

---

## Central Valley Regional Water Quality Control Board

14 October 2020

Sean Bigley  
Environmental Utilities  
City of Roseville  
2005 Hilltop Circle  
Roseville, CA 95747-9704

**CERTIFIED MAIL**  
**7019-2280-0001-9243-9676**

### REVISED NOTICE OF APPLICABILITY

**WATER QUALITY ORDER 2012-0010-DWQ-RB5S-0001**  
**AQUIFER STORAGE AND RECOVERY PROJECTS THAT INJECT DRINKING**  
**WATER INTO GROUNDWATER**  
**CITY OF ROSEVILLE**  
**CITY OF ROSEVILLE AQUIFER STORAGE AND RECOVERY PROGRAM**  
**PLACER COUNTY**

On 7 April 2020 Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a Notice of Intent (NOI) from City of Roseville (Discharger) to update its coverage under State Water Resources Control Board (State Water Board) Water Quality Order No. 2012-0010-DWQ, the *General Waste Discharge Requirements for Aquifer Storage and Recovery Projects That Inject Drinking Water Into Groundwater* (General Order). The NOI was submitted to update an existing Notice of Applicability (NOA) under the General Order to propose additional injection/extraction wells. On 9 June 2020 the Discharger submitted a revised NOI which replaced the 7 April submittal. Additional information in the revised NOI includes a change in monitoring well design and updated aquifer storage and recovery (ASR) well locations. The revisions to this Notice of Applicability (NOA) 2012-0010-DWQ-RB5S-0001 include updated well location data and updates to the applicable water quality objectives (WQOs).

Based on the information in the NOI and subsequent documentation, the Central Valley Water Board has determined that the updates to the Discharger's ASR program meet the required conditions for approval under the General Order. Therefore, this letter serves as formal notice that the General Order is applicable to the City of Roseville's updated ASR Program. Order 2012-0010-DWQ-RB5S-0001 is hereby revised and amended based on the information provided by the Discharger.

The Discharger submitted a Report of Waste Discharge (RWD) to apply for Waste Discharge Requirements (WDRs) for an ASR Program on 30 March 2012. Additional information was provided in technical and monitoring reports submitted between 2004

and January 2013. Originally approved on 13 April 2013, 2012-0010-DWQ-RB5S-0001 includes monitoring and reporting program (MRP) R5-2013-0803 and other implementation instructions for the Discharger.

The City has implemented a city-wide ASR Program consisting of a series of existing and planned ASR injection/extraction wells, as shown on Attachment A of this letter. The City is implementing the ASR Program on a phased approach corresponding to future development of the community and water supply demand.

## **BACKGROUND AND ASR PILOT TESTING**

Two phases of ASR pilot testing have been performed at one well site on the western portion of the city (Diamond Creek Well). The purpose of ASR pilot testing was to evaluate the effectiveness of implementing this approach to improve water supply reliability, maintain groundwater as a sustainable resource, improve operation flexibility, and meet regional conjunctive use goals.

On 25 April 2003, the Central Valley Water Board adopted Order R5-2003-0083, an individual waiver of WDRs for the Diamond Creek Well (DCW) Phase I ASR Pilot Study. Order R5-2003-0083 allowed the short-term injection and extraction of treated drinking water into aquifer storage between June and September 2004. The Phase I Pilot Study began the installation of DCW as a dedicated injection/extraction well and three monitoring wells (DCMW-1 through MW-3). DCW and the three related monitoring wells were installed with well screen intervals between 310 feet below ground surface (bgs) to 515 bgs. These screen intervals were selected within the Mehrten Formation, a confined high-quality water aquifer of the North American Subbasin.

## **ASR PROJECT**

Source water for implementation of the full-scale ASR Program is drawn from Folsom Lake. Prior to injection, the water is treated and disinfected at the Roseville WTF on Barton Road.

The original NOA has a table comparing treated drinking water quality and groundwater data from the Phase II ASR Pilot Study, along with applicable Water Quality Objectives for selected water quality parameters. That table is not recreated here because the data has not changed, however, the constituents presented in Table 1 have updated WQOs from the original 2013 NOA. The applicable WQOs are based on the groundwater requirements as described in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, Revised May 2018* (Basin Plan) for municipal and domestic water supply.

