

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

MEETING OF JUNE 10, 2020

ITEM 6

Status Report on Cleanup Activities Concerning Chromium Contamination from Pacific Gas and Electric Company's (PG&E's) Hinkley Compressor Station

CHRONOLOGY

April 9, 2008	Adopted General Waste Discharge Requirements for PG&E, General Site-Wide Groundwater Remediation Project, Board Order No. R6V-2008-0014 to allow timely and efficient implementation of various remedial activities for hexavalent chromium in groundwater. Remedial projects are authorized by a Notice of Applicability (NOA) of General Waste Discharge Requirements issued by the Executive Officer.
Nov. 4, 2015	Adopted Cleanup and Abatement Order (CAO) No. R6V-2015-0068, which directed PG&E, among other things, to continue remedial actions and to achieve cleanup of chromium in groundwater to 50 parts per billion (ppb) by Dec. 31, 2025 and to 10 ppb by Dec. 31, 2032.

BACKGROUND

The 2015 CAO requires annual remediation effectiveness reports be submitted by February 28. Beginning March 30, 2020, and every four years thereafter in lieu of the annual report, PG&E is required to submit a comprehensive evaluation report summarizing the remedial actions and effectiveness of those actions for the previous four years. The first Four-Year Comprehensive Cleanup Status and Effectiveness Report (2016 to 2019) was submitted this year and documents remedial actions conducted for chromium contamination cleanup in Hinkley during years 2016 through 2019. Based on the evaluation in the four-year report, PG&E asserts they are on track for meeting cleanup requirements of the CAO. Water Board staff concur with this assessment based on our review of the data provided in monitoring and technical reports.

This agenda item is the fourth annual summary of PG&E's remedial actions since adoption of the 2015 CAO.

ISSUES

The Water Board will be given a report of remedial actions conducted during the past year (2019) for chromium contamination cleanup in Hinkley, a report on PG&E's progress to reach target chromium concentrations by the associated deadlines in the CAO, a summary of community outreach and involvement during the past year, and an update on the progress of the U.S. Geological Survey (USGS) Chromium Background Study.

DISCUSSION

The executive summary from PG&E's Four-Year Comprehensive Cleanup Status and Effectiveness Report (2016 to 2019) is provided as Enclosure 1.

Water Board staff will provide an update on the following topics (Enclosure 2).

- Water Board staffing changes
- Review of projects to continue progress for chromium cleanup actions
- Remedial actions in 2019 and planned in 2020
- Proposed modification to in situ remediation and development of a new NOA
- Status of hexavalent chromium drinking water standard

PG&E staff will provide an update on the following topics (Enclosure 3).

- The findings of the Four-Year Comprehensive Cleanup Status and Effectiveness Report (2016 to 2019)
- An update on drought conditions and implications for remedial actions

The Hinkley Community Independent Review Panel (IRP) Manager, Project Navigator, will provide an update on the following topics (Enclosure 4).

- Outreach and technical advisory services provided to Hinkley Community
- Technical Working Group meetings and Background Study actions

Water Board staff will also provide an update on the USGS Chromium Background Study and mid-term report (Enclosure 5).

PUBLIC OUTREACH/INPUT

Water Board staff continues to work closely with the IRP Manager to encourage public participation and community involvement. The Water Board's quarterly Status of Action sheets are provided and discussed during quarterly Hinkley Community meetings. Due to COVID-19, the April 2020 community meeting was cancelled and the Status of Actions was provided to the community via the "Pacific Gas & Electric Company, Hinkley Chromium Cleanup" interested persons e-mail subscription list and hard copies were mailed to those that had previously requested it. This agenda item was posted to the Water Board's website on May 20, 2020, and distributed to the community via the "Pacific Gas & Electric Company, Hinkley Chromium Cleanup" interested persons e-mail subscription list and hard copies were mailed to those that had previously requested it.

PRESENTERS

Amanda Lopez, Water Board (Enclosure 2)
Kevin Sullivan, PG&E (Enclosure 3)
Dr. Raudel Sanchez, Project Navigator (Enclosure 4)
Anne Holden, Water Board (Enclosure 5)

RECOMMENDATION

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

ENCLOSURE	ITEM	BATES NUMBER
1	Executive Summary, PG&E's Four-Year Comprehensive Cleanup Status and Effectiveness Report (2016 to 2019)	6-5
2	Water Board staff presentation – PG&E Status Update	6-13
3	PG&E presentation – Four-Year Review and Drought Update	6-27
4	IRP Manager presentation – Hinkley Community Outreach Program	6-29
5	Water Board staff presentation – USGS Background Study	6-31

ENCLOSURE 1

Pacific Gas and Electric Company

FOUR-YEAR COMPREHENSIVE CLEANUP STATUS AND EFFECTIVENESS REPORT (2016 TO 2019)

Hinkley Compressor Station
Hinkley California

Cleanup and Abatement Order
No. R6V-2015-0068

March 30, 2020

Executive Summary

This Four-Year Comprehensive Cleanup Status and Effectiveness Report (2016 to 2019; report) provides a comprehensive evaluation of chromium cleanup actions at the Pacific Gas and Electric Company (PG&E) Hinkley Compressor Station (the site) to reach target concentrations listed in the Cleanup and Abatement Order No. R6V-2015-0068, issued on November 4, 2015 (2015 CAO; California Regional Water Quality Control Board, Lahontan Region [Water Board] 2015).

