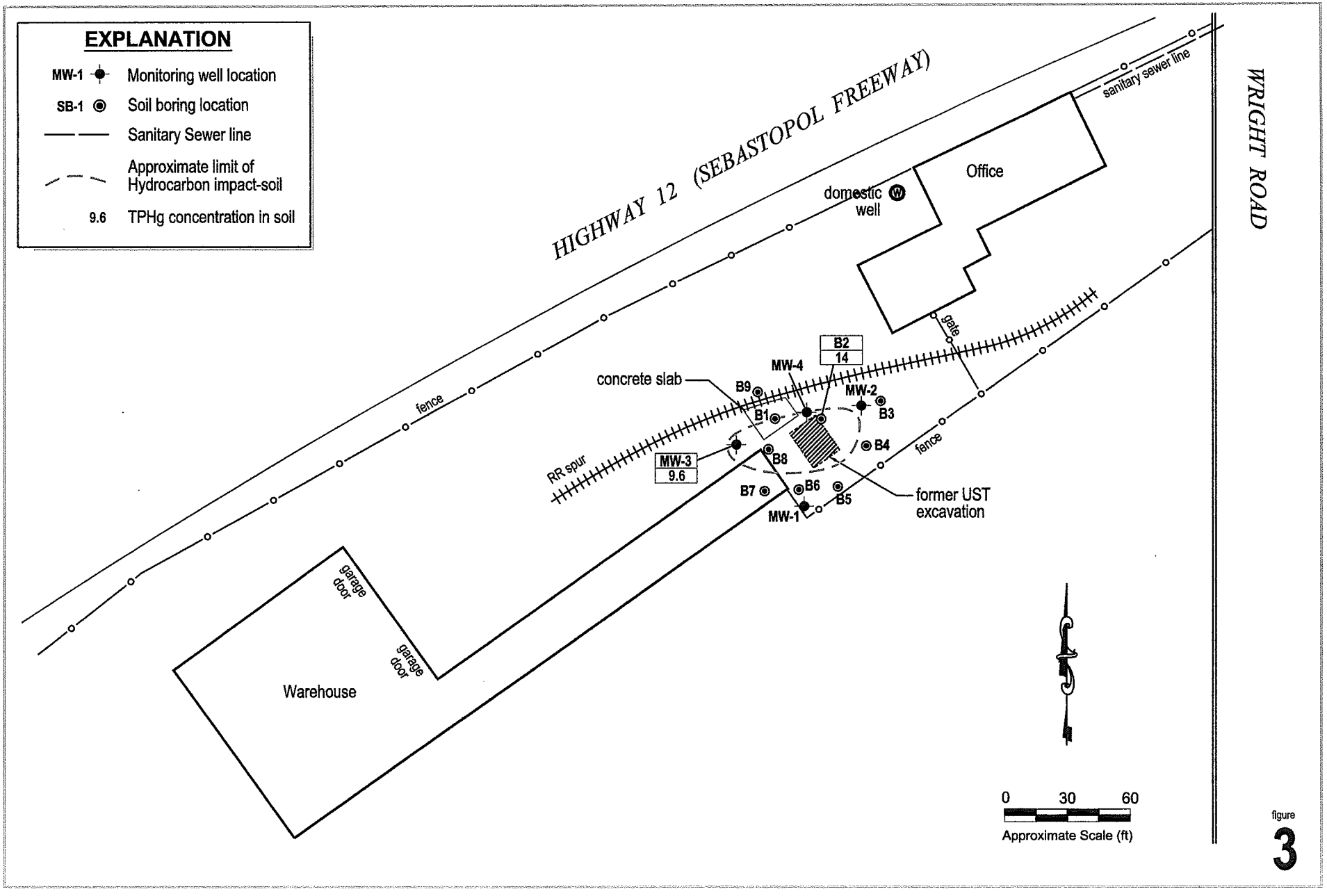
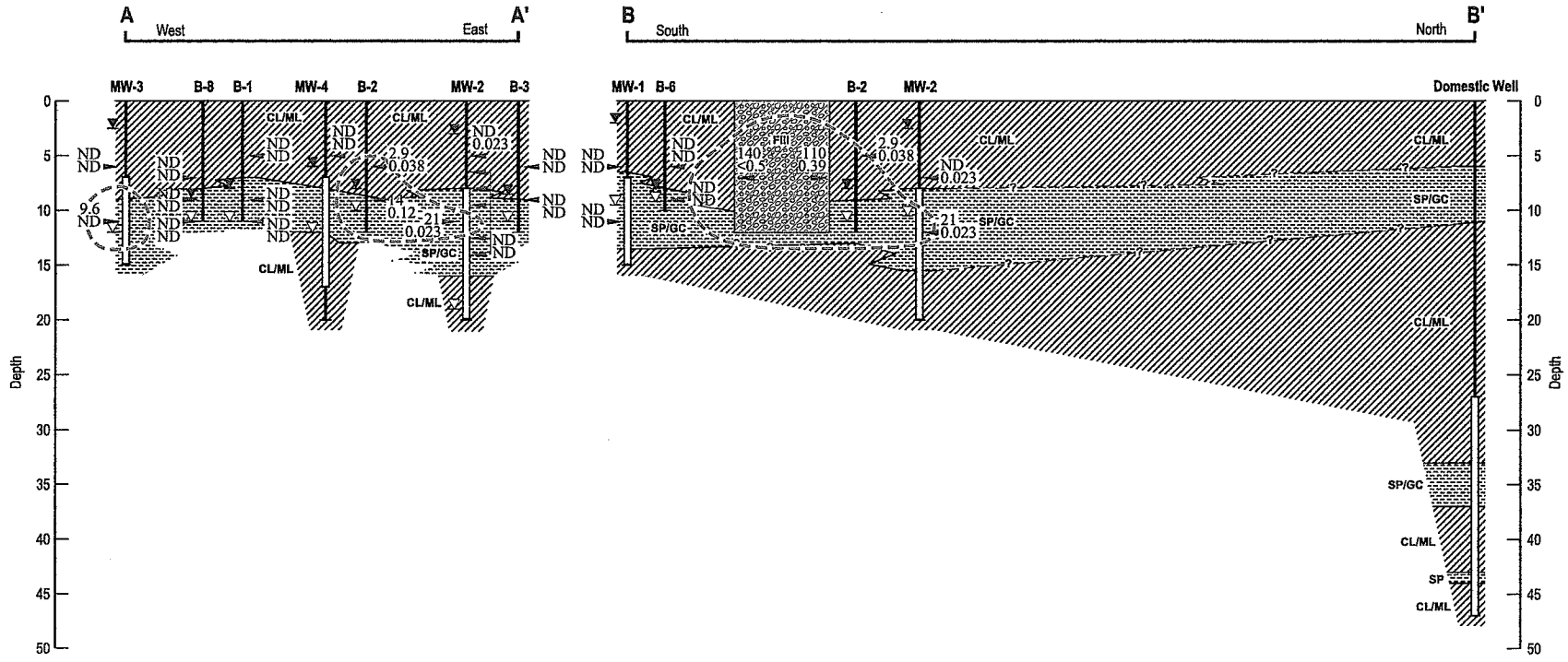
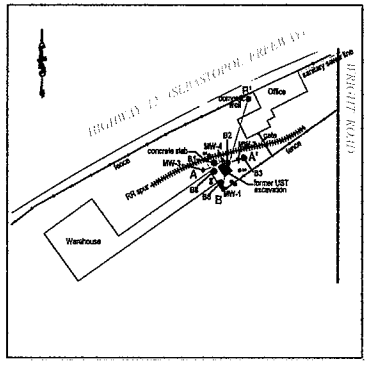