**Table 1 Water quality characterization with applicable WQOs**

<b>Constituent</b>	<b>Units</b>	<b>Applicable WQOs</b>
TDS	mg/L	500
EC	µS/cm	900
pH	standard units	6 - 8

<b>Constituent</b>	<b>Units</b>	<b>Applicable WQOs</b>
Arsenic, dissolved	mg/L	0.01

## **UPDATES**

Updates to the Discharger's ASR program are proposed as part of its overall water supply strategy to fully utilize available surface water and manage the groundwater aquifer for its environmentally friendly and large scale storage capability, further enabling the sustainable management of groundwater within the basin. The key updates described in the 2020 NOI and supporting documents are expansion of the program including the design and construction of up to six new ASR wells throughout the City of Roseville, status changes for existing older wells within the city boundaries, updates to the planned locations identified in the original NOA, and a *Workplan for Exploratory Borings and Monitoring Wells* (Monitoring Well Work Plan).

### **Updates to Planned Locations**

The Discharger has a greater understanding of groundwater conditions, specifically native groundwater quality, based on the last 10 years of water quality analysis from a series of monitoring wells throughout the City of Roseville. Many monitoring wells had been constructed specifically for the purpose of improving the City's understanding of groundwater conditions. Other monitoring wells were constructed by land developers for the purposes of evaluating the feasibility of installing nearby ASR production wells on the western portions of the City of Roseville. The most significant observation from these monitoring efforts is that generally iron and manganese concentrations of native groundwater are higher in wells in the western third of the City as compared to the central and eastern portions of the City. In addition, it is believed that monitoring wells drilled below the upper Mehrten formation have higher concentrations of some metals and minerals. For these reasons, wells that are too deep may run an elevated risk of not meeting water quality standards without wellhead treatment. In addition, areas have been avoided based on the location of known contaminated sites predominately in the older portion of City and near the railyard in the south-central portion of the City. Based on groundwater basin boundary information and a general understanding of aquifer units thinning eastward toward the basin boundaries, it is understood that groundwater storage volume also decreases toward the eastern portion of the City where alluvial sediments contact hard rock geology.

Therefore, future ASR production well sites were selected in the eastern and central portions of the City in a portion of the aquifer system that has adequate storage space and improved water quality. Future pilot borehole monitoring well completion data will be used to confirm that the planned sites are optimal for the purpose of constructing ASR production wells.

The two wells to the farthest west of the City, Well 9 (Westbrook Blvd) and Well 18 (Solaire Drive) are considered inactive; they have been installed but do not have ASR pump stations, as noted on Attachment A. Of the six "in service" wells shown on Attachment A, four are currently in ASR production, [Well 6 (Diamond Creek), Well 12

(Blue Oaks), Well 8 (Hayden Parkway), Well 7 (Woodcreek North)], and two are Non-ASR production well, used solely for extraction of water [Well 4 (Darling Way), and Well 5 (Oakmont)]. The remaining eight wells are proposed monitoring well sites. More details on these well classification are in Table 2 and Table 3 Well information: active and planned wells, below.

### Monitoring Well Work Plan

The June 2020 NOI included a monitoring well work plan, *Workplan for Exploratory Borings and Monitoring Wells* (Workplan), that provides specifications for the development of up to eight sites identified for exploratory borings and monitoring well feasibility studies for up to six new ASR production wells. The Workplan was approved by the Central Valley Water Board on 03 August 2020. The approval letter requires that within 60 days following the installation and development of the monitoring wells, the Discharger shall submit a *Monitoring Well Installation Report*, with groundwater data collected from the monitoring wells to be included in the regular monitoring report submittals required by the MRP.

The City has multiple water distribution zones, however there are two main zones across the majority of the City. The first zone encompasses the eastern and central portions of the City and the second zone includes the western portion of the City. Water in the City's distribution systems flows by gravity from Folsom Reservoir to the Roseville Water Treatment Facility (WTF). From the WTF, treated water continues to flow down to the lower portions of the City. The Discharger reports that some ASR well locations as originally presented in the original 2013 NOA would have had the unintended consequence of over-pressuring the water system when these wells are used for extraction. Therefore, it is desired to have a more balanced number of wells dispersed between these two main zones than was originally documented in the original NOA.

