
Central Valley Regional Water Quality Control Board

10 February 2017

Tim Busch
Utility Engineering Division
City of Winters
300 First Street
Woodland, CA 95695

CERTIFIED MAIL
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NOTICE OF APPLICABILITY FOR WATER QUALITY ORDER 2012-0010-DWQ, AQUIFER STORAGE AND RECOVERY PILOT TEST, CITY OF WOODLAND, YOLO COUNTY.

On 9 January 2017, the City of Woodland (City) submitted a Notice of Intent (NOI) to apply for Waste Discharge Requirements (WDRs) for an aquifer storage and recovery (ASR) pilot test. The ASR pilot test will be conducted using treated drinking water sourced from the City's municipal drinking water distribution system and municipal wells for injection and recovery at a specific confined aquifer zone underlying the City service area. Conducting this pilot test will provide information to evaluate and prepare operational guidance for the City's planned multi-well ASR program.

Based on the information provided by the City, the proposed ASR pilot test qualifies for coverage under the *General Waste Discharge Requirements for ASR Projects that Inject Drinking Water into Groundwater* (State Water Resources Control Board Water Quality Order 2012-0010, General Order). Therefore, this letter serves as formal notice that the City of Woodland's ASR pilot test is applicable to Water Quality Order 2012-0010 as described below. The City is hereby assigned 2012-0010-DWQ-RB5S-0005 for implementation of the proposed ASR pilot test.

A copy of the General Order is enclosed. You can also find the General Order on the Regional Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/#General

You are urged to familiarize yourself with the contents of the entire General Order. The ASR pilot test must be operated in accordance with the requirements contained in the General Order, Standard Provisions and Reporting Requirements for WDRs, and with the information submitted in the January 2017 NOI.

BACKGROUND AND ASR PILOT TESTING

Historically, the City has relied solely on groundwater to meet water supply demands. In 2009, the Woodland-Davis Clean Water Agency (WDCWA), a joint powers authority, was formed between the cities of Woodland and Davis to provide surface water supply for use within each of their service areas to meet their respective water supply needs. The WDCWA Regional Water System (RWS), which has a capacity of 30 million gallons per day (mgd), became operational in the summer of 2016. Of the 30 mgd capacity, 18 mgd is dedicated to the City of Woodland. An ASR program will help the City address its water supply needs during periods of peak demand and drought.

In early 2014, a short-term ASR pilot test was conducted in City ASR Well 28 using treated water from City municipal supply wells, which was regulated under NOA 2012-0010-DWQ-RB5S-0003. The pilot test, including all injection and extraction activities were completed on 17 March 2014. The pilot test confirmed that the targeted depth interval of 350 to 500 feet below ground surface (bsg) is suitable for ASR, the injected water was confined to the targeted ASR zone, drinking water quality standards were maintained during the injection and recovery phases of the test, and disinfection byproducts were not detected in the monitored wells or recovered water. Regulatory coverage under NOA 2012-0010-DWQ-RB5S-0003 was rescinded on 20 February 2015 following the completion of the pilot test and all injection and extraction activities have ceased.

This second proposed ASR pilot test will use water diverted from the Sacramento River under Appropriate Water Right Permit 20281 and treated at the WDCWA RWS. Treated water will be routed through the City's potable water distribution systems to ASR wells located within the City's service area. Treated surface water will be injected into a confined aquifer zone between depths of approximately 350 and 500 feet bgs and stored there until needed for subsequent extraction and use. When needed to supplement the City's water supply, water stored in the ASR aquifer zone will be extracted using the City's ASR wells.

The proposed ASR pilot test will use ASR Wells 28, 29, and 30 and their associated monitoring networks. Well locations are shown on Attachment A. The pilot test will consist of baseline monitoring, cycle testing in ASR Well 28, and interim recharge testing in ASR Wells 29 and 30. Baseline monitoring will include treated municipal water monitoring prior to injection and monitoring of groundwater levels and quality in the ASR wells and their associated monitoring networks prior to pilot testing. The cycle testing will include a series of injection and recovery cycles at ASR Well 28 beginning in February 2017. The results of the test will be used to prepare operational guidelines for the City's three ASR Wells and considerations for future ASR well designs.

