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REVISED WORKPLAN TO CONDUCT AN ADDITIONAL SOIL AND GROUNDWATER INVESTIGATION

WENTE WINERY
5565 Tesla Road
Livermore, California

October 12, 2004

Project 2840

Prepared for

Wente Brothers Winery
5565 Tesla Road
Livermore, California

Prepared by

SOMA Environmental Engineering, Inc.
2680 Bishop Drive, Suite 203
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CERTIFICATION

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Wente Brothers, the owners of Wente Winery, which is located at 5565 Tesla Road, Livermore, California. This workplan was prepared in response to the Alameda County Health Care Services – Environmental Health Services (ACHCS-EHS) letter dated August 12, 2004 and a meeting with the ACHCS-EHS on September 30, 2004.

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1.0 INTRODUCTION

This workplan has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Wente Brothers, the property owners of Wente Winery. As shown in Figure 1, the property is located at 5565 Tesla Road, between South Vasco Road and Mines Road, in Livermore, California (the "Site"). Currently, the Site is an operating winery with three aboveground fuel storage tanks, with a total capacity of 4,000 gallons. The aboveground fuel storage tanks reportedly replaced two underground storage tanks (USTs) in 1987. The latest site investigation activities confirmed the presence of residual petroleum hydrocarbon concentrations in the subsurface in the vicinity of the former USTs. To assess the impact of the present groundwater contamination to human health and the environment, this workplan is designed to provide additional data in order to characterize the extent of the groundwater contamination around the former USTs, and to define the beneficial use of the groundwater. This workplan will be implemented after receiving approval from the Alameda County Health Care Services (ACHCS).

In late 2002, Wente Winery retained Clayton Group Services (Clayton) to conduct a Phase I Site Investigation at the Site. Based on the results of the Phase I Environmental Site Assessment report prepared by Clayton, dated November 8, 2002, the developed portion of the Site consists of approximately thirty buildings constructed between the 1920s and 1980s with an on-site septic system. West of the winery buildings is an enclosed maintenance and agricultural storage area with a former UST pit that contained one gasoline and one diesel UST. The USTs were replaced with three aboveground storage tanks (ASTs), with a total capacity of 4,000 gallons; the ASTs are reportedly located in the same area of the former USTs. Although California Water Service Company provides potable water to the Site, an on-site potable water supply well provides backup potable drinking water and process water for the winery facility. This water supply well is located south of and presumably upgradient from the former USTs area.

1.1 Previous Activities

In 1987, two fuel USTs were removed from the Site without agency oversight. Without available records of the tank removal, there is no information regarding the condition of the tank or evidence of leakage.

In 1990, the ACHCS issued a notice of violation (NOV) for discharging waste sludge into an open ditch adjacent to a former steam-cleaning bay, which is located at the south end of the steel storage and welding shed. The NOV required sampling of the ditch area and around a stained drum, along with remediation of the contaminated area(s). No available records reportedly exist to document the implementation of the required tasks.

1.2 Previous Investigations

In accordance with Comerica Bank guidelines, Clayton performed an ASTM D standard Phase I investigation to identify recognized environmental concerns (RECs). The Phase I study revealed the existence of the former USTs, former waste discharge area, and a number of agricultural storage areas. Agricultural chemicals and equipment are currently stored in the Agricultural Storeroom. However, documents indicate that these items were also previously stored in Building S and in a detached garage as shown in Figure 2. Clayton concluded that the identified areas constituted RECs and recommended sampling of these areas for relevant constituents of concern.

In 2003, Clayton performed a subsurface investigation at the Site to implement the recommendations of the Phase I report. Soil samples were analyzed for pesticides, herbicides, petroleum hydrocarbons, volatile organic compounds (VOCs), and heavy metals. Groundwater samples collected from beneath the former USTs and near the former steam cleaning areas were analyzed for petroleum hydrocarbons, VOCs, pesticides and herbicides. Appendix A presents the tabulated results of the soil and groundwater analyses, along with maps of sampling locations and groundwater analytical results. Clayton concluded that a fuel release in the former UST area impacted the groundwater at concentrations that significantly exceeded Risk Based Screening Levels (RBSLs). In the former steam-cleaning bay, located south/southwest of, and presumably upgradient from the former UST pit, no total petroleum hydrocarbon (TPH) or VOCs were detected in the soil. However, gasoline and motor oil-range petroleum hydrocarbons were detected in the groundwater at concentrations that were slightly above RBSLs. Other borehole samples contained constituents of concern below the RBSLs. Figure 2 illustrates the locations of the soil borings drilled by Clayton.

Clayton recommended an additional site characterization to further characterize the Site before installing monitoring wells. Wente then retained SOMA to review the Clayton report and provide an alternate workplan. Upon reviewing Clayton's report, SOMA proposed to install three groundwater monitoring wells to evaluate the groundwater contaminant plume and determine the groundwater flow direction. The ACHCS reviewed SOMA's workplan and requested a revised workplan that would present a vicinity well survey, a regional hydrogeologic study, and propose additional site characterization. The requested site characterization items included sampling and evaluating the water quality of the on-site water supply well, installing piezometers, additional lithologic characterization to better define the shallow/perched water-bearing zone, as well as vertical definition of the petroleum hydrocarbon contamination in the soil and groundwater beneath the USTs. Based on the ACHCS's request, the results of our regional hydrogeologic study and well survey data are presented in the following sections.

1.3 Regional Hydrogeologic Study

For conducting the regional hydrogeologic study, SOMA contacted the following agencies to obtain reports, documents and maps for this regional hydrogeologic study:

1. California Department of Water Resources (DWR);
2. California Division of Mines and Geology (CDMG);
3. Regional Water Quality Control Board – San Francisco Region (SFRWQCB);
4. Alameda County Health Care Services – Environmental Health Services (ACHCS-EHS); and
5. Zone 7 Water Agency (Zone 7).

The results of this study are presented below.

1.3.1 Regional Hydrogeologic Features

The subject site is located in the Livermore Valley Groundwater Basin (LVGB). With a surface area of 109 square miles, the LVGB extends from the Pleasanton Ridge approximately 14 miles east to the Altamont Hills and from the Livermore Upland approximately 3 miles north to the Orinda Upland.

