



EXECUTIVE OFFICER’S REPORT
December 1, 2021 – December 31, 2021

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State and Regional

1. Personnel Report – Sandra Lopez

New Hires – None

Vacancies

- Environmental Scientist, Non-Point Source Unit, South Lake Tahoe. This position will coordinate closely with interagency partners and the Tahoe Science Advisory Council to assess Lake Tahoe nearshore conditions and other factors influencing Lake Tahoe water quality and clarity, and aquatic invasive species. The incumbent will also help identify outstanding information needs for future work and coordinate applicable implementation actions, including those associated with implementation of the Lake Tahoe TMDL.
- Senior Engineering Geologist (Specialist), Leviathan Mine, South Lake Tahoe. This position will evaluate and provide advice to Water Board management regarding the Water Board's cleanup and abatement actions needed at the Leviathan Mine to comply with the USEPA's Administrative Abatement Action Order.
- Water Resource Control Engineer, Forestry / Dredge & Fill Unit, South Lake Tahoe. This position reviews and inspects U.S. Forest Service timber harvest and vegetation management, and/or ecological restoration projects.

- Engineering Geologist, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe. This position will oversee/direct site investigation and cleanup activities at various sites, such as underground storage tank sites, dry cleaner sites, mines, landfills, and Department of Defense sites.
- Senior Water Resource Control Engineer, Wastewater and Agriculture Unit, Victorville. This position will supervise staff performing tasks related to existing, new, expanded, and improved wastewater treatment and disposal facilities, onsite wastewater treatment systems and septic systems, dairies, heifer ranches, stormwater, and site cleanup program sites.
- Scientific Aid, Wastewater and Agriculture Unit, Victorville. This position supports staff primarily through review of submitted self-monitoring reports, along with other special projects.

Departures

- Anne Holden, Environmental Scientist, Non-Point Source Unit, South Lake Tahoe
- John Steude, Engineering Geologist, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe
- Tom Gavigan, Engineering Geologist, Forestry / Dredge & Fill Unit, South Lake Tahoe

North Lahontan Region

2. Update on Regional Tetrachloroethene (PCE) Groundwater Contamination in South “Y” Area of South Lake Tahoe, January 2022 – Abby Cazier

The purpose of this article is to provide you with an update on the Site Cleanup Subaccount Program (SCAP) South Y Regional Tetrachloroethylene (PCE) Plume Investigation (Regional PCE Plume Investigation) activities that have occurred since the last EO Report update from October of 2020. The SCAP Regional PCE Plume Investigation activities were completed by the State Water Resources Control Board’s contractor, AECOM, and AECOM’s subcontractors with oversight from Lahontan Water Board staff. The SCAP Regional PCE Plume Investigation activities completed during 2021 included the installation, development, and sampling of nine sentry wells for 1) the Lukins Brothers Water Company (LBWC) well No. 1 (LBWC #1; three wells total) and well No. 5 (LBWC #5; two wells total) and 2) Tahoe Keys Water Company (TKWC) wells No. 1 (TKWC #1; two wells total) and well No. 2 (TKWC #2; two wells total). The purpose of sentry well installation and monitoring is to provide water purveyors advance warning of potential PCE migration upgradient from water supply wells.

The siting and design of the sentry wells for LBWC #1, LBWC #5, TKWC #1, and TKWC #2 was based on lithology and PCE groundwater data from the Regional Plume Characterization Investigation completed during 2019 and 2020 which included the advancement of 79 cone-penetration test (CPT) and sonic borings. The sentry well locations and the approximate lateral extent of PCE concentrations exceeding the

California Maximum Contaminant Level (MCL) of 5 micrograms per liter ($\mu\text{g/L}$) are shown on Figure 2.1. The rationale for the sentry wells installed for LBWC #1, LBWC #5, TKWC #1, and TKWC #2 are described below.

LBWC #1 is located near the northwestern PCE plume edge and is LBWC's only operational municipal supply well without wellhead treatment (four out of their five wells have been impaired due to the PCE groundwater contamination and three of their five wells have been removed from service [destroyed]). PCE has not been detected above the laboratory method detection limit in LBWC #1. Three sentry wells, LBWC1-SW-1, LBWC1-SW-2, and LBWC1-SW-3 were installed to monitor the PCE concentrations at depths above or within the well screen interval of LBWC #1 (Figure 2.1).

