

**Table 4-1
Site Conceptual Model**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Regional	<p>The site is situated within the Coast Range Geomorphic Province of California. This geomorphic province contains coastal foothills and mountains and extends from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are comprised of the Pacific Ocean and the Great Valley Geomorphic Province, respectively.</p> <p>The site is located in the Franciscan Complex, which is subdivided into four major divisions identified as the Northern Coast Range, the Franciscan Block, the Diablo Range, and the Nacimiento Block. The site is situated within the Franciscan Block, an assemblage of variably deformed and metamorphosed rock units. The surface is composed of Quaternary alluvium; at depth, the site is underlain by rocks of the Franciscan Complex, which are composed predominately of detrital sedimentary rocks with volcanic tuffs and deep ocean marine sediments. The Franciscan lithologies typically have low porosity and permeability.</p>	None	NA

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	<p>A total of three samples were collected from each borings B9 and B10 at depths of five, ten and fifteen feet during the 08 May 2013 investigation. Based on field observations, generally brown, dry, plastic clay was observed in boring B9 at depths of five and ten feet bsg. Mottled, dry, fine grained silty sand was encountered within the boring at 15 feet bsg. Brown to light brown, dry silt with some fine grained sand was observed in boring B10 at five, ten and fifteen feet bsg. Soil samples have not been collected at depths greater than 15 feet bsg at the site.</p> <p>To date, one grab groundwater sample was collected from each of the two deep soil borings (B9 and B10) at depths of 46 to 50 feet bsg. Based on the Haber Oil site (located south and generally down gradient) depth to groundwater in fixed wells installed at their site has generally ranged historically from 31.6 to 44.6. Further, groundwater flow is generally to the north/northwest and at weak hydraulic gradients.</p>	There are no monitoring wells associated with the site. However based on the locations of Haber oil wells and historical groundwater flow directions and gradients inferred and calculated for the site, groundwater flows predominantly to the north/northwest at relatively weak hydraulic gradients.	Groundwater monitoring wells, based on grab groundwater samples collected at the site do not appear warranted for installation at this time.
Surface Water Bodies		The closest surface water body is the San Francisco Bay, which located approximately 2.5 miles west of the site. The San Leandro Creek is north of the site approximately 300 feet.		
Nearby Wells		Based on information provided by Stratus Environmental in their <i>Site Conceptual Model</i> , dated 25 January 2012, two supply wells are located 1,500 feet to west-northwest and 2,000 feet to the west-southwest of the Haber oil site. The sensitive receptor survey was performed by Aegis in 1992 and is likely the most recent representation of sensitive survey for the Swiss Valley Cleaners Site.	1. A current sensitive survey, circa 2000 or greater has not been performed for the site or surrounding sites.	Performance of an updated sensitive receptor for the site.
Release Source and Volume		The former dry cleaning machine is considered the source of the release at the site. The volume of the release is not known. The sanitary sewer line has not been fully investigated at the site at this time. However, based on low detections of PCE in the soil and water samples collected in front and rear of the facility it is likely	Additional soil and groundwater data does not appear to be warranted at this phase in the	NA

**Table 4-1
Site Conceptual Model (Continued)**

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		that the source is located beneath the former dry cleaning machine.	investigation.	
NAPL		Groundwater monitoring wells are currently not installed at the site. Further, non-aqueous phase liquids were not observed during grab groundwater sampling activities performed at the site in May 2013 and is likely not present in shallow groundwater at the site.	Monitoring wells do not appear warranted at the site at this time.	NA
Source Removal Activities		Source removal activities have not been performed at the site.	2. Source removal has not been completed.	Approval of work plan for vapor well installation and remedial system installation.
Contaminants of Concern (COC's)		Based on the historical investigations conducted at the site tetrachloroethene (PCE) is the primary constituent of concern for the site.	N/A	N/A
Chlorinated Hydrocarbons in Soil		<p>A total of seventeen soil samples have been collected at the site between August 1998 and May 2013. Samples have been collected surrounding the former and current location of the dry cleaning machine at depths ranging between 1.67 and 5 feet bsg.</p> <p>May 2013: two borings were advanced in the front and rear of the facility (B9 and B10) and soil samples were collected at depths of 5, 10 and 15 feet bsg. PCE and related constituents were reported in samples collected surrounding the former dry cleaning unit during the 2005 investigation and in the front and rear of the facility during the May 2013 investigation. Soil samples in the rear of the facility indicate that PCE impact to soil is limited to a shallow depth, while samples in the front of the facility indicate that PCE is undefined beyond a depth of 15 feet bsg.</p> <p>However, samples have not been collected at deeper intervals surrounding the former dry cleaning machines location. All PCE concentrations reported in soil are below shallow and deep environmental screening levels for commercial settings.</p>	3. Vertical definition in front of facility and surrounding former dry cleaning unit.	Advancement of one additional boring at the former dry cleaning machine and near the location of boring B9 to assess the vertical impact to soil.

