

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM
ORDER R5-2026-0803
FOR
CITY OF WILLIAMS
WASTEWATER TREATMENT PLANT
COLUSA COUNTY

This Monitoring and Reporting Program (MRP Order), which is separately issued pursuant to Water Code section 13267, subdivision (b)(1), establishes monitoring and reporting requirements related to the waste discharges regulated under the General Order for Municipal Wastewater Dischargers That Meet Objectives/Criteria at the Point of Discharge to Surface Water, Order R5-2023-0025, NPDES Permit CAG585001 (Municipal General Order) and Notice of Applicability (NOA) R5-2023-0025-009 with an effective date of 1 October 2026.

The City of Williams (Discharger) owns and operates the City of Williams Wastewater Treatment Plant (Facility) that is subject to the Municipal General Order and NOA R5-2023-0025-009. The Findings set forth in the Municipal General Order, including those pertaining to the need for submission of reports, are hereby incorporated as part of this MRP Order and supplement the additional findings herein. Please note the Municipal General Order and NOA R5-2023-0025-009 establish monitoring and reporting requirements, which are applicable to this MRP Order.

There are three unlined emergency storage basins (Ponds 2, 3, and 4) at the Facility that are only used in the case of plant upset. The basins are not used for diversion of raw influent and are only used to hold non-compliant treated effluent. If non-compliant treated effluent wastewater is diverted to the basins, the wastewater is pumped back through the treatment system to be retreated. If the basins are used, the Discharger uses a pump to manually pump from each basin into Pond 2 and then pump from Pond 2 into the Equalization Basin. From the Equalization Basin the wastewater is pumped back to the headworks. The groundwater elevation is generally shallow in the Facility area and at times the groundwater can be higher than the bottom elevation of the emergency storage basins. Treatment plant effluent held in the emergency storage basins has the potential to impact groundwater especially if groundwater levels are high. Groundwater monitoring following the upgrade to the existing treatment Facility showed that groundwater quality had improved to a stable level; therefore, regular groundwater monitoring was removed. However, increased use of the emergency storage basins over the previous NOA term due to issues with the treatment system warrants renewed groundwater monitoring requirements.

The monitoring and reporting required in this MRP Order are necessary to determine compliance with the groundwater limitations in the Municipal General Order and in NOA R5-2023-0025-009. The land discharge monitoring and groundwater monitoring contained in this MRP Order are necessary to adequately characterize the groundwater quality underlying the Facility in order to assess the potential impacts the Facility may have on groundwater. Additionally, this MRP Order includes groundwater reporting requirements to collect data and enable the characterization of groundwater quality. A Groundwater Information Report is necessary to characterize and determine the potential impact the

Facility may have on groundwater. A Groundwater Assessment Report is necessary to determine if the Facility is impacting groundwater and contributing to groundwater degradation. The Groundwater Monitoring Well Installation Work Plan and a Groundwater Monitoring Well Installation Reports have been included in this MRP Order to collect the necessary information if the Discharger deems it necessary to add or replace any groundwater monitoring wells.

The three existing emergency storage basins (Ponds 2, 3, and 4) are the remnants of the former four pond treatment system. Pond 1 was removed during the construction of the existing tertiary Facility. The Discharger completed removal of the sludge accumulated in the former pond treatment system from the three remaining emergency storage basins on 11 March 2020. However, comprehensive testing of the soil remaining in the pond bottoms needs to be performed in order to confirm the sludge was removed and the soil in the three ponds is at acceptable levels to prevent impacts to groundwater. This MRP Order requires a Pond Sludge Removal Confirmation Sampling Work Plan and Confirmation Report to complete the pond closure activities. Annual Flow Equalization and Aeration Basin Liner Maintenance Reports have been included in this MRP Order to document that appropriate maintenance has been conducted to prevent discharges to groundwater from the Flow Equalization Basin and Aeration Basin liner failure. The burden, including costs, associated with these reports is reasonable relative to the need and benefits to be obtained therefrom.

This MRP Order may be separately revised by the Executive Officer, in accordance with delegated authority under Water Code section 13223. The Discharger shall not implement any changes to this MRP Order unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP Order. This MRP Order will remain effective until the Discharger is no longer covered by NOA R5-2023-0025-009.

