

Attachment 8

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

CLEANUP AND ABATEMENT ORDER  
NO. R6V-2015-PROP  
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

Groundwater Monitoring and Reporting Program

San Bernardino County

California Water Code section 13267 authorizes the Regional Water Quality Control Board (Water Board) to require technical and monitoring reports. This Monitoring Program establishes monitoring requirements consistent with the California Water Code. Pursuant to Water California Water Code section 13223, this monitoring program may be amended by the Water Board Executive Officer.

This monitoring and reporting program (MRP) requires PG&E to collect water samples, conduct monitoring actions, and submit technical reports to evaluate compliance with the terms and conditions of this Order, and to assure protection of waters of the state and restoration of beneficial uses. Consistent with Water Code section 13267, this Order requires implementation of a MRP that is intended to verify the effectiveness of remediation, track progress toward meeting remediation targets, evaluate threats to and monitor water quality in private supply wells.

**I. GROUNDWATER MONITORING REQUIREMENTS**

- A. **Beginning second quarter 2015, and every quarter (three months) thereafter,** PG&E shall implement a site-wide monitoring well and domestic well sampling and monitoring program. Monitoring well and domestic/community/~~agricultural~~ well sampling shall be conducted at the frequency and using the criteria prescribed in this "Groundwater Monitoring and Reporting Program."
- B. PG&E shall:
1. Collect groundwater elevation data to the nearest 0.01 foot from all monitoring wells required for that quarter.
  2. Collect groundwater samples from monitoring wells and domestic/community/~~agricultural~~ wells required for that quarter. Active is defined as any water supply well used during that quarter or planned for use within the next six months. Active wells include those wells on PG&E-owned property and used that quarter for any purpose. Inactive wells are defined as

any water supply well not used that quarter or not planned for use within the next six months.

3. Water samples shall be analyzed for Cr(VI) using EPA Method 218.6 with a reporting limit detection level of 0.42 parts per billion (ppb) and Cr(T) using EPA Method 6020A or 6010B with a reporting limit detection level of 1 ppb.

### C. Southern Plume Area, including "Western Finger" and Lower Aquifer

This area is defined as the southern plume area connected to the source area at the Facility, shown in CAO Attachment 2. Within this area, the Discharger shall conduct the following sampling to meet the following objectives:

1. To track remediation effectiveness, sampling will be conducted in accordance with the monitoring and reporting programs specified for the ATUs and In-Situ Reactive Zones (IRZs) in the permits for those systems, as summarized in Attachment A to this MRP. The ATU monitoring program is currently established in the ATU WDRs (Finding 23) and associated documents. The IRZ program was proposed by the Water Board staff in a letter dated February 19, 2014 and will be included in a revised IRZ monitoring program that will be circulated for public comment along with revised/combined Notice of Applicability for the general Waste Discharge Requirements for In-situ Activities.
2. To track the chromium plume, to protect domestic wells, and for general monitoring, sampling will be conducted according to the chromium monitoring program listed in MRP Attachment A.

Once every year in the Annual Cleanup Status and Effectiveness Reports, the monitoring frequency of monitoring wells used to contour the plume boundary will be reviewed to determine whether the sampling frequency for an individual well should be changed. The decision tree shown in Figure 8.1 (MRP Attachment B) will be used to determine if a change in monitoring frequency is warranted.

- Quarterly Branch: For quarterly monitoring wells, if the Cr(VI) concentration is less than 3.1 µg/L for a period of four consecutive sampling events, the monitoring frequency will be reduced to semi-annual. If there are 12 consecutive sampling events of data in which the Cr(VI) concentrations are less than 10 µg/L then the sampling frequency will be changed to semiannual if either of the two following conditions are met: 1) Cr(VI) concentration is greater than 3.1 µg/L and there is a decreasing Mann-Kendall statistical trend based on 12 consecutive sampling events of data or 2) no trend based on 12 consecutive sampling events of data. If these conditions are not met, the sampling frequency will remain quarterly.

- Semi-Annual Branch: For semiannual monitoring wells, if the Cr(VI) concentration is greater than or equal to 3.1 µg/L for four consecutive sampling events and there is an increasing Mann-Kendall trend, then the sampling frequency will be changed to quarterly. If the Cr(VI) concentration is less than 3.1 µg/L for four consecutive sampling events, then the frequency will stay at semi- annual. If the Cr(VI) concentration is greater than 3.1 µg/L and there is not an increasing Mann Kendall statistical trend, then the sampling frequency will stay semi- annual.
- The few wells that are monitored on an annual sampling frequency, as specified in MRP Attachment A will continue on an annual sampling frequency. If changes to sampling frequency for these wells are needed, the evaluation will occur separately.
- This process will not apply to ATU and IRZ program wells which are under separate monitoring programs.

MRP Attachment A presents the initial sampling program. This program will be updated in the Annual Cleanup Status and Effectiveness Reports each year to reflect any changes made in the annual program evaluation or other changes made during the year.

**1. At wells with concentrations greater than or equal to maximum background values as of fourth quarter 2014:**

- ~~a) Quarterly sampling at all single monitoring wells and at multi-depth monitoring wells showing the highest hexavalent or total chromium detections as of fourth quarter 2014.~~
- ~~b) Semi-annual sampling in the second and fourth quarter of each year at multi-depth monitoring wells showing the second and third highest hexavalent or total chromium detections above maximum background levels as of fourth quarter 2014.~~
- ~~c) Annual sampling in the fourth quarter of each year for all multi-depth monitoring wells showing the third highest hexavalent or total chromium detections as of fourth quarter 2014.~~

**2. At wells with concentrations less than maximum background values as of fourth quarter 2014:**

- ~~a) Quarterly sampling at all monitoring wells showing unstable hexavalent or total chromium detections below maximum background levels as of fourth quarter 2014. "Unstable" is defined as any chromium detection above maximum background levels since first quarter 2013.~~
- ~~b) Semi-annual sampling in second and fourth quarter of each year at all monitoring wells showing stable hexavalent or total chromium detections below maximum background levels as of fourth quarter 2014. "Stable" is defined as all chromium detections below maximum background levels since first quarter 2013. Once four consecutive sampling events show chromium concentrations below maximum background levels, sampling frequency can be reduced to annual sampling.~~

~~c) Annual sampling in the fourth quarter of each year at all monitoring wells showing hexavalent or total chromium detections that have always been below maximum background levels and were installed and sampled by January 2011.~~

**3. “Western Finger” (west of Serra Road)**

- ~~a) Quarterly sampling within the plume (i.e., chromium concentrations exceed the maximum background levels), at all monitoring wells showing hexavalent or total chromium detections **above** the maximum background levels as of fourth quarter 2014.~~
- ~~b) Semiannual sampling in the second and fourth quarter of each year at multi-depth monitoring wells showing hexavalent or total chromium detections **at or below** the maximum background levels as of fourth quarter 2014.~~
- ~~c) If four consecutive or four out of five samples in different sampling periods detect chromium in monitoring wells at increasing or decreasing concentrations that puts the well into one of the above categories, the Discharger shall increase or decrease, respectively, the sampling frequency accordingly.~~

