SAUGUS FORMATION AQUIFER WATER SUPPLY WELL NC-13 NON-TIME CRITICAL REMOVAL ACTION

Public Meeting
October 2, 2025

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AGENDA

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- Welcome and Introductions
- Zoom Webinar and Housekeeping
- Big Picture Overview
- Project and Site Overview
- EE/CA Summary
- Community Relations
- Question Review

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SPEAKER INTRODUCTIONS

Rick Viergutz

Principal Water Resources Planner

SCV Water

Laura Gallegos

Senior Public Affairs Specialist

SCV Water

Tasha Simon

Principal Engineer

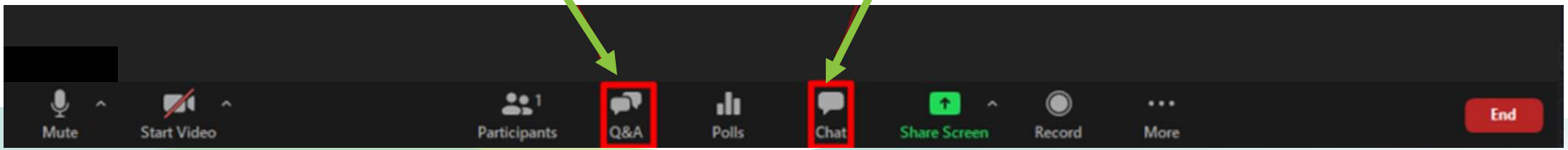
Geosyntec Consultants

ZOOM WEBINAR HOUSEKEEPING

- Workshop will be about 60 min., with 15 min. of Q&A
- Enter questions as they come to you

Ask questions in Q&A here:

View messages from the facilitator in Chat here



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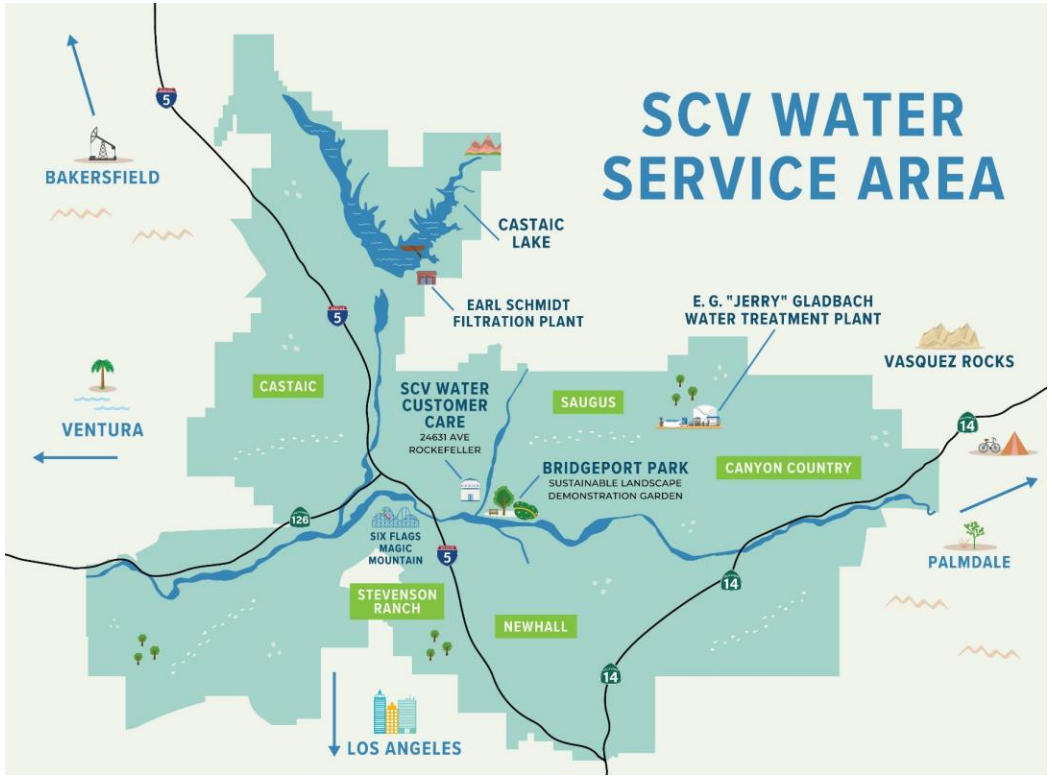
WHY WE ARE HERE TODAY



The SCV Water service area is located in northern Los Angeles County, with its western limit generally along the L.A.-Ventura County line.

