

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**MEETING OF MARCH 13-14, 2019  
SOUTH LAKE TAHOE**

**ITEM 10**

**SOUTH Y PCE GROUNDWATER CONTAMINATION UPDATE**

**CHRONOLOGY**

1989	PCE detected in municipal water supply wells near intersection of Hwy 50 and Hwy 89 in South Lake Tahoe.
2003 – 2017	Multiple site-specific/localized investigations and site-specific remediation activities conducted.
May 12, 2017	Cleanup and Abatement Order (CAO) No. R6T-2017-0022 adopted. Directs multiple responsible parties associated with former Lake Tahoe Laundry Works (LTLW) site to continue onsite remediation and to investigate the lateral and vertical extent of PCE groundwater contamination originating from the LTLW site.

**BACKGROUND**

Tetrachloroethene (PCE) is a persistent pollutant and was a common ingredient in many dry-cleaning and metal degreasing products. Several businesses in the South Y area (area surrounding the intersection of Hwy 89 North and Hwy 50) are known or suspected to have used, stored, or disposed of PCE or PCE-containing products, with discharges occurring as early as the 1970s. The discharges have impacted groundwater over an estimated 400-acre area extending in a north-northeasterly direction from near the intersection of Hwy 89 North and Hwy 50 to the Tahoe Keys development. Multiple municipal supply wells and some small private water system wells have been impacted affecting three water districts (South Tahoe Public Utility District, Lukins Brothers Water Company, and Tahoe Keys Water Company) and private well owners. The three water districts have and continue to provide the South Lake Tahoe community with a safe water supply.

**ISSUES**

Water Board members will be given brief presentations of activities currently underway by Water Board staff, a representative of the South Lake Tahoe (SLT)-area Water Purveyors, and a representative of the LTLW Working Parties.

**DISCUSSION**

The Water Board will be provided three presentations from Water Board staff, the Water Districts, and the LTLW Working Parties. The presentations will highlight the activities each one has undertaken in response to the PCE contamination and/or Water Board action. The activities include investigations and studies, remediation, changes in systems operations, pursuit of funding, coordination, and providing information to the public.

**PUBLIC OUTREACH/INPUT**

Water Board staff has been participating in a series of public meetings being hosted by South Tahoe Public Utility District as part of its Proposition 1 Feasibility Study evaluating remediation alternatives. These meetings occur approximately one per quarter and there have been three during the past year. Water Board staff will pick up the responsibility for hosting such meetings later this year after the Feasibility Study is completed. Water Board staff and the Water Purveyors also provided presentations to the South Lake Tahoe City Council in early February 2019.

**PRESENTERS**

Jeff Brooks, Senior Engineering Geologist, Lahontan Water Quality Control Board  
John Thiel, General Manager, South Tahoe Public Utility District  
Paul HOFFEY, Principal Environmental Scientist, Lake Tahoe Laundry Works Working Parties

**RECOMMENDATION**

This is an information item only. The Water Board may provide direction to staff as appropriate.

ENCLOSURE	ITEM	BATES NUMBER
1	Water Board staff presentation	10 - 3
2	Water Purveyors presentation	10 - 11
3	Lake Tahoe Laundry Works Working Parties presentation	10 - 17

# **ENCLOSURE 1**



# South Y PCE Groundwater Contamination Update

## Agenda Item 10

Jeff Brooks, P.G.  
Senior Engineering Geologist  
Lahontan Regional Water Quality Control Board

March 14, 2019  
South Lake Tahoe



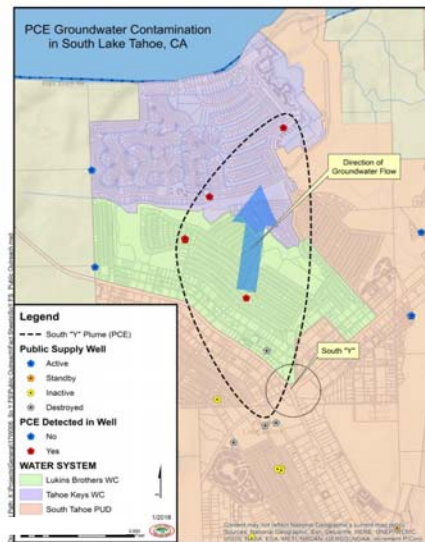
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## Presentation Outline

- Overview
- Water Board Actions
- Questions?