The 2015 CAO established cleanup requirements for the site, including the following cleanup timeframes for the southern plume in Requirement VI:

- Reach and maintain 50 parts per billion (ppb, equivalent to micrograms per liter [$\mu\text{g/L}$]) hexavalent chromium (Cr(VI)) and total chromium (Cr(T)) in 90% of the 50 ppb Cr(VI) plume as of the date of the 2015 CAO by December 31, 2025, as determined by a specified set of monitoring wells.
- Reach and maintain 10 ppb Cr(VI) and Cr(T) in 80% of the 10 ppb Cr(VI) plume as of the date of the 2015 CAO by December 31, 2032, as determined by a specified set of monitoring wells.

In 2014, Arcadis U.S., Inc. (Arcadis) conducted a Remedial Timeframe Assessment (RTA; Arcadis 2014) that estimated remedial timeframes based on a preliminary design of remedial infrastructure and a preliminary plan of construction sequencing and operations. The estimated timeframes from the RTA informed the cleanup timelines adopted in the 2015 CAO, although the deadlines established in the 2015 CAO are sooner than the range of estimates identified in the RTA.

Over the last four years, an adaptive management approach has been implemented, and more than double the amount of planned remedial infrastructure was proactively constructed and operated to keep the remedy progressing toward the 2015 CAO remedial goals. The additional remedial infrastructure includes 73 remedial wells that have been installed since 2015 in comparison to the 35 that were planned in the RTA. Exhibit ES-1 below summarizes key construction activities, effectiveness evaluations, and recommendations for improvements from observations made over the past four years (2016 through 2019). Significant remedial progress has been made at the site in several key areas: validating remedy selection and design methodology, understanding plume conditions, removing mass from groundwater, and reducing the aerial extent of the plume. Advancements in each of these areas are necessary and work in concert to progress the project toward reaching the target concentrations in CAO Requirement VI (Water Board 2015).

Performance data are continuously reviewed as part of a feedback loop to inform daily system operations. The performance evaluations have validated remedy applicability, improved the remedy design through refinement of well spacing, and advanced optimization of the extraction system for plume control and contraction. An updated evaluation of Best Available Technologies required for this four-year assessment confirmed that the combination of current technologies of in situ treatment, groundwater extraction with treatment at Agricultural Treatment Units (ATUs), and freshwater injection continues to comprise an expeditious approach to achieving the 2015 CAO goals, while providing for beneficial use of extracted water that is resulting in a reduction of legacy nitrate impacts to groundwater.

Proactive investigations advanced the understanding of plume conditions through the identification of high Cr(VI) concentration areas. This characterization was a key first step toward designing and implementing remedy enhancements to progress treatment of these high concentration areas to meet the 10 and 50 $\mu\text{g/L}$ goals. In addition, an improved understanding of the Lockhart Fault system was revealed in a study by Dave Miller at the United States Geological Survey (USGS) as part of the chromium background study.

FOUR-YEAR COMPREHENSIVE CLEANUP STATUS AND EFFECTIVENESS REPORT (2016 TO 2019)

The USGS study indicates that there are numerous splays of the Lockhart Fault present throughout the southern plume area (Miller et al., 2018). The hydrogeologic influences of these newly identified fault splays within the plume core areas, containing the highest chromium concentrations on site, are just beginning to be understood.

Performance data collected over the last four years demonstrate significant progress toward reducing concentrations, removing mass, and reducing aerial extent of the plume. Mass removal estimates show that approximately three times more mass (74%) has been removed from groundwater by remediation since 1992 in comparison to what remains (26%) in groundwater¹. The 10 and the 50 µg/L plume areas are shrinking from the outside rapidly in the north, with a retreat of the 50 µg/L contour by approximately 2,800 feet from the north and a retreat of the 10 µg/L contour by approximately 1,550 feet from the north and approximately 2,500 feet from the west. In the south, the treatment is carving holes in the plume from the inside, resulting in a steady decline in plume area.

