

August 28, 2014

Vivian Gomez-Latino
State Water Resources Control Board
1001 I Street
P.O. Box 2231
Sacramento, CA 95812
USTClosuresComments@waterboards.ca.gov

RE: Comments Regarding Proposed Underground Storage Tank (UST) Case Closure For
Santa Clara County, Case No. 07S1E22G04f

Dear Ms. Gomez-Latino:

On behalf of Green Valley, EnviroAssets has reviewed the August 12, 2014, letter from the County of Santa Clara Department of Environmental Health ("DEH") regarding the proposed UST case closure for the above referenced project ("Site"). The following comments pertain to DEH comments on the source and nature of contamination and risk to indoor air quality at the Site.

DEH Comment: light non-aqueous-phase liquid (LNAPL) is currently present at the site.

RESPONSE 1 We agree that residual LNAPL in the middle distillate range is currently present at the Site. In addition to sheen noted by field personnel in samples collected from wells RMW-1R, RMW-2, RMW-3, and RMW-6 during the final March 2014 sampling event, we note that middle distillate concentrations exceeded maximum solubility range estimates of 5 mg/L in wells RMW-3 and RMW-6 during that same event.

With regards to LNAPL, we note that the identified sources of this contamination predate removal of on-site USTs in 1988 and ASTs in 1990. In its July 30, 2014, submittal, RRM provided trend graphs of groundwater monitoring data from upgradient, cross-gradient, source area, and downgradient wells extending back to 1992. The downgradient wells in particular (with data beginning in 1996) show stable or decreasing trends over the monitored periods despite the existence of the LNAPL in the source area. Therefore, we believe that the stability of the plume has been sufficiently proven over a period greater than 5-years despite the existence of residual LNAPL in the source area. The distribution of data suggests that the identified LNAPL exists in pockets as residual LNAPL rather than continuous LNAPL (i.e. is not mobile) as sample locations in close proximity to each other have shown widely varying concentrations, and in most cases LNAPL has not migrated in detectable thicknesses into wells installed in close proximity to elevated grab sample locations even prior to recent remediation work. Therefore, the LNAPL does not represent a driver of plume mobility and both the State and County appear to agree that "practicable" remediation has been conducted in the source area. We note that



RRM did not provide a site map that depicts the locations of all wells that it provided trend graphs for so we have attached a more comprehensive site map for your convenience.

DEH Comment: Should the State Water Resources Control Board pursue case closure, the DEH requests that the property owners accept a land use restriction as a condition of case closure. The land use restriction should include restriction of site development for sensitive usage such as day cares or residences. The property has been subdivided and has multiple owners (attachment). The deed restriction should be applied to all parcels.

RESPONSE 2 While the property owner is willing to consider a deed restriction, it is notable that the State did not require a deed restriction in its list of necessary "conditions" and "actions" for closure within its draft Order. However, we believe that any potential Deed Restriction should be limited to use of groundwater at the Site and disagree with the proposed scope of a potential Deed Restriction which we believe is overly broad. This conclusion is based on investigation data that demonstrates the soil vapor intrusion to indoor air pathway is insignificant and that existing regulatory regimes are already in place to protect the public in the event that future redevelopment includes rezoning the Site from the existing commercial to residential. The following discussion addresses the applicability of standard elements of environmental Deed Restriction prohibitions within the context of Site specific information.

Extracting [Ground]water for Any Use

Shallow groundwater at the Site is impacted by petroleum hydrocarbons at concentrations above a variety of beneficial use standards and includes residual LNAPL. Therefore, we concur that restriction of groundwater extraction at the Site is reasonable and appropriate.

Restriction of Site Development for Sensitive Usage

This restriction is associated with prohibitions on residential use, hospital use, day care, and schools for persons under 21-years of age. These restrictions are impacted by soil vapor intrusion to indoor air, the only potentially complete pathway with current site development, and redevelopment concerns around soil and groundwater contamination which are discussed separately below.