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## South Y Overview



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## Water Board Staff Actions

- Lake Tahoe Laundry Works (LTLW) Cleanup and Abatement Order (CAO)
- Site Cleanup Subaccount Program Investigation (SCAPP)
- Potential Source Identification
- Stakeholder and Public Outreach

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## LTWL CAO Implementation

- Investigate PCE contamination originating from LTWL site.
  - Identify full lateral and vertical extent
  - Evaluate preferential pathways
- Continue onsite remediation
- Develop work plan to address any offsite contamination from LTWL



## SCAP-Funded Investigation

- Funding approved by State Water Board Division of Financial Assistance
- Primary tasks
  - Regional characterization
  - Source identification



## Staff Identification of Potential Sources

- Preliminary source investigation
- Request for information/investigation
- Coordinated with SCAP source investigation

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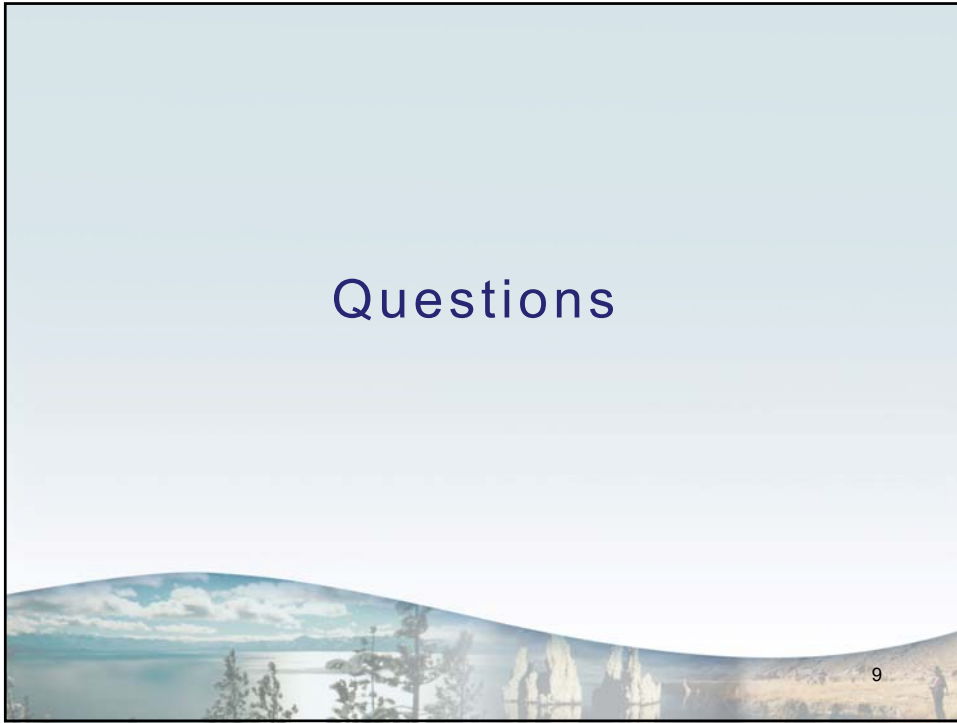
## Stakeholder and Public Outreach

- Regular meetings with the three water purveyors affected by regional PCE contamination
- Strategic Advisory Group meetings
- Public information meetings

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# Questions





## **ENCLOSURE 2**



# SOUTH LAKE TAHOE PCE CONTAMINATION

March 13-14, 2019

Lahontan Regional Water Quality Control Board | South Lake Tahoe



Lukins Brothers  
Water Company, Inc.

## INTRODUCTIONS

### NAME

### TITLE

### AFFILIATION

John Thiel, PE

General Manager



Jennifer Lukins

Assistant Manager



Lukins Brothers  
Water Company, Inc.

Kirk Wooldridge

General Manager



**Wells Shown Accounted for 72% of South Tahoe's Public Water Supply for Water Year 2017**



## CHALLENGE

- PCE contaminant plume 400+ acres
- Impaired both private and public water system wells
- PCE Detection
  - LBWC – 3 Wells
  - TKWC – 2 Wells
- Water production capacity reduced by 3.25 MGD

