



# GROUNDWATER AT THE SOUTH Y

FEBRUARY 7, 2018 6:00 PM – 7:30 PM  
CITY OF SOUTH LAKE TAHOE | COUNCIL CHAMBERS




**Lukins Brothers  
Water Company, Inc.**



# AGENDA

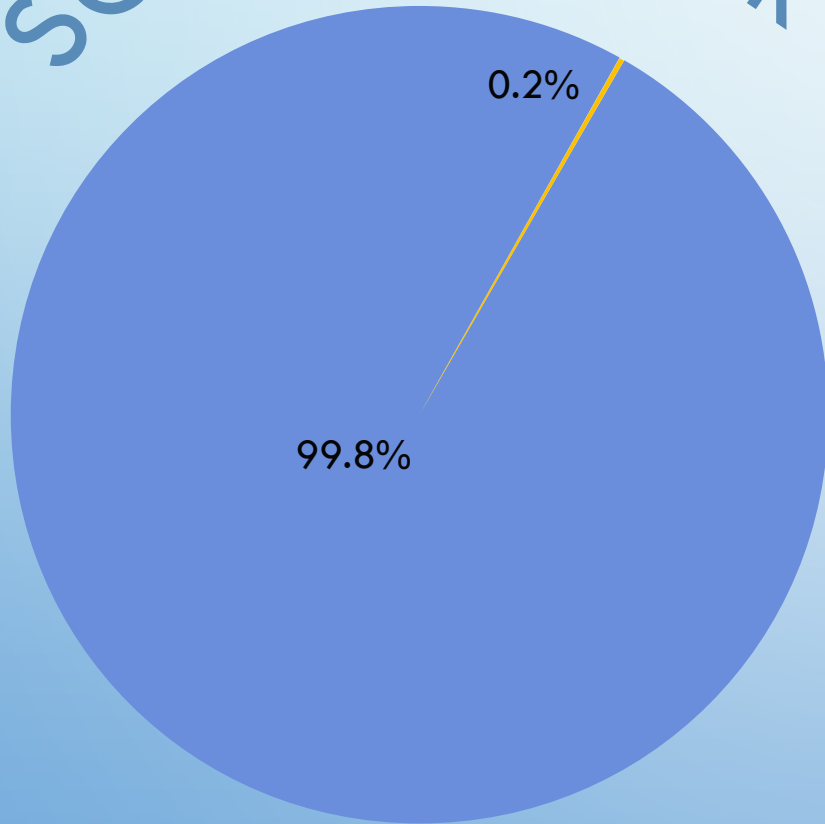
- INTRODUCTIONS
- SOUTH Y GROUNDWATER AND WATER AGENCY OVERVIEW
- CURRENT SITUATION
- WATER AGENCY APPROACH TO SOLUTION
  - LUKINS BROTHERS WATER COMPANY
  - TAHOE KEYS WATER COMPANY
  - SOUTH TAHOE PUBLIC UTILITY DISTRICT
- NEXT STEPS
- QUESTIONS AND ANSWERS

# INTRODUCTIONS

NAME	TITLE	AFFILIATION
Richard Solbrig, P.E.	General Manger	
Jennifer Lukins	Assistant Manager	 Lukins Brothers Water Company, Inc.
Rick Robillard, P.E.	Manager	
Ivo Bergsohn, PG, CHG	Hydrogeologist	
Sachi Itagaki, P.E.	Principal Engineer	Kennedy/Jenks Consultants