### ASR WELL STATUS

The City has already installed four of the thirteen planned wells to be used in the ASR Program as described in the original NOA. Table 2 lists the wells that have been removed from the original list of thirteen planned wells, while Table 3 Well information: active and planned wells is a summary of the currently active and planned wells.

The two older existing water supply wells shown in Table 2, Darling and Oakmont, were converted for use as ASR wells but due to their relative age, less than optimal materials used for well construction, and lack of remote metering systems these wells will not be used for ASR injection.

**Table 2 Well information: inactive and cancelled wells**

Well No.	Well Name	Year Drilled	Current Status
Well 4	Darling Way	1958	Removed from ASR list; for production only.
Well 5	Oakmont	1977	Removed from ASR list; for production only.

Well No.	Well Name	Year Drilled	Current Status
Well 14	Fiddymint Road	---	Removed from ASR list; not installed
---	Creekview	---	Removed from ASR list; not installed
---	Sierra Vista #2	---	Removed from ASR list; not installed

**Table 3 Well information: active and planned wells**

Well No.	Well Name	Year Drilled	Wellhead Completed for ASR	Current Status
Well 6	Diamond Creek	2003	2004	Active ASR Well
Well 7	Woodcreek North	2008	2008	Active ASR Well
Well 8	Hayden Parkway	2005	2014	Active ASR Well
Well 9	Westbrook (formerly known as West Side Dr. #1, W-77)	2006	TBD	Planned for ASR activation
Well 11	Pleasant Grove (formerly known as Woodcreek West)	TBD	TBD	Pending Installation
Well 12	Blue Oaks (formerly known as Del Webb)	2013	2014	Active ASR Well
Well 13	Campus Oaks (formerly known as Hewlett Packard)	TBD	TBD	Pending Installation
Well 18	Solaire (formerly known as Sierra Vista #1)	2003	TBD	Planned for ASR activation
pending	Misty Wood	TBD	TBD	Pending Installation
pending	Maidu	TBD	TBD	Pending Installation
pending	Marlin	TBD	TBD	Pending Installation
pending	Galilee	TBD	TBD	Pending Installation
pending	Vencil Brown	TBD	TBD	Pending installation only as back-up if primary location infeasible
pending	Central Park	TBD	TBD	Pending installation only as back-up if primary location infeasible

## **ELIGIBILITY**

Based on the submitted information, the proposed ASR Program continues to meet the following eligibility requirements for coverage under the General Order:

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 injection/extraction well and related monitoring wells were constructed in compliance with California Well Standards. Wells to be installed in the future will also comply with these standards.
3. Injected water for each ASR well will be of a quality that will ensure compliance with the General Order.
4. The ASR Program 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.

Implementation of the City's ASR Program is structured such that additional wells will be installed and/or converted for ASR injection and extraction depending on growth of the local community. To date, six of the wells in Table 3 have been installed with only four being used for ASR production (injection and extraction).

This Notice of Applicability authorizes continued implementation of the proposed ASR Program with updates specific to the wells cited in the NOI and discussed in this NOA under Revised Order 2012-0010-DWQ-RB5S-0001.

## **MONITORING AND REPORTING PROGRAM**

There are no changes to Monitoring and Reporting Program R5-2013-0803. Each additional injection/extraction well brought online shall comply with the monitoring and reporting requirements of R5-2013-0803 that prescribe one year of quarterly and annual monitoring, with sampling thereafter not required.

## **GENERAL INFORMATION AND REQUIREMENTS**

Within 30 days of completion of each new injection well, the City shall submit a technical report that provides a boring log, well construction details, and confirmation that the well has been registered with the US EPA Underground Injection Program.

The City shall comply with the Prohibitions, Requirements, Groundwater and Surface Water Limitations, and Provisions of Water Quality Order 2012-0010-DWQ-RB5S-0001. It is appropriate for the City of Roseville 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 RWD and supporting documentation.