Together, the actual performance and modeling prediction updates demonstrate considerable progress toward reaching 2015 CAO deadlines and show that the remedy is on the right track, but there is uncertainty associated with areas of elevated concentrations that were not known in 2015, areas that may be influenced by the complexity of the newly identified fault splays, areas of slow performance that may take time beyond the 2025 deadline to treat to 50 µg/L, and areas where remediation is on hold for permitting revisions. Accordingly, a workplan will be submitted by April 29, 2020 proposing recommendations and an implementation schedule to build on the infrastructure that has already been added to the RTA design to improve effectiveness. Several of these enhancements are identified throughout this report. These changes, in conjunction with the extra remedy infrastructure installed to date, are expected to significantly advance and maintain the current steady progress toward achieving the CAO goals of 50 µg/L across 90% of the plume by 2025 and 10 µg/L across 80% of the plume by 2032. However, it is possible that the 50 mg/L goal will be reached after 2025, even with the planned enhancements.

Due to the lack of Mojave River flows and limited Lenwood Recharge Basin imports in recent years, groundwater levels in the Hinkley Valley and greater area have generally shown a steady decline since 2011 when the last significant Mojave River flows occurred. Drought conditions and declining water levels persisted through the winter of 2019/2020, despite a single short-duration, low-volume river flow event on February 16, 2019 and the application of water to the Lenwood Recharge Basin in 2019.

Throughout the reporting period, hydraulic control has been maintained through adaptive management despite the persistence of drought conditions. In the northern portion of the southern plume, the northern extraction and ATUs maintained hydraulic control with optimization occurring many years ahead of plan. In the southern portion of the southern plume, the southern extraction and ATUs maintained hydraulic control, and capture was enhanced by bringing eight extraction wells online in the last two years along the eastern plume boundary. These extraction wells were installed to adapt operations in response to declining groundwater levels due to drought conditions and have resulted in reduced Cr(VI) concentrations observed in 2018 and 2019 at several plume boundary wells.

¹ Mass calculations are estimates and require assumptions to complete. Details on the assumptions, including Cr(VI) data used and assumptions related to saturated thickness under drought conditions, and procedures used to estimate mass removal estimates are provided in Appendix B.

FOUR-YEAR COMPREHENSIVE CLEANUP STATUS AND EFFECTIVENESS REPORT (2016 TO 2019)

The changes to sampling frequencies under 2015 CAO requirements I.C and I.D in 2020 included decreased sampling frequency in 25 wells and increased sampling frequency in 14 wells. During 2019, remedial systems were generally operated according to the 84 monthly goals set forth in the 2019 operational plan (Arcadis 2019), with two very minor exceptions: in March and April 2019 when the southern ATUs were operated at less than planned rates to prevent overwatering and ponding. These minor exceptions did not impact system performance.

FOUR-YEAR COMPREHENSIVE CLEANUP STATUS AND EFFECTIVENESS REPORT (2016 TO 2019)

Exhibit ES-1 2016 to 2020 Remedy Summary

Remedial System/ Area	Were Plans for 2016 – 2019 Construction Implemented? ¹	Additional Construction Activities ²	System Effectiveness	Component of Forthcoming Action Plan
Hydraulic Containment North	Yes	Yes • 2 additional extraction wells	Effective • Optimization ahead of plan • Successful containment • Significant plume contraction • Western operations optimized	No
Hydraulic Containment South	Yes	Yes • 2 extraction wells south of Community Boulevard in the Southeastern Source Area • 6 extraction wells East of Community East ATU	Effective • Hydraulic control of plume was maintained under changing drought conditions with the addition of 8 new extraction wells. • Concentration reductions observed at several plume boundary wells in response to new extraction wells	No
Lower Aquifer	Not applicable	Not applicable	Effective • Significant reductions in concentrations • Mass remains in relatively small area (two wells) with complex geology, pilot test planned	No
Central Area IRZ	Not applicable	Not Applicable	Effective, with recommendations • Eastern and central portions progressing, with exception of far east extent • Existing infrastructure does not effectively target the far western extent of the IRZ	Yes • Expand the remedial system to the west following approval of Notice of Applicability (NOA) modifications • Evaluate remedy enhancements to the far east
SCRIA IRZ	Yes	Yes • 21 additional injection wells • 3 additional extraction wells	Effective, with recommendations • Improvement in areas of new operations • Modeling results indicate additional infrastructure needed to target Cr(VI) in western extent	Yes • Expand to the remedial system to the west following approval of NOA modifications
Source Area IRZ	Yes	Yes • 4 additional injection wells	Effective, with recommendations • Cr(VI) concentrations have declined across the Source Area in IRZ treatment areas • Modeling indicates additional infrastructure needed to address remaining mass in the northern Source Area	Yes • Characterize plume extent and develop strategy to address elevated Cr(VI) concentrations in the northern Source Area

Notes:

¹ 2016-2019 construction plan as presented in Arcadis 2016, 2017, 2018, and 2019.