LBWC #5 is located at the northern PCE plume edge and was taken off-line in July 2014 when PCE was first detected above the MCL. PCE was detected at LBWC #5 at a concentration of $64 \mu\text{g/L}$ in 2020. As of July 2021, the well is back online following the installation of a granular activated carbon treatment system. LBWC5-SW-1 was designed to monitor the high concentrations of PCE detected during 2020 drilling activities. LBWC5-SW-2 was designed to monitoring PCE concentrations within the well screen interval of LBWC #5. (Figure 2.1).

TKWC #1 is located at the northeastern PCE plume edge and is impacted by PCE contamination. In 2016, PCE was detected at a maximum concentration of $4 \mu\text{g/L}$ in TKWC #1. The migration of the PCE plume towards TKWC #1 may result in PCE concentrations that exceed the MCL of $5 \mu\text{g/L}$ and would affect well operation (e.g., the well may be taken off-line or require wellhead treatment). TKWC1-SW-1 was designed to monitor the PCE where the maximum concentration of PCE was detected above the TKWC#1 well screen interval. TKWC1-SW-2 was designed to monitor the PCE concentrations within the well screen interval of TKWC #1. (Figure 2.1).

TKWC #2 is located at the northwestern PCE plume edge, is impaired by PCE contamination, and has been operating with a granular activated carbon treatment system since 2012. The maximum PCE concentration detected in TKWC #2 was $31 \mu\text{g/L}$ in May 2020. PCE concentrations detected in TKWC #2 continue to increase and TKWC is concerned that if wellhead treatment system influent concentrations exceed $50 \mu\text{g/L}$, the drinking water source will be defined by the State Water Resources Control Board Division of Drinking Water as an extremely impaired source of drinking water. This would require additional monitoring and treatment system backup requirements, which would increase the cost to operate and maintain the wellhead treatment system. TKWC2-SW-1 and TKWC2-SW-2 were installed to monitor the PCE concentrations upgradient from TKWC #2 at depths that corresponded to TKWC #2 top screen interval (Figure 2.1).

Following sentry well installation in July and August of 2021, the wells were developed, surveyed, and sampled for volatile organic compounds (VOC) including PCE. Groundwater samples were collected from the nine sentry wells using passive diffusion bags (PDBs) installed on September 24, 2021, and removed from the wells between October 19 and October 20, 2021. Two of the nine wells were sampled using the low-flow purge sampling method immediately after the PDBs were removed to confirm the

sampling methods yield similar analytical results and validate the future use of PDBs for sentry well groundwater sampling events.

The sentry well PCE groundwater sampling results (including low-flow purge sampling results for TKWC2-SW-1 and LBWC5-SW-1 and duplicate sampling results for TKWC1-SW-1) are shown on the draft site map provided as Figure 2.2 (note, the concentration contours on Figure 2.1 have not been updated with the new Sentry Well data). The Semi-Annual Sentry Well Groundwater Monitoring Report is pending and will be uploaded to GeoTracker as soon as it becomes available.

Anticipated SCAP Tasks for 2022

The anticipated SCAP field tasks that will be completed during the 2022 field season include:

- Continue to develop a private and small-community water supply well inventory to identify additional supply wells to be sampled to ensure the water supply wells are providing water that is safe for human consumption.
- Conduct a soil gas investigation to evaluate the potential human health risks associated with potential soil vapor intrusion resulting from the PCE contamination. Soil gas samples will be collected downgradient from suspected source areas in locations where elevated concentrations of PCE have been detected in shallow groundwater. A Tier I human health risk evaluation will be conducted using the soil gas analytical data.
- Properly destroy priority municipal, private, and small-community water supply wells that have been identified as a vertical conduit(s) (e.g., responsible for the vertical migration of PCE in groundwater impacting deeper water-bearing unit[s]). Inactive wells, including monitoring wells installed for site-specific investigations, that have not been properly destroyed are included in the evaluation.
- Conduct two sentry well semi-annual groundwater monitoring events.

Interested in More Information?

Additional information on the SCAP Regional PCE Plume Investigation activities, including AECOM's *Sentry Well Installation and Sampling Work* dated July 13, 2021, *Sentry Well Installation Report* dated December 23, 2021, 2019 and 2020 CPT and sonic boring logs, analytical data from the Regional PCE Plume Investigation, and sentry well construction logs can be found on GeoTracker at https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000007984.