Water-Bearing Formations

The LVGB basin consists of a structural trough that is an important source of irrigation water for the Livermore Valley. The LVGB comprises water-bearing formations derived from alluvial fans, outwash plains and lakes that belong to the valley-fill, Livermore and Tassajara Formations. The valley-fill and Livermore Formations provide adequate to large quantities of good to excellent water quality.

Valley-Fill. The shallowest water-bearing formation is the Holocene age (less than 10,000 years old) valley-fill that ranges from several tens of feet to almost 400 feet thick. The valley-fill unit consists of unconsolidated sediments deposited as alluvium, stream-channel, alluvial fan, and terrace deposits. In the western part of the basin, up to 40 feet of clay caps these water-bearing sediments. In the vicinity of the subject site, DWR maps the valley-fill with a thickness of approximately 20 to 30 feet and describes this water-bearing zone as a permeable unit consisting of sand and gravel in a clayey sand matrix. The DWR delineated the potentiometric surface of valley-fill groundwater near the Site at approximately 20 to 30 feet below ground surface (bgs).

Livermore Formation. The next youngest water-bearing zone is the Plio-Pleistocene (approximately 10,000 to 5 million years old) Livermore Formation with a thickness of up to 4,000 feet. The Livermore Formation usually occurs at approximately 400 feet bgs. In the eastern half of the LVGB, deep wells produce adequate volumes of groundwater for irrigation, industrial, or municipal purposes. In the vicinity of the subject site, the DWR delineated the potentiometric groundwater surface within this formation at approximately 150 feet bgs. The DWR describes this water-bearing unit as massive beds of rounded gravel cemented by an iron-rich sandy clay matrix.

Tassajara Formation. The oldest water-bearing zone is the Pliocene-age (approximately 2 to 5 million years old) Tassajara Formation that occurs in the uplands north of the Livermore Valley, at approximately 250 to 750 feet bgs. This formation consists of more consolidated deposits of sandstone, siltstone, shale, conglomerate and limestone. The Tassajara Formation only provides enough groundwater for domestic and livestock purposes. This unit has little hydrogeologic continuity with the Livermore Formation.

Subbasins of the Livermore Valley Groundwater Basin

The LVGB consists of twelve subbasins bounded by faults and non-water-bearing marine rocks: Bishop, Dublin, Castle, Bernal, Camp, Amador, Cayetano, May, Spring, Vasco, Altamont and Mocho Subbasins. The subject site is located on the west side of the Mocho Subbasin, which is one of the three most important water-producing subbasins of the Livermore Valley.

The Mocho Subbasin is bounded on the east by the Tesla Fault, on the west by the central zone of the Livermore Fault, on the north by bedrocks of the Tassajara Formation, and on the south by non-water-bearing marine rocks. Within the Mocho Subbasin, the DWR described groundwater flow to the North or Northwest with a gradient of 20 feet per mile (equivalent to 0.004 foot per foot).

This subbasin has been divided into the Mocho I (eastern) and Mocho II (western) Subbasins that are separated by a nearly buried ridge of the underlying Livermore Formation. These subunits are described below.

Mocho I Subbasin. In the shallow water-bearing valley-fill, there is an apparent lack of hydrogeologic continuity with the Mocho II subbasin. The Mocho I subbasin is drained by the Arroyo Seco watercourse.

Mocho II Subbasin. The shallow valley-fill deposits of Mocho II occur along the watercourse of Arroyo Mocho that merges with gravelly fan deposits near Tesla Road. The DWR described these Arroyo Mocho deposits as no more than 30 feet thick. In the vicinity of the Site, the DWR mapped approximately 20 to 30 feet of the valley-fill unit overlying the Livermore Formation. Within the Livermore Formation, there is apparently little discontinuity with the Mocho I Subbasin or across the Mocho Fault. Sediments of the Livermore Formation have been down-warped into a structural trough – or syncline – and the Site is situated on the south limb of this syncline. Beds underlying the Site incline gently to the north at approximately 5 to 10 degrees.

1.3.2 Initial Site Conceptual Model

Prior subsurface exploration by Clayton indicates that the Site investigation area is covered mostly by sandy silt and silty clay with some gravel. Boreholes were advanced to 8 to 20 feet below ground surface (bgs). Clayton encountered first groundwater at approximately 9 to 12 feet bgs. Groundwater analytical from the angle borehole advanced under the existing AST and former USTs indicated elevated levels of total petroleum hydrocarbons as gasoline, diesel, benzene, and other volatile organic compounds. Soil analytical from this borehole also indicated elevated levels of benzene-related compounds. In the borehole advanced near the former steam cleaning bay, groundwater analytical indicated substantially lower levels of constituents of concern. Soil analytical from this borehole and other vadose zone boreholes indicated near-trace to non-detectable levels of the constituents of concern.

Due to the limited site-specific hydrogeology and the partial delineation of the petroleum hydrocarbons in the groundwater beneath the Site, the site conceptual model (SCM) cannot fully be evaluated. This will be discussed after implementing the proposed fieldwork.

1.4 Well Survey

SOMA contacted Zone 7 and the DWR to obtain well data for this survey. As shown in the well location map presented in Appendix B, there is one on-site well (3S/2E 23C1) and five wells in the properties immediately west of and presumably downgradient from the Site: 3S/2E 23C2, 3S/2E 23D1, 3S/2E 23D2, 3S/2E 23D3, and 3S/2E 23D4. North/northeast of and presumably up/cross gradient from the subject site are seven wells within 2,000 feet of the investigation area: 3S/2E 14P2, 3S/2E 14Q1, 3S/2E 14Q2, 3S/2E 14Q3, 3S/2E 14Q5, 3S/2E 14Q6, and 3S/2E 14Q7. Approximately 1,800 feet south of the Site is another water supply well 3S/2E F1.

1.4.1 Well Construction Findings

On-Site

Table 1 in Appendix A shows that the Wente Brothers' well (23C1) is 102 feet deep with a casing diameter of 10 inches. The State DWR Water Well Drillers Report indicates this well is screened from 11 to 66 feet and 77 to 93 feet bgs.