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Chlorinated hydrocarbons in groundwater		A "grab" wastewater samples was collected from the floor drain within the unit in 1998. Samples collected from the floor drain in 1998 were non-detect for chlorinated hydrocarbon constituents. A total of two groundwater samples have been collected at the site, collected in the front and rear of the facility during the May 2013 investigation. Grab groundwater samples collected during the 2013 indicate that PCE has minimally impacted groundwater surrounding the site. One of the two samples (B9W@46-50) collected during the investigation exceeded SFBRWCB ESL's of 5 ug/l.	Chlorinated hydrocarbon impact to groundwater is currently undefined. However, low concentration in both locations sampled during the 2013 suggests that additional assessment is not warranted at this time.	N/A
Chlorinated hydrocarbons in soil vapor and indoor air.		A total of three soil-vapor samples were collected surrounding the former and current location of the dry cleaning machine at the site during the May 2013 investigation. Vapor samples were collected at depth of 5 feet bsg. PCE was detected at all three locations at concentrations above SFBRWQB commercial ESLs.	The extent of the subsurface vapor plume is not currently defined by data collected during the May 2013 investigation.	Additional vapor sampling is not currently proposed. However, the installation of shallow vapor mitigation wells and a soil vapor extraction system is proposed at this time.

<p>Risk Evaluation</p>		<p>The Swiss Valley Cleaners facility is currently unoccupied. However, future occupancy is proposed at the site. Indoors the site is currently covered with a concrete slab and on the outside of the facility with asphalt and concrete sidewalks.</p> <p>Indoor vapor sampling has not currently been conducted for the site. However, based on soil vapor sample results a residual vapor plume exists below the former dry cleaning unit.</p> <p>The site is currently zoned for commercial use and existing business occupy the adjacent suites.</p> <p>The primary source of the residual impact is from historical dry cleaning operations performed at the site. To date the primary source has been terminated and chemicals of concerned should not further be released into the subsurface.</p> <p>Potential exposure routes to existing secondary source (soil, soil vapor) include incidental ingestion, dermal contact and inhalation. For contaminated soil the exposure route is ingestion, dermal contact and inhalation of dust. Based on the location of the residual impact additional evaluation of risk is not warranted.</p> <p>For soil vapor exposure routes in only inhalation. Based on soil vapor samples collected at the site and the exceedance of concentrations in comparison to commercial ESLs, remediation is warranted as well as indoor air sampling.</p> <p>For leaching of contaminants from soil to groundwater, the ingestion and dermal pathways are unknown. Further evaluation does not appear warranted at this time based on low concentration reported in both soil and groundwater.</p> <p>For volatilization from soil/groundwater to outdoor air, the exposure pathway is considered to be insignificant due to natural dilution and concentrations reported during historical investigations. Additional evaluation does not appear warranted.</p>	<p>Indoor air sampling has not been completed.</p>	<p>3. Remediation of the soil vapor plume beneath the sub-slab has been proposed and should be completed immediately.</p>
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**Table 5-1
Data Gaps Summary and Proposed Investigation**

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	Sensitive Receptor Survey	Review of historical well installation logs and performance of field sensitive receptor survey.	The most recent sensitive receptor completed for sites surrounding Swiss Valley Cleaners was completed over 10 years ago.	None

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
2	Source Removal	A total of ten shallow remedial wells have been proposed for installation at the site. In conjunction with installation an SVE system is proposed for installation to mitigate residual vapor impact resulting from historical dry cleaning operations at the site.	Based on results from the May 2013 investigation soil vapor impact is present beneath the site above SFBRWQB ESL's. Removal of the soil vapor beneath the facility is warranted at this time.	VOC's by EPA method 8260B.
3	Vertical Definition of Adsorbed Chlorinated Hydrocarbon Impact	Advancement of two soil borings: One boring will be advanced adjacent to former dry cleaning machine and one near boring B9. Soil samples will be collected to evaluate the vertical limits of the chlorinated hydrocarbon impact.	Vertical definition has not been completed in either location.	VOC's by EPA 8260B
4	Indoor air sample collection has not been completed.	Not warranted with SVE.		VOC's by EPA TO-15