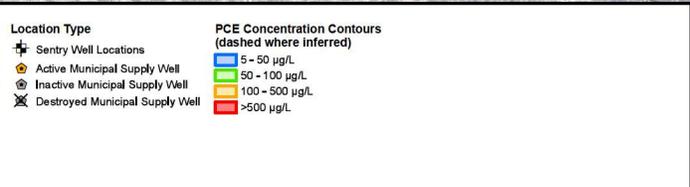
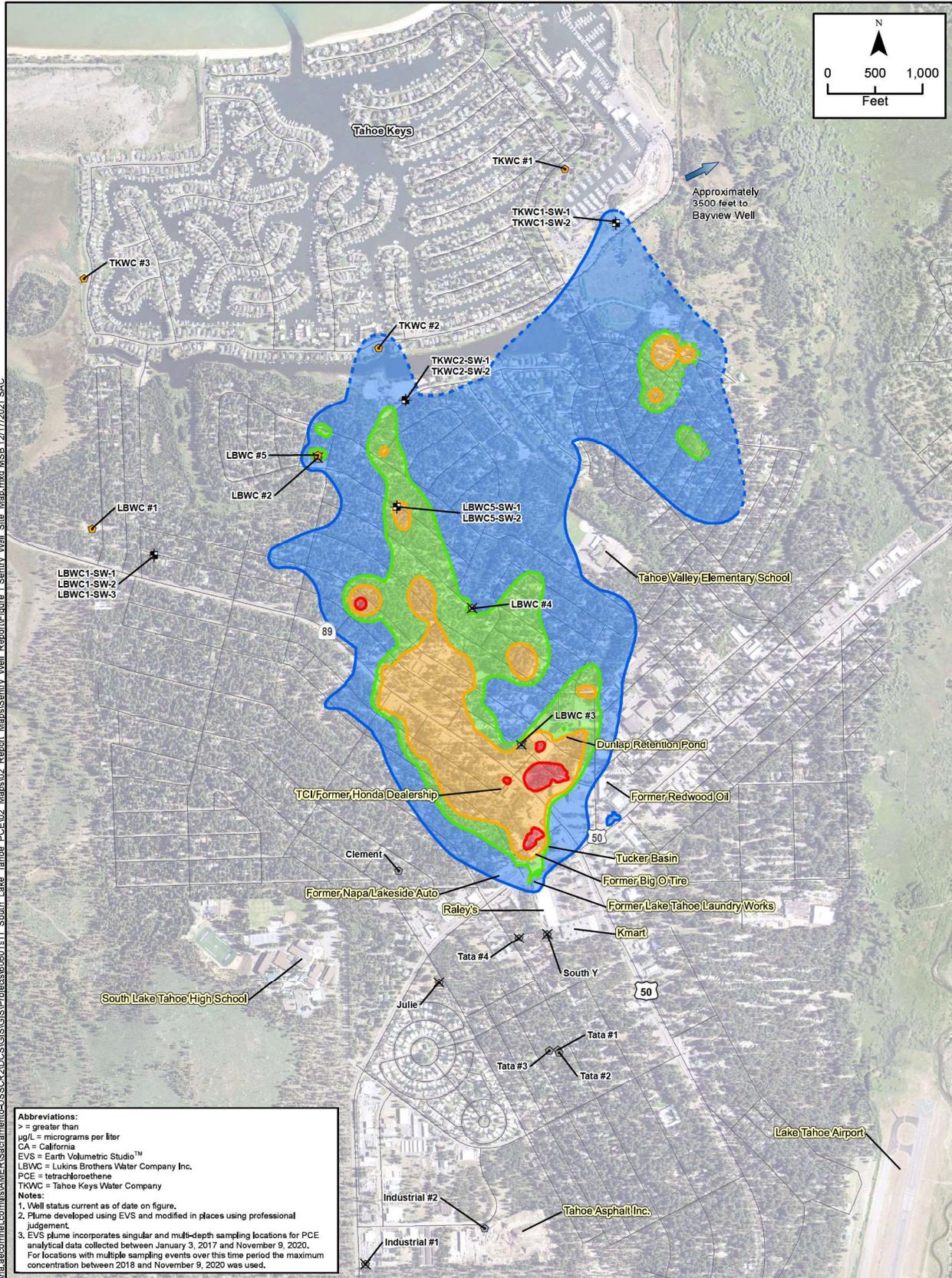