West/Northwest of Site

With the exception of 3S/2E 23C2, the five wells west of and adjacent to the Site have similar well depths ranging from 108 to 140 feet. Well 23D3 is located at 5143 Tesla Road and has a relatively shallow depth of 29 feet with a casing diameter of 9 inches. Zone 7 records indicate that this well is used for domestic purposes and that well 23C2 is used as a drinking water well. Well 23C2 is located on the property immediately adjacent to the Site at 5443 Tesla Road. In response to SOMA's request for a well search within 2,000 feet of the Site, the DWR provided no Water Well Drillers Reports for three of these five wells, which is located west of and adjacent to the Site.

North/Northeast of Site

Available records indicate that seven wells are located north/northeast of and within 2,000 feet of the Site. Zone 7 records indicate that these wells are 80 to 308 feet deep with casing diameters ranging from 6.6 to 10 inches. Wells 3S/2E P2, 3S/2E Q1, 3S/2E Q2, 3S/2E Q3, 3S/2E Q5, and 3S/2E Q6 are reportedly used as the drinking water wells. State DWR Reports indicate that well Q6 is perforated from 80 to 140 feet bgs and that well Q7 is perforated from 100 to 210 feet bgs. The DWR provided no Water Well Drillers Reports for the other five wells and construction details for most of these wells are unknown.

South of Site

Based on data received from Zone 7, well 3S/2E 23F1 is located almost 2,000 feet south and presumably up/cross gradient from the Site. Because the DWR provided no Water Well Drillers Report for this well, the construction details for well 23F1 are unknown.

1.4.2 Well Evaluation

Based on the regional hydrogeologic study, groundwater flow in the valley-fill and underlying Livermore Formations is to the northwest/north. The nearby water supply wells west of and presumably downgradient from the Site are potentially exposed to the on-site contaminant plume. If the findings of the investigation indicate that the plume has migrated beyond the western property line, these wells should also be sampled.

2.0 SCOPE OF WORK

Based on the results of the most recent site investigation conducted by Clayton, SOMA's research described above, and the ACHCS-EHS letter of workplan request, SOMA proposes to perform the following scope of work in two phases:

Task 1: Field Preparation: Permit Acquisition, Site Health and Safety Plan Preparation, and Utility Clearance
Task 2: Sampling On-Site Water Supply Wells
Task 3: Direct-Push Technology Drilling and Groundwater Sampling
Task 4: Laboratory Analysis
Task 5: Installing Shallow Monitoring Wells
Task 6: Developing, Surveying, and Sampling
Task 7: Report Preparation

The following is a brief description of the above tasks.

Task 1: Field Preparation: Permit Acquisition, Site Health and Safety Plan Preparation, and Utility Clearance

For drilling the groundwater sampling boreholes, SOMA will obtain the necessary permits from the Zone 7 Water Agency. Prior to the commencement of field activities, a site-specific health and safety plan (HASP) will be prepared by SOMA.

The HASP is designed to address safety provisions during field activities. It provides procedures to protect the field crew from physical and chemical hazards resulting from drilling, well installation, and groundwater monitoring and sampling. The HASP establishes personnel responsibilities, general safe work practices, field procedures, personal protective equipment standards, decontamination procedures, and emergency action plans.

To protect the field crew from underground utility hazards, SOMA will notify Underground Service Alert (USA) and interface with the utility companies to clear the proposed drilling locations. In addition, a private utility locator will survey and mark subsurface utilities in the vicinity of the proposed groundwater sampling borehole locations.

Task 2: Sampling On-Site Water Supply Well

The on-site water supply well will be sampled. The groundwater sample will be analyzed for the following constituents of concern, as identified by the ACHCS-EHS:

- Total petroleum hydrocarbons as diesel (TPH-d) using EPA Method 8015M,
- Total petroleum hydrocarbons as gasoline (TPH-g) and as motor oil (TPH-mo) using EPA Method 8015M, and
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and Methyl tertiary Butyl Ether (MtBE) using EPA Method 8260.

Task 3: Direct Push Technology Drilling and Groundwater Sampling

As shown in Figure 2, SOMA proposes drilling nine temporary well boreholes to delineate the lateral extent of the shallow-zone groundwater plume. SOMA will use direct push technology (DPT) to drill the temporary well boreholes to a total anticipated depth of 30 to 40 feet bgs.

The drilling crew will use a truck mounted mobile Geoprobe™ 6600 or track-mounted 66DTdrill rig to collect continuous soil cores through a dual-wall sampling device. Prior to drilling each temporary well borehole, the sampler, drilling rods, and outer casing will be thoroughly washed and decontaminated to avoid cross-contamination between boreholes. Geoprobe™ designed the cased-rod system for discrete soil and groundwater sampling without cross contaminating water-bearing zones. The dual-walled DPT sampler involves hydraulically driving or hammering a cased set of rods into the ground with the lead rod section consisting of a hollow acetate-lined sampler. After pushing the cased rods to a desired depth the 2-inch diameter drilling rods are withdrawn from within the 3.25-inch diameter outer casing to retrieve the soil-filled liner.

Driving the 3-inch diameter cased-rod assembly through gravelly zones may result in shallow refusal. In the deeper intervals of the recent alluvial deposits, derived from the underlying water-bearing gravels, the potential for refusal is probably higher.

After driving the cased sampler to each 4-foot interval, the drilling crew will withdraw the sampling rods and remove a 4-foot sample within polyethylene tubing. A SOMA field geologist will split and examine each tube to log the sediment core and determine whether the interval is a water-bearing layer. After collecting the first encountered groundwater, the drilling crew will advance the cased DPT sampler to collect discrete groundwater samples from deeper water-bearing zones. SOMA will implement this procedure to evaluate the vertical extent of the groundwater contamination in the investigation area.

The contents of each sediment-filled tube will be screened using a calibrated photo-ionization detector (PID). The field geologist will collect and place fragments of the sediment core into a freezer-grade re-sealable plastic bag and heat the bagged soil for a few minutes. Vapors from the bagged soil core samples will be measured for volatile analysis by inserting the PID nozzle into the bag sample and noting the PID reading.