figure 3

TPHg in Soil Iso-Contour Map

879 Wright Road
Santa Rosa, California





EXPLANATION

- = Low to Moderate Permeability Soils
  - CL - Clay
  - ML - Clayey Silt
- = High Permeability Soils
  - SP - Poorly Graded Sand
  - GC - Clayey Gravel
- = Fill (Tank Pit)
- Approximate soil sample location
- TPHg / Benzene — Hydrocarbon concentrations in soil, in parts per million
- ND — Not Detected above laboratory detection limits
- Well ID — Well designation
- Elev. — Top of casing elevation
- Groundwater monitoring well
- Well screen interval
- Bottom of boring
- Highest groundwater elevation
- Lowest groundwater elevation
- ? — Approximate limit of Hydrocarbon impact-soil

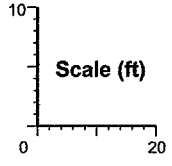
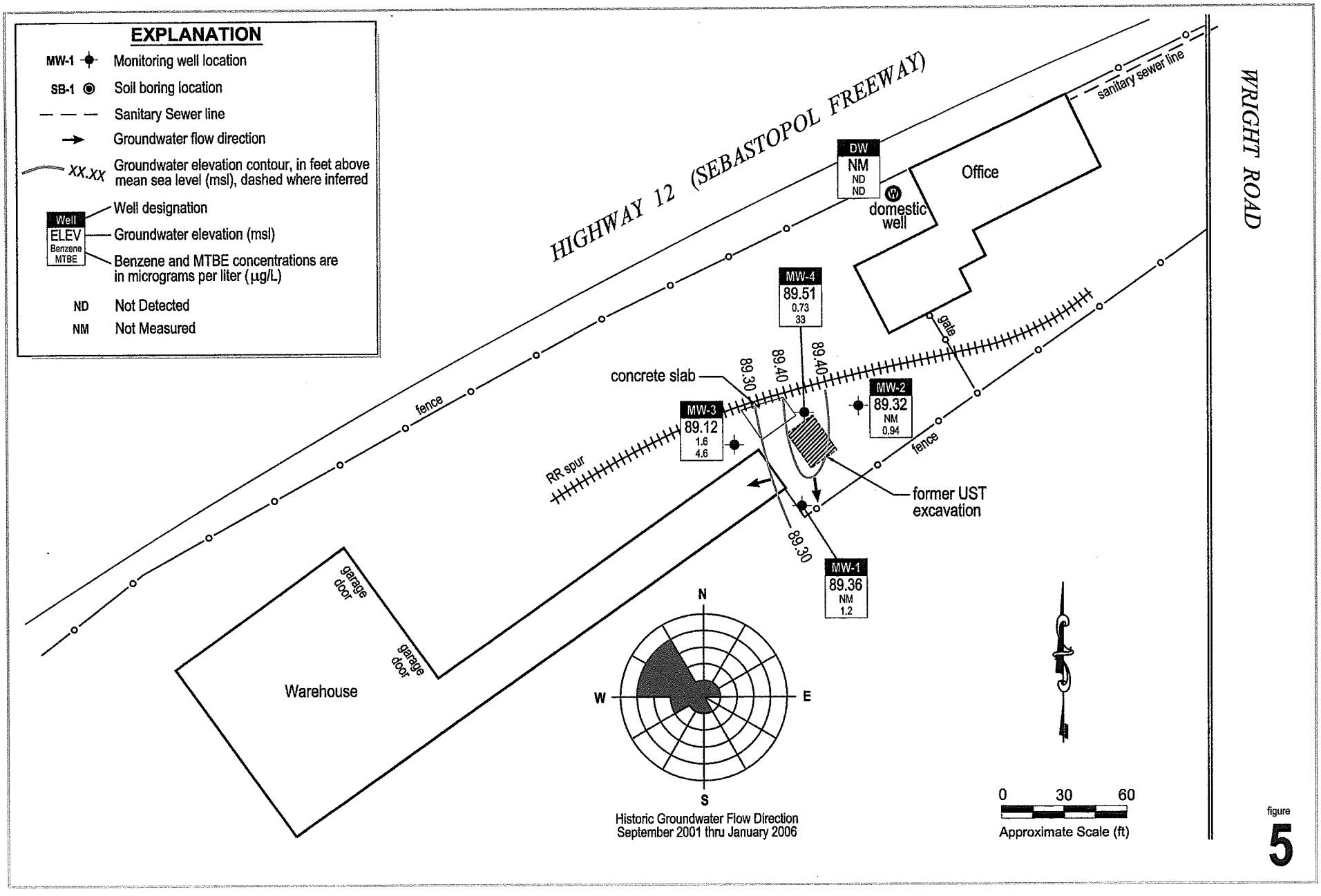


figure **4**

Cross Section A-A' and B-B'