A copy of the General Order is enclosed. You can also find the General Order on the State Water Board's [Adopted Water Quality Orders webpage](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0010_with_signed_mrp.pdf) ([https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2012/wqo2012\\_0010\\_with signed mrp.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0010_with_signed_mrp.pdf)). You are urged to familiarize yourself with the contents of the entire General Order.

The ASR Program 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 RWD and NOI. If additional wells are proposed in the future, the City must submit an updated RWD to apply for revision of this Notice of Applicability to include those wells.

Please review this Notice of Applicability carefully to ensure that it completely and accurately reflects the proposed discharge. The City of Roseville will maintain exclusive control over the discharge and subject to the terms and conditions of the General Order. As such, the City of Roseville 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 Notice of Applicability 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](mailto: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:

Program:	Non-15 Compliance
Facility Name:	City of Roseville Aquifer Storage and Recovery Program
County:	Placer
Order:	2012-0010-DWQ-RB5S-0001
CIWQS Place ID:	793714

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 revised NOA has been issued, the Water Board's Compliance and Enforcement Section will continue management of your case. Guy Childs is your point of contact for any questions about the Order. All monitoring reports, submittals, discharge notifications, and questions regarding compliance and enforcement should be submitted to him. If you find it necessary to make a change to your permitted operations as described in this NOA, Guy will direct you to the appropriate permitting staff. You may contact Guy at (916) 464-4648 or [guy.childs@waterboards.ca.gov](mailto:guy.childs@waterboards.ca.gov).



For Patrick Pulupa  
Executive Officer

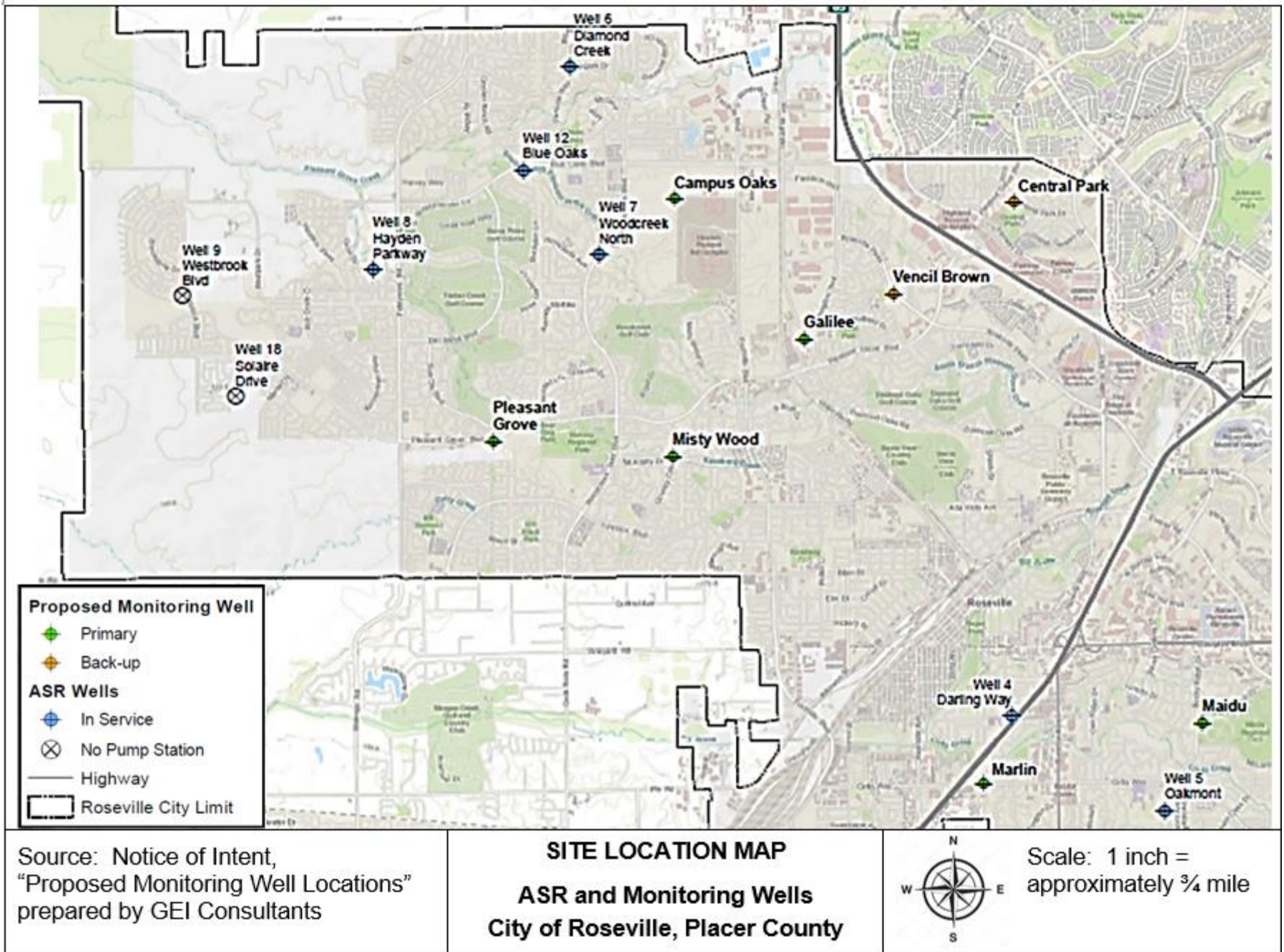
Enclosures:

State Water Resources Control Board Water Quality Order 2012-0010-DWQ  
Attachment A - Well Site Location Map  
Attachment B - Monitoring and Reporting Program R5-2013-0803 as  
Attachment D from the original 2013 NOA

cc:

Stephanie Torres, State Water Resources Control Board, Sacramento  
Steve Watson, State Water Resources Control Board Division of Drinking Water,  
District 2, Redding  
Wesley Nicks, Placer County Dept. of Environmental Health, Auburn  
Tomas Torres, US EPA Region IX, San Francisco





## ATTACHMENT D

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION  
MONITORING AND REPORTING PROGRAM R5-2013-0803

FOR  
THE CITY OF ROSEVILLE  
CITY OF ROSEVILLE AQUIFER STORAGE AND RECOVERY PROJECT  
PLACER 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.

### 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

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Well Operational Status <sup>1</sup>	N/A	Recorded	Daily	Quarterly
Daily Average Injection Rate	gpd <sup>2</sup>	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

---

- <sup>1</sup> Well Operational Status shall be reported for each well associated with the ASR project. Injection activity shall be recorded on a daily basis.
- <sup>2</sup> 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:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> <sup>1, 2</sup>	<u>Reporting Frequency</u> <sup>1</sup>
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
<u>Total Dissolved Solids</u>	mg/L	Grab	Quarterly	Quarterly

<sup>1</sup> 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.

<sup>2</sup> 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:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Well Activity <sup>1</sup>	N/A	Recorded	Daily	Quarterly
Average Pumping Rate	gpd <sup>2</sup>	Meter	Continuous	Quarterly
Extracted Water/Year <sup>3</sup>	ac•ft/yr	Meter	Continuous	Quarterly
Electrical Conductivity	umhos/cm	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
pH	pH units	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
Arsenic	mg/L	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
Iron	mg/L	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
Manganese	mg/L	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
Nitrate (as Nitrogen)	mg/L	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>
Total Dissolved Solids	mg/L	Grab	Quarterly <sup>4, 5</sup>	Quarterly <sup>4</sup>

<sup>1</sup> Well Activity shall be reported for all wells associated with the ASR project. Injection/extraction activity shall be recorded on a daily basis.

<sup>2</sup> Alternative units may be used to report the data.

<sup>3</sup> Extracted Water/Year represents the total amount of water extracted from a well for the calendar year.

<sup>4</sup> 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.

<sup>5</sup> 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:

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

<sup>1</sup> 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 **1<sup>st</sup> day of the second month after the quarter** (e.g. the January-March quarter is due by May 1<sup>st</sup>) 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.



ATTACHMENT D  
MONITORING AND REPORTING PROGRAM R5-2013-0803  
CITY OF ROSEVILLE  
CITY OF ROSEVILLE AQUIFER STORAGE AND RECOVERY PROGRAM  
PLACER COUNTY

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:   
for PAMELA C. CREEDON, Executive Officer

4/25/13  
(Date)