Based on PID readings and the occurrence of water-bearing stringers, selected sections of the sediment-filled tubes will be cut into 6-inch long sections. The field geologist will trim and cap the ends of the samples with Teflon film and plastic end caps. The sample will be labeled and immediately placed into a chilled ice chest for transportation to Curtis & Tompkins Laboratories for analysis. At least one soil sample will be collected from each borehole.

Based on previous experience at the Site, groundwater can be collected from the shallow zone on the same day of drilling. However, water-bearing zones selected for groundwater sampling may yield groundwater slowly. Low yielding water-bearing layers may result in waiting at least a half hour to obtain enough groundwater for gas and diesel analyses. Cumulative waiting time for groundwater sampling may result in extended field time.

Disposable bailers or a Watera™ sampler fitted into plastic tubing will be used to collect grab groundwater samples. Grab groundwater samples from each water-bearing zone will be transferred into amber liter bottles and 40 ml VOA vials that will be placed into an ice chest. After completing the fieldwork, the samples will be transported to a state-certified laboratory. After the sampling is complete, all temporary well boreholes will be tremie-sealed with neat cement grout.

Task 4: Laboratory Analysis

Soil and groundwater samples will be analyzed for:

- TPH-d using EPA Method 8015M,
- TPH-g and TPH-mo using EPA Method 8015M,
- BTEX and MtBE using EPA Method 8260B.

Task 5: Installation of Groundwater Monitoring Wells

The results of the DPT investigation will determine the depth and thickness of water bearing zones(s) beneath the Site. Using the information provided by the DPT, SOMA will locate and determine the screen interval for three shallow-zone groundwater monitoring wells.

Using a hollow stem auger (HSA) rig, well boreholes will be continuously sampled to approximately 15 to 20 feet commencing at approximately five feet above the anticipated first encountered groundwater. After obtaining one sample from the vadose zone, the sampler will be unlined to allow for the examination of continuous soil cores.

The field crew will then plug the well borehole up to the bottom of the selected screen interval and install the casing with factory-slotted schedule 40 PVC screen with 0.02" slots. The drilling crew will attach a PVC cap on the bottom of the casing without adhesives or tape, and the top of the casing will be fitted with a locking well plug.

After the casing is set into the borehole, a sand filter pack will be emplaced outside the casing by slowly pouring 2/12 kiln-dried sand into the annular space from the bottom of the borehole to approximately one half- to one-foot above the screened interval. To prevent grout from infiltrating down into the filter material, a one-foot thick bentonite plug will be placed above the filter pack and hydrated. After thoroughly hydrating the bentonite seal, the well will be sealed from the top of the bentonite layer to about one-foot bgs with neat cement containing approximately 3 to 5% bentonite. Near surface grade, the wells will be completed by installing a traffic-rated well vault into a concrete foundation. Appendix B presents the monitoring well construction details.

Task 6: Developing, Surveying and Sampling Monitoring Wells

SOMA field personnel will develop or oversee development of the wells. The wells will be bailed to remove sediment and then surged to develop the sand packs. The field crew will then pump the wells until the groundwater clarifies substantially and groundwater quality parameters stabilize.

Licensed surveyors will survey the casing elevations of the monitoring well in accordance with NAD-survey requirements set forth by the UST Fund. All well casing elevations will be surveyed to NAVD 88 survey datum with latitude and longitude surveyed to NAD 83 datum. With the survey data, depths to groundwater will be converted into groundwater surface elevations to determine the groundwater flow direction beneath the investigation area.

During subsequent quarterly monitoring events, SOMA field personnel will purge and sample the wells. Using an electric sounder, the depth to groundwater in each monitoring well will be measured from the top of the casing to the nearest 0.01 foot. Field personnel will then purge each well using a battery operated 2-inch diameter pump (Model ES-60 DC). To ensure that the final samples represent the surrounding groundwater, groundwater quality samples will be collected for field measurements of pH, temperature and electrical conductivity (EC). SOMA will measure groundwater quality parameters using a Hanna pH, conductivity, and temperature meter. The equipment will be calibrated at the Site using standard solutions and procedures provided by the manufacturer.

The purging of the wells will continue until the parameters of pH, temperature and EC stabilize or three casing volumes are purged. Field personnel will use a disposable polyethylene bailer to collect sufficient samples from each well for laboratory analyses. The groundwater sample will be transferred into un-preserved amber liter bottles and 40-mL VOA vials pre-preserved with hydrochloric acid. The vials will be sealed to prevent the development of air bubbles within the headspace. All groundwater samples will be placed in a chilled ice chest accompanied by a chain of custody (COC) form. After the sampling is complete, groundwater samples will be delivered to the designated state-certified lab.

Task 7: Report Preparation

Upon completion of the above-mentioned tasks, SOMA will prepare a written report containing a detailed description of the procedures, present the results of the field investigation, and discuss our recommendations for further studies, including the installation of additional groundwater monitoring wells, as well as extraction wells, if warranted. The report will include tables and figures to help explain the results of the investigation.