² Construction activities in addition to those in Arcadis 2014 Remedial Timeframe Assessment (Arcadis 2014).

FOUR-YEAR COMPREHENSIVE CLEANUP STATUS AND EFFECTIVENESS REPORT (2016 TO 2019)

References

- Arcadis. 2014. Remedial Timeframe Assessment, PG&E Hinkley Compressor Station, Hinkley, California. June 30.
- Arcadis. 2016. Annual Cleanup Status and Effectiveness Report (January to December 2017), Pacific Gas and Electric Company, Hinkley Compressor Station, Hinkley, California. February 28.
- Arcadis. 2017. Annual Cleanup Status and Effectiveness Report (January to December 2017), Pacific Gas and Electric Company, Hinkley Compressor Station, Hinkley, California. February 26.
- Arcadis. 2018. Annual Cleanup Status and Effectiveness Report (January to December 2017), Pacific Gas and Electric Company, Hinkley Compressor Station, Hinkley, California. February 28.
- Arcadis. 2019. Annual Cleanup Status and Effectiveness Report (January to December 2017), Pacific Gas and Electric Company, Hinkley Compressor Station, Hinkley, California. February 28.
- Water Board. 2015. Cleanup and Abatement Order No. R6V-2015-0068 WDID No. 6B369107001 Requiring Pacific Gas and Electric Company to Clean Up and Abate Waste Discharges of Total and Hexavalent Chromium to the Groundwaters of the Mojave Hydrologic Unit. November 4.

ENCLOSURE 2

ITEM 6

**Status Report on
Activities Concerning Chromium
Contamination,
PG&E Hinkley Compressor Station**

Lahontan Water Board Meeting
June 10, 2020

Amanda Lopez, PG
Engineering Geologist



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PG&E Status Report

- Water Board – Amanda Lopez
- PG&E – Kevin Sullivan
- Independent Review Panel (IRP)
Manager – Dr. Raudel Sanchez
- Water Board – Anne Holden



Lahontan Regional Water Quality Control Board



Pacific Gas and
Electric Company®



PROJECT
NAVIGATOR, LTD.®



Outline

- Water Board staffing changes
- Review of PG&E's adaptive management projects to target chromium hot-spots
- Mitigation strategies to manage Agricultural Treatment Unit (ATU) byproducts
- Proposed modifications to in situ remediation
- Status of Cr(VI) drinking water standard development



Water Board Staff

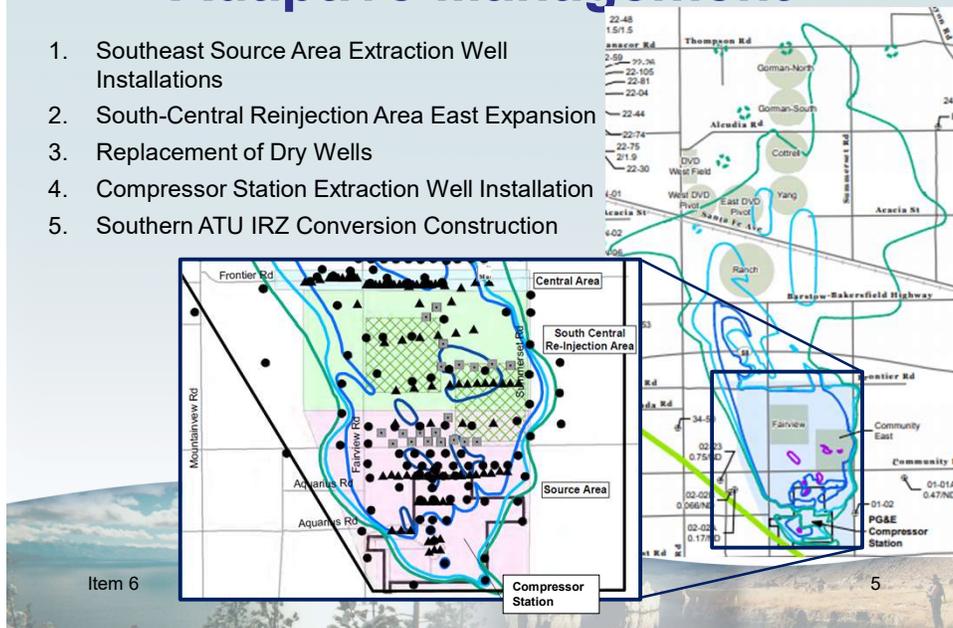


- PG&E oversight was transferred to the Victorville office
- Anne Holden continues as lead for the USGS Background Study
- In December 2019, Amanda Lopez was hired as lead caseworker for PG&E