1. Groundwater Quality Concern
2. Why Conduct Engineering Evaluation and Cost Analysis?
    1. Analysis of alternatives
    2. Preferred Alternative
3. Community Relations and Next steps

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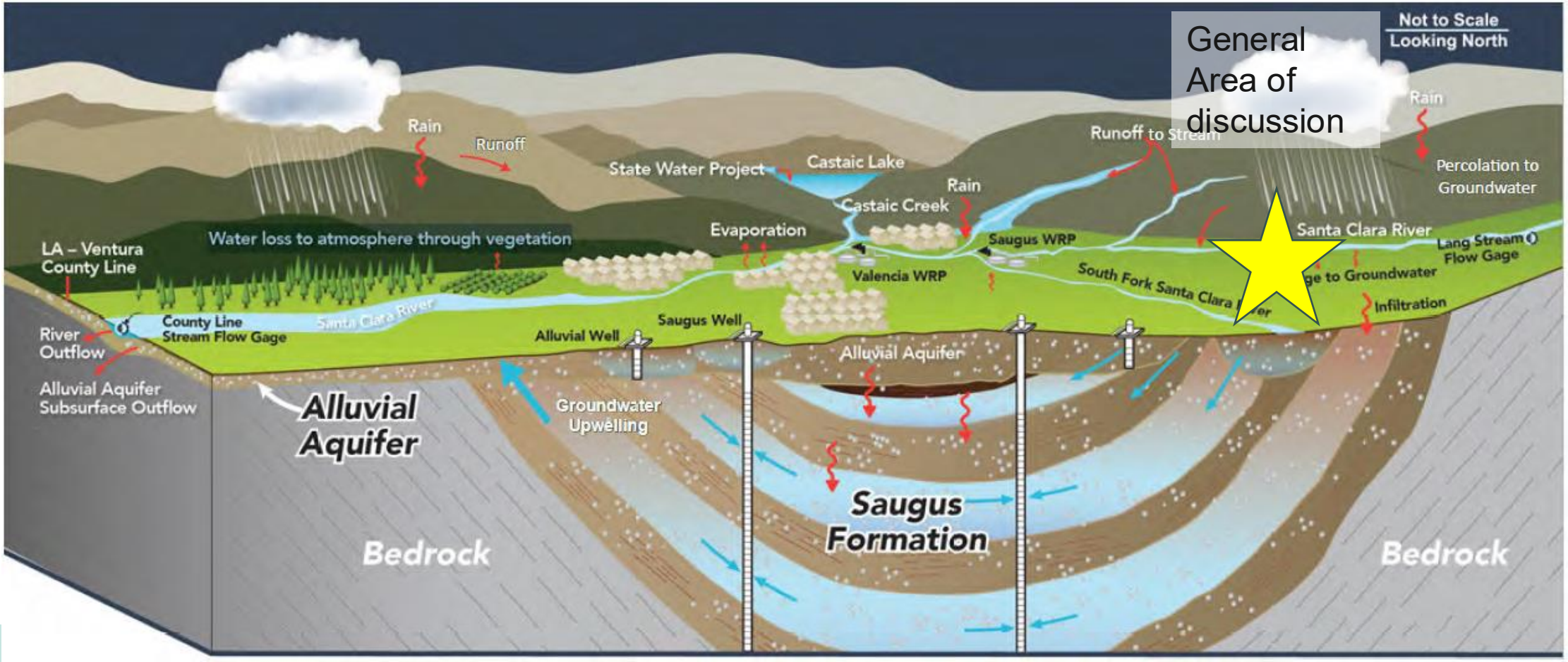
CONCEPTUAL HYDROGEOLOGY