## SOUTH TAHOE PCE PROJECTS

- 2008** ○ **PCE detected in TKWC Well 2 over MCL, well shut-down**
- 2013** ○ GAC filtration installed on TKWC Well 2, capacity limited
- 2014** ○ **PCE detected in LBWC Well 2&5 over MCL, wells shut-down, STPUD intertie opened**
- 2015** ○ Preliminary Eng Report completed for treatment alternatives on LBWC Well 2&5
- 2016** ○ **PCE detected in TKWC Well 1 under MCL**
- 2016-2017** ○ Groundwater Investigation (grant funding)
- 2017** ○ Planning, design & engineering for GAC treatment on LBWC Well 5 (grant funding)  
TKWC Facilities Plan developed to address PCE
- 2018** ○ Monitor TKWC Well 2 for vertical contamination extent  
GAC filtration at LBWC Well 5 implementation grant awarded (grant funding)
- 2017-Present** ○ Feasibility Study to identify recommended alternatives (grant funding)



# SOUTH TAHOE PCE COSTS

AGENCY	LOCAL COST	SWRCB GRANTS	TOTAL
South Tahoe Public Utility District	\$673,812	\$504,295	\$1,178,107
Lukins Brother Water Company	\$324,000	\$137,000	\$461,000
Tahoe Keys Water Company	\$789,000	-	\$789,000
<b>TOTAL</b>	<b>\$1,786,812</b>	<b>\$641,295</b>	<b>\$2,428,107</b>



## REQUEST FOR LRWQCB

### NEAR-TERM

- Sentinel wells to monitor PCE movement toward water sources
- TKWC Well 1 piping modification to be able to hook up to portable GAC
- Zone testing for TKWC Well 2 to determine extent of contamination
- Well destruction for LBWC Well 2 and LBWC Well 4 to remove possible contaminant pathways

### LONG-TERM

Support for implementation funding for recommended alternative identified in Feasibility Study

The background of the slide is a light blue gradient. The top half features a dynamic water splash with various droplets and bubbles. The bottom half is a solid light blue band containing the text "QUESTION AND ANSWERS" in a bold, black, sans-serif font. Several large, realistic water droplets are scattered across the bottom blue band, some overlapping the text.

# QUESTION AND ANSWERS



## **ENCLOSURE 3**



**SUMMARY OF WORKING PARTIES' ACTIVITIES AT  
FORMER LAKE TAHOE LAUNDRY WORKS (LTLW)  
2017-Present**

**Presentation to  
Lahontan Water Board  
March 13-14, 2019**

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**FIELD WORK SINCE 2017 - BY THE NUMBERS**

- **14 Field Mobilizations**
- **122 Separate Sample Locations Tested**
- **313 Samples Analyzed**
- **> \$1,000,000 Costs Incurred**
- **2 Parties Performing Work**

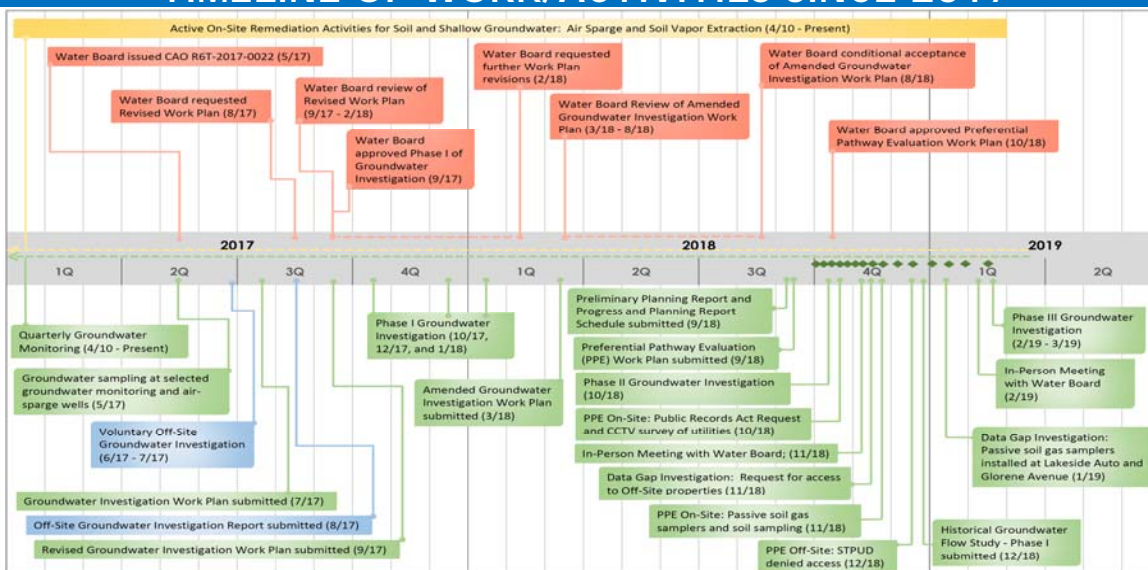
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## BREAKDOWN OF WORKING PARTIES' FIELD WORK - SINCE 2017