**4. Lower Aquifer**

- ~~a) Quarterly sampling within the plume (i.e., chromium concentrations **exceed non-detect levels**) at all lower aquifer monitoring wells showing hexavalent or total chromium detections **above** the non-detect level as of fourth quarter 2014.~~
- ~~b) Semiannual sampling outside the plume at all lower aquifer monitoring wells showing hexavalent or total chromium detections **at or below** non-detect level as of fourth quarter 2014.~~
- ~~c) If four consecutive or four out of five samples in different sampling periods detect chromium in monitoring wells at increasing or decreasing concentrations that puts the well into one of the above categories, the Discharger shall increase or decrease, respectively, the sampling frequency accordingly.~~
- ~~d) If a single well, or all depths at a multi-depth monitoring well location contain less than the maximum background levels for four or more consecutive sampling events with a stable or decreasing trend, monitoring should follow section E below for Outside Plume Boundaries.~~

**D. Northern Plumes Area**

This area is defined as north of Thompson Road and into the Harper Dry Lake Valley, shown on CAO Attachment 2. Plume(s) may be contiguous or non-contiguous. The Discharger shall conduct the following sampling:

1. Quarterly sampling at all **single** monitoring wells and at **multi-depth** monitoring wells showing the **highest** hexavalent or total chromium detections greater than the maximum background levels as of fourth quarter

2014. If four consecutive or four out of five samples in different sampling periods detect chromium in monitoring wells at decreasing concentrations that puts the well into one of the below categories, the Discharger may decrease the sampling frequency accordingly. In this instance, the new well showing the highest chromium concentrations greater than the maximum background levels is then moved to a quarterly sampling frequency.

2. Semi-annual sampling in the second and fourth quarter of each year at **multi-depth** monitoring wells showing the **second highest** hexavalent or total chromium detections as of fourth quarter 2014.
3. Annual sampling in the fourth quarter of each year for all **multi-depth** monitoring wells showing the third highest hexavalent or total chromium detections as of fourth quarter 2014.
4. Once every year in the Annual Cleanup Status and Effectiveness Reports, the sampling frequency of monitoring wells used to contour the plume boundary will be reviewed to determine whether the sampling frequency for an individual well should be changed. The decision tree shown in Figure 8.2 (MRP Attachment C) will be used to determine changes to the monitoring frequencies.
  - a) Quarterly Branch: For quarterly monitoring wells, if the Cr(VI) concentration is less than 3.1 µg/L for a period of four consecutive sampling events, the monitoring frequency will be reduced to semi-annual. If the Cr(VI) concentration is greater than 3.1 µg/L and there is a decreasing Mann-Kendall statistical trend based on 12 consecutive quarters of data and there are 12 consecutive quarters of data in which the Cr(VI) concentrations are less than 10 µg/L or no trend based on 12 consecutive quarters of data and there are 12 consecutive quarters of data in which the Cr(VI) concentrations are less than 10 µg/L, then the sampling frequency will be changed to semiannual. For the remaining quarterly wells, the sampling frequency will remain quarterly.
  - b) Semi-Annual Branch: For semiannual monitoring wells, if the Cr(VI) concentration is greater than or equal to 3.1 µg/L for four consecutive sampling events and there is an increasing Mann-Kendall trend, then the sampling frequency will be changed to quarterly. If the Cr(VI) concentration is less than 3.1 µg/L for four consecutive sampling events, then the frequency will be changed to annual. If the Cr(VI) concentration is greater than 3.1 µg/L and there is not an increasing Mann Kendall statistical trend, then the sampling frequency will be decreased to annual. If all of the wells in the cluster meet the criteria for annual sampling, the well with the highest Cr(VI) concentration will be retained for semi-annual sampling.
  - c) Annual Branch: For annual monitoring wells, if the Cr(VI) concentration is non-detect for four consecutive sampling events, the sampling frequency

will be reduced to biennial. If the Cr(VI) concentration is detected within four consecutive sampling events and there is an increasing Mann-Kendall statistical trend, then the sampling frequency will be increased to semi-annual. If the Cr(VI) concentration is detected within four consecutive sampling events and there is not an increasing Mann-Kendall statistical trend, then the sampling frequency will remain annual.

- ~~5. For wells in semi-annual or annual sampling frequency, if two consecutive or two out of three samples in different sampling periods detect chromium in monitoring wells at increasing or decreasing concentrations that puts the well into another of the above categories, the Discharger shall increase or decrease, respectively, the sampling frequency accordingly.~~
- ~~6. If a single well or all depths at a multi-depth monitoring well location contain less than the maximum background levels for four or more consecutive sampling events with a stable or decreasing trend, monitoring should follow section E below for Outside Plume Boundaries.~~

**~~E. Outside Plume Boundaries (site-wide), Upper Aquifer~~**

~~Outside all upper aquifer plume boundary lines (except in the "Western Finger"), the Discharger shall conduct the following monitoring well sampling:~~

- ~~1. Quarterly sampling at all monitoring wells showing hexavalent or total chromium detections between 3.0 ppb Cr(VI) or 3.1 ppb Cr(T) and 80 percent of the maximum background levels (i.e., 2.5 ppb Cr(VI) or 2.6 ppb CrT) as of fourth quarter 2014.~~
- ~~2. Semi-annual sampling in the second and fourth quarter of each year at all monitoring wells showing hexavalent or total chromium detections **less than** 80 percent of the maximum background levels (i.e., 2.5 µg/l Cr(VI) or 2.6 ppb CrT) as of fourth quarter 2014.~~
- ~~3. Annual sampling in the fourth quarter of each year for all monitoring wells showing hexavalent or total chromium detections less than 2.5 ppb Cr(VI) or 2.6 ppb CrT in four or more consecutive sampling events with a stable or decreasing trend.~~
- ~~4. If four consecutive or four out of five samples in different sampling periods detect chromium in monitoring wells at increasing or decreasing concentrations that puts the well into one of the above categories, the Discharger shall increase or decrease, respectively, the sampling frequency accordingly.~~

**E. F. Domestic/Community/Agricultural Water Supply Wells, Northern Plumes<sup>1</sup>**

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<sup>1</sup> Domestic supply well monitoring in the southern plume area is required as part of Board Order R6V-2014-0023 (Waste Discharge Requirements for Agricultural Treatment Units).

For the northern plume area, the following sampling requirements apply to all water supply wells one-half mile downgradient and cross gradient of any northern plume area monitoring well showing detections of total or hexavalent chromium above maximum levels.

1. Quarterly sampling at all domestic and community wells having hexavalent or total chromium detections at or above drinking water standards following any sampling event.
2. Semi-annual sampling in the second and fourth quarter of each year at all domestic and community wells having hexavalent or total chromium detections at or above the maximum background levels.
3. Annual sampling in the fourth quarter of each year at all domestic and community wells having hexavalent or total chromium detections below the maximum background levels.
4. If two consecutive or two out of three samples in different sampling periods detect chromium in supply wells at increasing or decreasing concentrations that puts the well into one of the above categories, the Discharger shall increase or decrease, respectively, the sampling frequency accordingly.

**F. G. No Monitoring or Domestic Well Sampling is Required for the Following Locations:**

1. Southwest (i.e., upgradient) of the Lockhart Fault
2. On or Eeast of Dixie Road
3. Redundant monitoring wells (defined as being less than 200 feet from other monitoring wells except those screened across different depths) having the lower of chromium detections compared to the other nearby well may be removed from all sampling events.