I. MONITORING

The monitoring results of this MRP Order shall be submitted in accordance with Appendix D of NOA R5-2023-0025-009, including submitting electronic self-monitoring reports (eSMR) via the California Integrated Water Quality System Program (CIWQS) website for data collected from monitoring locations designated in this MRP Order. The Discharger shall provide the data in the Permittee Entry Template (PET) tool for uploading into CIWQS.

A. MONITORING LOCATIONS

1. The Discharger shall establish the monitoring locations listed in Table 1 to adequately characterize the water quality of the emergency storage basins and the groundwater quality underlying the Facility.

Table 1. Monitoring Station Locations

Monitoring Location Name	Monitoring Location Description
PND-002	A location where a representative sample from the unlined emergency storage basin Pond 2 can be collected. Latitude: 39° 10' 3.00" N - Longitude: 122° 9' 8.60" W
PND-003	A location where a representative sample from the unlined emergency storage basin Pond 3 can be collected. Latitude: 39° 10' 4.47" N - Longitude: 122° 9' 12.00" W
PND-004	A location where a representative sample from the unlined emergency storage basin Pond 4 can be collected. Latitude: 39° 10' 6.29" N - Longitude: 122° 9' 16.24" W
RGW-001	Upgradient groundwater monitoring well east of the emergency storage basins. Identified as MW-1 in previous Discharger groundwater monitoring reports. Latitude: 39° 9' 57.76" N - Longitude: 122° 9' 13.51" W
RGW-002	Downgradient groundwater monitoring well northwest of the emergency storage basins. Identified as MW-2 in previous Discharger groundwater monitoring reports. Latitude: 39° 10' 9.03" N - Longitude: 122° 9' 9.26" W
RGW-003	Downgradient groundwater monitoring well southwest of the emergency storage basins. Identified as MW-3 in previous Discharger groundwater monitoring reports. Latitude: 39° 10' 10.14" N - Longitude: 122° 9' 15.23" W

Table 1 Note:

1. The North latitude and West longitude information in Table 1 are approximate for administrative purposes.

B. LAND DISCHARGE MONITORING REQUIREMENTS

1. Monitoring Location PND-002, PND-003, and PND-004

- a. The Discharger shall monitor the three unlined emergency storage basins that receive non-compliant secondary or tertiary wastewater at Monitoring Locations PND-002, PND-003, and PND-004 as specified in Table 2 and the testing requirements in section B.1.b. Monitoring Locations PND-002, PND-003, and PND-004 are defined in Table 1. If non-compliant secondary or tertiary wastewater is not present in a basin during the designated monitoring period for more than seven consecutive days, monitoring is not required during that period for the respective basin. The Discharger shall state in the monthly eSMR which basins, if any, did not contain non-compliant wastewater for more than seven consecutive days during the respective monitoring period.

Table 2. Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Biochemical Oxygen Demand (5-day @ 20°C)	Milligrams per Liter (mg/L)	Grab	Once per Month (1/Month)
Electrical Conductivity @ 25°C	Micromhos per Centimeter (µmhos/cm)	Grab	1/Month
Nitrate (as Nitrogen)	mg/L	Grab	1/Month
Total Dissolved Solids	mg/L	Grab	1/Month
Total Kjeldahl Nitrogen	mg/L	Grab	1/Month
Standard Minerals	mg/L	Grab	Once per Quarter (1/Quarter)

- b. **Table 2 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table 2:
- Applicable to all parameters.** Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 C.F.R. part 136 allowed sample type.
 - Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
 - Field Meter.** A hand-held field meter may be used for **electrical conductivity**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP Order shall be maintained at the Facility.
 - Standard Minerals** shall include the following: dissolved arsenic, boron, calcium, dissolved iron, magnesium, potassium, sodium, chloride, dissolved manganese, phosphate, total alkalinity (including alkalinity series), sulfate, and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

C. GROUNDWATER MONITORING REQUIREMENTS

1. Monitoring Locations RGW-001, RGW-002, and RGW-003 and Additional or Replacement Wells, If Installed

- a. The Discharger shall monitor groundwater at Groundwater Monitoring Locations RGW-001, RGW-002, and RGW-003, and any additional wells installed to monitor groundwater, as specified in Table 3 and the testing requirements in section C.1.d.
- b. Prior to construction and/or beginning a sampling program of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board (see also section II. Reporting Requirements and Attachment A). Once installed, all new wells shall be added to the monitoring network (which currently consists of well numbers RGW-001, RGW-002, and RGW-003) and shall be sampled and analyzed according to the schedule below.
- c. 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.