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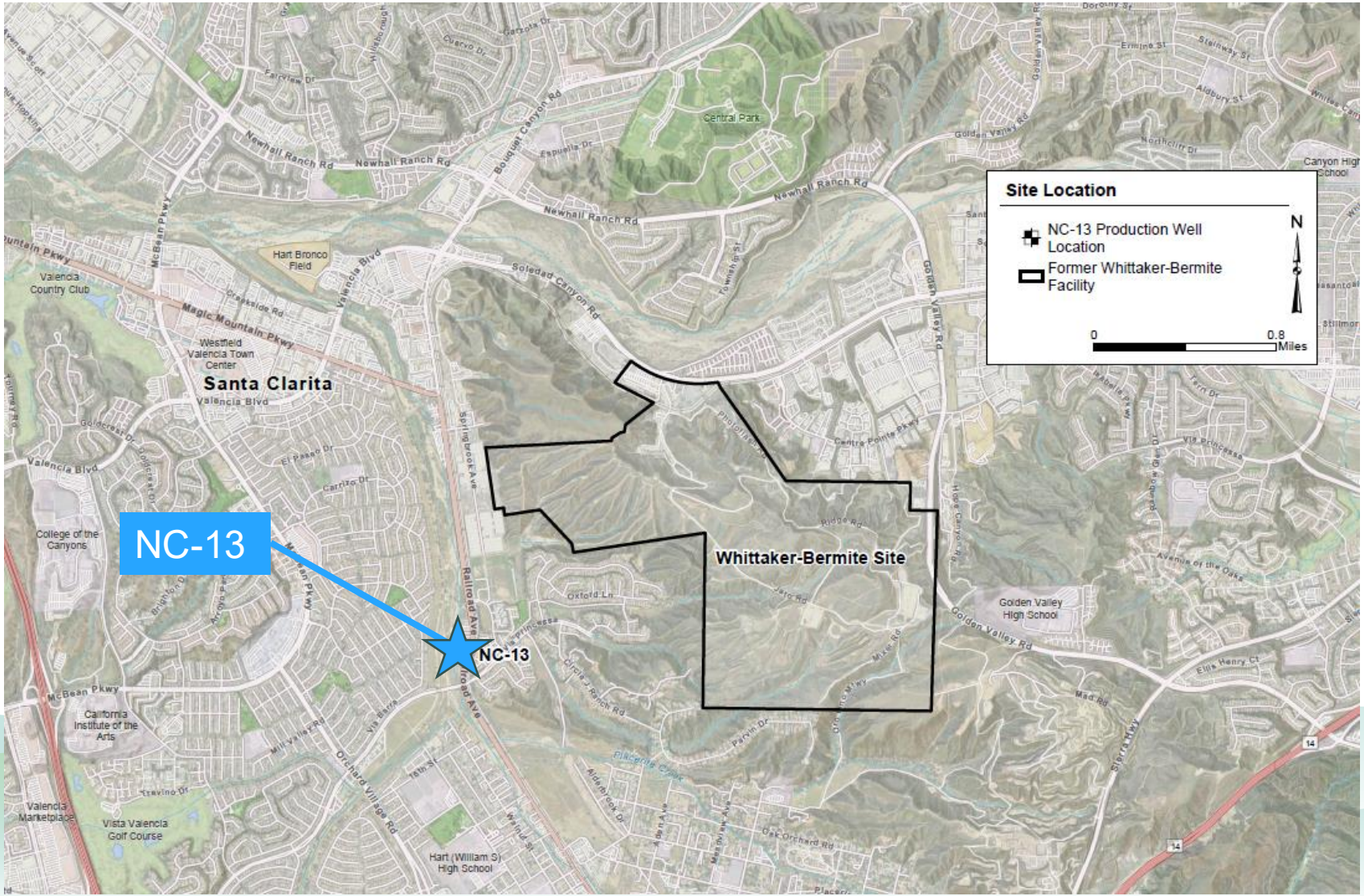
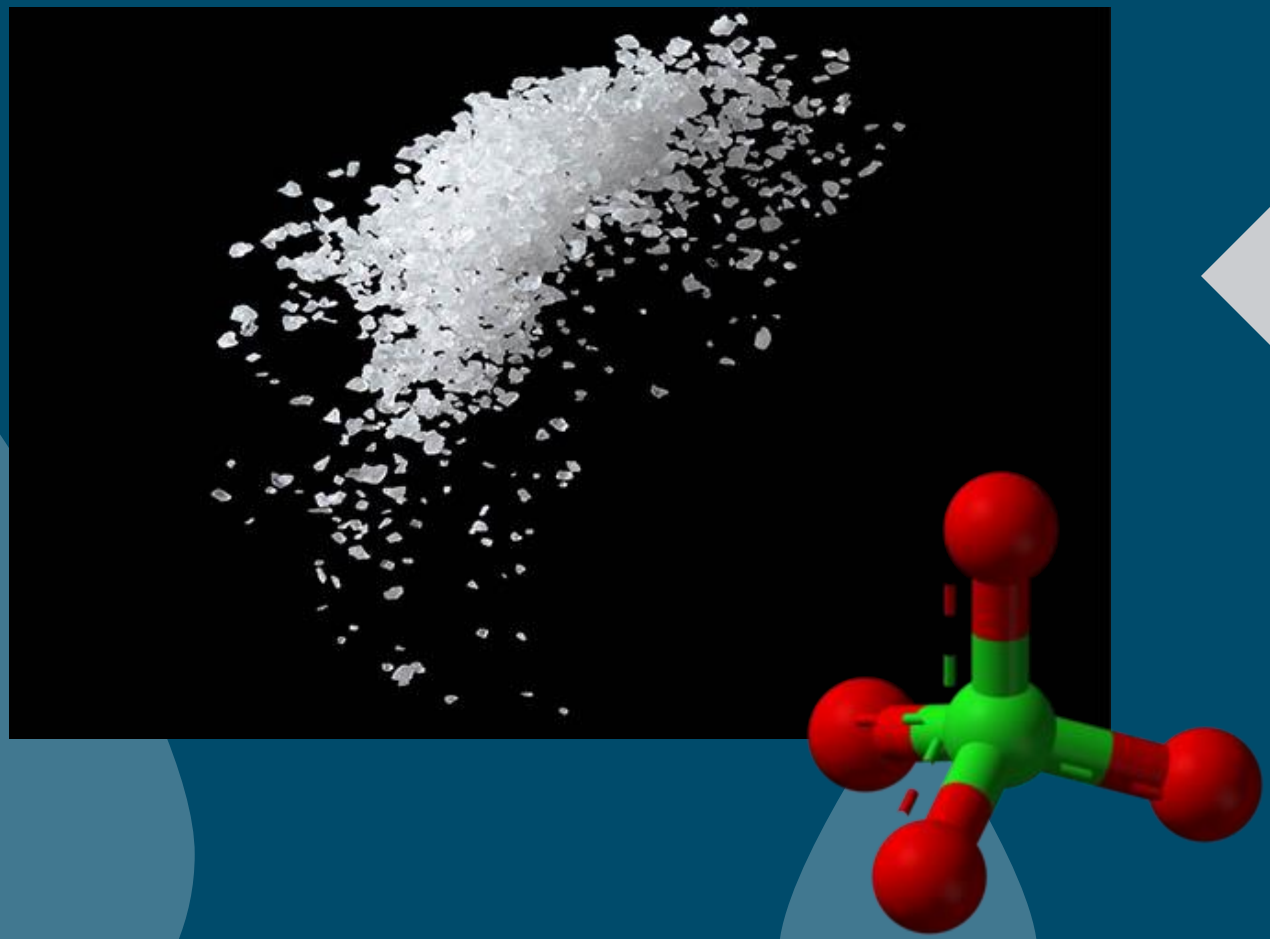
FORMER WHITTAKER-BERMITE FACILITY AND WELL NC-13