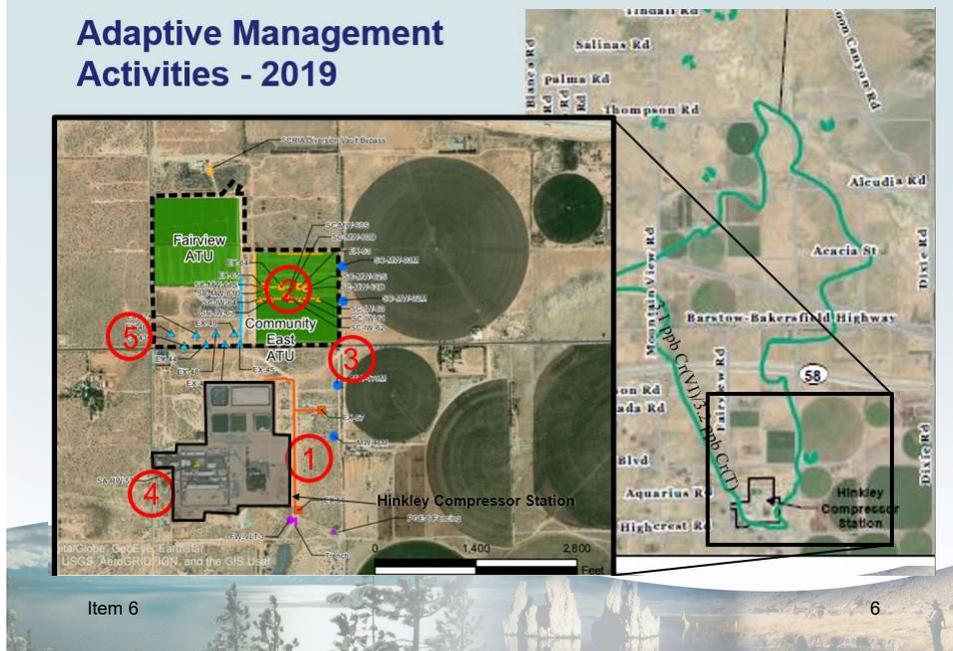


Adaptive Management

1. Southeast Source Area Extraction Well Installations
2. South-Central Re-injection Area East Expansion
3. Replacement of Dry Wells
4. Compressor Station Extraction Well Installation
5. Southern ATU IRZ Conversion Construction

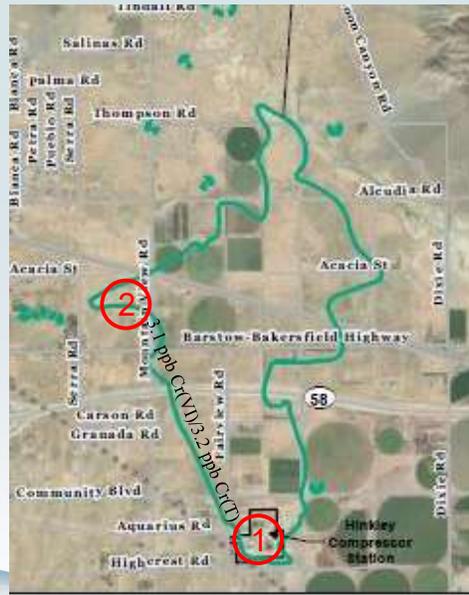


Adaptive Management Activities - 2019



Investigations – 2019

1. Well PGE-6 Freshwater Injection Pilot Test Conversion Construction
2. Lower Aquifer Remediation



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Well PGE-6 Freshwater Injection Pilot Test



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Lower Aquifer Remediation

- Blue clay transition zone, Cr(VI) concentrations stagnating
- Modify groundwater extraction at wells EX-29, EX-30, and EX-37



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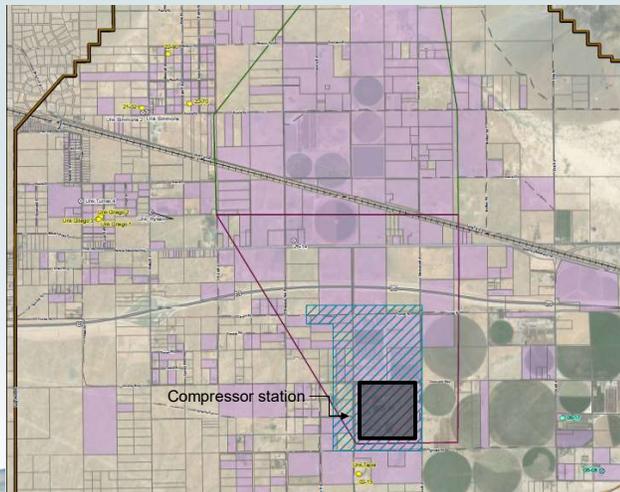
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Review Sampling Frequency and Reporting of Monitoring Programs