The cycle testing will be conducted for a period of approximately four to six months, with additional time to continue (up to six additional months) if after review of the results additional testing is warranted. Any additional cycle testing will be conducted in a manner similar to the cycle testing program described below. The cycle testing program will be conducted in phases.

1. **Initial Injection Phase.** Treated water is injected into ASR Well 28 for a period of four weeks at a rate of approximately 1,000 gallons per minute (gpm) or approximately 1.4 mgd.
2. **Initial Storage Phase.** Following the initial injection phase, injection will be stopped and the injected source water will be stored in the aquifer for approximately two weeks.

3. **Initial Recovery Phase.** ASR Well 28 will be pumped to recover approximately one-half of the stored water, based upon calculations of total water injected during the initial storage phase to ensure preservation of the buffer zone.

The interim recharge testing occurs during the time period between when the ASR wells have been constructed and pump tested, and the time when they have been fully equipped and are ready for full operation (typically eight to ten months). The duration of the interim recharge period and amount of water stored for each of the ASR wells will depend upon the initial recharge capacity and the efficiency rate for each well. Based on initial test pumping performed during well construction, targeted flow rates for continuous injection for ASR Wells 29 and 30 are 1,200 to 1,300 gpm and 600 to 700 gpm, respectively.

Constituents of concern identified in groundwater within the City's service area include total dissolved solids (TDS), nitrate, boron, selenium, and hexavalent chromium. In addition, known historical contaminants within the expected areas of influence limited to the shallow soil include gasoline, polynuclear aromatic hydrocarbons, methyl tertiary butyl ether, diesel, tetrachloroethylene, and trichloroethylene. Due to the depth of the target aquifer zone, thick confining units overlying the aquifer zone, and the deep surface seals used for ASR Wells 28, 29, and 30, upward movement of injected or displaced water from the target aquifer zone to the shallower aquifer zones are not expected. And therefore, mobilization of contaminants from the shallow aquifer is not expected during the ASR pilot test or long-term ASR Program operations.

ELIGIBILITY

Based on the NOI, the proposed ASR pilot test is consistent with the requirements set forth in Attachment C of the General Order and meets the following eligibility requirements:

1. Injected water will be treated and delivered to each injection well consistent with the requirements of a California Department of Public Health domestic water supply permit.
2. The existing ASR Wells 28, 29, and 30 used for the ASR pilot test and their monitoring well network were constructed in compliance with California Well Standards. All ASR related wells to be installed in the future will also comply with these standards.
3. Injected water for ASR pilot testing will be of a quality that will ensure compliance with the General Order.
4. The ASR pilot test is not restricted by local ordinance, prohibition, or other law or regulation, and
5. An environmental impact evaluation has been performed pursuant to the California Environmental Quality Act (CEQA) and is consistent with the requirements of the General Order.

MONITORING AND REPORTING PROGRAM

The City shall comply with the monitoring and reporting requirements prescribed in Monitoring and Reporting Program (MRP) R5-2017-0801 included as Attachment B of this Notice of Applicability.

GENERAL INFORMATION AND REQUIREMENTS

This NOA authorizes implementation of the proposed ASR pilot test under Water Quality Order 2012-0010-DWQ for the wells cited in the January 2017 NOI documentation and discussed in

this NOA. In accordance with Prohibition B.4 of the General Order, operation of a pilot test shall not extend beyond 24 months from the date this NOA is issued. The City shall comply with the Prohibitions, Requirements, Groundwater and Surface Water Limitations, and Provisions of Water Quality Order 2012-0010-DWQ. The City of Woodland is encouraged to become familiar with the contents of the entire General Order. All ASR functions must be operated in accordance with the requirements contained in the General Order and with the NOI and supporting documentation.

In order to obtain coverage for the City's long-term ASR program, the City shall submit a technical addendum describing the results of the pilot test and a NOI for coverage under the General Order. The technical addendum shall confirm that the long-term ASR Program is eligible for coverage under the General Order.