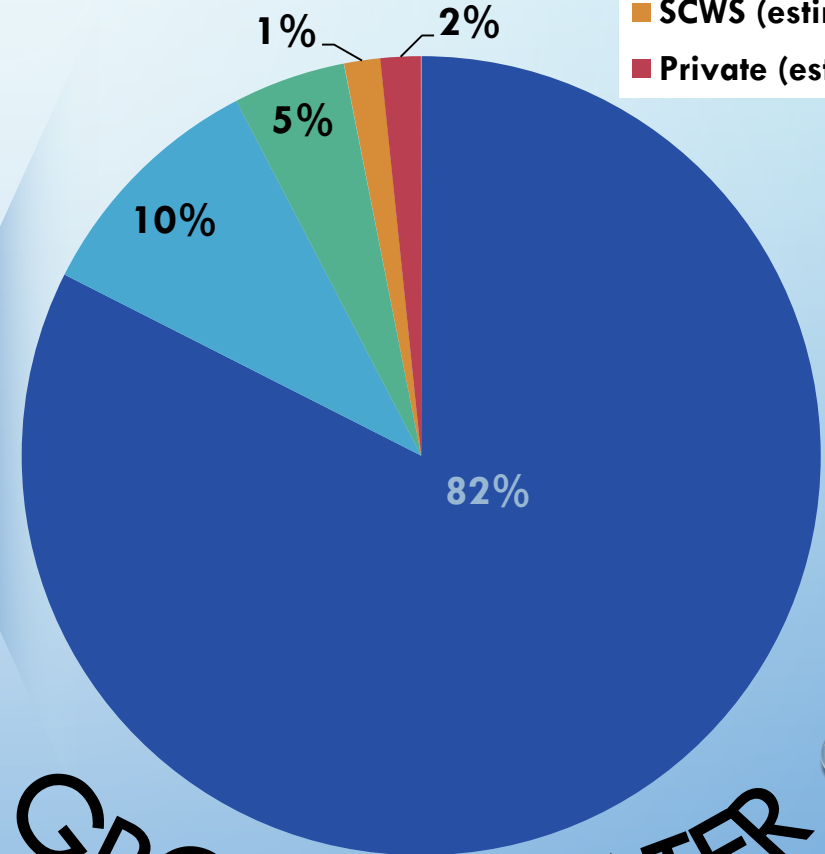
# DRINKING WATER

## SOURCE WATER



■ GROUNDWATER ■ SURFACE WATER

- STPUD
- TKWC
- LBWC
- SCWS (estimated)
- Private (estimated)