- January 2020: Annual Sampling Frequency Evaluation (2015 CAO). Frequency change in 39 (9%) of 450 wells
- Four-year Review: Annual Cleanup Status and Effectiveness Reports, and Operational Plans will now be replaced by Four-Year Comprehensive Cleanup Status and Effectiveness Reports



Management of Inactive Supply Wells on PG&E Properties



Criteria to destroy inactive supply wells:

- Within 2,000 feet of a multi-depth monitoring well
- Cr(VI) and/or Cr(T) <2.0 ppb since September 2011
- Wells screened across upper and lower aquifers

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Management of Inactive Supply Wells on PG&E Properties



PG&E proposal for inactive supply well destruction:

- 2019 – destroy 13 single aquifer wells and 2 cross-screened wells
- A cumulative total of 232 single aquifer wells and 102 cross-screened wells have been destroyed to date

Agricultural Treatment Units and Byproducts

- Board Order No. R6V-2014-0023
 - Northern ATUs
 - Southern ATUs
- Environmental Impact Report (EIR) Mitigation Measures
- Aquifer must be restored to pre-remedial conditions
- Management of Byproducts
 - Total Dissolved Solids (TDS)
 - Nitrate
 - Uranium



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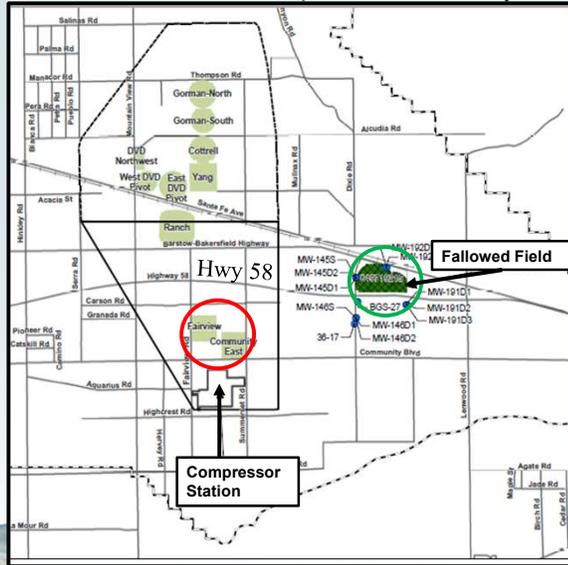
Establish Baselines in ATU Areas and Evaluate Potential Impacts from the Project

Board Order No. R6V-2014-0023 requires that "the Discharger shall propose a statistical method to determine if uranium (U) concentrations are increasing in a statistically significant manner due to remedial irrigation."

- PG&E submitted a vadose zone modeling and supplemental baseline data report for the southern ATUs
- PG&E submitted an Action Plan and Alternative Source Demonstration for U Detected in Groundwater Beneath the Gorman ATU



Location of Farm Swap Fields in Hinkley



Mitigation for Potential ATU Byproducts

- “Farm Swap” – follow a field used to discharge dairy wastewater for credit towards managing potential byproducts
- “LEPA” – reimburse farmers for converting to more efficient irrigation systems that reduce water use and potential byproducts creation by 10 percent

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In Situ Remediation

- Board Order No. R6V-2008-0014
 - This General Order allows management of remediation including extraction, injection, and in-situ use of chemical or biological reductant
 - Notice of Applicability issued 2016
 - Adaptive management is limited



Proposed Revisions to the Notice of Applicability, Board Order No. R6V-2008-0014

- Western expansion of the IRZ areas
- Designate areas for future extraction and freshwater injection
- Streamline IRZ byproduct data and reporting
- Adjust MRP for current and future conditions/expansions
- Rescind the April 2016 NOA
- Expect to have a draft revised NOA for public comment during Summer 2020



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Status of Cr(VI) Drinking Water Standard

July 2014
California Cr(VI)
MCL of 10 ppb

May 31, 2017
Judge invalidates
California's Cr(VI)
MCL of 10 ppb

2018 2021
New California
Cr(VI) MCL in
development (Div.
of Drinking Water)

Summary

- Adaptive Management
 - Multiple remediation activities and investigations performed in 2019
- ATUs
 - establish baseline data and manage byproducts
- Drafting new NOA for In Situ Remediation Zones
 - Add flexibility for adaptive management in IRZ treatment zones
 - Collaborative approach with PG&E, IRP Manager, and Community
- Development of Cr(VI) MCL
 - Division of Drinking Water
- Compliance with CAO Requirements

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PG&E Status Report

- Water Board – Amanda Lopez
- PG&E – Kevin Sullivan
- Independent Review Panel (IRP) – Dr. Raudel Sanchez
- Water Board – Anne Holden



Lahontan Regional Water Quality Control Board



Questions?