PROJECT SITE

ABOUT PERCHLORATE



Highly soluble in water

Stable and mobile in groundwater systems

Perchlorate and its salts are used in rockets, missiles, and fireworks, and other explosives

Perchlorate Maximum Contaminant Level is 6 Parts Per Billion

WHITTAKER BERMITE SITE

Manufacturing and testing of explosives from 1934 to 1987

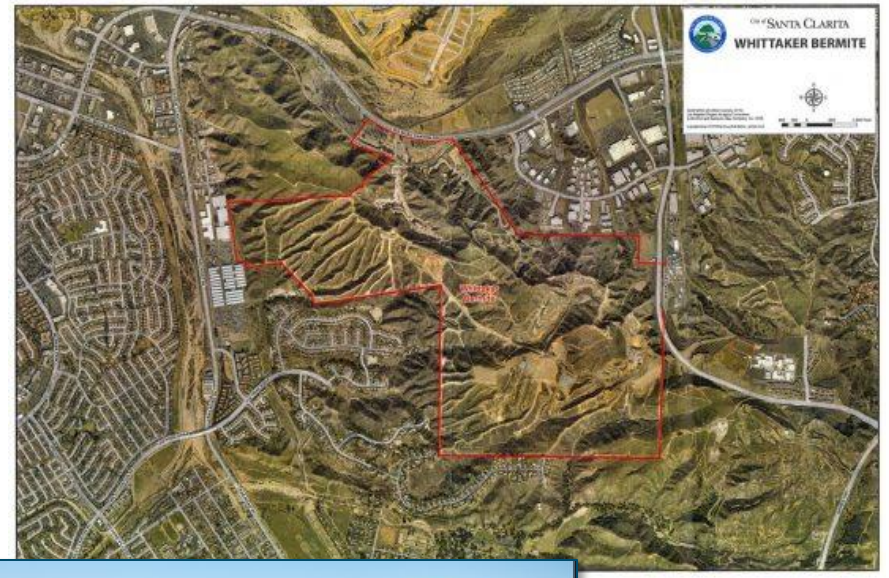
996 acres, 350 buildings