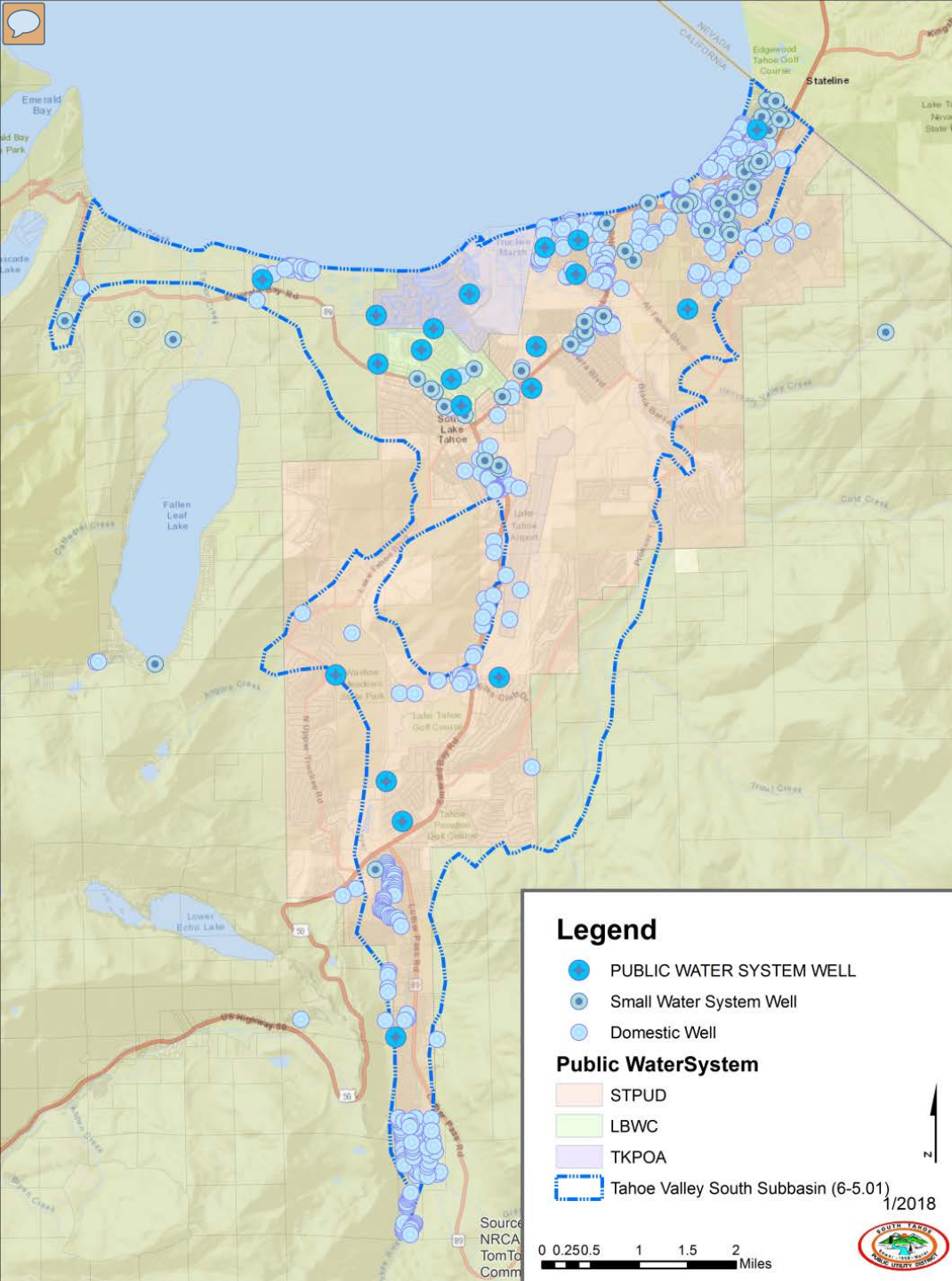


## GROUNDWATER



# GROUNDWATER BASIN

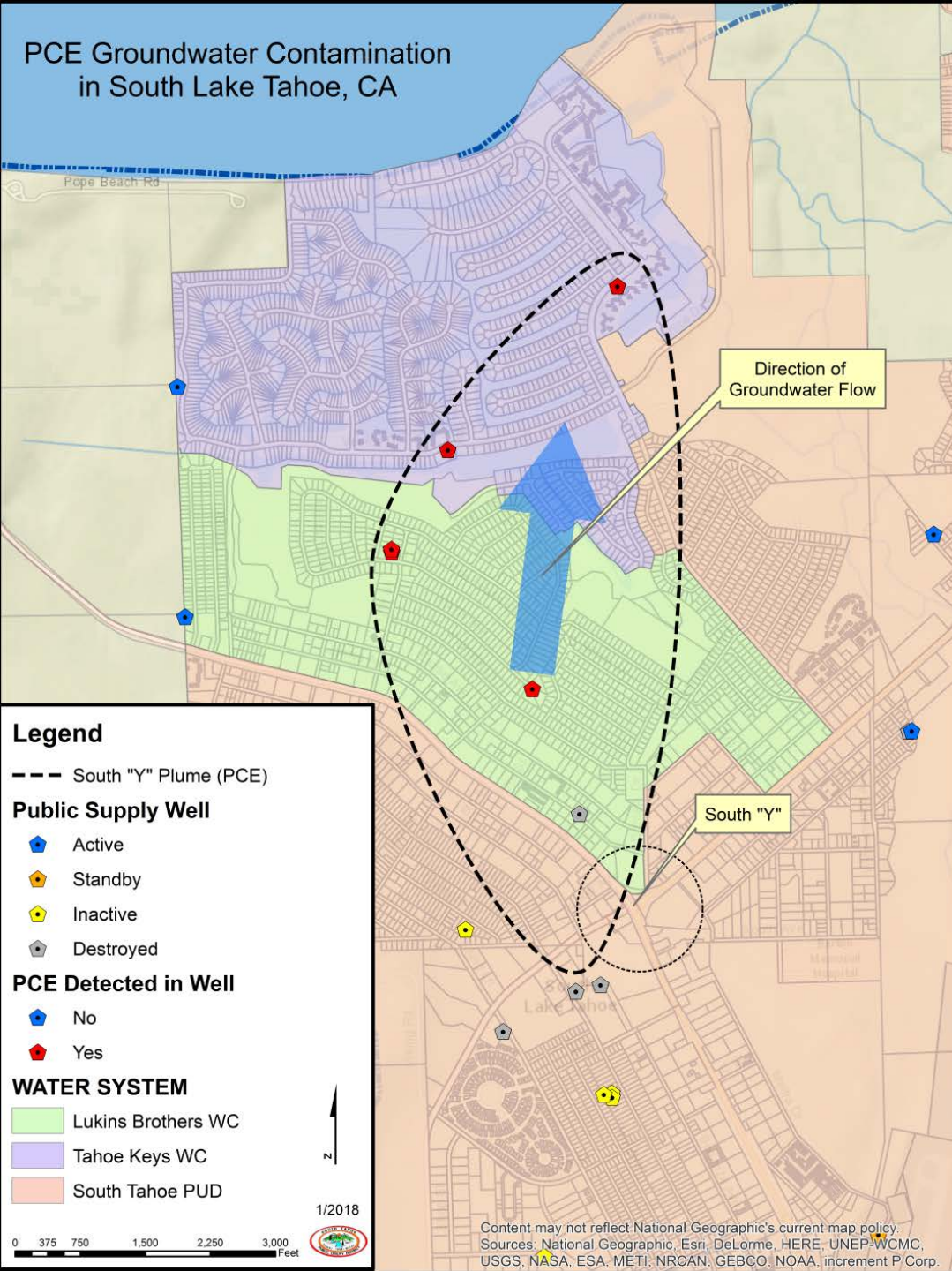
- TAHOE VALLEY SOUTH BASIN
- SEDIMENTARY GEOLOGIC BASIN
- HIGHLY PRODUCTIVE FOR GROUNDWATER
- RECHARGED FROM SURROUNDING WATERSHEDS
- EXCELLENT WATER QUALITY
- HIGH RELIANCE ON WELLS
- SUSCEPTIBLE TO CONTAMINATION



