

IWV-TAC Agenda Item 3a

Proposition 1 Funding**Task 8: Water Quality & Stable Isotope Sampling Analysis**

❖ Objectives

- Establish a baseline – measure changes
- Fill existing data gaps
- Refine existing monitoring network (GSP § 354.34)
- Validate the HCM (GSP § 354.14)
- Update MODFLOW Model (GSP § 354.16)

**Water Quality & Stable Isotope Analyses**

❖ TDS and General Chemistry Analysis

- 30 Groundwater Wells
 - o 20 CASGEM Wells
 - o 10 Domestic Wells
- 10 Springs

❖ Isotope Analysis

- 14 Sampling Sites
Note: Sample locations will overlap with WQ sampling sites

Water Quality Sampling Constituents	
Water Quality Parameters	Method
<i>Field Analysis</i>	
pH	Field meter
Temperature	Field meter
Dissolved Oxygen	Field meter
Conductivity	Field meter
<i>BC Laboratories Analysis</i>	
Conductivity	EPA 120.1
Total Dissolved Solids	EPA 160.1
Turbidity	EPA 180.1
Total Cations	Calculation
Total Anions	Calculation
Total Hardness (as CaCO ₃)	Calculation
Total Alkalinity (as CaCO ₃)	EPA 310.1
Calcium (Ca)	EPA 6010B
Magnesium (Mg)	EPA 6010B
Sodium (Na)	EPA 6010B
Potassium (K)	EPA 6010B
Hydroxide (OH)	EPA 310.1
Carbonate (CO ₃)	EPA 310.1
Bicarbonate (HCO ₃)	EPA 310.1
Sulfate (SO ₄)	EPA 300.0
Chloride (Cl)	EPA 300.0
Nitrate (as NO ₃)	EPA 300.0
Fluoride (F)	EPA 300.0
<i>Desert Research Institute Analysis</i>	
Dissolved Inorganic Carbon-13	U of Nevada, Reno
Dissolved Inorganic Carbon-14	U of Nevada, Reno
Dissolved Organic Carbon-13	U of Arizona
Dissolved Organic Carbon-14	U of Arizona
Deuterium	UC Davis SIF
Oxygen-18	UC Davis SIF

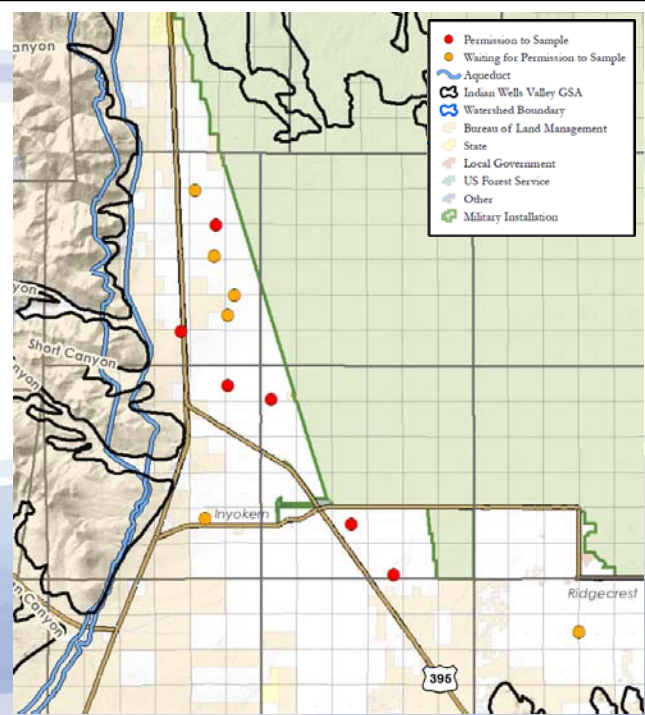


Water Quality Sampling - Domestic Wells

❖ Planned for Mid-September – Early-October

Steps for Purge Sampling

1. Coordinate with well owner
2. Purge 3 well casing volumes
3. Establish stabilization of parameters:
 - *pH*
 - *Specific Conductance*
 - *Dissolved Oxygen*
 - *Turbidity*
4. Collect samples and send to CA State Certified Laboratory for Analysis