879 Wright Road
Santa Rosa, California



Groundwater Contour Map

879 Wright Road
Santa Rosa, California

January 11, 2006

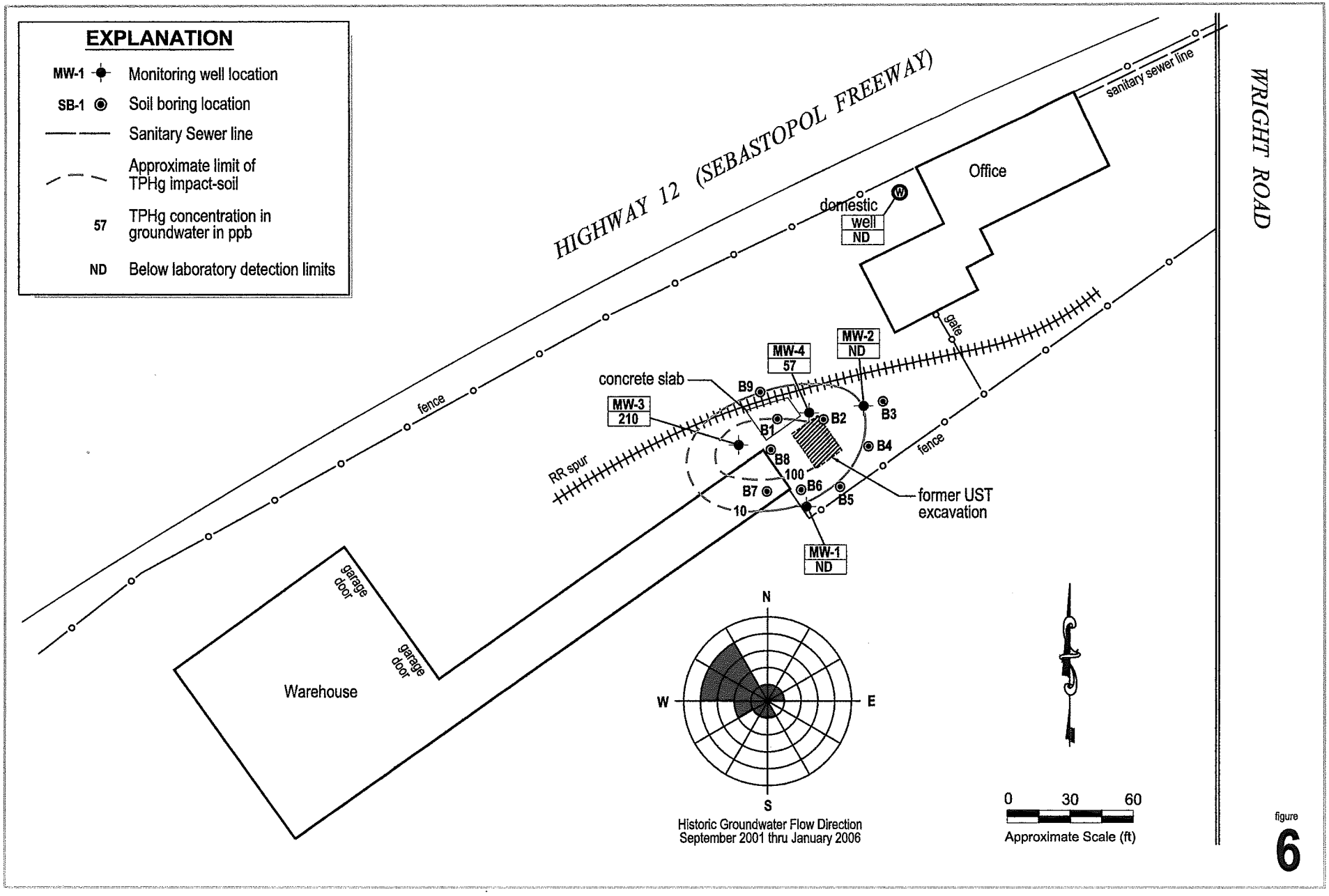
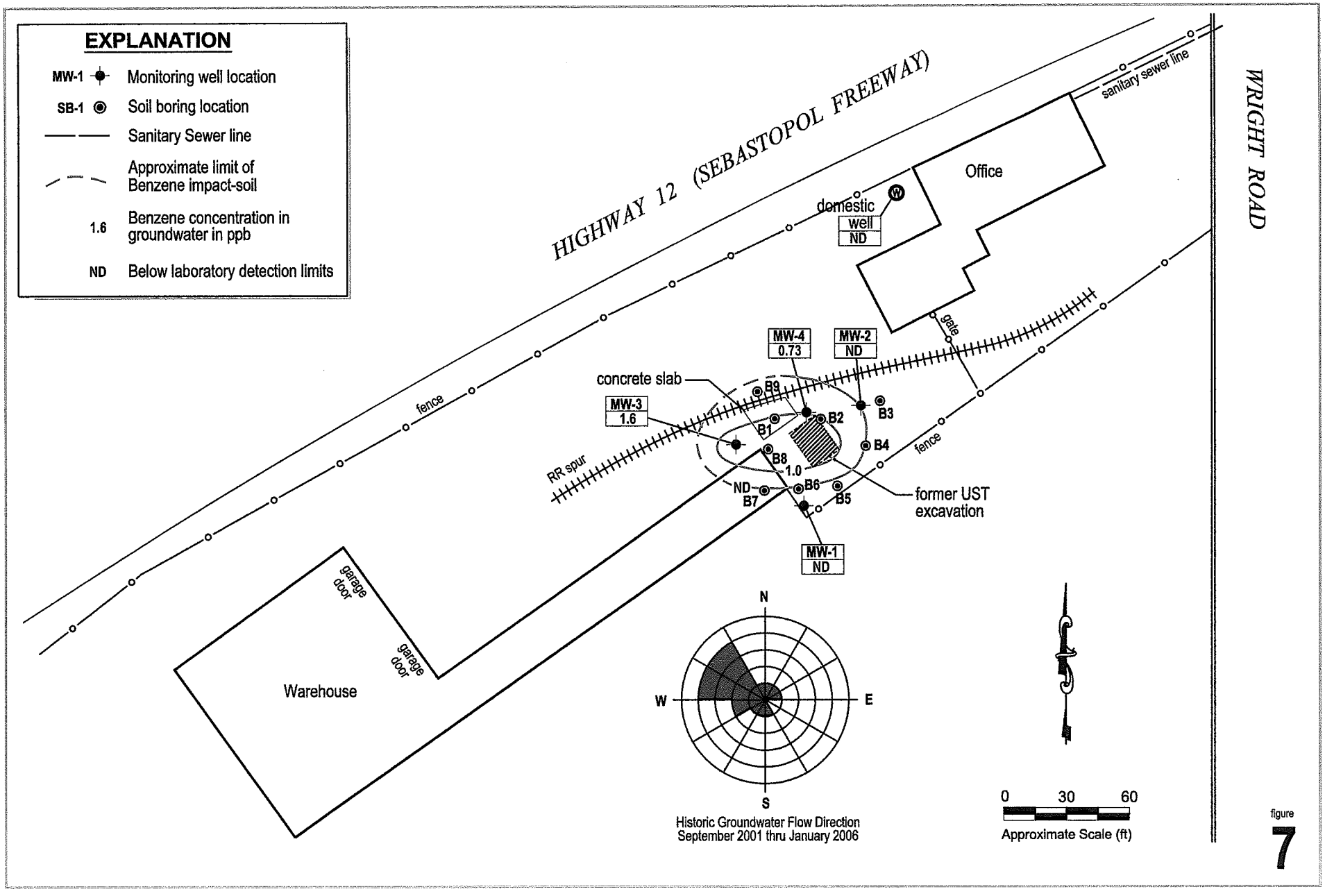