Perchlorate detected in SCV Water drinking water wells in 1997

Ongoing cleanup of soil and groundwater

Expanding groundwater plume

Regulated by California's DTSC



DTSC
Department of Toxic Substances Control

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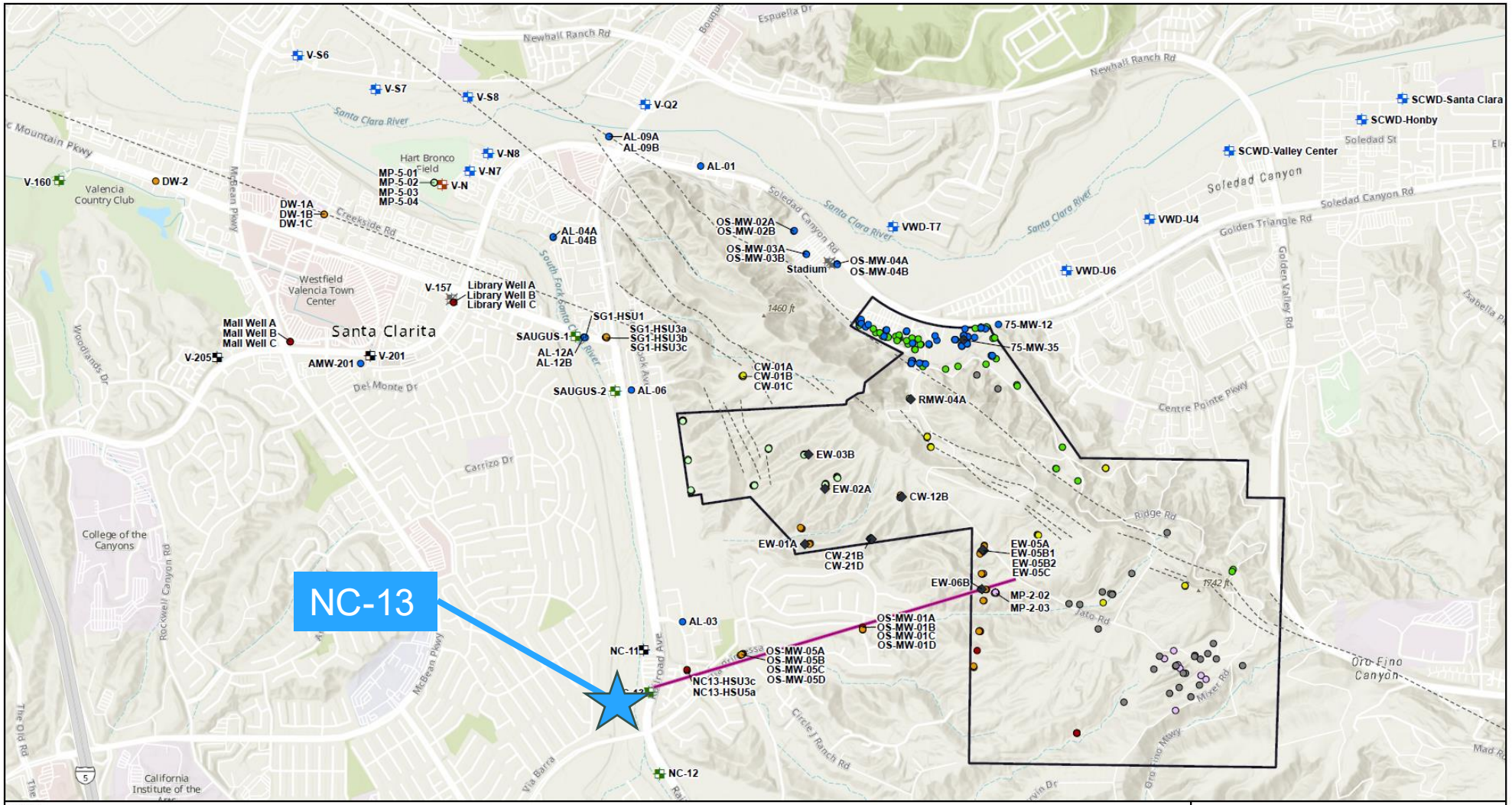
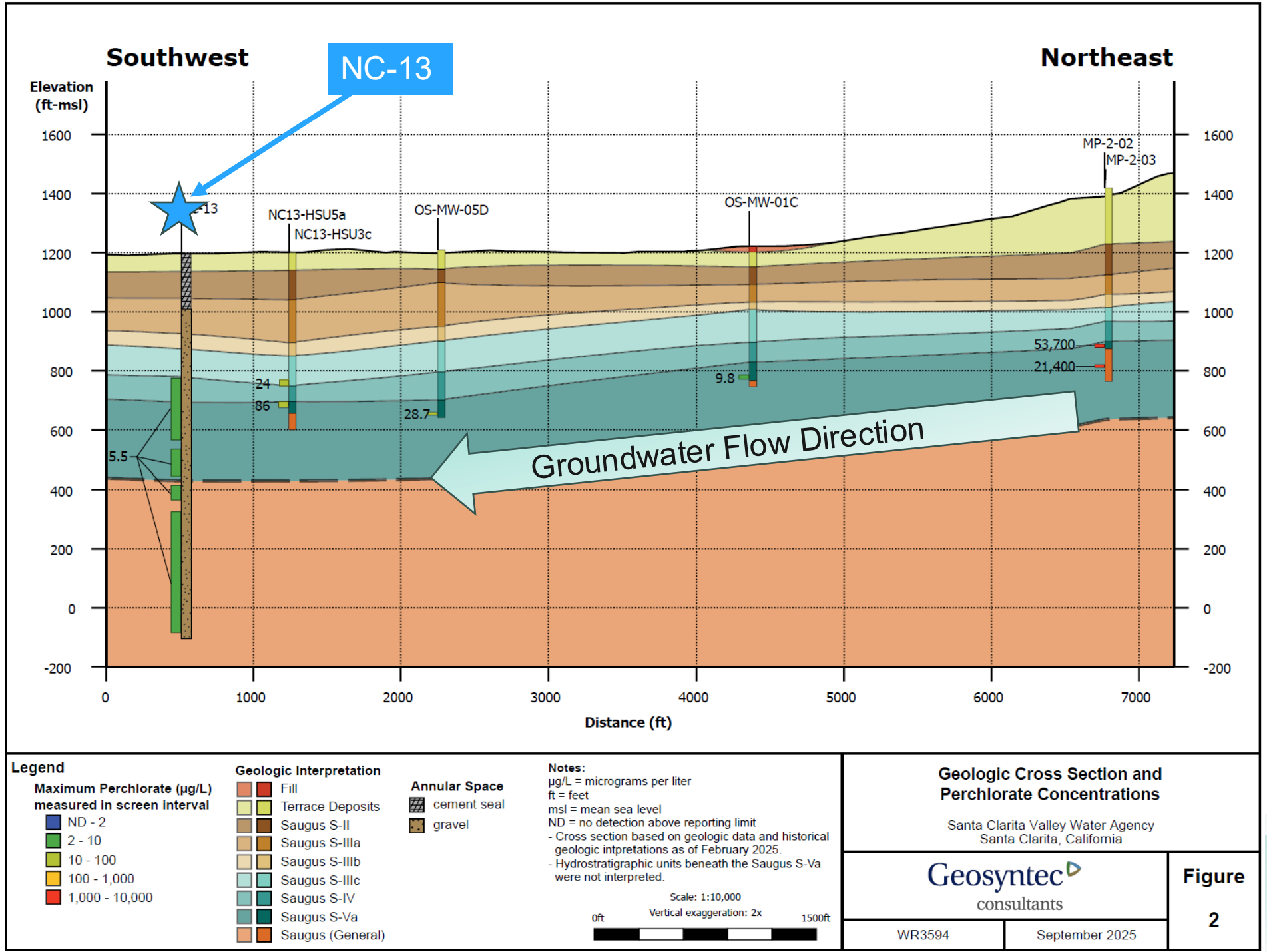
WELL LOCATIONS AND CROSS SECTION