Soil Vapor Intrusion to Indoor Air – Sensitive Use of Existing Site

Multiple lines of evidence confirm that there is no significant risk to indoor air at the Site for commercial or residential usage scenarios. Therefore, it is unnecessary to restrict use of the Site for "sensitive uses", such as an on-site business offering its employee on-site day care. In June 2010, a comprehensive sub-slab soil vapor investigation was conducted by RRM. RRM collected additional soil vapor samples at one foot and five feet below surface elevation in May 2013. These data are provided on Table 1 (attached).

As shown on Table 1, shallow soil vapor samples collected at 5-feet below grade contained contaminants of concern below directly comparable Low-Threat Closure Policy and Environmental Screening Levels¹ (ESLs) guidance for residential properties.

A range of regulatory guidance concentrations for sub-slab vapor sampling is also provided on Table 1. Currently, directly comparable regulatory guidance for sub-slab vapor sampling are not available in the Low-Threat Policy or from the Water Board, and recommended attenuation factors from sub-slab vapor concentrations to indoor air concentrations are inconsistent between regulatory agencies. However, the sub-slab data compare favorably with existing regulatory guidance as discussed below. The following guidance concentrations for sub-slab vapor data are provided on Table 1:

- *Low-Threat UST Policy* ("Policy", State Water Resources Control Board, effective August 17, 2012), Appendix 4, for no bioattenuation zone. As noted in the Policy, "[f]or the no bioattenuation zone, the screening criteria are same as the California Human Health Screening Levels (CHHSLs) with engineered fill below sub-slab".
- Table 7 CHHSLs, Soil-Gas-Screening Numbers for Volatile Chemicals below Buildings Constructed without Engineered Fill below Sub-slab Gravel. Please note that this table is considered to be the more appropriate CHHSL guidance for comparison with sub-slab vapor samples since no attenuation across a layer of engineered fill below sub-slab gravel is assumed.
- ESL Residential Indoor Air with 0.001 attenuation factor. The California Environmental Protection Agency derived an attenuation factor of 0.001 between indoor air CHHSLs and soil vapor for Buildings Constructed without Engineered Fill below Sub-slab Gravel using the Johnson and Ettinger model with a 3.5-inch concrete slab and 4-inches of "thick crushed rock or gravel, and sand mixture" in direct contact with contamination in its 2005 *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties*. These modeling parameters are analogous to sampling that provides the concentration of vapor immediately below the concrete building slab (i.e. sub-slab vapor data). It is notable that the Site building was constructed with a 5-inch slab that is 43% thicker than the 3.5-inch slab modeled for CHHSL development.
- ESL Residential Indoor Air with 0.05 attenuation factor. This attenuation factor is provided for consideration only as it is not considered to be in conformance with the Water Board Low Threat Policy, and in many cases provides guidance concentrations below readily available analytical detection limits. The Water Board adopted CHHSLs as part of its Low-Threat Underground Storage Tank Case Closure Policy in 2012, after the DTSC released its 2011 guidance that included an attenuation factor of 0.05 for residential and commercial construction. The San Francisco Bay Regional Water Quality Control Board ("Water Board") explicitly did not embrace a 0.05 attenuation factor,

¹ San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, December 2013

stating that the database used by the EPA to derive its attenuation factor "includes sites across the country, many of which have conditions different from what are found in the San Francisco Bay region"². In the document that offered the 0.05 attenuation factor, the *Final Guidance For The Evaluation And Mitigation Of Subsurface Vapor Intrusion To Indoor Air* (DTSC, October 2011), DTSC notes that the national database used to develop this default attenuation factor "lacks sufficient information concerning commercial buildings to conclusively infer a sub-slab attenuation factor for this building scenario. Hence, the residential sub-slab attenuation factor of 0.05 should also be used for commercial buildings". However, commercial construction generally has thicker foundation slabs and greater air exchange rates than residential construction. That same DTSC document provides language that clearly states that the default attenuation factors are non-chemical and non-scenario specific, and are the most broad and generic of the multiple options for performing a screening evaluation for vapor concerns that include CHHSLs and modeling with the Johnson and Ettinger Model for estimating vapor intrusion.