figure
6

Iso-Contours of TPHg in Groundwater

879 Wright Road
Santa Rosa, California

January 11, 2006



Iso-Contours of Benzene in Groundwater

879 Wright Road
Santa Rosa, California

January 11, 2006

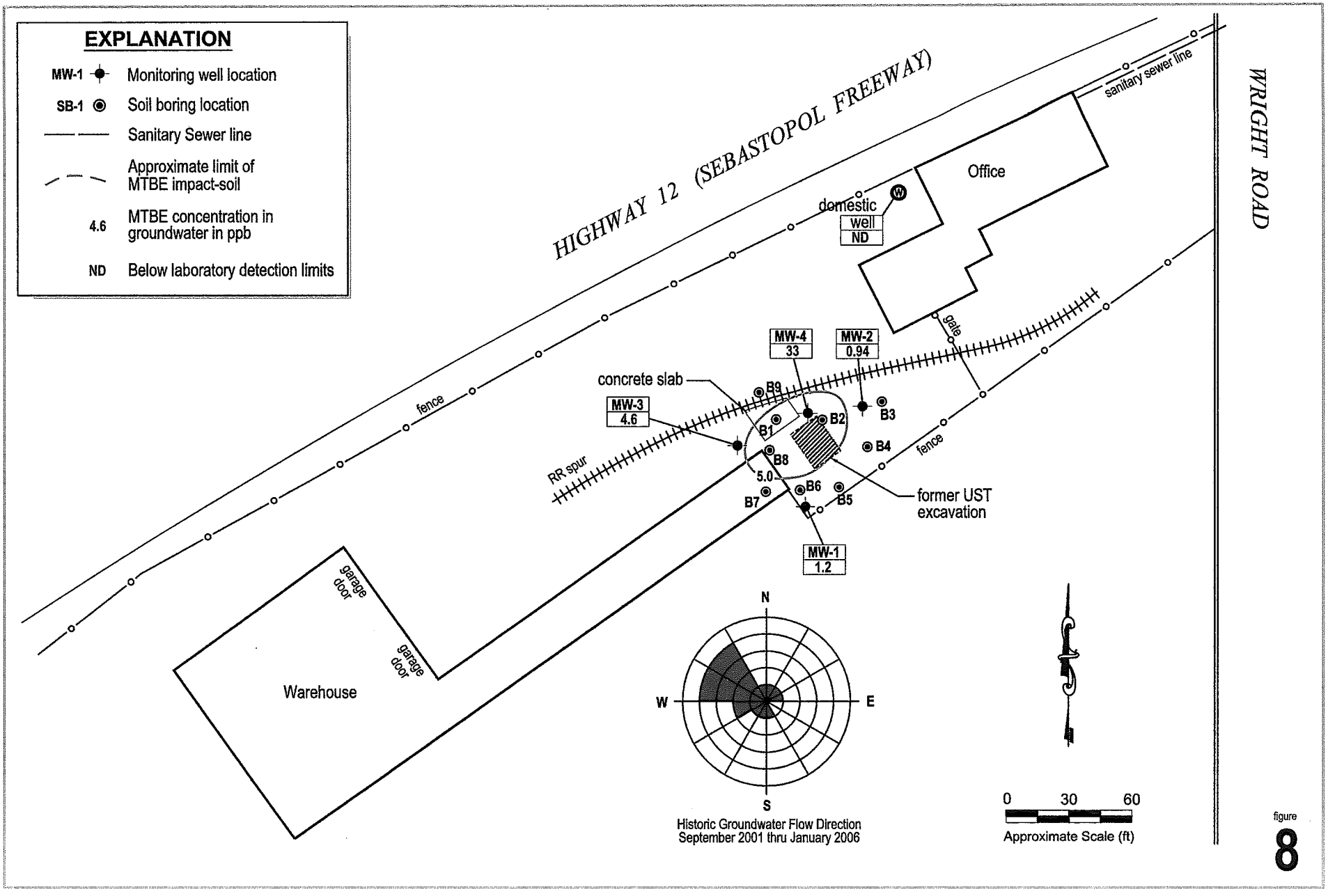


figure
8

Iso-Contours of MTBE in Groundwater

879 Wright Road
Santa Rosa, California

January 11, 2006