Table 3. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Depth to Groundwater	±0.01 feet	Measurement	1/Year
Groundwater Elevation	±0.01 feet	Calculated	1/Year
Gradient	feet/feet	Calculated	1/Year
Gradient Direction	Degrees	Calculated	1/Year
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Year
Dissolved Oxygen	mg/L	Grab	1/Year
Nitrate (as Nitrogen)	mg/L	Grab	1/Year
pH	standard units	Grab	1/Year
Total Coliform Organisms	Most Probable Number per 100 milliliters (MPN/100 mL)	Grab	1/Year

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Dissolved Solids	mg/L	Grab	1/Year
Total Organic Carbon	mg/L	Grab	1/Year
Total Kjeldahl Nitrogen	mg/L	Grab	1/Year
Standard Minerals	mg/L	Grab	1/Year

- d. **Table 3 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table 3:
- i. **Groundwater Elevation** shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.
 - ii. **Applicable to all parameters.** Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - iii. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
 - iv. **Handheld Field Meter.** A handheld field meter may be used for **electrical conductivity and pH** provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
 - v. **Standard Minerals** shall include the following: dissolved arsenic, boron, calcium, dissolved iron, magnesium, potassium, sodium, chloride, dissolved manganese, phosphate, total alkalinity (including alkalinity series), sulfate, and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

II. REPORTING REQUIREMENTS

A. GROUNDWATER INFORMATION REPORT

1. The Discharger shall submit the Groundwater Information Report by **1 October 2027** and shall include the following information or provide updates to the following information, to the extent feasible from available information:
 - a. Each emergency storage basin area;
 - b. Each emergency storage basin working liquid depth;
 - c. Each emergency storage basin invert and berm elevation;
 - d. Vertical separation distance between each emergency storage basin invert and highest anticipated groundwater;
 - e. Existing monitoring wells, including at minimum, construction date, reference elevation, depth, screened interval, and boring logs;
 - f. Subsurface cross-section(s) using boring logs from wells and other available information to demonstrate the presence of hardpan layer(s);
 - g. Water balance calculations for the emergency storage basins to estimate annual seepage losses;
 - h. Brief characterization of the emergency storage basins setting, including surface water runoff, nearest surface water bodies, climate (annual precipitation for average and flood years and reference evaporation), onsite soils and description of stratigraphy (if possible, infiltration rates), regional groundwater gradient, groundwater depth under the Facility, and characterization of groundwater wells in the vicinity of the Facility;
 - i. Assessor parcel number(s) covering the, including the numbers, owner, and acreage; and
 - j. A scaled facility map that shows the Discharger's property line, prevalent groundwater flow direction, Salt Creek and any nearby tributaries, and all monitoring locations specified in this Order.

B. GROUNDWATER REPORT

1. The Discharger shall submit a Groundwater Report that includes groundwater gradients and flow direction and a summary of data collected during the term of the report. The data summary shall also include a comparison to previous groundwater data collected from monitoring wells, where available, and a comparison of current groundwater monitoring data to data collected from the emergency storage basins at monitoring locations PND-002, PND-003, and/or PND-004, where applicable. The Discharger shall provide the Groundwater Report to the Central Valley Water Board due by **30 September 2030**.