Please review this NOA carefully to ensure that it completely and accurately reflects the proposed discharge. The City of Woodland will maintain exclusive control over the discharge and subject to the terms and conditions of the General Order. As such, the City is primarily responsible for compliance with the General Order. If the City violates the terms or conditions of the General Order, the Central Valley Water Board may take enforcement action, including assessment of administrative civil liability as authorized by provisions of the California Water Code.

The required fee specified in the annual billing statement from the State Water Board shall be paid until this NOA is officially terminated. You must notify this office in writing if the discharge regulated by this Order ceases so that coverage under the General Order can be terminated and to avoid unnecessary billing.

DOCUMENT SUBMITTALS

All monitoring reports and other correspondence should be converted to searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50 MB should be emailed to: *centralvalleysacramento@waterboards.ca.gov*.

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email or any documentation submitted to the mailing address for this office:

Facility Name: City of Woodland, ASR Pilot Test, Yolo County		
Program: Non-15 Compliance	Order: WQO 2012-0010-DWQ-RB5S-0005	CIWQS Place ID: 811315

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to:

Central Valley Regional Water Quality Control Board
ECM Mailroom
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

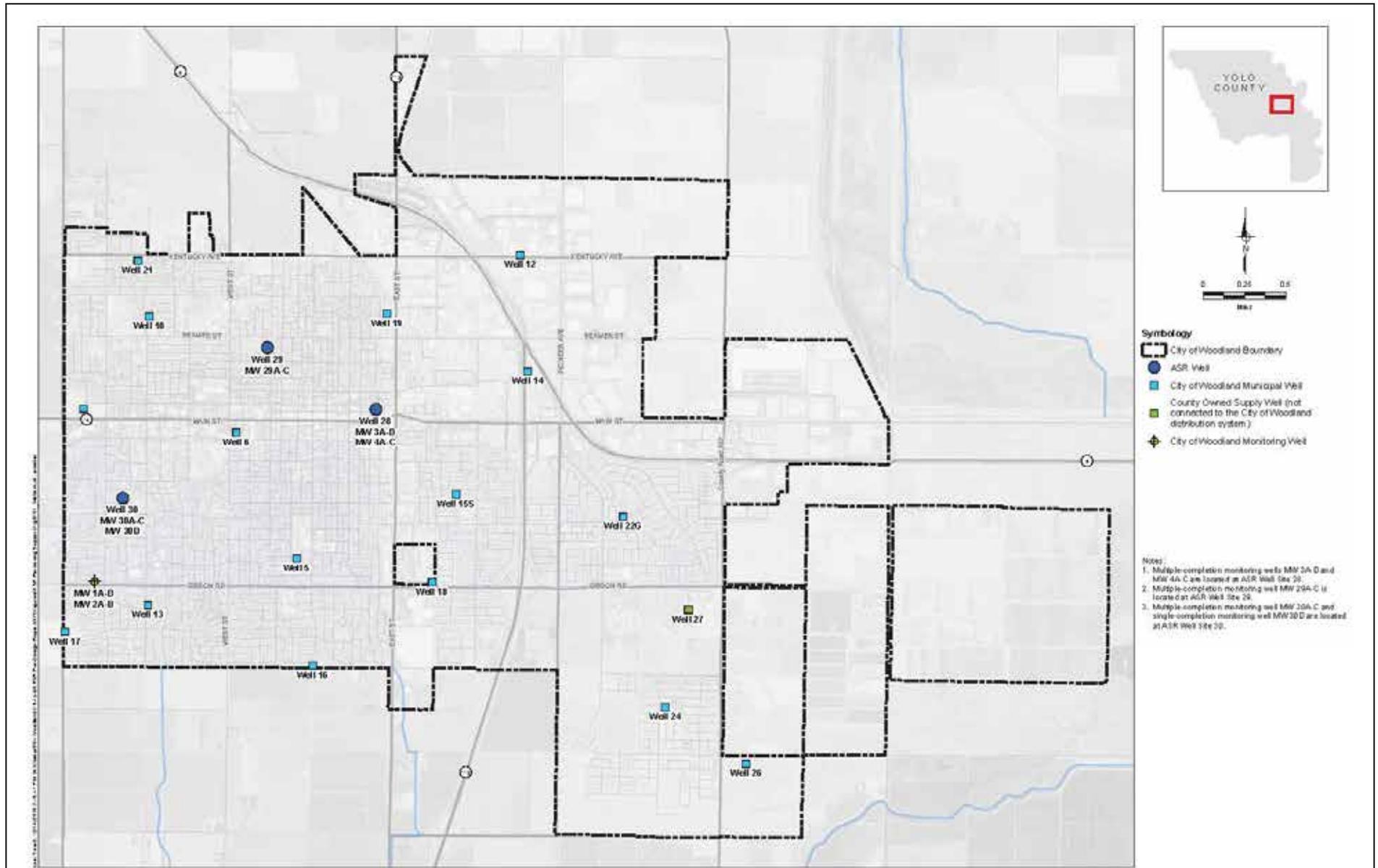
Now that the NOA has been issued, the Water Board's Compliance and Enforcement Section will take over management of your case. Brendan Kenny is your new point of contact for any questions about the Order. In addition, all monitoring and technical reports should be submitted to him. If you find it necessary to make a change to your permitted operations as described in this NOA, Brendan will direct you to the appropriate Permitting staff. You may contact Brendan at (916) 464-4635 or at bkenny@waterboards.ca.gov.