3.0 References

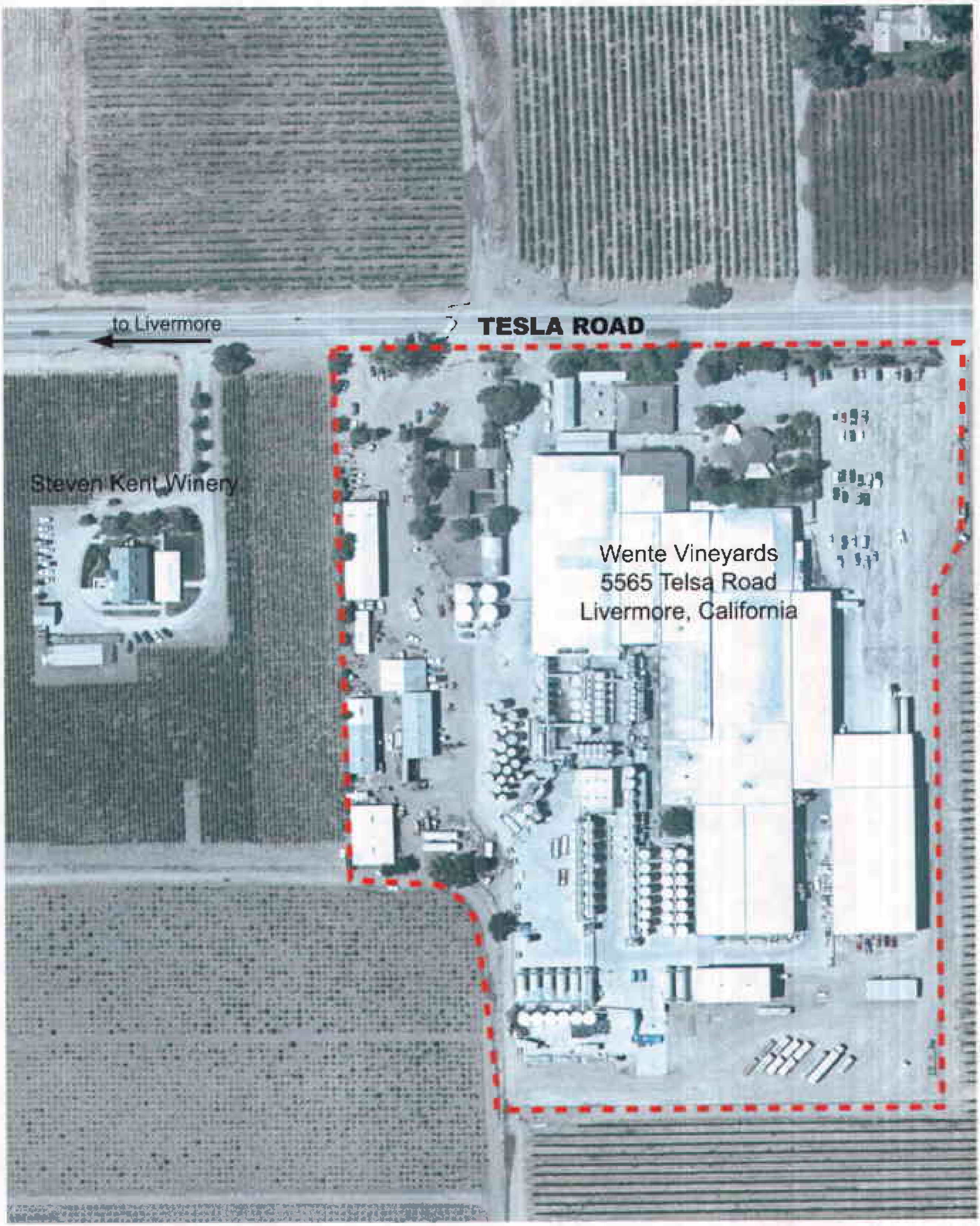
Department of Water Resources, June 1974. "Evaluation of Ground Water Resources: Livermore and Sunol Valleys," Bulletin 118-2.

Department of Water Resources, October 1, 2003. "San Francisco Hydrologic Region Livermore Valley Groundwater Basin," Update to Bulletin 118-2.

Lawrence Livermore National Laboratory, 1995. "Environmental Report of 1995."

Zone 7 Water Agency, August 3, 2004. " Well Location Map – 5565 Tesla Road" and Table of Well Owners.

FIGURES



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approximate scale in feet
0 50 100

Figure 1: Site vicinity map.

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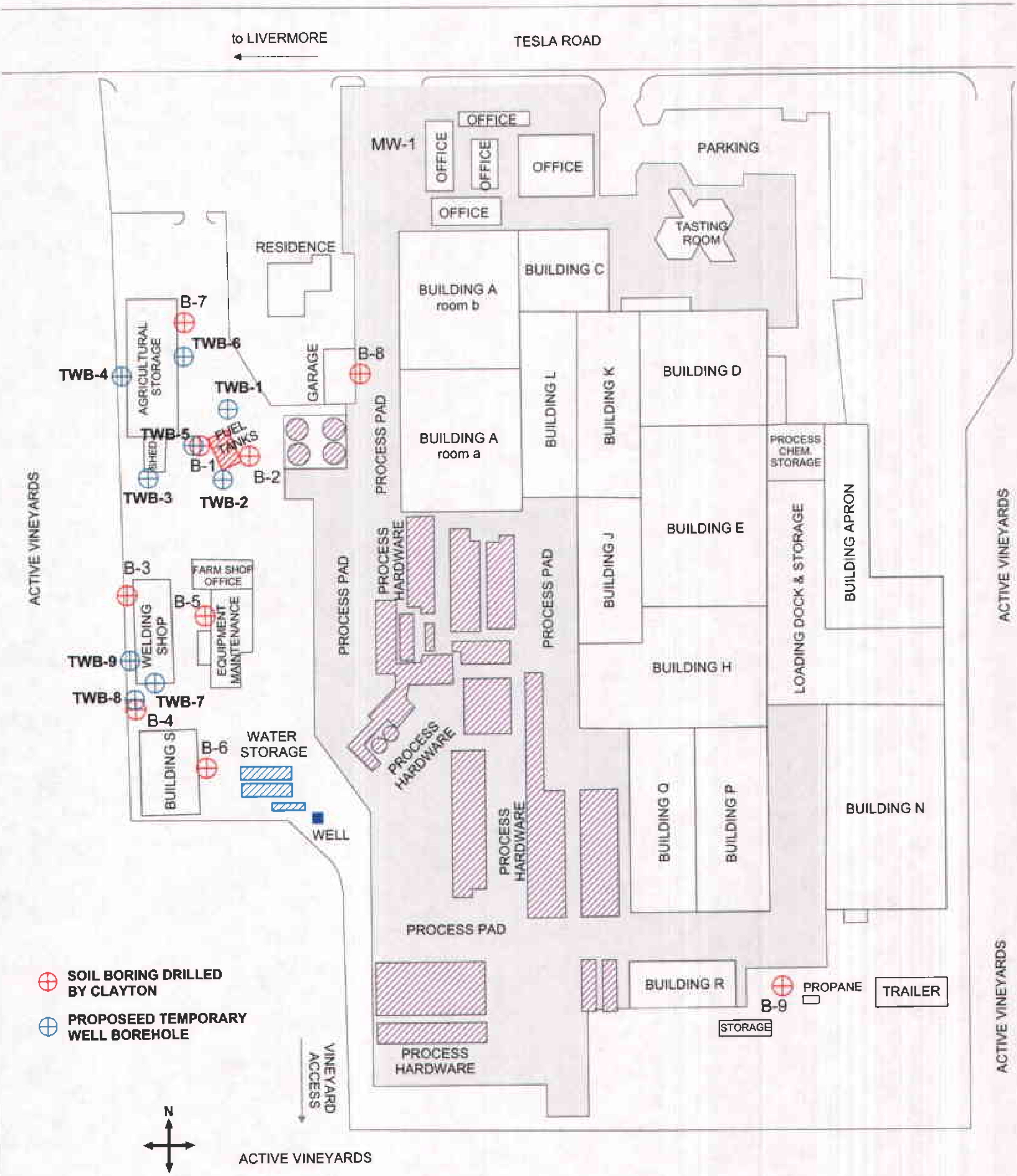