## **II. REPORTING TYPES**

### **A. Quarterly Groundwater Monitoring Reports**

Beginning with third quarter 2015, quarterly groundwater monitoring reports for site-wide monitoring well and domestic/community/~~agricultural~~ well monitoring are due by **October 30, 2015**, and every quarter (three months) thereafter (i.e., January 30<sup>th</sup>, April 30<sup>th</sup>, July 30<sup>th</sup>, and October 30<sup>th</sup> of each year). The quarterly reports shall include required information for maps and reports as described below in Requirements III.B.1., B.2., and B.3. Chromium plume maps and Geotracker submittals shall be implemented according to the due dates described in Requirements III H.C. and III H.D.

### **B. Annual Cleanup Status and Effectiveness Reports, and Operational Plans**

**Beginning February 28, 2016**, submit annual cleanup effectiveness reports to reach target concentrations listed in CAO Requirement VI. The reports shall

describe all clean up actions planned and/or implemented during the previous calendar year. PG&E shall explain why any planned cleanup actions were not implemented. Each report shall discuss the actual effectiveness of the final cleanup remedy compared to the prior year's data and expected effectiveness showing the fourth quarter chromium plume boundary for the year before versus that year's fourth quarter chromium plume boundary map on the same figure. Provide a calculation for chromium mass removed over the year and the cumulative mass removed since initial remedial actions were implemented in 1992. If current actions are not achieving expected reductions in chromium concentrations, the report shall propose recommendations and an implementation schedule to increase effectiveness. **Within 30 days of the annual report due date**, implement the recommended actions that do not require Water Board approval.

Each annual report shall also include operational plans for the upcoming year. Operational plans shall be specific to each remediation system (e.g., ATUs, IRZs, and freshwater injection areas), and shall describe minimum planned flow rates, injection rates, reagent volumes, or other pertinent measures of operational effort to maintain plume capture, and demonstrate progress toward meeting remediation goals. Subsequent annual status reports shall be submitted by February 28 of each calendar year, starting with the year 2017. In the fourth year, the annual report shall be replaced by a four-year Comprehensive Cleanup Status and Effectiveness Report, as described in the next section.

### C. Four-Year Comprehensive Cleanup Status and Effectiveness Reports

**Beginning March 30, 2020**, in lieu of the annual report, submit a report containing a comprehensive evaluation of chromium cleanup actions to reach target concentrations listed in CAO Requirement VI. These four-year comprehensive reports shall summarize the information listed above in the annual reports, II.B, during the previous four years of remedial action. Each report shall contain a figure showing the fourth quarter chromium plume boundary map for each of the four years. Using this figure and other information, each report shall compare the fourth year data to data from the previous three years to discuss remediation effectiveness. The fourth year data shall also be compared to data from the year this Order is issued, and all intermittent four-year reports. Data collected over the four-year period shall be used to update groundwater models for predicting chromium cleanup to target concentrations. The report shall also provide research of best available technologies that may be available to remediate chromium in groundwater sooner than target deadlines in this Order. Using the groundwater model results, evaluate the progress to reach target chromium concentrations by the associated deadlines. Describe whether current actions are or are not achieving expected reductions in chromium concentrations. If cleanup actions are not achieving expected reductions, submit a workplan **within 30 days of the date of the 4-year report due date** proposing recommendations and an implementation schedule to increase effectiveness. If



best available technology is not recommended, the report and workplan shall state why and provide supporting information. The 4-year reports can consider, evaluate, and include corrective actions previously approved by the Water Board. Subsequent four-year comprehensive reports shall be submitted by March 30 every four years, starting with the year 2024.

### III. GROUNDWATER MONITORING REPORTS

- A. Quarterly groundwater monitoring reports shall include all monitoring data, laboratory reports, related maps, tables of historical data, calculations, statistical test results for that quarter, and recommendations, such as locations for the installation of additional monitoring wells within a quarter mile of any domestic well(s), as needed.
- B. Quarterly reports shall define the full lateral and vertical extent of chromium in groundwater, based on the monitoring information gathered pursuant to the MRP, for hexavalent and total chromium to at least the maximum background levels of 3.1 ppb and 3.2 ppb, respectively, in the upper aquifer, and to non-detect concentrations in the lower aquifer, and determine the direction of groundwater flow. At a minimum, quarterly monitoring reports shall contain the information listed below.

#### 1. Map Types

- a. Show the extent of total and hexavalent chromium in groundwater in the upper aquifer. These maps are not to show the approximate limit of saturated alluvium in upper aquifer or flow directional arrows. Each quarterly report shall contain two maps:
  - i. A map showing the maximum plume boundary throughout the uppermost saturated zone. Chromium concentrations shall be shown next to each monitoring well sampled. Include the location of domestic wells sampled.
  - ii. A separate map showing the maximum plume boundary that quarter compared to the plume boundary in the prior quarter.
- b. Potentiometric map for the upper aquifer showing the groundwater flow directions, estimated flow velocity, and calculated gradients, along the length of the mapped chromium plume and areas where PG&E collected water table data. Do not include the approximate limit of saturated alluvium in upper aquifer.
- c. Potentiometric map for the lower aquifer showing the groundwater flow directions, estimated flow velocity, and calculated gradients, along the length of the mapped chromium plume where water table data exist. Include the approximate limit of saturated alluvium in upper aquifer.

- d. Map showing all active and inactive domestic/community/~~agricultural~~ supply wells, including those wells on PG&E-owned property and used that quarter for any purpose. Chromium concentrations shall be shown next to each water supply well sampled.
- e. Chromium plume maps shall be submitted to the Water Board in digitized form (such as a pdf document). At least one of the submitted maps shall contain monitoring data and plume lines and be printed by the public on 8-1/2 inch by 11 inch and 11 inch by 17 inch paper. Another submitted map shall contain only plume lines and be printed by the public on 8-1/2 inch by 11 inch paper.

## 2. Map Content

- a. Map contents shall be consistent between each map, including data, color, symbols, etc.
- b. Text font size on maps shall be 9 points or greater.
- c. Street names shall be shown in black color to be easily legible.
- d. Location of all active supply wells used for remedial actions and the compressor station operations.
- e. Approximate location of the Lockhart Fault.
- f. Chromium boundary lines on plume maps shall reflect the reported maximum hexavalent or total chromium concentration reported in monitoring wells and extraction wells at all locations for that quarter. Monitoring wells used to draw the 3.1 ppb Cr(VI) or 3.2 ppb Cr(T) boundary lines shall have plume lines drawn through the monitoring well.
- g. Chromium plume boundary lines shall show monitoring and extraction well concentration contours representing the maximum extent of the following: 1,000 ppb Cr(VI) or Cr(T), 50 ppb Cr(T), 10 ppb Cr(VI), 3.1 ppb Cr(VI) or 3.2 ppb Cr(T).
- h. Plume boundary lines shall be drawn to connect any monitoring well located within one-half mile (2,600 ft) of any other monitoring well having chromium concentrations of 3.1 ppb Cr(VI) or 3.2 ppb Cr(T) or greater. Where access is not granted to install additional monitoring wells, plume boundary lines shall be drawn to connect monitoring wells exceeding background concentrations up to one mile apart.
- i. The dashed line representing the inferred chromium boundary of 3.1 ppb Cr(VI) or 3.2 ppb Cr(T) shall be a dark color so as to stand out in contrast to other markings on the map.
- j. Where access to private property or endangered species habitat has not been granted for six months or more, the chromium plume boundary shall be drawn around any domestic well containing chromium concentrations exceeding 3.1 ppb Cr(VI) or 3.2 ppb Cr(T) and within a one mile distance of the prior quarter's plume boundary.
- k. Domestic wells having chromium concentrations exceeding maximum background levels and which become inactive in the prior quarter can be

removed from maps only if a monitoring well exists and is monitored within one-quarter mile distance of that domestic well.