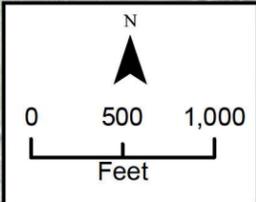
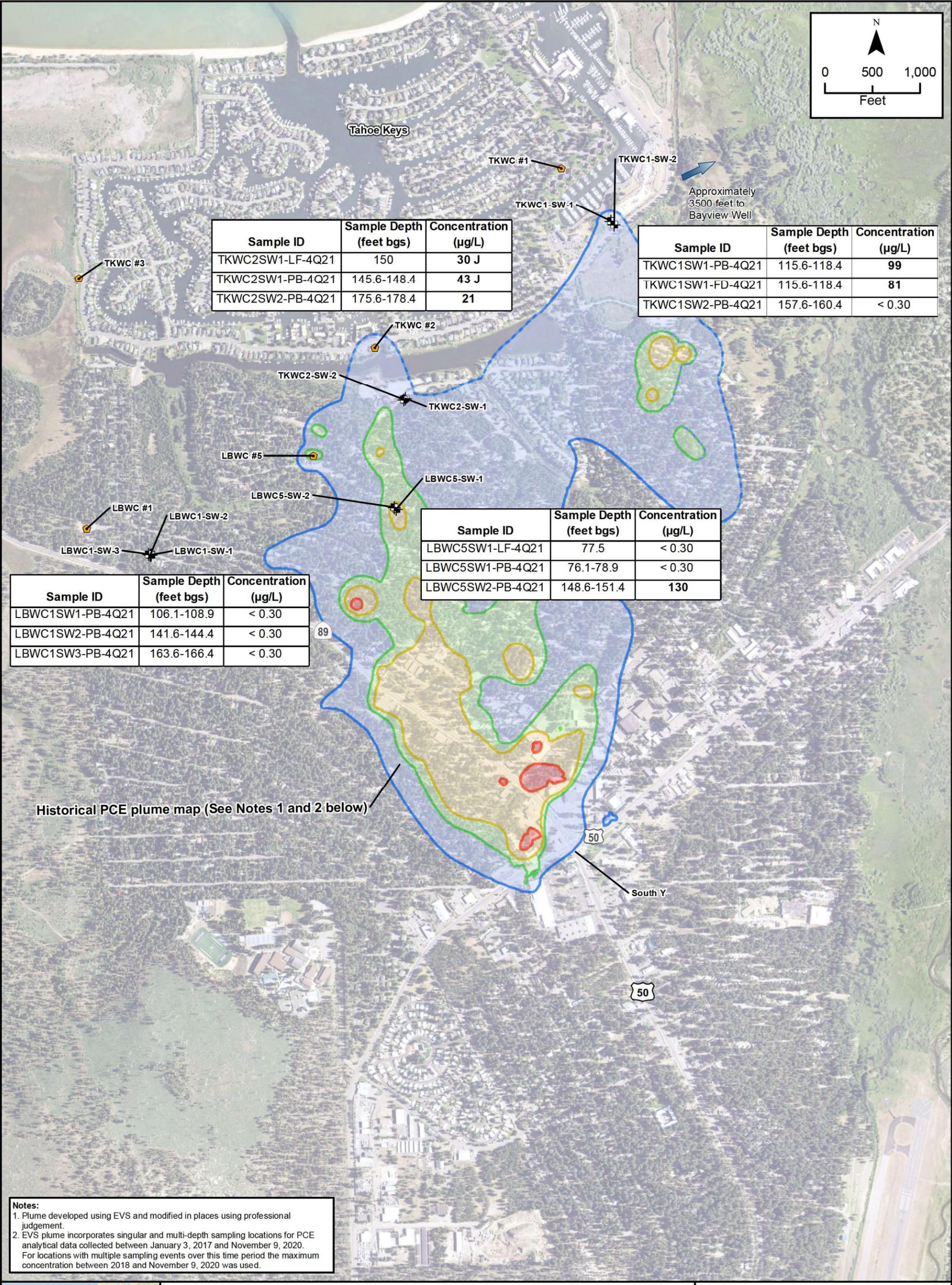