approximate scale in feet

0 50 100

Figure 2: Site map showing approximate locations of proposed temporary well boreholes and previously drilled soil borings.

SOMA

APPENDICES

Appendix A

Soil and Groundwater Analytical Tables and Groundwater Analytical Map

Table 1
Summary of Sampling and Analytical Program
Wente Winery, Livermore, CA

		Analytical Methods			Organochlorine	Organophosphorus	Chlorinated	Total Metals
Boring ID	Depth	TPH Scan	VOCs	LUFT Metals	Pesticides	Pesticides	Herbicides	As & Pb
SOIL								
B-1	0.5 - 1'				Comp1345	Comp1345	Comp1345	
	7.5 - 8'	X	X					
B-2	7.5 - 8'	X	X					
B-3	0.5 - 1'	X		X	Comp1345	Comp1345	Comp1345	
	3.5 - 4'		X					
B-4	0.5 - 1'	X		X	Comp1345	Comp1345	Comp1345	
	7.5 - 8'		X					
B-5	0.5 - 1'	X		X	Comp1345	Comp1345	Comp1345	
	3.5 - 4'		X					
B-6	0.5 - 1'				Comp6789	Comp6789	Comp6789	Comp6789
B-7	0.5 - 1'				Comp6789	Comp6789	Comp6789	Comp6789
B-8	3.5 - 4'				Comp6789	Comp6789	Comp6789	Comp6789
B-9	0.5 - 1'				Comp6789	Comp6789	Comp6789	Comp6789
GROUNDWATER								
B-1		X	X					
B-4		X	X					
	Total Analyses:	7	7	3	2	2	2	1

Table 2
Summary of Soil Analytical Results: TPH, VOCs, and Metals
Wente Winery, Livermore, CA

Analytical Method	Analyte	Units	Sample ID, Depth (Feet), & Date								RBSLs
			B-1 7.5-8' 4/18/03	B-2 7.5-8' 4/18/03	B-3 0.5-1' 4/18/03	B-3 3.5-4' 4/18/03	B-4 0.5-1' 4/18/03	B-4 7.5-8' 4/18/03	B-5 0.5-1' 4/18/03	B-5 3.5-4' 4/18/03	Industrial
Total Petroleum Hydrocarbons (EPA 8015M)	TPH-Gasoline	mg/Kg	**24**	<1.0	<1.0	--	<1.0	--	**1.2**	--	100
	TPH-Diesel	mg/Kg	**44**	**1.7**	<1.0	--	<1.0	--	**33**	--	100
	TPH-Motor Oil	mg/Kg	<5.0	**7.5**	<5.0	--	<5.0	--	**190**	--	1000
Volatile Organic Compounds (EPA 8260B)	MTBE	ug/Kg	<100	<5.0	--	<5.0	--	<5.0	--	<5.0	28
	Benzene	ug/Kg	<100	<5.0	--	<5.0	--	<5.0	--	<5.0	45
	Toluene	ug/Kg	<100	<5.0	--	<5.0	--	<5.0	--	<5.0	2.6
	Ethylbenzene	ug/Kg	**140**	<5.0	--	<5.0	--	<5.0	--	<5.0	2,500
	Xylenes	ug/Kg	**210**	<5.0	--	<5.0	--	<5.0	--	<5.0	1.0
	Naphthalene	ug/Kg	**560**	<5.0	--	<5.0	--	<5.0	--	<5.0	4.3
	1,2,4-Trimethylbenzene	ug/Kg	**3,400**	<5.0	--	<5.0	--	<5.0	--	<5.0	NE
	sec-Butyl benzene	ug/Kg	**150**	<5.0	--	<5.0	--	<5.0	--	<5.0	NE
	Isopropylbenzene	ug/Kg	**100**	<5.0	--	<5.0	--	<5.0	--	<5.0	NE
	n-Propyl benzene	ug/Kg	**610**	<5.0	--	<5.0	--	<5.0	--	<5.0	NE
	1,3,5-Trimethylbenzene	ug/Kg	**1,300**	<5.0	--	<5.0	--	<5.0	--	<5.0	NE
LUFT Total Metals (SW Series 6000, 7010)	Cadmium	mg/Kg	--	--	<0.5	--	<0.5	--	<0.5	--	12
	Chromium	mg/Kg	--	--	**69**	--	**60**	--	**52**	--	750
	Lead	mg/Kg	--	--	**7.9**	--	**8.0**	--	**41.0**	--	750
	Nickel	mg/Kg	--	--	**180**	--	**160**	--	**150**	--	150
	Zinc	mg/Kg	--	--	**99**	--	**54**	--	**57**	--	600

Notes:

ug/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

-- = Not analyzed

<x = Analyte not detected at or above detection limit of x.

RBSLs = Risk Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, RWQCB, Interim Final - December 2001, Table A.