Sub-slab data are below all selected guidance criteria with the following exceptions:

- A single detection of benzene collected in June 2010 prior to Caldo's most recent remediation efforts from sample location SG-118A exceeded the ESL Residential Indoor Air with 0.05 attenuation factor. Benzene was not detected in other sub-slab samples and the sole detection is below all other screening criteria.
- Detections of naphthalene in 1-foot below grade vapor samples collected from SCG-4 and CSG-6 exceeded ESL Residential Indoor Air with 0.05 attenuation factor. Naphthalene was not detected in other sub-slab samples and the detections are below all other screening criteria. Additionally, the detections of naphthalene at 5-feet below grade from the same locations are below ESL Residential Shallow Soil Gas Screening Levels.

In addition to the shallow and sub-slab vapor sampling results, the primary drivers of risk at petroleum hydrocarbon sites, the aromatic compounds benzene, toluene, ethylbenzene, and xylene(s), have not been detected above reporting limits in over 70 soil samples collected expressly to delineate shallow soil contamination at the Site since 2010 (although ethylbenzene and xylenes were detected at estimated concentrations in two samples). Soil data from the area in question has shown conclusively that volatile chemicals are not present at concentrations considered significant based on applicable regulatory guidance documents. Samples of impacted soil demonstrate conclusively that the contamination is primarily middle distillates (kerosene and diesel range aliphatic hydrocarbons) that have lost the aromatic and volatile chemicals that are the drivers of risk to indoor air and human health and the environment for petroleum hydrocarbon releases. These data fit a Site Conceptual Model understanding that the contamination in question was released over 24-years ago.

² Water Board, *User's Guide: Derivation and Application of Environmental Screening Levels*, December 2013



Therefore, based on multiple lines of evidence, there is no significant risk to indoor air at the Site for commercial or residential usage scenarios and it is unnecessary to restrict use of the Site for "sensitive uses" such as day care, schools, or health care.

Future Redevelopment/Zoning Revision

While residual concentrations of petroleum hydrocarbons in soil and groundwater at the Site are above residential standards, the Site is within an area of San Jose currently zoned commercial and there are multiple existing safeguards currently in place to prevent unrestricted residential redevelopment without a Deed Restriction. Should a future zoning revision to residential use be sought, the City of San Jose would require an environmental review per its General Plan Hazardous Materials Policy #3 that states "[s]oil and groundwater quality should be evaluated when considering development proposals". Furthermore, the closure letter issued by the DEH on March 23, 2005, included the following protective language:

Residual contamination both in soil and groundwater remains at the site that could pose an unacceptable risk under certain site development activities such as site grading excavation or the installation of water wells. The County and the appropriate planning and building department shall be notified prior to any changes in land use grading activities excavation and installation of water wells. This notification shall include statement that residual contamination exists on the property and list all mitigation actions if any necessary to ensure compliance with this site management requirement. The levels of residual contamination and any associated site risk are expected to reduce with time

Based on the multiple layers of regulatory restrictions on unrestricted redevelopment, we believe that sufficient regulatory protections are in place without restricting redevelopment of the Site to industrial or commercial use with a Deed Restriction.

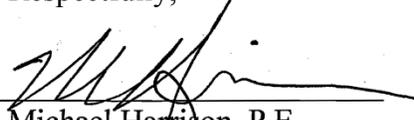
Applicable Parcels for Potential Deed Restriction

The DEH recognizes that the "property has been subdivided and has multiple owners" and recommends that the "deed restriction should be applied to all parcels". However, contamination from historical hydrocarbon fueling activities has only been identified beneath the parcel originally associated with the Caldo Oil Company operations; APN 477-73-042 (see parcel "42" on attached parcel map). Therefore, a potential Deed Restriction should be restricted to commercial condominiums overlying that parcel.



Thank you for your consideration.