Task	Date	Number of Sample Locations	Number of Samples Analyzed
LTLW Groundwater and Soil Vapor Monitoring	Quarterly 2017-2019	22	101
Voluntary Off-Site Groundwater Investigation	June-July 2017	16	80
Phase I Groundwater Investigation	Oct 2017-Jan 2018	7	35
Phase II Groundwater Investigation	October 2018	5	25
Off-Site Monitoring Well Pairs	November 2018	6	6
Stage 1 (On-Site) Preferential Pathway Evaluation	December 2018	31	31
Data Gap Investigation (Former Lakeside Auto/Glorene Ave.)	January 2019	35	35
<b>Totals</b>		<b>122</b>	<b>313</b>

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## TIMELINE OF WORK/ACTIVITIES SINCE 2017



### Notes

#### REMEDATION OF ON-SITE SOIL AND GROUNDWATER

#### WATER BOARD DIRECTIVES, ACTIONS, DOCUMENT REVIEW

#### WORKING PARTIES REPORTS VOLUNTARY FIELD INVESTIGATIONS/ACTIVITIES

#### WORKING PARTIES FIELD INVESTIGATIONS/ACTIVITIES PER CAO/WATER BOARD REQUEST

Progress and Planning Reports (PPR) and Weekly or Bi-Weekly Calls with Water Board PPR#1 (10/1/18), PPR#2 (10/9/18), PPR#3 (10/16/18), PPR#4 (10/23/18), PPR#5 (10/30/18), PPR#6 (11/6/18), PPR#7 (11/13/18), PPR#8 (11/20/18), PPR#9 (11/27/18), PPR#10 (12/4/18), PPR#11 (12/18/18), PPR#12 (1/4/19), PPR#13 (1/15/19), PPR#14 (1/29/19), and PPR#15 (2/12/19).

## WORKING PARTIES' NEXT STEPS THROUGH APRIL 1, 2019

### ■ Perform Phase III Groundwater Investigation

**Purpose:** Investigate Groundwater PCE Distribution in Lateral and Upgradient Directions from LTLW

- Collect and Analyze 38 Groundwater Samples from Target Depths at 10 Locations

### ■ Complete Stage 2 (Off-Site) Preferential Pathway Evaluation

**Purpose:** Investigate Potential Contaminant Migration Inside and Along Utilities

- Secure Access to STPUD Sanitary Sewer (Requested November 2018)
- Secure Access to Former Big O Tires Property (Requested November and December 2018)
- Obtain STPUD Sanitary Sewer Maintenance Records (Requested October and November 2018)

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## WORKING PARTIES NEXT STEPS THROUGH APRIL 1, 2019

### ■ Complete Data Gap Investigation

**Purpose:** Investigate Possible Contamination (Identified During Step-Out and Step-Down Process) In and Around Tucker Avenue Storm Water Retention Basin and Former Big O Tires Property

- Secure Access to Former Big O Tires Property (Requested November and December 2018)
- Obtain Water Board Information on and Letters to Other Potential Source Properties (Requested November 2018)

### ■ Complete Historical Groundwater Flow Studies

**Purpose:** Assess Effect of Municipal Supply Well Pumping on Historical Groundwater Flow Direction and Contaminant Migration

- Obtain STPUD Aquifer Testing and Monitoring Data Conducted Under Proposition 1 Groundwater Grant Program (Requested January 2019)