NE = Not established

Table 3
Summary of Soil Analytical Results: Pesticides, Herbicides and Metals
Wente Winery, Livermore, CA

Analytical Method	Analyte	Units	Sample ID & Date Comp1345 4/18/03	Sample ID & Date Comp6789 4/18/03	RBSLs Industrial
Organochlorine Pesticides (EPA 8080)	a-Chlordane	ug/Kg	<1.0	**6.2**	2,900
	g-Chlordane	ug/Kg	<1.0	**6.8**	2,900
	p,p-DDD	ug/Kg	**1.4**	<5.0	17,000
	p,p-DDE	ug/Kg	**3.3**	<5.0	4,000
	p,p-DDT	ug/Kg	**8.8**	<5.0	4,000
Organophosphorus Pesticides (EPA 8081)	Herbicides	ug/Kg	ND	ND*	NE
Chlorinated Organic Herbicides (EPA 8151)	Herbicides	ug/Kg	ND*	ND*	NE
Total Metals (SW Series 7010)	Arsenic	mg/Kg	--	<2.5	2.7
	Lead	mg/Kg	--	**9.4**	750

Notes:

ug/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

<x = Analyte not detected at or above detection limit of x.

ND = No Analytes Detected.

ND* = No analytes detected; however, elevated detection levels due to sample dilution

-- = Not analyzed

RBSLs = Risk Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, RWQCB, Interim Final - December 2001 Table A.

NE = Not established

Table 4
Summary of Grab-Groundwater Analytical Results - TPH and VOCs
Wente Winery, Livermore, CA

Category	Chemical	Units	Sample ID & Date		RBSLs
			B-1W 4/18/03	B-4W 4/18/03	Industrial
Total Petroleum Hydrocarbons	TPH-Gasoline	ug/L	**200,000**	**74**	100
(EPA 8015M)	TPH-Diesel	ug/L	**150,000**	**180**	100
	TPH-Motor Oil	ug/L	<5,000	**370**	100
Volatile Organic Compounds	MTBE	ug/L	<1000	<0.5	5.0
(EPA 8260B)	Benzene	ug/L	**2,100**	<0.5	1.0
	Toluene	ug/L	**34,000**	**5.1**	40
	Ethylbenzene	ug/L	**5,900**	**2.0**	30
	Xylenes	ug/L	**31,000**	**12**	13
	n-Butyl benzene	ug/L	**1,300**	<0.5	NE
	tert-Butyl benzene	ug/L	<1000	**0.51**	NE
	chloroform	ug/L	<1000	**1.2**	28
	Naphthalene	ug/L	**1,800**	**1.3**	21
	1,2,4-Trimethylbenzene	ug/L	**9,900**	**4.0**	NE
	sec-Butyl benzene	ug/L	<1000	<0.5	NE
	Isopropylbenzene	ug/L	<1000	<0.5	NE
	n-Propyl benzene	ug/L	**1,100**	**0.67**	NE
	1,3,5-Trimethylbenzene	ug/L	**3,300**	**1.7**	NE

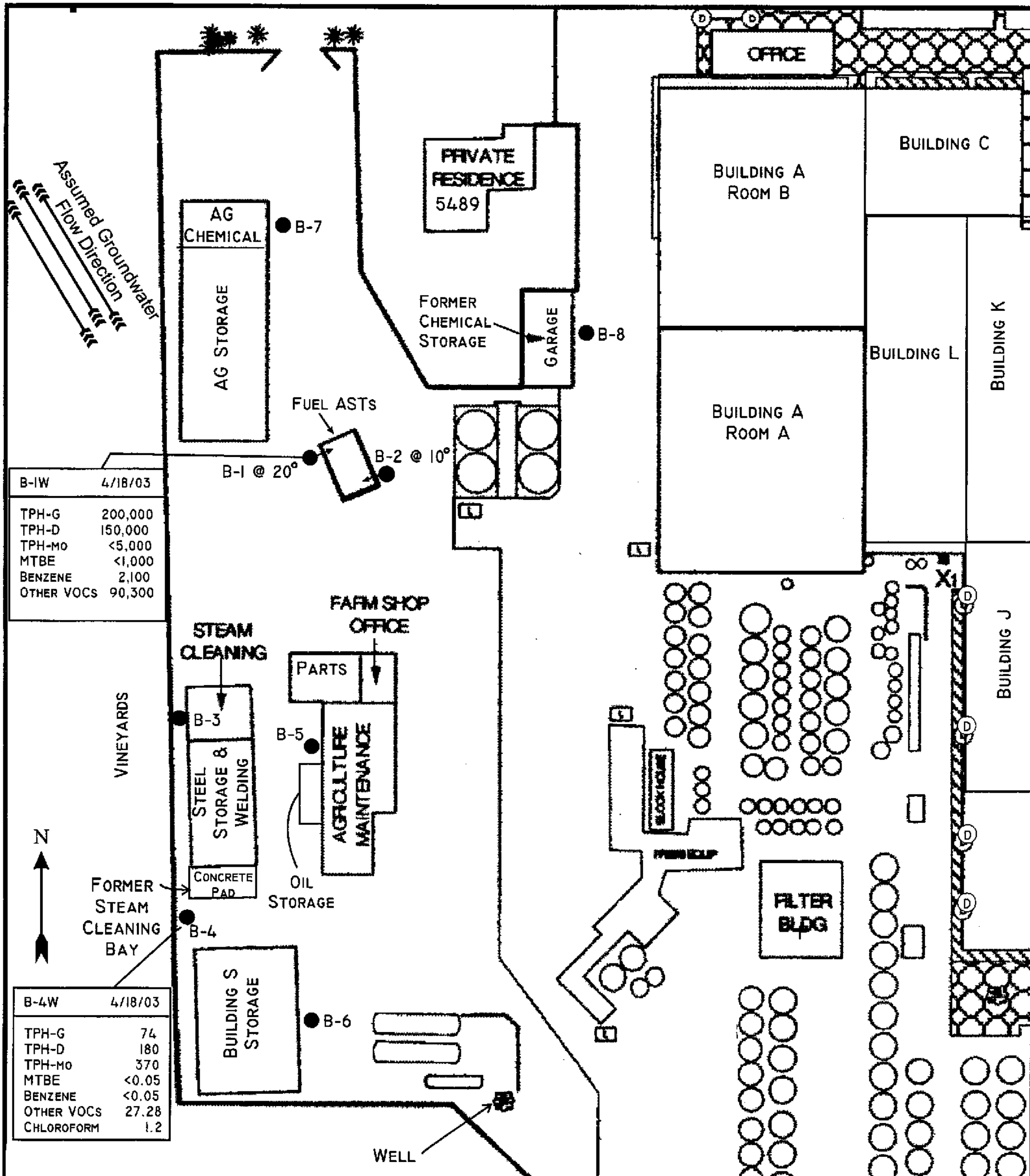
Notes:

ug/L = micrograms per liter

<x = Analyte not detected at or above detection limit of x.