Thank you for listening



ENCLOSURE 3

Enclosure 3 is not electronically accessible through our public website. Documents may be requested by contacting Katrina Fleshman, Water Board Clerk at (530) 542-5414 or Lahontan@waterboards.ca.gov.

ENCLOSURE 4

Enclosure 4 is not electronically accessible through our public website. Documents may be requested by contacting Katrina Fleshman, Water Board Clerk at (530) 542-5414 or Lahontan@waterboards.ca.gov.

ENCLOSURE 5

History of Revised Background Study

Jan. 2013:

Technical Working Group (TWG) formed. Meetings are open to public.

June 2013:

Develop and execute contract to retain USGS's Dr. Izbicki to develop formal study proposal.

Oct. 2013 and Jan. 2014:

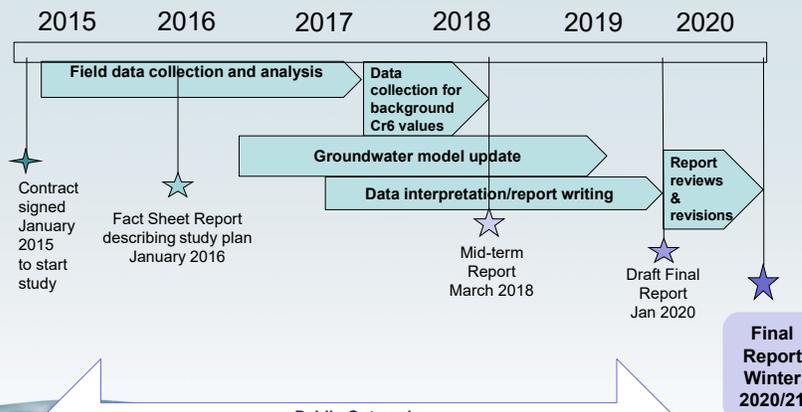
Dr. Izbicki presents study proposal to Hinkley community and Water Board at public meetings. Strong support for proposal is expressed.

Jan. 2014 to Jan. 2015:

Water Board and USGS staff develop contract to implement proposal; contract processing through State Water Board.

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Background Study (revised) Timeline



Public Outreach:
 TWG meetings at least quarterly before/throughout study
 Community tours for sampling and field work
 8 presentations to Hinkley community from Dr. Izbicki

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Draft Final Report Status

Draft Report Released to TWG early January 2020

- TWG review concurrent with phase 1 USGS official review
- Water Board staff from Victorville and SLT reviewed and provided comments
- Comments focused on clarity, readability, consistency; requests for clarifying information or explanation of concepts
- Comments submitted to lead author, Dr. Izbicki, by due date of April 1
- USGS staff began addressing comments upon receipt

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Draft Report Overview



Nine chapters detailing data collection, methods, results, and conclusions



Highly detailed and comprehensive study of Hinkley Valley geology, groundwater, and aquifer conditions



Weigh-of-evidence approach to support presentation of plume extent and estimates of background values for each study subarea

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Collected Data

Groundwater Samples (over 175 Monitoring and Domestic Wells)

- Chromium and many other parameters
- Isotopic tracers of age and source of groundwater

Rock, Drilling Core, and Sediment Samples

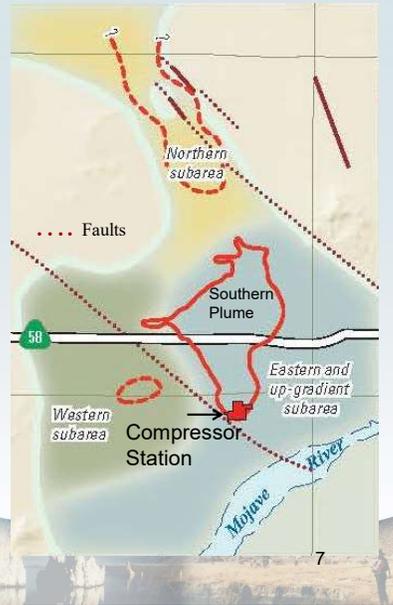
- What is range of Cr6 in geologic materials?
- Where does groundwater move quickly or slowly, and why (fine- or coarse-grained sediments, faults)?

And more ...

- Geophysics, aquifer properties, pore water samples...



Background Study Subareas



Key Questions Answered from Data Analysis

What and where are the natural geologic sources of Cr6?

How much Cr6 do natural sources add to groundwater?

What are important process driving Cr6 presence in groundwater?

What is the source and movement of groundwater?

What is the age of groundwater in wells relative to dates of compressor station Cr6 releases?

How do geologic and hydrologic conditions vary between subareas, and what are effects on Cr6 occurrence, groundwater flow, data interpretation?



Report Fulfills Study Goals



What is extent of Cr6 from the compressor station?

- ✓ Map of plume extent



What are Cr6 background values?