### 3. Report Content

- a. Describe depth to groundwater, changes from prior quarter, and calculated gradients and flow direction.
- b. Table of groundwater elevation data for all monitoring and remediation wells sampled over prior 12 months,
- c. Potentiometric map showing the groundwater flow direction and the calculated flow gradient,
- d. Laboratory results:
  - i. Sample results showing a difference of 25% or greater between Cr(VI) and Cr(T) concentrations shall be re-analyzed within same quarter and the ensuing results described.
  - ii. Tabulate laboratory results for monitoring wells, remediation wells, domestic/community/agricultural supply wells, and include data over the prior 12-months of sampling for each well.
- e. Describe all required monitoring wells or water supply wells not sampled during quarter and provide an explanation why.
- f. Interpret chromium plume boundary in the upper and lower aquifers compared to boundary lines in prior quarter. State if this quarter's boundary lines are stable or have migrated. If migration occurred, explain why it migrated (if due to PG&E's actions, natural groundwater movement, or actions by others).
- g. If the chromium plume boundary is undefined in certain areas (sampling locations are more than one-quarter mile distance), submit a workplan proposing additional sampling locations in accessible areas and an implementation schedule.
- h. Describe methods and actions for installing wells, as needed.
- i. The domestic well sampling and monitoring requirements shall be included in the main body of the report (not as an appendix) and include:
  - i. Total number and sampling results for wells that quarter, including number of wells exceeding maximum background levels and chromium MCLs.
  - ii. Required water supply wells not sampled that quarter with an explanation.
  - iii. Map showing all active domestic wells in sampling program and detected chromium concentrations for each monitoring event.
  - iv. Table of inactive water supply wells.
- j. Include appendices for boring logs and well designs for any wells installed during the quarter.

- k. Include appendix with description explaining the difference between monitoring well labels, such as A, B, C versus S and D, etc.
- l. Include appendix of Standard Operating Procedures for sampling procedures of monitoring wells and domestic wells.
- m. Include appendix of laboratory reports and field notes.
- n. Discuss calculated groundwater flow direction and velocity based on groundwater elevation data and not surface topography.
- o. Discuss the status of conditions that prevent access to land for installation of monitoring wells. Such conditions may include, but not be limited too, permission to access to private property by the owner, acquisition of private property, and approval from agencies, such as Department of Fish and Wildlife, to lands that may be considered endangered species habitat or threatened species habitat. Note if conditions change such that access is available.

### C. Plume Map Submittals

Chromium plume maps shall be submitted to the Water Board in digitized form (such as a pdf document) within **one** business day of the report due date. At least one of the submitted maps shall contain monitoring data and plume lines and be printed by the public on 8-1/2 inch by 11 inch and 11 inch by 17 inch paper. Another submitted map shall contain only plume lines and be printed by the public on 8-1/2 inch by 11 inch paper.

### D. Geotracker Submittals

Reports shall be uploaded to the State Water Resources Control Board's Geotracker database, within **one** business day of the report due date, so that reports can be viewed by the public at the link: [https://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=SL0607111288](https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607111288). If report appendices are uploaded as separate files, the appendix number or letter shall be included in the file name.

### E. Other Monitoring Requirements Not Superseded

Requirements for site-wide groundwater monitoring and domestic well sampling and monitoring do not supersede sampling requirements in Water Board orders R6V-2008-0014 and R6V-2014-0023 and related Notices of Applicability.

## III. MONITORING FOR COMPLIANCE WITH CAO CLEANUP REQUIREMENTS FOR SOUTHERN PLUME

The monitoring and remediation wells listed in Table 8.1 shall be evaluated in four-year comprehensive reports required above by Requirement II.C. All wells in Table 8.1 shall be monitored at the frequency specified in MRP Attachment A **quarterly** for

total and hexavalent chromium to assess progress toward and compliance with cleanup requirements specified in CAO Requirement VI.B. The concentrations of chromium listed in Table 8.1 are of third quarter 2014.

**Table 8.1. Monitoring Wells for Evaluating Compliance with CAO Cleanup Requirements for Southern Plume.**

Compliance MWs for 50 ppb Target	Cr(VI) (ppb)	CrT (ppb)	Compliance MWs for 10 ppb Target	Cr(VI) (ppb)	CrT (ppb)
CA-MW-107D	150		PMW-01	42	
CA-MW-108S	76		CA-MW-204D	29	
CA-MW302D	99	99	CA-MW-312D	28	29
CA-MW-315D	75	76	CA-MW-402S	40	39
CA-MW-405D	74	75	CA-MW-404S	19	19
DPMW-03	320	360	CA-MW-411S	25	25
MW-01	550	610	CA-MW-412D	28	29
MW-11B	1400	1400	CA-MW-506D	13	14
MW-15	1700	1800	CA-MW-508D	32	32
MW-17	110	99	EX-02	20	18
MW-178D	290		EX-15	11	11
MW-178S	220		EX-20	13	13
MW-18	53		EX-26	22	
MW-180RD	95		EX-30	41	43
MW-180RS	92		EX-34	21	
MW-193S3	140	150	IW-01	26	28
MW-20	700	720	IW-02	15	17
MW-36	84	87	MW-03	13	12
PT2-MW-10	510		MW-04	33	34
SA-MW-01S	400	450	MW-10	22	23
SA-MW-02D	150	160	MW-108D	35	35
SA-MW-04S	220	250	MW-108S	41	39
SA-MW-05D	3900	4100	MW-109	13	12
SA-MW-06S	520	570	MW-12B	12	13
SA-MW-07D	880		MW-13	22	23
SA-MW-09S	470		MW-14B	35	32
SA-MW-10D	400	430	MW-14S	29	29
SA-MW-11S	430		MW-154S1	13	14
SA-MW-11D	120		MW-179D	26	
SA-MW-15D	90		MW-182D	39	
SA-MW-16S	340	390	MW-182S	30	
SA-MW-17S	190	210	MW-183D	22	
SA-MW-18D	64	69	MW-183S	33	
SA-MW-20D	830	910	MW-22B	29	29