- *Original signed by Andrew Altevogt for* -

PAMELA C. CREEDON
Executive Officer

Enc: Attachment A - ASR Location Map
Attachment B – MRP R5-2017-0801
Water Quality Order 2012-0010-DWQ

Cc w/o enc: Tim O'Brien, State Water Resources Control Board, Sacramento
Yolo County Environmental Health Division, Woodland
Ed Wisniewski, City of Woodland, Woodland
Ken Loy, West Yost Associates, Davis



Approximate Scale:
As Noted Above



Drawing Reference:
ASR Technical Report
January 2017

ASR WELL LOCATION MAP
CITY OF WOODLAND
ASR PILOT TESTING AND OPERATIONS
YOLO COUNTY

ATTACHMENT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION MONITORING AND REPORTING PROGRAM R5-2017-0801

FOR CITY OF WOODLAND AQUIFER STORAGE AND RECOVERY PILOT TEST YOLO COUNTY

This Monitoring and Reporting Program (MRP) allows determination of the potential for groundwater degradation and incorporates requirements for monitoring of injected water and groundwater. This MRP is issued pursuant to Water Code section 13267. The City of Roseville (Permittee) shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the monitored medium. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Injection flow monitoring shall be conducted continuously using a flow meter and shall be reported in gallons per day and cumulative totals.

Field test instruments (such as those used to monitor pH) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

MONITORING WELL NETWORK

The following table lists the City's existing groundwater monitoring network, which consists of six multiple-completion monitoring wells and one-single completion monitoring well.

Well Type	Well Name
ASR Well	ASR Well 28, ASR Well 29, ASR Well 30
Monitoring Well	MW-1A, MW-1B, MW-1C, MW-1D, MW-2A, MW-2B, MW-3A, MW-3B, MW-3C, MW-3D, MW-4A, MW-4B, MW-4C, MW-29A, MW-29B, MW-29C, MW-30A, MW-30B, MW-30C, MW-30D

INJECTION WELL MONITORING

Injection wells shall be monitored when water is being injected into the aquifer. Monitoring of the injection wells shall include, at a minimum, the following

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Well Operational Status ¹	N/A	Recorded	Daily	Quarterly
Daily Average Injection Rate	gpd ²	Meter	Continuous	Quarterly
Injected Water, cumulative total for year to date	ac•ft/yr	Meter	Continuous	Quarterly
Extracted Water, cumulative total for year to date	ac•ft/yr	Meter	Continuous	Quarterly

¹ Well Operational Status shall be reported for each well associated with the ASR project. Injection activity shall be recorded on a daily basis.