# WHAT IS TETRACHLOROETHYLENE (PCE)?

- MANUFACTURED CHEMICAL USED FOR DRY CLEANING AND METAL DEGREASING
- **1970S** - PEAK USE AS A DRY CLEANING SOLVENT
- **1980S** – PROBABLE CARCINOGEN, TOXIC POLLUTANT,
- DRINKING WATER MAXIMUM CONTAMINANT LEVEL (MCL) = 5 PARTS PER BILLION
- IN GROUNDWATER ENVIRONMENT – DENSE NON-AQUEOUS PHASE LIQUID (DNAPL)
  - SINKER - HEAVIER THAN WATER
- CAN BE REMOVED BY TREATMENT FOR DRINKING WATER USE.

# PCE Groundwater Contamination in South Lake Tahoe, CA



# CURRENT SITUATION

- PCE CONTAMINANT PLUME > 400 ACRES (SOUTH Y PLUME)
- IMPAIRED BOTH PRIVATE AND PUBLIC WATER SYSTEM (PWS) WELLS
- TOTAL AVAILABLE WATER PRODUCTION CAPACITY REDUCED BY 3.25 MGD (~5,000 AVERAGE CA HOUSEHOLDS)
- PCE DETECTIONS
  - LBWC – 3 WELLS
  - TKWC – 2 WELLS

# WATER AGENCY APPROACH TO SOLUTIONS



LUKINS BROTHERS WATER COMPANY



TAHOE KEYS WATER COMPANY



SOUTH TAHOE PUBLIC UTILITY DISTRICT



# LUKINS BROTHERS WATER COMPANY

**Summer 2014** ○ Initial detection over MCL

**May 2015** ○ Preliminary Engineering Report for water system improvements finalized  
Began engineering for granular activated carbon (GAC) filtration system at Well 5 location.

**July 2017** ○ Planning grant awarded

Construction plans and specifications nearing 90% completion

California Department of Water Resources State Revolving Fund Application has been submitted for funding construction of GAC Treatment

**2018/2019** ○ Anticipated construction of GAC Facility

**January 2018** ○ Submitted California Department of Water Resources State Revolving Fund Application for Feasibility study to locate potential new water sources for Lukins



# TAHOE KEYS WATER COMPANY

- 2009** ○ PCE detected in Tahoe Keys well #2 and required to shut well down in 2009 by State of California. Exceeded maximum contaminant level (MCL)
- 2012** ○ Installed granular activated carbon filtration in 2012 on well #2 to remove PCE. Limits the pumping capacity of well #2 below original capacity.
- 2016** ○ PCE detected in Tahoe Keys Well #1 below the state required MCL, Well will be required to be shut down if value exceeds MCL.
- 2017** ○ Hired engineering consultant to develop a facilities plan to address the PCE contamination and provide alternatives to deliver safe, reliable water to the Tahoe Keys water users.