CROSS SECTION



Geologic Cross Section and Perchlorate Concentrations

Santa Clarita Valley Water Agency
Santa Clarita, California

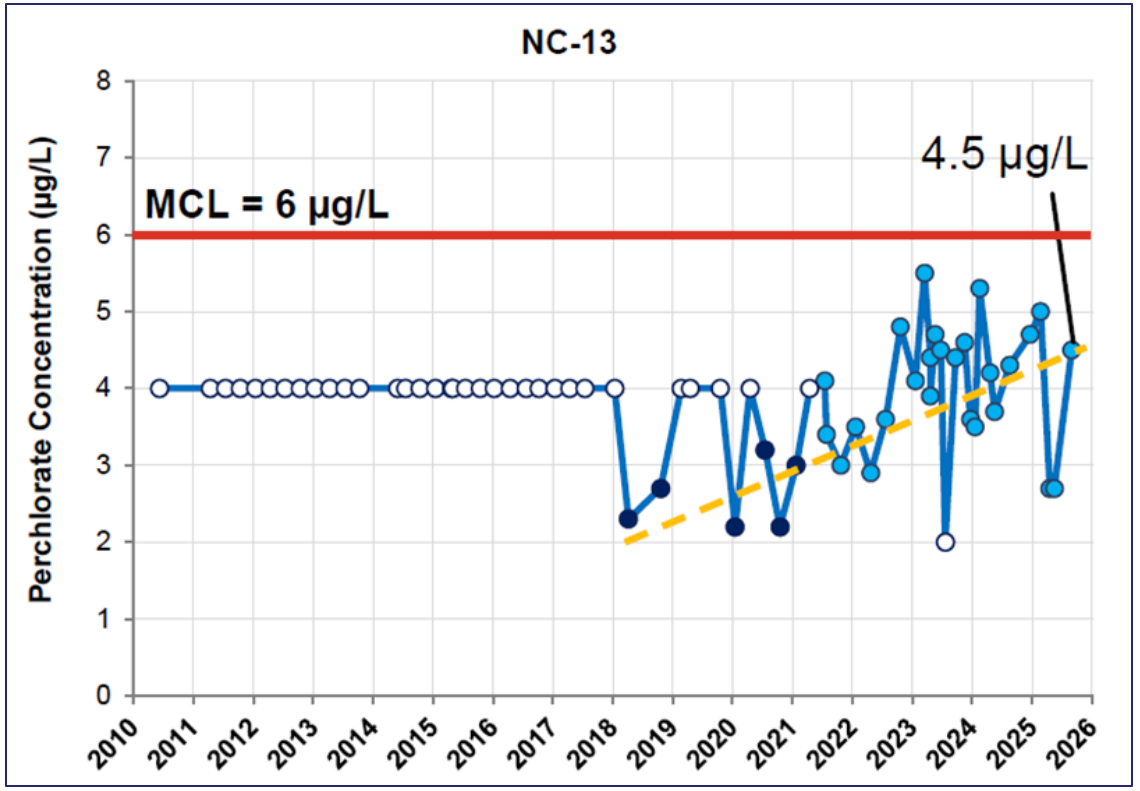
Geosyntec consultants

WR3594 | September 2025

Figure 2

WELL NC-13

- Located southwest and downgradient of the former Whittaker-Bermite Facility.
- Constructed in 1990 to a depth of 1,300 feet below ground surface.
- Pumped relatively continuously since 2010 in some cases up to 2,000 gallons per minute.
- Perchlorate been increasing



ENGINEERING EVALUATION AND COST ANALYSIS

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PROCESS

Identify: Identify removal action objectives and alternatives

Screen: Screen removal action alternatives

Evaluate: Evaluate and compare removal action alternatives

Recommend: Recommend preferred removal action alternatives

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REMOVAL ACTION OBJECTIVES

Protect human health and the environment by minimizing and reducing the potential for human exposure to perchlorate-contaminated groundwater.

Reduce further migration of perchlorate-impacted groundwater.

Remove and treat perchlorate until future response actions can address perchlorate concentrations detected in the aquifer.

Restore and maintain the operational use of well NC-13 in a manner consistent with Applicable/Relevant and Appropriate Requirements (ARARs), in accordance with historical use and reasonable anticipated future uses.

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REMOVAL ACTION ALTERNATIVES

- Alternative 1 – No Action: involves no action.
- Alternative 2 - Alternate Water Supply Source: considers securing an alternate water supply.
- Alternative 3 - New Water Supply Well Location: involves installing a new water supply well in an area unaffected by perchlorate or other hazardous substances and decommissioning NC-13.
- Alternative 4 - Groundwater Blending Strategies: proposes blending water from well NC-13 with water from imported surface water to dilute perchlorate concentrations to acceptable levels.
- Alternative 5 - Groundwater Treatment: entails actively treating the produced water from NC-13 to remove perchlorate.