Figure 2.1
Sentry Well
Location Map

South "Y" PCE Plume
 South Lake Tahoe, CA

Z:\Sacramento-USSCR2\DCS\GIS\Projects\160601911 South Lake Tahoe PCE\02 Maps\02 Report Maps\Sentry Well Report\Figure 3 Sentry Well PCE Concentrations.mxd MSB_12/13/2021_SAC



Sample ID	Sample Depth (feet bgs)	Concentration ($\mu\text{g/L}$)
TKWC2SW1-LF-4Q21	150	30 J
TKWC2SW1-PB-4Q21	145.6-148.4	43 J
TKWC2SW2-PB-4Q21	175.6-178.4	21

Sample ID	Sample Depth (feet bgs)	Concentration ($\mu\text{g/L}$)
TKWC1SW1-PB-4Q21	115.6-118.4	99
TKWC1SW1-FD-4Q21	115.6-118.4	81
TKWC1SW2-PB-4Q21	157.6-160.4	< 0.30

Sample ID	Sample Depth (feet bgs)	Concentration ($\mu\text{g/L}$)
LBWC5SW1-LF-4Q21	77.5	< 0.30
LBWC5SW1-PB-4Q21	76.1-78.9	< 0.30
LBWC5SW2-PB-4Q21	148.6-151.4	130

Sample ID	Sample Depth (feet bgs)	Concentration ($\mu\text{g/L}$)
LBWC1SW1-PB-4Q21	106.1-108.9	< 0.30
LBWC1SW2-PB-4Q21	141.6-144.4	< 0.30
LBWC1SW3-PB-4Q21	163.6-166.4	< 0.30

Notes:
 1. Plume developed using EVS and modified in places using professional judgement.
 2. EVS plume incorporates singular and multi-depth sampling locations for PCE analytical data collected between January 3, 2017 and November 9, 2020. For locations with multiple sampling events over this time period the maximum concentration between 2018 and November 9, 2020 was used.



Location Type

- ⊕ Sentry Well Locations
- 📍 Active Municipal Supply Well

PCE Concentration Contours (dashed where inferred)

- 5 - 50 $\mu\text{g/L}$
- 50 - 100 $\mu\text{g/L}$
- 100 - 500 $\mu\text{g/L}$
- >500 $\mu\text{g/L}$

Abbreviations:
 > = greater than
 < = less than
 $\mu\text{g/L}$ = micrograms per liter
 # = number
 bgs = below ground surface
 CA = California
 EVS = Earth Volumetric Studio™
 ID = identification
 J = estimated value
 LBWC = Lukins Brothers Water Company Inc.
 PCE = tetrachloroethene
 TKWC = Tahoe Keys Water Company

Figure 2.2
Sentry Well PCE Concentrations
October 2021 Semi-Annual
Groundwater Sampling (Event 1)

South "Y" PCE Plume
 South Lake Tahoe, CA

3. Bear Valley Cleaners, Neighborhood Canvassing Event – Shelby Barker

Bear Valley Cleaners is a commercial dry-cleaning facility located at 16200 Bear Valley Road in the City of Victorville within the Renaissance Shopping Center.

Tetrachloroethene (PCE) has been detected in soil vapor at the site to a depth of 300 feet below ground surface (bgs). Additionally, PCE has been detected in soil vapor at adjacent businesses located in the shopping center and in the residential neighborhood to the north (Tokay Street). PCE has not been detected in groundwater during the last groundwater sampling event in April 2021.