# SOUTH TAHOE PUBLIC UTILITY DISTRICT



State Water Resources Control Board

MAR 30 2017

Ivo Bergsohn  
South Tahoe Public Utility District  
1275 Meadow Crest Drive  
South Lake Tahoe, CA 96150

PROPOSITION 1 GROUNDWATER GRANT FUNDING PRELIMINARY AWARD;  
SOUTH TAHOE PUBLIC UTILITY DISTRICT (DISTRICT); FEASIBILITY STUDY OF  
REMEDIAL ALTERNATIVES TO MITIGATE TETRACHLOROETHYLENE (PCE)  
CONTAMINATION (PROJECT) (FAAST #38046)

Dear Mr. Bergsohn:

Project, as described  
in this planning project is



## Kennedy/Jenks Consultants

10850 Gold Center Drive, Suite 350  
Rancho Cordova, CA 95670  
916-858-2700  
916-858-2754 (Fax)

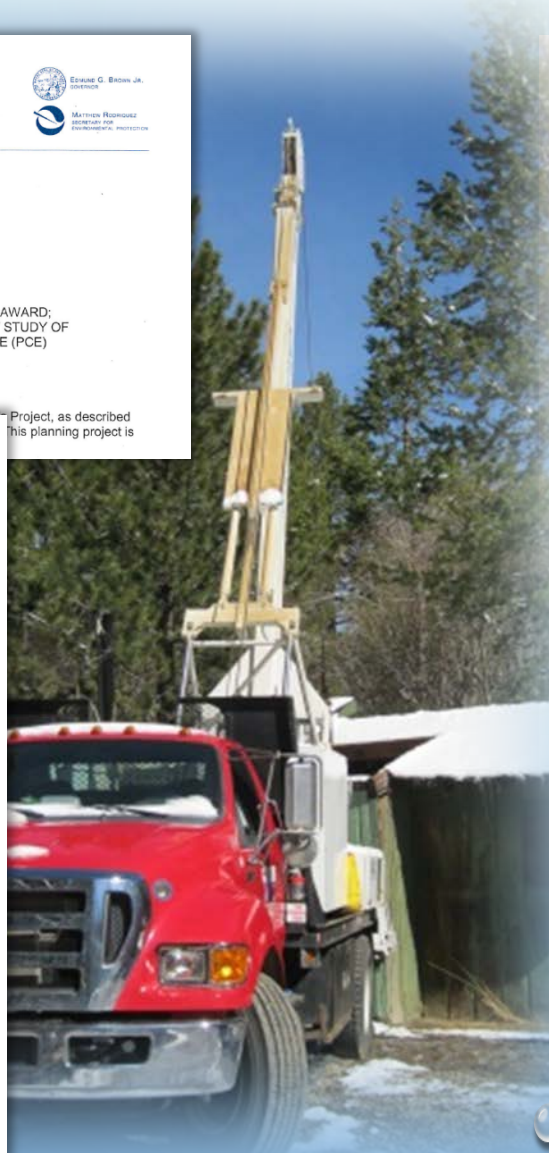
### Tahoe Valley South Basin (6-5.01) 2014 Groundwater Management Plan

22 December 2014

Prepared for  
**South Tahoe Public Utility  
District**  
1275 Meadow Crest Drive  
South Lake Tahoe, CA 96150