Compliance MWs for 50 ppb Target	Cr(VI) (ppb)	CrT (ppb)	Compliance MWs for 10 ppb Target	Cr(VI) (ppb)	CrT (ppb)
SA-MW-26S	360	380	MW-23B	44	47
SA-SM-015-01S	740		MW-27A	12	11
SA-SM-02D	1800		MW-28B	14	15
SA-SM-08D	290	310	MW-30B2	12	13
SA-SM-11D	95	100	MW-38B	28	27
SC-MW-03D	320	350	MW-39D	23	
SC-MW-12S	330	340	MW-41S	11	14
SC-MW-13S	110	120	MW-42B1	33	33
SC-MW-21S	440		MW-42B2	45	48
SC-MW-26D	1000		MW-43	10	11
SC-MW-38D	55	52	MW-50S	14	14
<b># OF WELLS</b>	<b><u>44-45</u></b>		MW-68D	12	11
<b>90 % OF TOTAL (compliance target)</b>	<b><u>40-41</u></b>		SA-SM-10D	22	
Minimum Cr value (3Q 2014, ppb)	52		X-16	15	
Maximum Cr value (3Q 2014, ppb)	4100		Y-01	12	
			Y-03	11	
			<b># OF WELLS</b>	<b><u>49-50</u></b>	
			<b>80% OF TOTAL (compliance target)</b>	<b><u>39-40</u></b>	
			Minimum Cr value (3Q 2014, ppb)	10	
			Maximum Cr value (3Q 2014, ppb)	48	

**IV. CRITERIA FOR REMOVAL OR ABANDONMENT OF PG&E-OWNED INACTIVE DOMESTIC WELLS FROM SAMPLING PROGRAM**

- A. The Discharger may remove inactive wells from the domestic well sampling requirements specified above in Requirement I.B.2, if such wells meet the following criteria:
1. The domestic well is located within 2,000 feet of a multi-depth monitoring well, or
  2. The domestic well does not contain hexavalent or total chromium concentrations of 2.0 µg/L or greater since September 2011.
  3. Prior to removing domestic wells from the sampling program, the Discharger shall provide the Water Board with a list of inactive domestic

wells and the rationale for removal from the sampling program within each quarterly report.

4. Domestic wells removed from the sampling program shall be left in place and secured (capped in place) until they become active or a decision is made to abandon them under IV.B, below ~~to be evaluated in the future for potential sampling.~~
- B. The Discharger may abandon inactive domestic wells, for example, those which are screened across both the upper and lower aquifers.
1. Prior to abandonment, the Discharger will provide the Water Board with a list of inactive domestic wells proposed for abandonment at least 14 days before initiating abandonment actions.
  2. Upon Water Board staff's acceptance of the list, the Discharger will abandon inactive domestic wells in accordance with state Well Standards and county ordinances.

**Attachments:**

Attachment A: Southern Plume Area Monitoring Program

Attachment B: Figure 8.1, Decision Tree for Monitoring Frequency, Southern Plume Area

Attachment C: Figure 8.2, Decision Tree for Monitoring Frequency, Northern Area

MRP Attachment A: Southern Plume Area Monitoring  
Program



**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
BW-01D	LUA				Q		
BW-01S	UUA				Q		
C-01	UA				Q		
C-02	UUA				Q		
C-04	UA				Q		
CA-MW-101D	LUA		Q				
CA-MW-102D	LUA		SA				
CA-MW-103D	LUA		SA				
CA-MW-104D	LUA		SA				
CA-MW-104S	UUA		SA				
CA-MW-105	UA		SA				
CA-MW-105D	LUA		SA				
CA-MW-106D	LUA		SA				
CA-MW-107D	LUA		Q				
CA-MW-108D	LUA		Q				
CA-MW-108S	UUA		SA				
CA-MW-109D	LUA		Q				
CA-MW-109S	UUA		A				
CA-MW-110	UUA	Q					
CA-MW-201	UUA		A				
CA-MW-202	UUA		A				
CA-MW-203	UA		A				
CA-MW-204D	LUA		SA				
CA-MW-204S	UUA		A				
CA-MW-301	UUA		Q				
CA-MW-302D	LUA		SA				
CA-MW-302S	UUA		SA				
CA-MW-303D	LUA		SA				
CA-MW-303S	UUA		SA				
CA-MW-304	UUA		SA				
CA-MW-305	UUA		A				
CA-MW-306D	LUA		SA				
CA-MW-306S	UUA		A				
CA-MW-307D	LUA		A				
CA-MW-307S	UUA		A				
CA-MW-308	UUA		A				
CA-MW-309	UUA		A				
CA-MW-310D	LUA		SA				
CA-MW-310S	UUA		SA				
CA-MW-311	UUA		A				
CA-MW-312D	LUA		Q				
CA-MW-313	UUA		Q				
CA-MW-314	UUA		A				

**Attachment A  
Southern Plume Area Monitoring Program**

		Remediation Effectiveness Monitoring			Chromium Monitoring		
Well ID	Aquifer Zone	ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
CA-MW-315D	LUA		SA				
CA-MW-315S	UUA		A				
CA-MW-316	UUA		A				
CA-MW-317D	LUA		SA				
CA-MW-317S	UUA		A				
CA-MW-401	UUA		SA				
CA-MW-402D	LUA		A				
CA-MW-402S	UUA		SA				
CA-MW-403D	LUA		A				
CA-MW-403S	UUA		A				
CA-MW-404D	LUA		A				
CA-MW-404S	UUA		SA				
CA-MW-405D	LUA		SA				
CA-MW-405S	UUA		A				
CA-MW-406	UUA		SA				
CA-MW-407	UUA		A				
CA-MW-408	UUA		SA				
CA-MW-409D	LUA		SA				
CA-MW-409S	UUA		A				
CA-MW-410	UUA		SA				
CA-MW-411D	LUA		A				
CA-MW-411S	UUA		SA				
CA-MW-412D	LUA		Q				
CA-MW-412S	UUA		Q				
CA-MW-501D	LUA		Q				
CA-MW-501S	UUA		Q				
CA-MW-502	UUA		SA				
CA-MW-503D	LUA		A				
CA-MW-503S	UUA		SA				
CA-MW-504	UUA		SA				
CA-MW-505	UUA		SA				
CA-MW-506D	LUA		SA				
CA-MW-506S	UUA		Q				
CA-MW-507	UUA		SA				
CA-MW-508D	LUA		SA				
CA-MW-508S	UUA		A				
CA-MW-509	UUA		A				
CA-MW-510D	LUA		Q				
CA-MW-510S	UUA		A				
CA-MW-511	UUA		Q				
CA-MW-601	UUA		Q				
CA-MW-602	UUA		Q				
CA-MW-603	UUA		Q				

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
CPVT	UNK	Q					
DVD-BS-01	UNK	Q					
DW-02	UUA	Q		X			
DW-03	UUA			X	Q		
EX-02	UA				Q		
EX-03	UA				Q		
EX-04	LUA				Q		
EX-05	UUA				Q		
EX-15	UA				Q		
EX-16	UA				Q		
EX-17	UUA				Q		
EX-20	UA				Q		
EX-21	UA				Q		
EX-23	UA				Q		
EX-31	UUA				Q		
EX-32	UUA				Q		
EX-33	UUA				Q		
EX-35	UUA				Q		
EX-36	UA				Q		
G-1R	UA				Q		
G-2R	UUA				Q		
GPVTN	UNK	Q					
GPVTS	UNK	Q					
IW-01	UA				Q		
IW-02	UA				Q		
IW-03	UA				Q		
MW-01	UUA		A				
MW-03	LUA				Q		
MW-03A	UA		Q				
MW-04	UUA		SA				
MW-05	UUA				Q		
MW-06	UUA		A				
MW-09	LUA				Q		
MW-100C	LA				Q		
MW-101D	LUA				Q		
MW-102D	LUA				Q		
MW-105D	LUA	Q					
MW-105S	UUA	Q					
MW-107S	UUA				Q		
MW-108S	UUA				Q		
MW-109	UUA				Q		
MW-110S	UUA				Q		
MW-112S	UUA				Q		