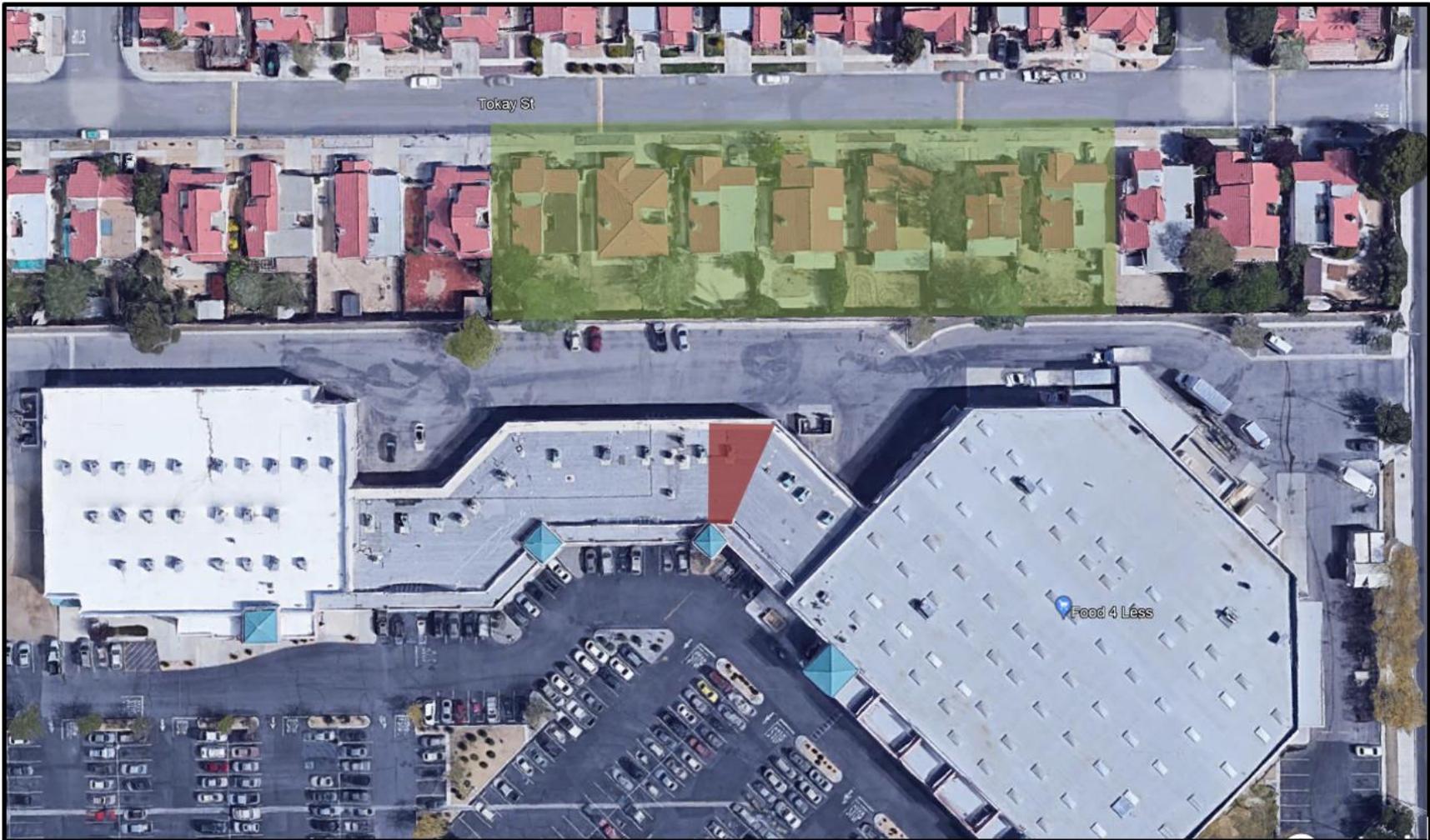
Due to health-risk concerns associated with indoor air exposure to PCE vapors for the residential homes on Tokay Street, the Water Board is requiring the Bear Valley Cleaners responsible party (The Woodmont Company, the appointed receiver for the property owner of Renaissance Shopping Center) to perform indoor air sampling for seven of the homes located on Tokay Street (Figure 3.1). Fact sheets regarding the environmental investigation as well as vapor intrusion risks and indoor air sampling procedures were prepared in coordination with the State Water Resources Control Board, Office of Public Participation. Because of a limited response from residents during previous canvassing events in June 2021, Water Board staff Jan Zimmerman and Shelby Barker reached out to San Bernardino County Fire Department, Hazardous Materials Division, and the City of Victorville for outreach assistance.

On Wednesday evening, December 1, 2021, Jan Zimmerman and Shelby Barker were joined by Mr. Peter Saavedra with San Bernardino County Fire Department and

Mr. Frank Estrada with the City of Victorville Water Department to knock on doors at seven homes on Tokay Street. With their assistance, Water Board staff were able to make personal contact with five of the seven homeowners and/or tenants and provide them with the fact sheets and inform them that a representative of The Woodmont Company would be contacting them to obtain access to their property/residence for indoor air sampling. One of the seven homes was vacant. Over the following two days, Shelby Barker was able to speak with all remaining homeowners and/or tenants with exception of the homeowner for the vacant residence. The fact sheets were mailed to that homeowner's mailing address on December 2, 2021.

Later in December 2021, Water Board staff received and responded to the draft access agreement provided by The Woodmont Company. The Woodmont Company sent out the access agreements to all homeowners and tenants via certified mail on

December 22, 2021. The vapor intrusion field work is tentatively scheduled to commence during the third week of January 2022.



- Bear Valley Cleaners
- Residential Homes for Vapor Intrusion Sampling

Image Source: Google Earth Pro

Figure 3.1: Site Vicinity Map