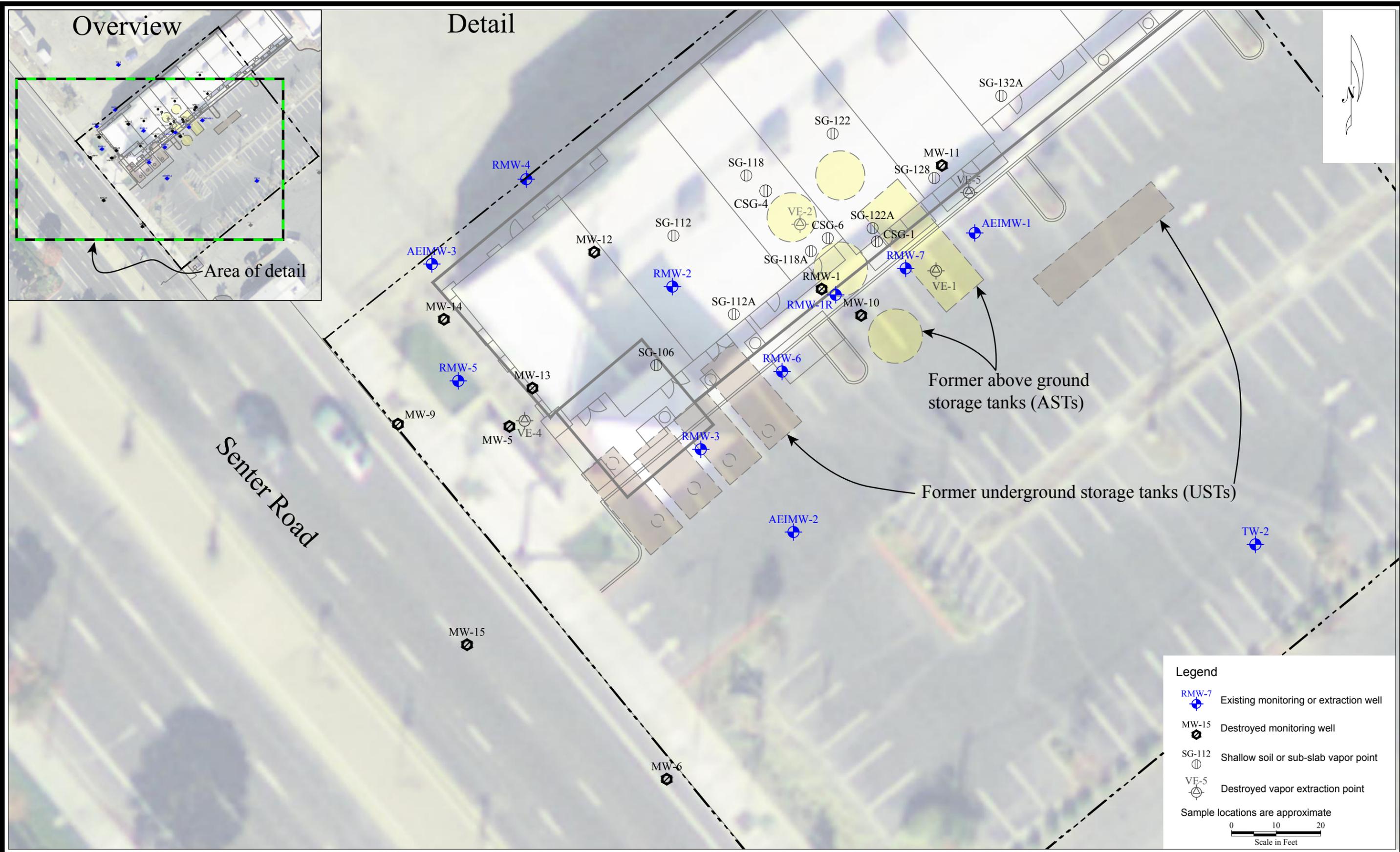
Respectfully,


Michael Harrison, P.E.
Principal Engineer



Attach.

cc: Aaron Barger, Green Valley Corporation (abarger@barryswensonbuilder.com)
Brian Kelleher, Kelleher and Associates (bkellehr@ix.netcom.com)



No.	Date	Revision	Approved	Date:
				8/25/2014
				Drawn: MH
				File Name: EA17889-14



TABLE 1: RESULTS OF SUBSLAB AND SHALLOW SOIL VAPOR INVESTIGATION
2266 Senter Road, San Jose, California