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
MW-116D1	LUA				Q		
MW-118S	UUA						Q
MW-11A	UUA		A				
MW-11B	LUA		Q				
MW-11C	LA				A		
MW-121D	LUA				Q		
MW-121S	UUA				SA		
MW-122D	LUA				Q		
MW-124S1	UUA				Q		
MW-124S2	UUA				Q		
MW-126S1	UUA				Q		
MW-126S2	UUA				Q		
MW-127S1	UUA	Q					
MW-127S2	UUA	Q					
MW-128S1	UUA				Q		
MW-12B	LUA		A				
MW-13	LUA		A				
MW-147D	LUA					SA	
MW-147S	UUA				Q		
MW-148S	UUA					SA	
MW-14A	UUA		SA				
MW-14B	LUA	SA					
MW-14C	LA				A		
MW-14S	UUA	SA					
MW-153S	LUA				Q		
MW-155D	LUA		Q				
MW-155S	UUA		Q				
MW-158CR	LA				A		
MW-16	UUA	Q					
MW-164D	LUA				SA		
MW-164S	UUA				SA		
MW-168D	LUA					A	
MW-168S	UUA					SA	
MW-169S2	UUA				Q		
MW-17	UUA		Q				
MW-170S	UUA	Q		X			
MW-172S1	UUA				Q		
MW-172S2	UUA				Q		
MW-177D	LUA		Q				
MW-177S	UUA		SA				
MW-178D	LUA		Q				
MW-178S	UUA	Q					
MW-179D	LUA		Q				

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
MW-179S	UUA		SA				
MW-17D	LUA		SA				
MW-18	UA		SA				
MW-180RD	LUA		Q				
MW-180RS	UUA		Q				
MW-181D	LUA		SA				
MW-181S	UUA		SA				
MW-182D	LUA		Q				
MW-182S	UUA		Q				
MW-183D	LUA		Q				
MW-183S	UUA		Q				
MW-20	UUA		Q				
MW-201D	LUA						A
MW-201S	UUA						SA
MW-202S	UUA				Q		
MW-203D	LUA				Q		
MW-206S	UUA	Q					
MW-208S	UUA	Q					
MW-209S	UUA	Q					
MW-210S	UUA	SA					
MW-211S	UUA	Q					
MW-21A	UA	Q		X			
MW-21B	LUA			X			
MW-21B1	LUA	Q					
MW-21C	LA				SA		
MW-22A1	UA	SA					
MW-22B	LUA	SA					
MW-23B	LUA				Q		
MW-23C	LA				Q		
MW-27A	UUA	SA					
MW-27B	LUA	SA					
MW-28A	UUA	SA					
MW-28B	LUA	SA					
MW-28C	LA				Q		
MW-29	UUA	SA		X			
MW-30B2	LUA			X			
MW-31	LUA	Q					
MW-31C	LA				Q		
MW-32B1	LUA	Q					
MW-32S	UUA	Q		X			
MW-34	LA				SA		
MW-36	UUA		Q				
MW-37	UUA				Q		

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c,d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
MW-38A	UUA		SA				
MW-38B	LUA		Q				
MW-39	UUA		SA				
MW-39D	LUA		Q				
MW-41B	LUA			X			
MW-41S	UUA			X	Q		
MW-42B1	LUA	SA					
MW-42B2	LUA	SA		X			
MW-42C	LA				Q		
MW-43	LUA				Q		
MW-44A	UUA				Q		
MW-44B	LUA				Q		
MW-45A	UUA			X	Q		
MW-45B	LUA				Q		
MW-46	UUA		SA				
MW-47	UA			X	Q		
MW-47A	UUA			X			
MW-49A	LUA	SA					
MW-49B	LUA	SA					
MW-49S	UUA				Q		
MW-50B	LUA			X	Q		
MW-50S	UUA			X	Q		
MW-54	UUA			X	Q		
MW-55A	LUA	Q					
MW-55B	LUA			X			
MW-55C	LA				SA		
MW-55S	UUA	Q		X			
MW-56	LUA	SA					
MW-57	UUA					SA	
MW-57D	LUA					SA	
MW-58	UUA			X	Q		
MW-59	UUA				A		
MW-61	UUA		SA				
MW-62A	LUA			X	Q		
MW-62C	LA				SA		
MW-63	UUA	Q					
MW-66A	UUA				Q		
MW-67A	UUA		Q				
MW-67B	LUA		Q				
MW-68C	LA				SA		
MW-68D	LUA	Q		X			
MW-68S	UUA	Q		X			
MW-69D	LUA			X	Q		

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c,d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
MW-69S	UUA			X	Q		
MW-70D	LUA	Q					
MW-70S	UUA	Q		X			
MW-71D	LUA	Q					
MW-71S	UUA	Q		X			
MW-72S	UUA			X	Q		
MW-73D	LUA		Q				
MW-73S	UUA		Q				
MW-74D	UUA		Q				
MW-74S	UUA		Q				
MW-75D	LUA		Q				
MW-76S	UUA			X	Q		
MW-78D	LUA		SA				
MW-78S	UUA		Q				
MW-79S	UUA			X	Q		
MW-80S	UUA			X	Q		
MW-82S	UUA			X			
MW-83D	UUA	Q		X			
MW-83S	UUA	Q					
MW-84D	LUA	Q					
MW-84S	UUA	Q					
MW-85D	LUA	Q					
MW-85S	UUA	Q					
MW-86D	LUA	SA					
MW-86S	UUA	SA		X			
MW-87D	LUA				Q		
MW-87S	UUA			X	Q		
MW-88D	LUA	SA					
MW-88S	UUA	SA		X			
MW-89D	LUA	Q					
MW-89S	UUA	Q					
MW-90C	LA				Q		
MW-91C	LA				Q		
MW-92C	LA				Q		
MW-93C	LA				SA		
MW-94S	UUA				Q		
MW-95S	UUA				Q		
MW-96S	UUA				Q		
MW-97S	UUA				Q		
MW-98C	LA				Q		
MW-99C	LA				SA		
PMW-02	UUA	SA					
PMW-03	LUA		Q				

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
PMW-04	UA		SA				
PMW-05	UA		Q				
PMW-06	UA		A				
PT1-MW-01	UA		SA				
PT1-MW-04	UA		Q				
PT2-MW-08	UA		A				
PT2-MW-09	UA		SA				
PT2-MW-10	LUA		Q				
PT2-MW-11	UA		SA				
PZ-04	UUA			X			
PZ-05	UUA			X			
PZ-06	UUA			X			
PZ-08	UUA			X			
RPVT	UNK	Q					
SA-MW-01D	LUA		SA				
SA-MW-01S	UUA		Q				
SA-MW-02D	LUA		A				
SA-MW-02S	UUA		Q				
SA-MW-03D	LUA		A				
SA-MW-03S	UUA		A				
SA-MW-04D	LUA		SA				
SA-MW-04S	UUA		SA				
SA-MW-05D	LUA		Q				
SA-MW-05S	UUA		A				
SA-MW-06D	LUA		SA				
SA-MW-06S	UUA		Q				
SA-MW-07D	LUA		Q				
SA-MW-07S	UUA		Q				
SA-MW-08D	LUA		Q				
SA-MW-08S	UUA		SA				
SA-MW-09D	LUA		A				
SA-MW-09S	UUA		Q				
SA-MW-10D	LUA		Q				
SA-MW-10S	UUA		SA				
SA-MW-11D	LUA		SA				
SA-MW-11S	UUA		Q				
SA-MW-12D	LUA		SA				
SA-MW-12S	UUA		Q				
SA-MW-13D	LUA		A				
SA-MW-13S	UUA		Q				
SA-MW-14D	LUA		SA				
SA-MW-14S	UUA		SA				
SA-MW-15D	LUA		SA				