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USEPA EVALUATION CRITERIA FOR REMOVAL ACTION ALTERNATIVES

Effectiveness

- Overall Protection of Human Health and the Environment
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume Through Treatment
- Short-Term Effectiveness
- Achieve Removal Action Objectives

Implementability

- Technical Feasibility
- Administrative Feasibility
- Availability of Services and Materials
- State Acceptance
- Community Acceptance

Cost

- Direct Capital Costs
- Indirect Capital Costs
- Annual Operations and Maintenance Costs

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ALTERNATIVE 1 – NO ACTION

- No remedial activities
- Consists mainly of continuous monitoring of the perchlorate concentrations at water supply well NC-13 and upgradient monitoring wells.

Evaluation:

Effectiveness:

- No direct or indirect response to perchlorate contamination in groundwater extracted at NC-13 and, therefore, would not protect human health or the environment.
- Reliance on natural attenuation is not considered an effective and perchlorate concentrations in the drinking water produced by NC-13 would be expected to persist over both the short term and long term

Implementability:

- Technically and administratively implementable
- Not acceptable by DDW or the community to continue to operate NC-13 above the MCL for perchlorate

Cost:

- No additional capital or O&M costs

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ALTERNATIVE 2 – ALTERNATE WATER SUPPLY SOURCE

- Replace the drinking water supply provided by NC-13 with imported surface water from the Sites Reservoir Project.
- Water supply well NC-13 is removed from service and decommissioned

Evaluation:

Effectiveness:

- Temporary solution for maintaining potable water supply by securing an alternate source to offset the loss of production from well NC-13.
- Would protect human health by avoiding the distribution of perchlorate-contaminated water above the MCL.
- Would not preserve the ability to operate NC-13 in accordance with its historical use or reasonably anticipated future use.
- May provide a short-term solution but would not offer a permanent remedy or contribute to the long-term sustainability of local water resources
- If NC-13 were removed from service due to the presence of perchlorate-impacted groundwater, the perchlorate-impacted groundwater could then migrate to NC-12, or other wells. In short, the failure to remove perchlorate from NC-13 would allow for migration of perchlorate impacted groundwater, otherwise captured by NC-13, to other wells, and if perchlorate concentrations at additional water supply wells increase and exceed the MCL, SCV Water's water supply will be further limited.

Implementability:

- SCV Water currently maintains infrastructure and agreements for importing surface water and has successfully managed its distribution network using a combination of local and imported sources. From a technical and administrative standpoint, this alternative would be feasible.
- The ongoing dependency on external sources could introduce uncertainty in availability and cost over time, and the approach would not build toward long-term groundwater resilience.

Cost:

- NC-13 would be taken out of service and decommissioned due to perchlorate contamination,and imported surface water would be used to replace the lost groundwater supply. The replacement volume was assumed to be 3,228 acre-feet per year at $2,000/AF.

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ALTERNATIVE 3 – NEW WATER SUPPLY WELL LOCATION

- Due to perchlorate concentrations exceeding the MCL at water supply well NC-13, decommissions the well and installs a new water supply well to offset the loss in drinking water production resulting from NC-13 being removed from service.

Evaluation:

Effectiveness:

- Effectively prevents the immediate exposure of the community to contaminated groundwater and would ensure that drinking water production continues from a source that meets applicable regulatory standards
- This alternative would not comply with RAOs or ARARs because it would not reduce perchlorate concentrations in groundwater extracted from NC-13 and would not support continued use of the well for its designated beneficial purpose.
- While constructing a new water supply well in an area not currently impacted by perchlorate or other hazardous substances may offer a short-term solution, its long-term reliability is uncertain due to the potential for contaminant migration within the groundwater, which could eventually affect the water quality at the new well location.
- If NC-13 were removed from service due to the presence of perchlorate-impacted groundwater, the perchlorate-impacted groundwater could then migrate to NC-12, or other wells. In short, the failure to remove perchlorate from NC-13 would allow for migration of perchlorate impacted groundwater, otherwise captured by NC-13, to other wells, and if perchlorate concentrations at additional water supply wells increase and exceed the MCL, SCV Water's water supply will be further limited.

Implementability:

- SCV Water has a proven track record of successfully siting, drilling, and equipping groundwater water supply wells and has developed similar infrastructure within the Saugus Formation and Alluvial aquifer. Therefore, this alternative would be technically feasible.
- Implementation would require land acquisition, hydrogeological investigation, well design, permitting, and construction, which could span multiple years. Administrative feasibility is high, but project implementation would require coordination with local agencies and utility stakeholders.

Cost:

- Assume approximately $11.4 million for land acquisition, construction of a new water supply well, and mechanical piping and equipment installation based on historical SCV Water project costs for well installation of similar scope.

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ALTERNATIVE 4 – GROUNDWATER BLENDING STRATEGIES

- Blending is an engineering control that involves mixing, blending, and diluting contaminated and uncontaminated waters to achieve acceptable levels.
- Under this approach, water from water supply well NC-13 would be blended with imported surface water from Sites Reservoir. The resulting blended water would have perchlorate concentrations below the California MCL of 6 µg/L prior to being conveyed into SCV Water's drinking water distribution system.