Sample ID	Sample Date	Depth	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
Shallow Soil Vapor									
Low Threat/CHHSL Residential with engineered fill*			NA	NA	85	320,000	1,100***	740,000	93
ESL Residential Shallow Soil Gas Screening Levels**			68,000	300,000	42	160,000	490	52,000	36
CSG-1-5'	5/6/2013	5	1,000	1,200	34	73	9.6	50	2.9
CSG-4-5'	5/6/2013	5	<1,000	570	<2.7	<3.2	<3.7	<3.7	5.0
CSG-6-5'	5/6/2013	5	3,700	5,000	8.8	11	<3.6	5.1	3.1
Sub-Slab and Near-Slab (1' bgs) Soil Vapor									
Low Threat/CHHSL Residential with engineered fill*			NA	NA	85	320,000	1,100***	740,000	93
CHHSL Residential w/o engineered fill****			NA	NA	36	140,000	1,400***	320,000	32
ESL Residential Indoor Air Screening Levels**			1,400	590	0.084	310	0.97	100	0.072
ESL Residential Indoor Air with 0.05 attenuation factor			28,000	11,800	2	6,200	19	2,000	1.4
ESL Residential Indoor Air with 0.001 attenuation factor			1,400,000	590,000	84	310,000	973	100,000	72
SG-132A	6/22/2010	<1	2,100	<1,000	<10	<5.0	<5.0	<15	<5.0
SG-132	6/22/2010	<1	2,400	1,200	<10	<5.0	<5.0	<15	<5.0
SG-128	6/22/2010	<1	2,100	<1,000	<10	<5.0	<5.0	<15	<5.0
SG-122A	6/22/2010	<1	2,400	<1,000	<10	<5.0	<5.0	<15	<5.0
SG-122	6/22/2010	<1	2,200	<1,000	<10	<5.0	<5.0	<15	<5.0
SG-118A	6/22/2010	<1	1,700	<1,000	11	<5.0	<5.0	<15	<5.0
SG-118	6/22/2010	<1	1,700	<1,000	<10	<5.0	<5.0	<15	<5.0
SG-106	6/23/2010	<1	2,200	1,000	<10	<5.0	<5.0	<15	<5.0
SG-112A	6/23/2010	<1	1,800	<1,000	<5.0	<5.0	<5.0	<10	<5.0
SG-112	6/23/2010	<1	1,700	<1,000	<10	<5.0	<5.0	<15	<5.0
CSG-4-1'	5/6/2013	1	<1,000	380	<2.6	<3.1	<3.5	<3.5	3.5
CSG-6-1'	5/6/2013	1	<1,000	390	<2.8	<3.3	<3.8	<3.8	3.2

Note:

Results presented in µg/m3

<# Below detection limit

Depth in feet below ground surface. Depth of samples collected in June 2010 described as follows: "a hand drill was used to create an approximately 1-inch diameter hole through the concrete of the slab foundation to at least 3 to 4 inches below the slab" (RRM, 2/14/2012)

TPHd Total Petroleum Hydrocarbons as diesel (middle distillates)