C. GROUNDWATER MONITORING WELL INSTALLATION WORK PLAN AND REPORT (IF NECESSARY)

1. If the Discharger determines there is a need to install new or replace existing groundwater monitoring wells, then the Discharger shall follow the requirements of Attachment A – Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports. The Discharger shall provide a Groundwater Monitoring Well Installation Work Plan and a Groundwater Monitoring Well Installation Report to the Central Valley Water Board **prior to installing any new monitoring wells.**

If the Discharger does install new groundwater monitoring wells, the Discharger shall follow the groundwater monitoring requirements in section I.C of this MRP Order for the new groundwater monitoring wells, as well as the existing groundwater monitoring wells.

D. FLOW EQUILIZATION BASIN AND AERATION BASIN LINER MAINTENANCE

1. **Liner Leak Detection Assessment Report.** The Discharger shall submit, by **30 September 2030**, a Liner Leak Detection Assessment Report. The Liner Leak Detection Assessment Report shall include, at minimum:
 - a. A performance test for both the Flow Equalization Basin and Aeration Basin (e.g., seepage/leak test, water balance, liner leak detection testing, or geologic evaluation) evaluating that each basin is operating with minimal leaking and if the basin meets the hydraulic conductivity standard of 1×10^{-6} cm/s or less;
 - b. A description of the performance test methodology and/or instrumentation used;
 - c. Basin liner characteristics and conditions (including, but not limited to, liner thickness, hydraulic conductivity in terms of centimeter per second, and leakage rate in terms of gallons per acre per day, and any other technical information that pertains to the ability of the liner to compromise the infiltration of wastewater into soil and underlying groundwater); and
 - d. Test results and conclusions.
2. **Annual Liner Maintenance Reports.** The Discharger shall submit, by **1 February 2027 and annually on 1 February thereafter**, a Liner Maintenance Report. The Liner Maintenance Report shall include, at minimum:
 - a. Visual observations of importance made throughout the year for the Flow Equalization Basin and the Aeration Basin, i.e., potential issues observed that require further investigation regarding the integrity of the liners; and
 - b. If liner modifications or repairs are needed to continue basin operations:
 - i. A summary of all future improvement projects,
 - ii. A summary of maintenance performed, and
 - iii. Any required repairs including a schedule to complete the repair or a date the repairs were completed as well as current Operations and Maintenance

projects (including but not limited to liner repairs) regarding the Flow Equalization Basin and Aeration Basin liners.

E. POND SLUDGE REMOVAL CONFIRMATION REPORT

Prior to the existing Facility, wastewater was treated using a pond treatment system with four aerated waste stabilization ponds. Former Pond 1 no longer exists as it was removed to allow construction of the existing Facility and Ponds 2, 3, and 4 are only used as emergency storage basins for secondary or tertiary non-compliant wastewater. The Discharger completed the sludge removal and offsite disposal from former Ponds 2, 3, and 4 on 11 March 2020. The sludge removed from Ponds 2, 3, and 4, and the soil from the bottom of Pond 2 were sampled for CAM 17 metals, plus total nitrogen. Any leftover contaminated soil remaining in Ponds 3, and 4 may impact shallow groundwater. Requiring soil samples from Ponds 3 and 4 to confirm that the sludge and any contaminated soil has been adequately removed from each pond mitigates future impacts to groundwater. The Pond Sludge Removal Confirmation Report confirms the cleanup was effective by detailing the results of confirmation sampling and final soil conditions.

1. The Discharger shall submit a Pond Sludge Removal Confirmation Report, **due by 1 April 2028**. Soil samples shall be taken from each quadrant of Ponds 3 and 4. The four samples from pond 3 shall be combined into one composite sample and the same shall be done for pond 4. A background soil sample shall also be taken from outside the ponds. The two composite soil samples from each pond and the background soil sample shall be tested to determine if contaminants in the soil are at acceptable levels. The soil samples shall be sampled for the CAM 17 metals (antimony, asbestos, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc), plus total nitrogen, total organic carbon, and sodium. The Pond Sludge Removal Confirmation Report shall include:
 - a. A scaled map indicating the locations of where the soil samples were collected from each pond and background soil sample location;
 - b. On the same scaled map, include the locations of any previously collected samples, if applicable;
 - c. Detailed procedures used in the collection of the soil samples and the analytical methods. The procedures shall include at a minimum:
 - i. Equipment used during the sampling.
 - ii. Equipment decontamination procedures.
 - iii. Analytical methods and reporting limits.
 - iv. General sampling techniques.
 - d. The depth and volume of soil removed from each pond;
 - e. Soil sample results from the ponds and background sample; and
 - f. Summary and conclusion of the work performed.