**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
SA-MW-15S	UUA	Q					
SA-MW-16D	LUA		Q				
SA-MW-16S	UUA		Q				
SA-MW-17D	LUA		SA				
SA-MW-17S	UUA		Q				
SA-MW-18D	LUA		SA				
SA-MW-18S	UUA		Q				
SA-MW-20D	LUA		Q				
SA-MW-20S	UUA		SA				
SA-MW-21D	LUA		SA				
SA-MW-21S	UUA		A				
SA-MW-22D	LUA		A				
SA-MW-22S	UUA		A				
SA-MW-24D	LUA		SA				
SA-MW-24S	UUA		SA				
SA-MW-25D	LUA		Q				
SA-MW-25S	UUA		Q				
SA-MW-26D	LUA		Q				
SA-MW-26S	UUA		Q				
SA-MW-27D	LUA		Q				
SA-MW-27S	UUA		Q				
SA-SM-01D	LUA		Q				
SA-SM-01S	UUA		Q				
SA-SM-02D	LUA		A				
SA-SM-02S	UUA		Q				
SA-SM-03D	LUA		A				
SA-SM-03S	UUA		A				
SA-SM-04S	UUA		A				
SA-SM-05S	UUA		A				
SA-SM-06D	LUA		A				
SA-SM-06S	UUA		SA				
SA-SM-07D	LUA		A				
SA-SM-07S	UUA		A				
SA-SM-08D	LUA		Q				
SA-SM-08S	UUA		A				
SA-SM-09D	LUA		A				
SA-SM-09S	UUA		SA				
SA-SM-10D	LUA		A				
SA-SM-10S	UUA		A				
SA-SM-11D	LUA		SA				
SA-SM-11S	UUA		A				
SC-MW-01D	LUA		Q				
SC-MW-01S	UUA		Q				

**Attachment A**  
**Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
SC-MW-02D	LUA		Q				
SC-MW-02S	UUA		Q				
SC-MW-03D	LUA		Q				
SC-MW-03S	UUA		Q				
SC-MW-04D	LUA		Q				
SC-MW-04S	UUA		Q				
SC-MW-05D	LUA		Q				
SC-MW-05S	UUA		SA				
SC-MW-06D	LUA		Q				
SC-MW-06S	UUA		Q				
SC-MW-07D	LUA		SA				
SC-MW-07S	UUA		Q				
SC-MW-08D	LUA		SA				
SC-MW-08S	UUA		SA				
SC-MW-09D	LUA		Q				
SC-MW-09S	UUA		SA				
SC-MW-10D	LUA		Q				
SC-MW-10S	UUA		Q				
SC-MW-11D	LUA		Q				
SC-MW-11S	UUA		Q				
SC-MW-12D	LUA		Q				
SC-MW-12S	UUA		Q				
SC-MW-13D	LUA		Q				
SC-MW-13S	UUA	Q					
SC-MW-14D	LUA		Q				
SC-MW-14S	UUA	SA					
SC-MW-15D	LUA		Q				
SC-MW-15S	UUA		SA				
SC-MW-16C	LA				A		
SC-MW-16D	LUA		Q				
SC-MW-16S	UUA		SA				
SC-MW-21D	LUA		A				
SC-MW-21S	UUA	Q					
SC-MW-22D	LUA		A				
SC-MW-22S	UUA		A				
SC-MW-23D	LUA		A				
SC-MW-23S	UUA		A				
SC-MW-26D	LUA		Q				
SC-MW-26S	UUA		A				
SC-MW-32D	LUA		SA				
SC-MW-32S	UUA		A				
SC-MW-38D	LUA		SA				
SC-MW-38S	UUA		A				

**Attachment A  
Southern Plume Area Monitoring Program**

Well ID	Aquifer Zone	Remediation Effectiveness Monitoring			Chromium Monitoring		
		ATU Monitoring Plan <sup>a</sup>	IRZ Monitoring Plan <sup>b</sup>	Hydraulic Control Monitoring Plan (water levels only) <sup>c d</sup>	Used for contouring plume boundary	Downgradient of main contiguous plume	Domestic well protection
X-10	UA		SA				
X-11	LUA		A				
X-12	UA	Q					
X-16	LUA		A				
YAU	UNK	Q					
<b>TOTAL NUMBER OF WELLS:</b>		<b>434</b>					

<sup>a</sup> WDRs set forth in Water Board Order No. R6V 2014-0023 (Water Board 2014a)

<sup>b</sup> Water Board Letter "Comments on Manganese Investigation Technical Report, Pacific Gas and Electric (PG&E), Hinkley Compressor Station, San Bernardino County" (Water Board 2014b)

<sup>c</sup> Water Board Order No. R6V 2008 0002A3 (Water Board 2012). A proposed revision to the hydraulic control monitoring program was submitted to the Water Board on June 2, 2015

<sup>d</sup> Monitoring wells in Hydraulic Capture Monitoring Program have pressure transducers installed and record nearly continuous water level measurements (every 30 minutes). Manual water levels are also collected at these monitoring locations periodically

B = biennial monitoring frequency (sampled every two years)

Q = quarterly monitoring frequency

SA = semiannual monitoring frequency (sampled twice per year)