- ✓ Table of background values for each subarea

Determining Plume Extent

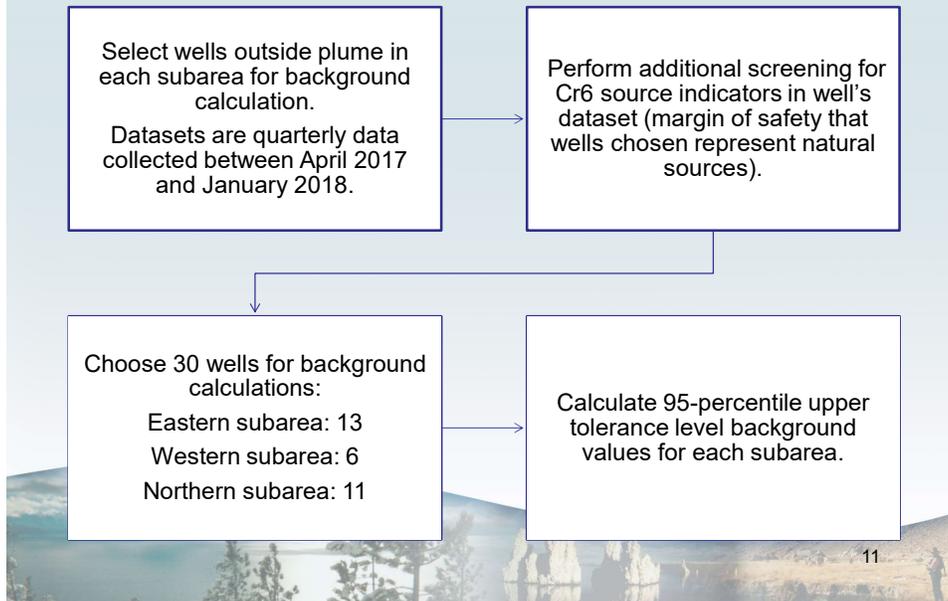
Consolidate data into a summative scale for over 100 monitoring wells. Scale comprises eight questions on key data attributes indicating source of Cr6.

Answers are yes/no, scored 1 or -1. Score of 1 is consistent with anthropogenic source; and score of -1 is consistent with natural source.

Each evaluated well gets a score, with a high positive score indicating anthropogenic source and high negative score indicating a natural source of Cr6.

Exercise results in summative scale plume, showing the extent of Cr6 releases from compressor station.

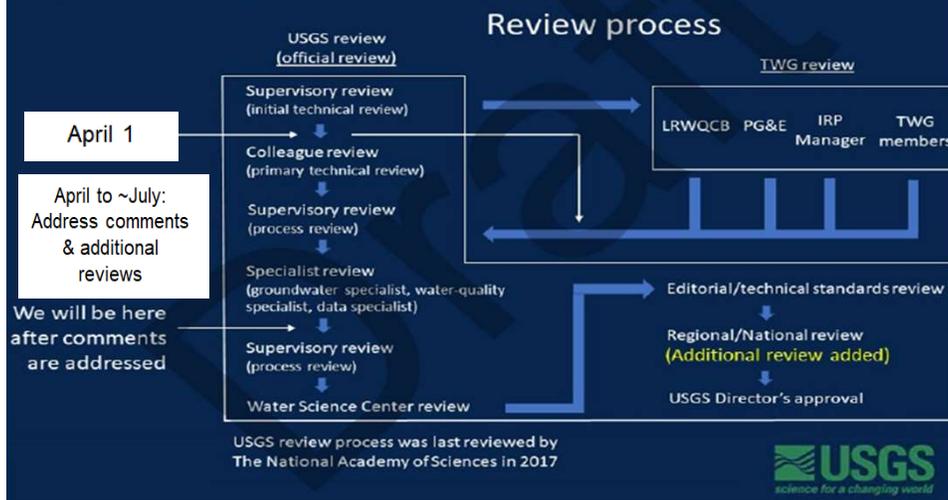
Determining Background Values



Looking Ahead...

Timetable for completion

Begin addressing review comments April 1st



Looking Further Ahead...

Final Report scheduled for publication end of 2020
Contract was extended one year

Water Board workshop in 2021
Dr. Izbicki will present report findings

Staff to develop and propose approach to incorporate into regulatory efforts for Hinkley remediation project
Additional workshops/public meetings

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Online Information

Lahontan Water Board Hinkley Project webpage

- https://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/

USGS Hinkley Project webpage

- <https://ca.water.usgs.gov/projects/hinkley/>

YouTube videos

- <https://www.youtube.com/>
Search USGS chromium background study

State Board's Geotracker webpage - USGS/Water Board contract documents

- http://geotracker.waterboards.ca.gov/profile_report?global_id=T10000010367

Project Navigator's webpage

- <http://www.hinkleygroundwater.com/>

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