KJ Project No. 1470005'00

- GROUNDWATER SUSTAINABILITY AGENCY (GSA)
  - PLANNING & IMPLEMENTATION
  - GROUNDWATER STUDIES & INVESTIGATIONS
  - BASIN MONITORING
  - DEVELOP PROJECTS/ACTIONS TO ADDRESS PROBLEMS
- GROUNDWATER MANAGEMENT PLAN
  - BMO#1 - MAINTAIN A LONG-TERM GROUNDWATER SUPPLY
  - BMO #2 - MAINTAIN AND PROTECT GROUNDWATER QUALITY
- OBTAIN GRANT FUNDING FOR GROUNDWATER PROJECTS
  - SOUTH Y FEASIBILITY STUDY OF REMEDIAL ALTERNATIVES



# SOUTH Y FEASIBILITY STUDY

## **PURPOSE :**

EVALUATE FEASIBILITY OF PUMPING AND TREATMENT OF GROUNDWATER UPSTREAM TO REDUCE CONTAMINATION TO DRINKING WATER WELLS DOWNSTREAM

### Main Elements



Public  
Outreach



Pre-design  
Investigation

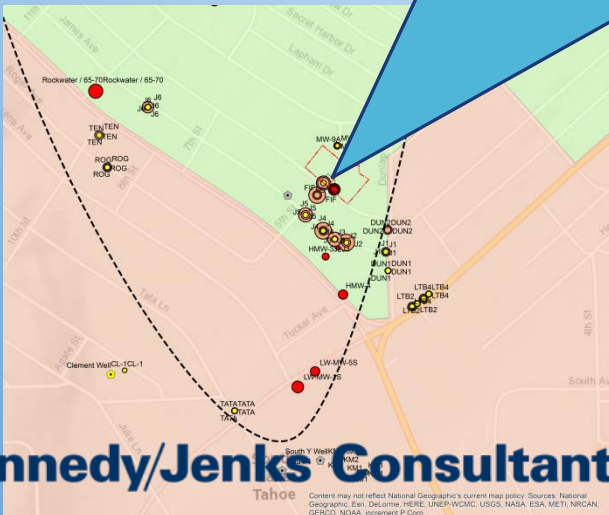


Feasibility  
Study

- EVALUATION OF ALTERNATIVES FOR TREATMENT AND DISPOSAL
- DEFINE FACILITY NEEDS AND ESTIMATE COSTS FOR IMPLEMENTATION
- IMPLEMENTATION PLAN FOR RECOMMENDED ALTERNATIVE

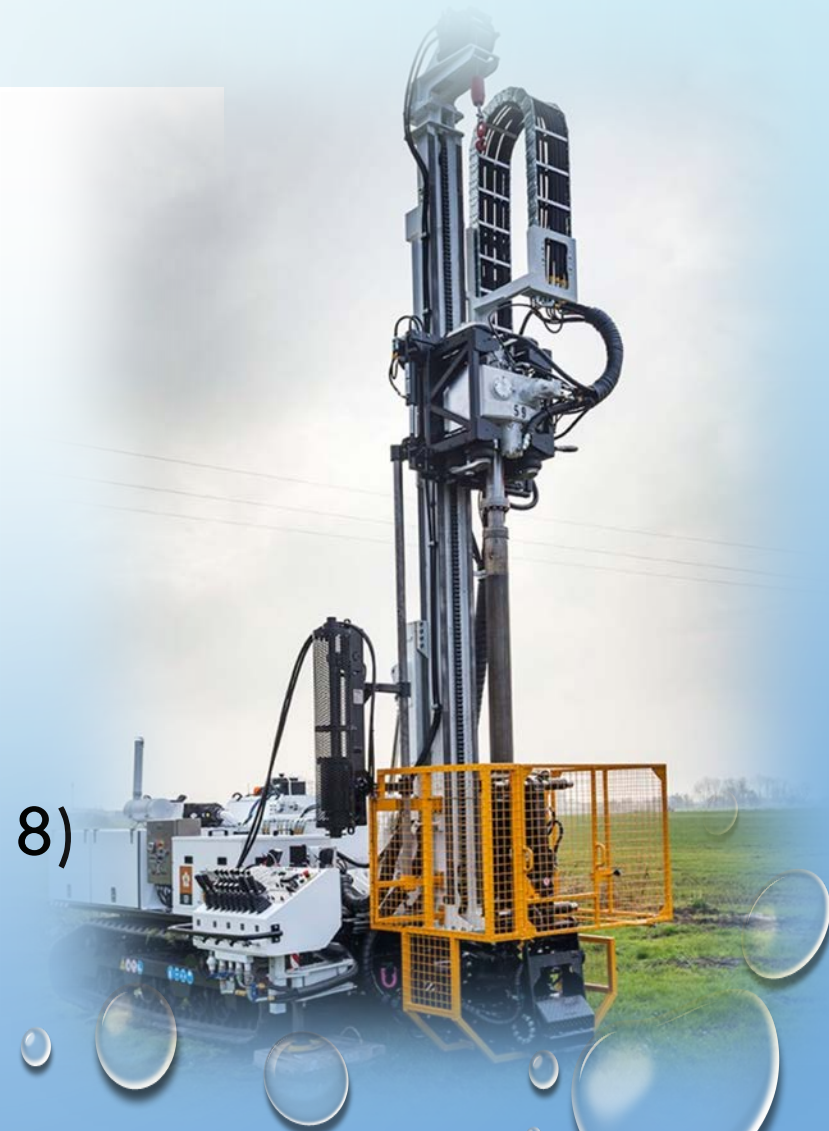
# SOUTH Y FEASIBILITY STUDY- UPCOMING ACTIVITIES