RBSLs = Risk Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, RWQCB Interim Final - December 2001, Table A.

NE = Not established



LEGEND

● Soil Boring Vertical

●→ Angled Soil Boring Degrees from Vertical

1 " = 55'

SCALE

GROUNDWATER RESULTS - TPH and VOCs

Wente Winery
5489 & 5565 Tesla Road
Livermore, California

Clayton Project No. 70-003412.01

FIGURE

2

Clayton GROUP SERVICES

Appendix B

Well Survey Map

	ZONE 7 WATER AGENCY **5997 PARKSIDE DRIVE** **PLEASANTON, CA 94588**	**WELL LOCATION MAP**	**SCALE: 1"= 600 ft** **DATE: 8/30/04** **5565 TESLA RD**

Roger Papler

From: Hong, Wyman [WHong@zone7water.com]

Sent: Thursday, September 02, 2004 11:25 AM

To: rpapler@somaenv.com

Subject: Owner's List

Roger,

Here's a list of the wells near 5565 Tesla Road in Livermore with their respective addresses and owners. Be aware that the owners may have changed since the well was first constructed or field located.

WELL_#	DEPTH	DIAM	USE	RP	ADDRESS	CITY	OWNER
3S/2E 13M 1	200.0	8.0	pot	660.00	S VASCO ROAD	LIVERMORE	RON BAKER
3S/2E 14J 5	0.0	0.0	dom	0.00	2700 S. VASCO RD	LIVERMORE	W.C. MALONEY
3S/2E 14P 1	740.0	10.0	sup	611.00	5600 TESLA RD	LIVERMORE	ROBERT DETJENS
3S/2E 14P 2	120.0	6.6	pot	615.00	5600 TESLA RD.	LIVERMORE	ROBERT DETJENS
3S/2E 14Q 1	114.0	10.0	mon	622.50	2915 S. VASCO RD	LIVERMORE	DR. JENSEN
3S/2E 14Q 2	80.0	8.0	sup	619.40	5878 TESLA RD	LIVERMORE	JUAN
3S/2E 14Q 3	308.0	7.0	pot	620.00	2657 S. VASCO RD.	LIVERMORE	K. M. VOLKMAN
3S/2E 14Q 4	294.0	0.0	pot	610.00	2693 S. VASCO RD.	LIVERMORE	KENNETH WALTERS
3S/2E 14Q 5	158.0	6.0	pot	625.00	5898 TESLA RD.	LIVERMORE	LEROY IRWIN
3S/2E 14Q 6	140.0	6.6	pot	620.00	2657 S. VASCO RD.	LIVERMORE	KEN VOLKMAN
3S/2E 14Q 7	210.0	6.0	dom	625.00	2903 S. VASCO RD	LIVERMORE	MERV FRYDENDAL
3S/2E 14R 1	152.0	8.0	dom	700.00	6500 TESLA RD	LIVERMORE	MAX RIOS
3S/2E 14R 2	175.0	6.7	dom	665.00	2720 S. VASCO RD	LIVERMORE	EVERETT FARMS
3S/2E 15J 6	0.0	8.0	sup	0.00	2262 BUENA VISTA AV	LIVERMORE	JAY DAVIS
3S/2E 15J 7	140.0	5.0	irr	0.00	2262 BUENA VISTA AVE	LIVERMORE	JAY DAVIS
3S/2E 15R 1	250.0	10.0	sup	596.80	2552 BUENA VISTA	LIVERMORE	SMITH
3S/2E 15R 2	0.0	8.0	dom	0.00	2368 BUENA VISTA	LIVERMORE	W. RAYMOND
3S/2E 15R 8	133.0	8.0	irr	600.00	4948 TESLA RD	LIVERMORE	STONY RIDGE WINERY
3S/2E 22H 1	184.0	12.0	sup	603.20	DEVINE RANCH AT WENTE FORD	LIVERMORE	WENTE BROS.
3S/2E 22H 2	141.0	10.0	dom	609.60	DEVINE RANCH AT WENTE FORD	LIVERMORE	WENTE BROS.
3S/2E 23A 1	200.0	4.5	pot	0.00	5767 TESLA RD	LIVERMORE	WENTE BROS.
3S/2E 23C 1	102.0	10.0	irr	0.00	TESLA RD & MINES RD	LIVERMORE	WENTE BROS.
3S/2E 23C 2	108.0	10.0	pot	0.00	5443 TESLA RD	LIVERMORE	DALMAZZO
3S/2E 23D 1	140.0	8.0	dom	609.10	5255 TESLA RD	LIVERMORE	PELLERIN
3S/2E 23D 2	116.0	0.0	dom	0.00	5167 TESLA RD	LIVERMORE	GAVENS

3S/2E 23D 3	29.1	9.0 dom	0.00	5143 TESLA RD	LIVERMORE	JUDY DUDNEY
3S/2E 23D 4	0.0	0.0 sup	0.00	5053 TESLA RD	LIVERMORE	STAMBAUGH
3S/2E 23F 1	690.0	12.0 sup	635.00	5565 TESLA RD	LIVERMORE	WENTE BROS.
3S/2E 23H 2	0.0	0.0 sup	0.00	6271 TESLA RD	LIVERMORE	J. MIGLIORE

Wyman Hong
Water Resources Specialist
Zone 7 Water Agency
(925) 484-2600 ext. 235

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