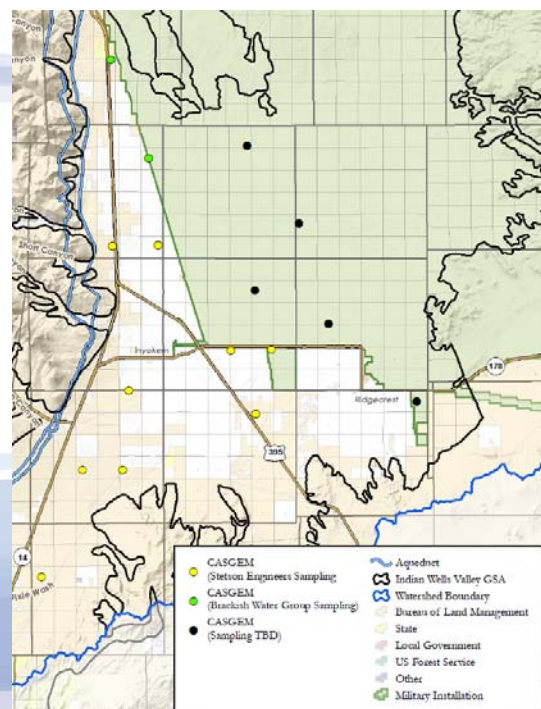
Water Quality Sampling - CASGEM Wells

❖ Performed by subcontractor

❖ Scheduled for week of October 28, 2019

Steps for Low-Flow Sampling

1. Deploy low-flow bladder pump
2. Establish stabilization of parameters:
 - *pH*
 - *Specific Conductance*
 - *Dissolved Oxygen*
 - *Turbidity*
3. Collect samples and send to CA State Certified Laboratory for Analysis

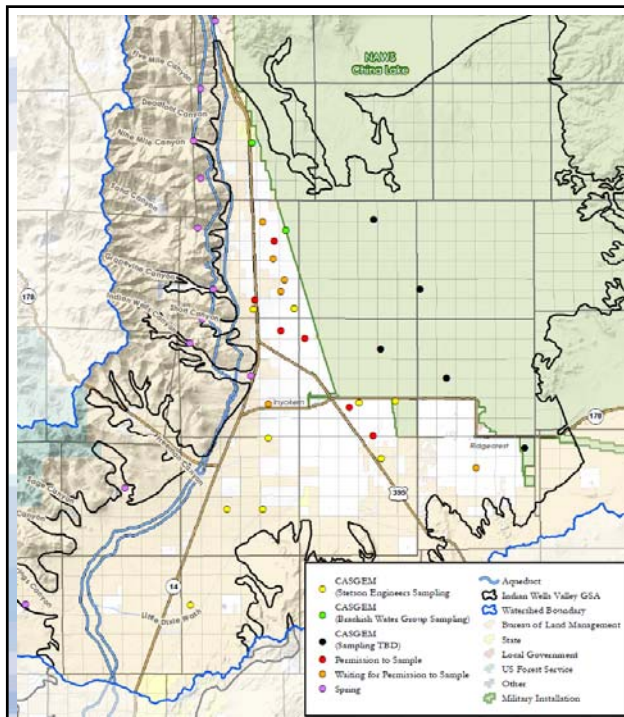


Water Quality Sampling - Springs

❖ Planned for Mid-September – Early-October

Steps for Spring Sampling

1. Confirm site condition & presence of flowing water
2. Collect grab sample and send to CA State Certified Laboratory for Analysis



Summary

Domestic Wells

❖ Planned for Mid-September – Early October (weekend)

CASGEM Wells

❖ Subcontractor scheduled for October 28 – November 1

Springs

❖ Concurrent with CASGEM and Domestic Well Sampling