TPHg Total Petroleum Hydrocarbons as gasoline

NA Not available

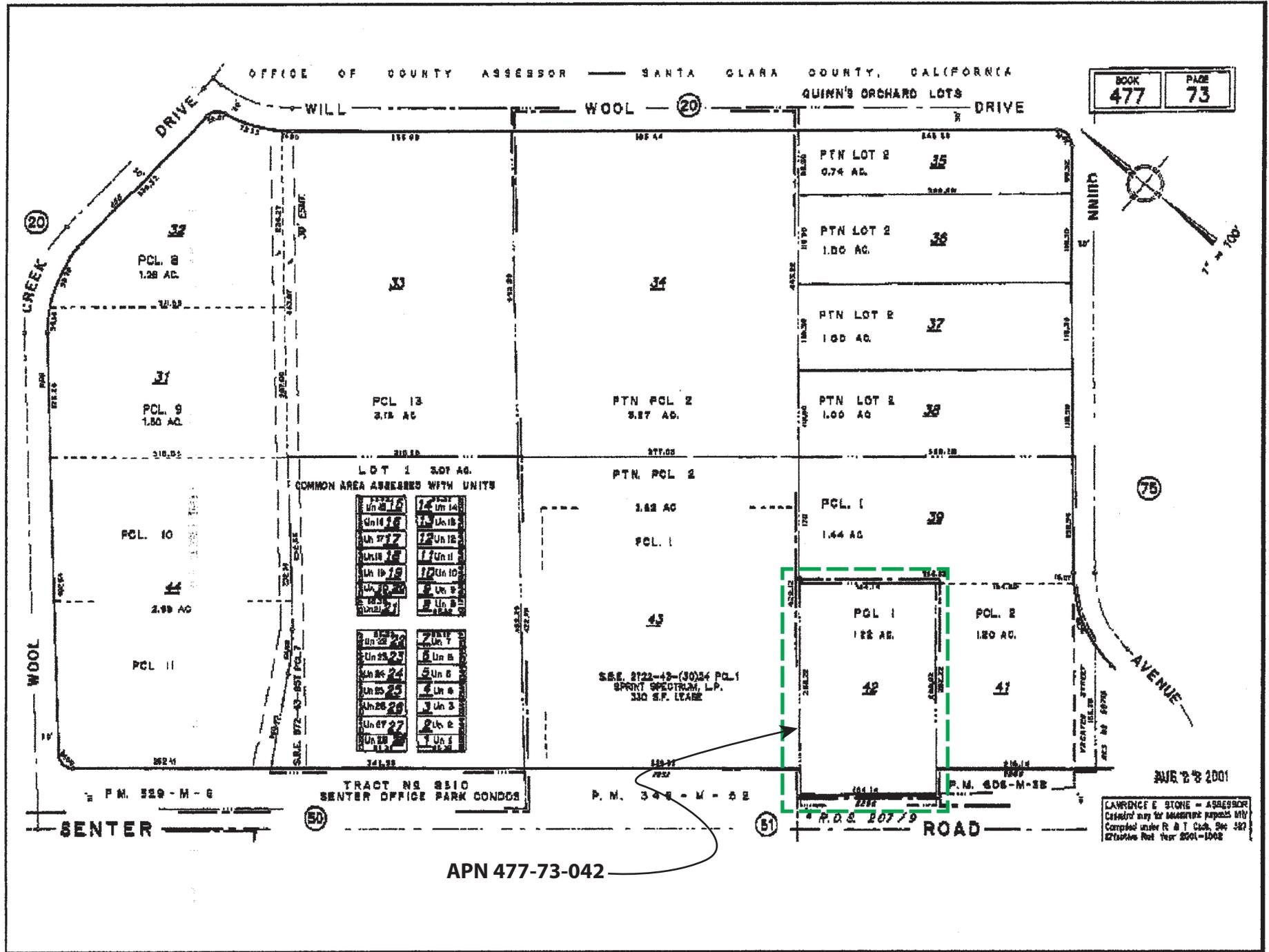
* Low-Threat UST Policy, Appendix 4, No Bioattenuation Zone, and Table 6 California Human Health Screening Levels ("CHHSLs"), Soil-Gas-Screening Numbers for Volatile Chemicals below Buildings Constructed with Engineered Fill below Sub-slab Gravel

** Table E-3, Ambient and Indoor Air Screening Levels, Commercial/Industrial Exposure, California Regional Water Quality Control Board, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* ("ESL"), December 2013

***Ethylbenzene CHHSLs from California Human Health Screening Levels For Ethylbenzene (OEHA, September 2010)

**** Table 7 CHHSLs, Soil-Gas-Screening Numbers for Volatile Chemicals below Buildings Constructed without Engineered Fill below Sub-slab Gravel

Data excerpted from RRM, *Dual Phase Extraction (DPE) and Cap Implementation Summary Report*, June 28, 2013



LOT 1 3.07 AC.
COMMON AREA ADRESSED WITH UNITS

Un 15	Un 14
Un 16	Un 13
Un 17	Un 12
Un 18	Un 11
Un 19	Un 10
Un 20	Un 9
Un 21	Un 8
Un 22	Un 7
Un 23	Un 6
Un 24	Un 5
Un 25	Un 4
Un 26	Un 3
Un 27	Un 2
Un 28	Un 1

S.E.E. 2722-49-(30)24 PCL 1
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