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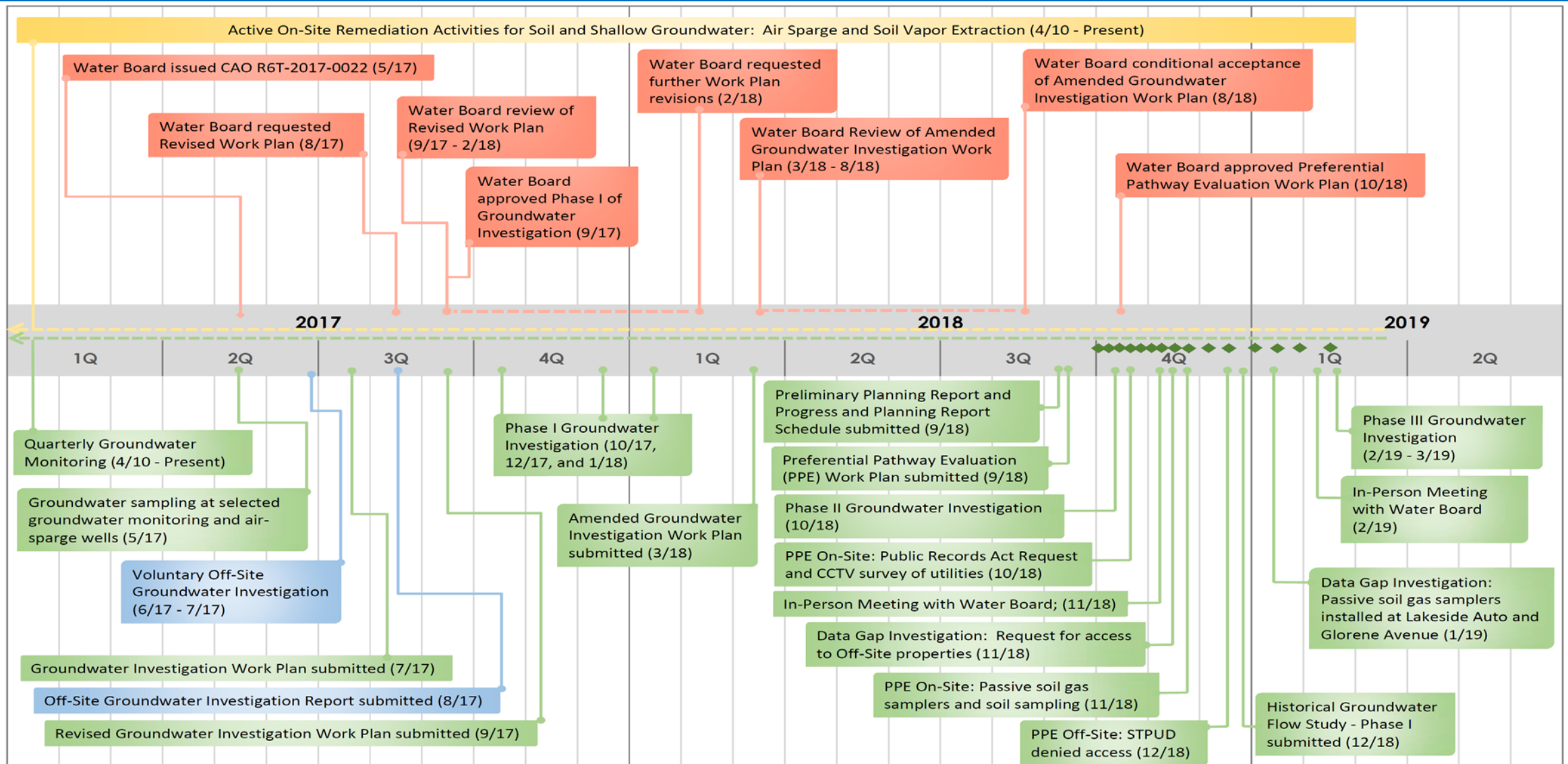
## WORKING PARTIES' NEXT STEPS THROUGH APRIL 1, 2019

- **Prepare Technical Report to Water Board (due April 1, 2019)**

**Purpose:** Summarize Investigative Activities Conducted During Prior 6-Month Period

- Present Technical Information and Analysis Required by CAO (e.g., boring logs, groundwater PCE contours, cross sections)
- Synthesize Results of Investigation to Date
- Evaluate Next Steps as Part of Dynamic and Iterative Work Strategy

# TIMELINE OF WORK/ACTIVITIES SINCE 2017



## Notes

### REMEDICATION OF ON-SITE SOIL AND GROUNDWATER

### WATER BOARD DIRECTIVES, ACTIONS, DOCUMENT REVIEW

### WORKING PARTIES REPORTS VOLUNTARY FIELD INVESTIGATIONS/ACTIVITIES

### WORKING PARTIES FIELD INVESTIGATIONS/ACTIVITIES PER CAO/WATER BOARD REQUEST

◆ Progress and Planning Reports (PPR) and Weekly or Bi-Weekly Calls with Water Board  
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