- PRE DESIGN INVESTIGATION
  - TEST WELL DRILLING & AQUIFER TESTING
- 5<sup>TH</sup> STREET & ELOISE AVE.
- DEADLINE: JUNE 2018



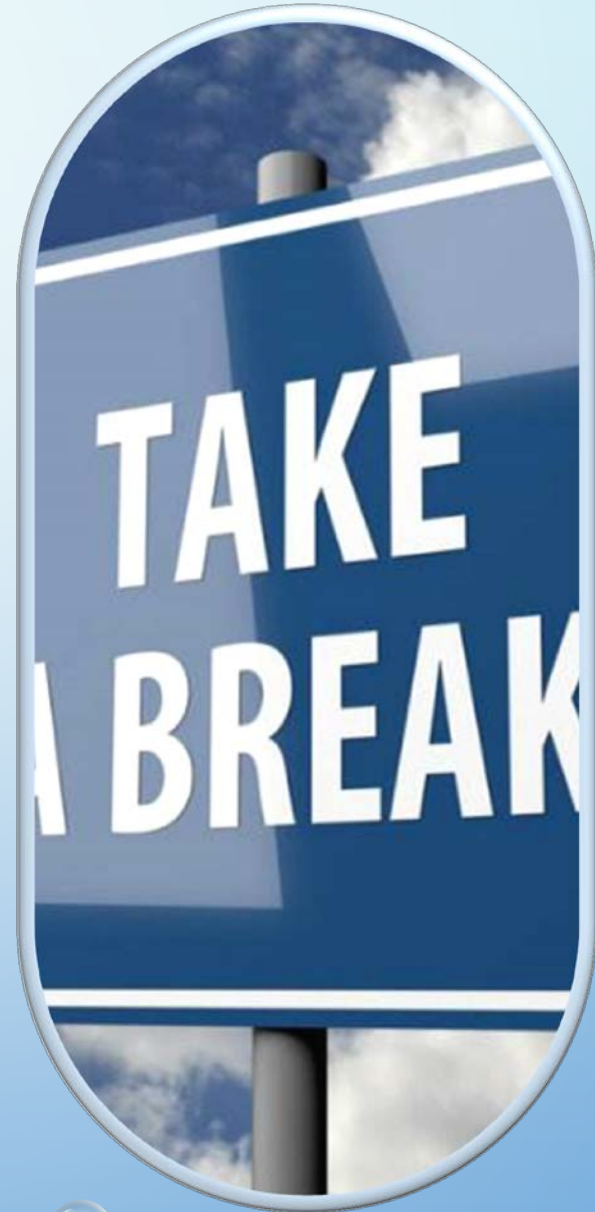
# NEXT STEPS

- COMPLETE PRE-DESIGN INVESTIGATION
- CONDUCT GROUNDWATER MODELING
- START FEASIBILITY STUDY
- PUBLIC WORKSHOP (JUNE 2018)



**BREAK**

**10- MINUTES**





# QUESTION AND ANSWERS