² Alternative units may be used to report the data.

INJECTED WATER MONITORING

Injected water is limited to potable water that the Permittee produces through its CDPH permitted domestic water supply permit. Section 116470 of the California Health and Safety Code requires:

1. An Annual Water Quality Report (AWQR). The AWQR characterizes the injected water.
2. Public water systems that serve more than 10,000 service connections and that detect one or more contaminants in drinking water that exceed the applicable public health goal, are required to prepare a report that addresses the contaminant issue.

Both of the reports shall be submitted as part of the Annual Report.

Additionally, potable water used as injected water shall be monitored during periods when injection is occurring. Monitoring of the injected water shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency ^{1,2}	Reporting Frequency ¹
pH	pH units	Grab	Quarterly	Quarterly
Arsenic	mg/L	Grab	Quarterly	Quarterly
Iron	mg/L	Grab	Quarterly	Quarterly
Manganese	mg/L	Grab	Quarterly	Quarterly
Nitrate (as Nitrogen)	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly

- ¹ The sampling and reporting frequency shall be quarterly for one year, commencing on the first date of injection under this Order. Thereafter, sampling is not required.
- ² Injected water sampling is not required for any quarter during which injection did not occur.

EXTRACTION WELL MONITORING

The following extraction wells shall be monitored if water was injected in the previous calendar year:

1. An extraction well used for injection in the previous calendar year.
2. An extraction well that is pumping a substantial amount of previously injected water.

Monitoring of the extraction wells shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Well Activity ¹	N/A	Recorded	Daily	Quarterly
Average Pumping Rate	gpd ²	Meter	Continuous	Quarterly
Extracted Water/Year ³	ac•ft/yr	Meter	Continuous	Quarterly
Electrical Conductivity	umhos/cm	Grab	Quarterly ^{4, 5}	Quarterly ⁴
pH	pH units	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Arsenic	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Iron	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Manganese	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Nitrate (as Nitrogen)	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Total Dissolved Solids	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Total Suspended Solids	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Turbidity	NTU	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Hexavalent Chromium	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Aluminum	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Selenium	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Chloride	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Alkalinity	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Calcium	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Magnesium	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Sodium	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Potassium	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Sulfate	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Carbonate	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Bicarbonate	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Trihalomethanes	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Chlorine Residual	mg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Total Organic Carbon	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴
Haloacetic Acids	µg/L	Grab	Quarterly ^{4, 5}	Quarterly ⁴

- ¹ Well Activity shall be reported for all wells associated with the ASR project. Injection/extraction activity shall be recorded on a daily basis.
- ² Alternative units may be used to report the data.
- ³ Extracted Water/Year represents the total amount of water extracted from a well for the calendar year.
- ⁴ The sampling and reporting frequency shall be quarterly for one year, commencing on the first date of injection under this Order. After four quarterly sampling events are completed, regardless of whether they occur during four consecutive quarters, further sampling is not required.
- ⁵ Extracted water sampling is not required for any quarter during which extraction did not occur.

GROUNDWATER AQUIFER MONITORING

If the Permittee proposes to monitor the target zone using wells other than those designated as injection or extraction wells, the monitoring wells shall be monitored in accordance with the following.

Prior to construction and/or sampling of any groundwater monitoring wells, the Permittee shall submit plans and specifications to the Regional Water Board for approval. Once installed, all new wells shall be added to the monitoring network and shall be sampled and analyzed according to the schedule presented below. All samples shall be collected using approved EPA methods. Groundwater elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Use of low flow or passive sampling methods that do not require well purging are acceptable if described in the approved Sampling and Analysis Plan (SAP). Samples shall be filtered using a 0.45 micron filter if required by the SAP. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency ¹	Reporting Frequency ¹
Electrical Conductivity	umhos/cm	Grab	Quarterly	Quarterly
pH	pH units	Grab	Quarterly	Quarterly
Arsenic	mg/L	Grab	Quarterly	Quarterly