Evaluation:

Effectiveness:

- This dilution strategy could achieve compliance with the California MCL in the finished water and reduce immediate risks to public health. However, the effectiveness of this approach would depend on the availability of adequate blending water and infrastructure to consistently maintain perchlorate concentrations below regulatory limits.
- This alternative would not comply with the RAOs because it does not provide treatment of perchlorate. When perchlorate levels exceed the MCL, the water would be considered impaired and likely could no longer be used as a drinking water supply or be blended to achieve compliance with drinking water standards.
- Furthermore, based on SCV Water's historical interactions with DDW, once concentrations exceed the MCL, especially in a 97-005 impaired water source, the water supply well would normally be shut down.
- The long-term effectiveness and permanence of this approach would be limited, particularly if source concentrations increase or if blending capacity becomes constrained.

Implementability:

- The blending strategy could be implemented using existing or modified conveyance infrastructure and operational controls.
- Although SCV Water has the operational capacity and monitoring systems necessary to support blending operations, this approach would require careful water quality monitoring, flow balancing, and contingency planning to address potential system disruptions in the long term.
- Additionally, a substantial quantity of imported surface water may be necessary to lower the perchlorate concentration in water produced from NC-13 should levels rise; at a minimum, 20% of the water must be replaced when perchlorate reaches the MCL of 6 µg/L.
- Based on SCV Water's past experience, it is anticipated that DDW would not approve groundwater blending when the concentration of perchlorate exceeds the MCL.

Cost:

- Assumes no major changes to infrastructure
- Slight increase in O&M costs for pumping for blending
- Assumes volume of replacement water to maintain perchlorate concentrations at or below 80% of the MCL will be supplied from imported sources (assumes 20% from import sources at $2,000 per AF)

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ALTERNATIVE 5 – GROUNDWATER TREATMENT

- Technologies for treating perchlorate-impacted wells were previously screened and evaluated in the 2005 IRAP. Based on pilot testing and performance data from full-scale perchlorate treatment systems operating elsewhere in California, the 2005 IRAP identified IX treatment as the preferred alternative for perchlorate removal.
- This alternative assumes well head treatment is constructed near NC-13 and water extracted from NC-13 is treated by ion exchange.

Evaluation:

Effectiveness:

- Would provide overall protection of human health and the environment by actively reducing the potential for exposure to perchlorate in drinking water through treatment.
- This removal action alternative would comply with RAOs and ARARs until broader removal actions address the contaminant plume within the aquifer.
- The use of IX technology has been proven effective at other SCV Water drinking water supply wells in comparable hydrogeologic settings since 2011.

Implementability:

- Remedial design, permitting, and construction could take 2 to 3 years based on SCV Water experience with similar projects.
- SCV Water is experienced in the implementation activities required of this alternative, including land acquisition, detailed process engineering and design, environmental permitting, and construction.
- Perchlorate treatment by IX is recognized as “a best available technology economically achievable” by the State of California under Title 22 of the California Code of Regulations, and services and materials for implementing would be readily available.
- Installing IX wellhead treatment system has been approved by DDW and DTSC at several other SCV Water supply wells.
- long track record of effectiveness and community familiarity that contributes to continued public acceptance.
- Based on SCV Water’s past experience, this alternative would meet state and community acceptance.

Cost:

- The scope and associated capital costs and O&M costs for this alternative were assumed to be comparable to past and current SCV Water projects for well head treatment for perchlorate.

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COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

Alternative	Effectiveness	Implementability	Total Net Present Value Cost
Alternative 1: No Action	×	×	Low
Alternative 2: Alternate Water Supply Source	×	×	High
Alternative 3: New Water Supply Well Location	×	✓	Moderate
Alternative 4: Groundwater Blending Strategies	×	×	Moderate
Alternative 5: Wellhead Treatment	✓	✓	Moderate

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RECOMMENDED REMOVAL ACTION IS ALTERNATIVE 5

- This alternative:
  - Directly addresses perchlorate concentrations in groundwater extracted from the well;
  - Ensures compliance with drinking water standards;
  - Meets the site-specific removal action objectives (RAOs); and
  - Complies with applicable/relevant and appropriate requirements and meets statutory preference for treatment as a principal element of a removal action.
- This alternative provides a technically feasible and implementable solution under regulatory oversight and contributes to the long-term viability of NC-13 as a potable water supply source.

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COMMUNITY INVOLVEMENT

Sept. 23, 2025

- Draft EE/CA published: Removal Action for Saugus Formation Aquifer | Santa Clarita Valley Water
- Press release published in *The Signal*

Sept. 24, 2025

- E-newsletter sent to interested parties (survey response due by October 23, 2025)
- Hard copies provided to local library and City

Oct. 2, 2025

- Public Meeting (Virtual)
- Questions submitted through Zoom

Oct. 7, 2025

- SCV Water Board of Directors information update

Oct. 23, 2025

- Public comment period closes

- **Written comments may be submitted by October 23, 2025 5:00 p.m. through the outlined process. After review, the Final EE/CA will be published in the administrative record, followed by preparation of an Action Memo. For questions, contact Communications Manager Kevin Strauss at kstrauss@scvwa.org.**

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QUESTIONS?