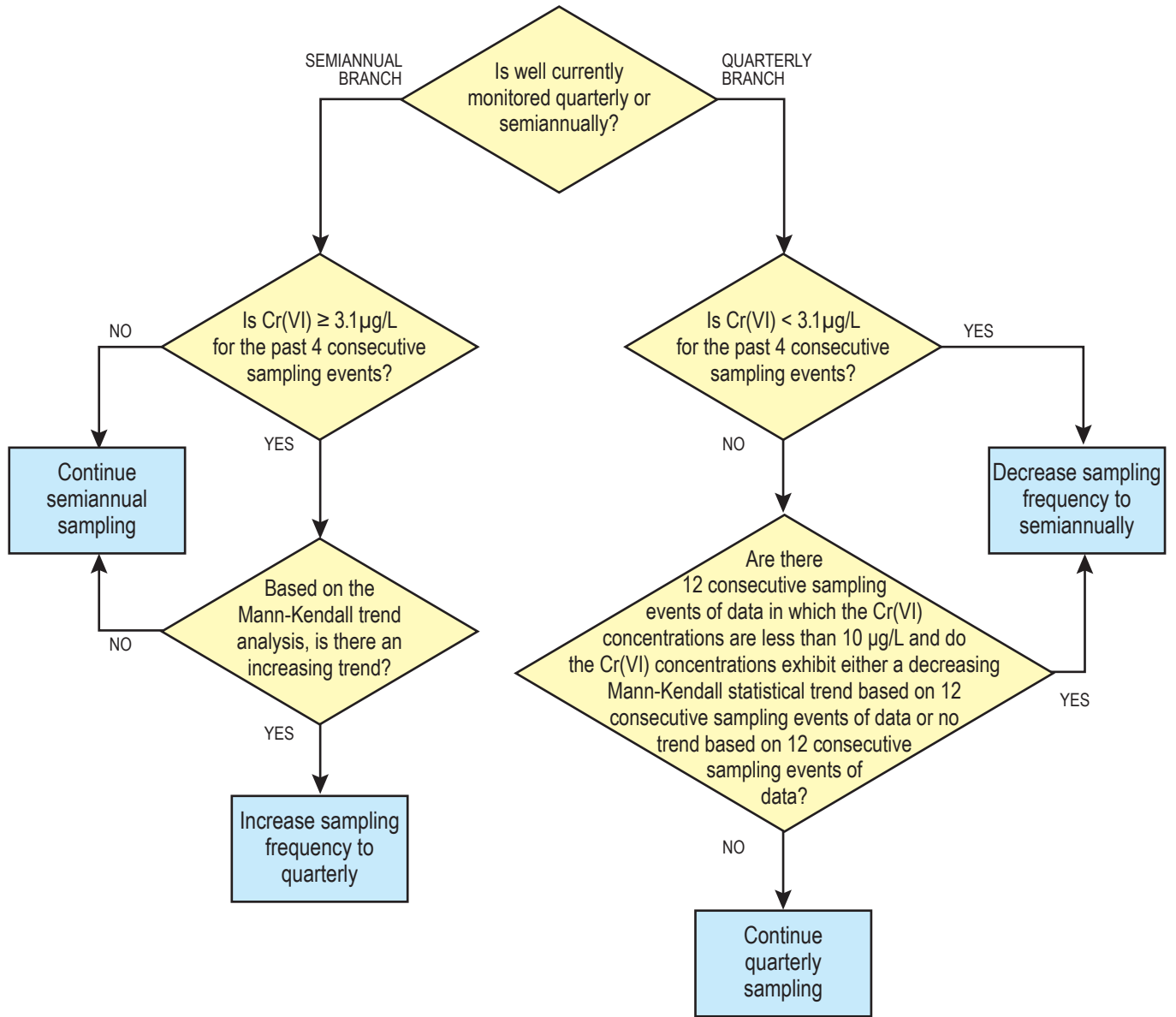
LA = lower aquifer

LUA = deep zone of the upper aquifer

UUA = shallow zone of the upper aquifer

MRP Attachment B: Figure 8.1, Decision Tree for Monitoring Frequency, Southern Plume Area

**EVERY YEAR**



**Note:**

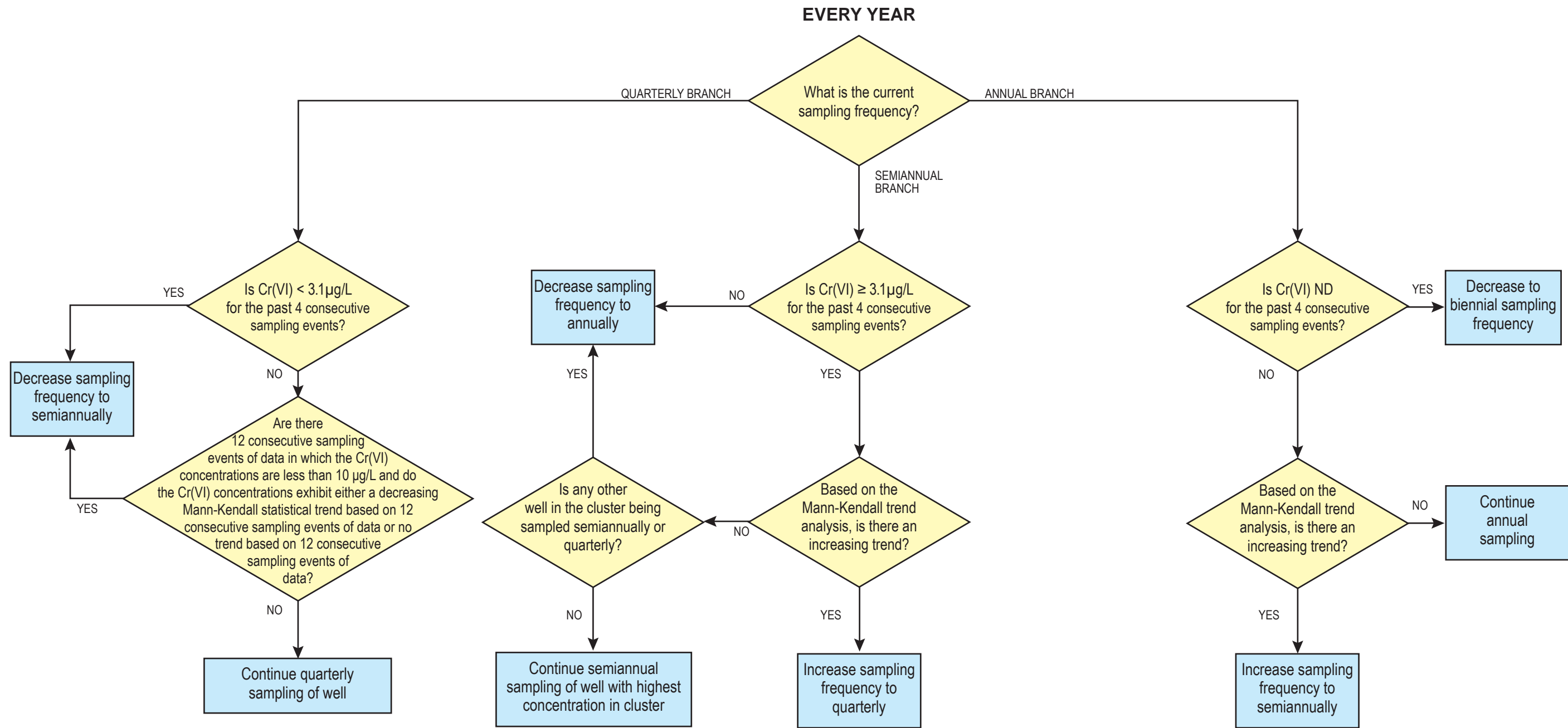
The few wells in this area that are monitored in the Southern Plume Area on an annual sampling frequency will continue on an annual sampling frequency. If changes to sampling frequency for these wells is needed, the evaluation will occur separately.

**Legend**

- Cr(VI)            hexavalent chromium
- µg/L             micrograms per liter
- Semiannual     Sampled twice per year

**FIGURE 8-1**  
Decision Tree for Monitoring Frequency, Southern Plume Area

## MRP Attachment C: Decision Tree for Monitoring Frequency, Northern Area



Note: Sampling frequency for wells sampled biennially will be evaluated on a case-by-case basis using similar logic as shown above.

- Legend
- Cr(VI) hexavalent chromium
  - µg/L micrograms per liter
  - ND Not detected
  - Semiannual Sampled twice per year
  - Biennial Sampled every two years

FIGURE 8-2  
Decision Tree for Monitoring Frequency, Northern Area