Constituent	Units	Type of Sample	Sampling Frequency ¹	Reporting Frequency ¹
Iron	mg/L	Grab	Quarterly	Quarterly
Manganese	mg/L	Grab	Quarterly	Quarterly
Nitrogen (as Nitrate)	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Total Suspended Solids	mg/L	Grab	Quarterly	Quarterly
Turbidity	NTU	Grab	Quarterly	Quarterly
Hexavalent Chromium	µg/L	Grab	Quarterly	Quarterly
Aluminum	µg/L	Grab	Quarterly	Quarterly
Selenium	µg/L	Grab	Quarterly	Quarterly
Chloride	mg/L	Grab	Quarterly	Quarterly
Alkalinity	mg/L	Grab	Quarterly	Quarterly
Calcium	mg/L	Grab	Quarterly	Quarterly
Magnesium	mg/L	Grab	Quarterly	Quarterly
Sodium	mg/L	Grab	Quarterly	Quarterly
Potassium	mg/L	Grab	Quarterly	Quarterly
Sulfate	mg/L	Grab	Quarterly	Quarterly
Carbonate	mg/L	Grab	Quarterly	Quarterly
Bicarbonate	mg/L	Grab	Quarterly	Quarterly
Trihalomethanes	µg/L	Grab	Quarterly	Quarterly
Chlorine Residual	mg/L	Grab	Quarterly	Quarterly
Total Organic Carbon	µg/L	Grab	Quarterly	Quarterly
Haloacetic Acids	µg/L	Grab	Quarterly	Quarterly

¹ For each new well included in the ASR Program, the sampling and reporting frequency shall be quarterly for one year, commencing on the first date of injection under this Order. Thereafter, sampling is not required.

REPORTING

In reporting monitoring data, the Permittee shall arrange the data in tabular form so that the date, sample type (e.g., source water, injection well, extraction well, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the Order, NOA, and Basin Plan. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the supervision of a registered professional engineer or geologist and signed by the registered professional.

A. QUARTERLY MONITORING REPORT

For the first year commencing with the date of first injection under this Order, the Permittee shall establish a quarterly sampling schedule for injection well, injected water, extraction well, and groundwater monitoring such that samples are obtained as required. For subsequent years, quarterly monitoring reports are not required. Quarterly monitoring reports shall be submitted to the Regional Water Board by the **1st day of the second month after the quarter** (e.g. the January-March quarter is due by May 1st) each year. The quarterly monitoring report shall include the following:

1. A discussion of the status (dates of injection, extraction, and idle time) for all extraction/injection wells associated with the ASR project.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the injection, extraction, and groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the Order, the NOA, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each monitoring well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged (if applicable, see notes on passive sampling in the Receiving Water section).
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any.
4. Results of groundwater monitoring (analytical results tabulated with reporting limits for non-detectable results).
5. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
6. A comparison of monitoring data to the groundwater limitations presented in the NOA and an explanation of any violation of those requirements. Any other violation of the Order with explanation and corrective action to prevent future violations.
7. Summary data tables of historical and current water table elevations and analytical results.
8. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum.
9. Copies of laboratory analytical report(s) for groundwater monitoring.

B. Annual Monitoring Report

For the first year commencing with the date of first injection under this Order, an annual monitoring report shall be prepared in addition to the quarterly monitoring reports. For subsequent years, only the annual monitoring report is required. The annual monitoring report shall be submitted to the Regional Water Board by **1 February** each year. The annual monitoring report shall include the following:

1. The annual water quality report and public health goal report published during the calendar year (if required by CDPH).
2. For the first year only, tabular and graphical summaries of all monitoring data collected during the year.
3. Projected ASR project activity for the next calendar year.
4. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the Order and/or the Notice of Applicability.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of violations found during the reporting period, and actions taken or planned for correcting noted violations. If the Permittee has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Permittee, or the Permittee's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Permittee shall implement the above monitoring program as of the date of this Order.

Ordered by: - Original signed by Andrew Altevogt for -
PAMELA C. CREEDON, Executive Officer

14 February 2017

(Date)