A transmittal/cover letter shall be included with each submittal of monitoring and reporting requirements contained in this MRP Order and shall contain the following penalty of perjury statement and shall be signed by the Discharger or the Discharger's authorized agent:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$1,000 per day pursuant to Water Code section 13268. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Resources Control Board must receive the petition by 5:00 p.m., 30 days after the date of this MRP Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Resources Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided on request.

The Discharger shall implement the above monitoring program starting **1 October 2026**.

This Order is issued under authority delegated to the Executive Officer by the Central Valley Water Board pursuant to Resolution R5-2018-0057, and Water Code section 13223.

PATRICK PULUPA, Executive Officer

ATTACHMENT A – STANDARD REQUIREMENTS FOR MONITORING WELL INSTALLATION WORK PLANS AND MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing, at a minimum, the information listed in Section I, below. Upon installation, the Discharger shall submit a well installation report that includes the information contained in Section II, below. All work plans and reports must be prepared under the direction of, and certified by, a California registered geologist or California registered civil engineer.

I. MONITORING WELL INSTALLATION WORK PLAN

The monitoring well installation work plan shall contain, at a minimum, the following information:

A. General Information

1. Purpose of the well installation project.
2. Brief description of local geologic and hydrogeologic conditions.
3. Proposed monitoring well locations and rationale for well locations.
4. Topographic map showing facility location, roads, and surface water bodies.
5. Large-scaled site map showing all existing on-site wells, proposed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and major physical and man-made features.

B. Drilling Details

1. On-site supervision of drilling and well installation activities.
2. Description of drilling equipment and techniques.
3. Equipment decontamination procedures.
4. Cutting disposal methods.
5. Soil sampling intervals (if appropriate); logging methods; number and location of soil samples and rationale; and sample collection, preservation, and analytical methods.

C. Monitoring Well Design (in graphic form with rationale provided in narrative form)

1. Borehole diameter.
2. Casing and screen material, diameter, and centralizer spacing (if needed).
3. Type of well caps (bottom cap either screw on or secured with stainless steel screws).
4. Anticipated depth of well, length of well casing, and length and position of perforated interval.
5. Thickness, position and composition of surface seal, sanitary seal, and sand pack.
6. Anticipated screen slot size and filter pack.

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement)

1. Method of development to be used (i.e., surge, bail, pump, etc.).
2. Parameters to be monitored using development and record keeping technique.
3. Method of determining when development is complete.
4. Disposal method of development water.

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot)

1. Identify the Licensed Land Surveyor or Licensed Civil Engineer that will perform the survey.
2. Datum for survey measurements.
3. List well features to be surveyed (i.e., top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP, a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities, shall contain, at a minimum, a detailed written description of standard operating procedure for:

1. Equipment to be used during sampling.
2. Equipment decontamination procedures.
3. Water level measurement procedures.
4. Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged).
5. Monitoring and record keeping during water level measurement and well purging (including copies of record keeping logs to be used).
6. Purge water disposal.
7. Analytical methods and required reporting limits.
8. Sample containers and preservatives.
9. Sampling:
 - a. General sampling techniques
 - b. Record keeping during sampling (include copies of record keeping logs to be used)
 - c. QA/QC samples
10. Chain of Custody.
11. Sample handling and transport.

II. MONITORING WELL INSTALLATION REPORT

The monitoring well installation report shall contain the information listed below. In addition, the report shall also clearly identify, describe, and justify any deviations from the approved work plan.

A. General Information

1. Purpose of the well installation project.
2. Number of monitoring wells installed and identifying label(s) for each.
3. Brief description of geologic and hydrogeologic conditions encountered during well installation.
4. Topographic map showing facility location, roads, surface water bodies.
5. Large-scale site map showing all previously existing wells, newly installed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form)

1. On-site supervision of drilling and well installation activities.
2. Drilling contractor and driller's name.
3. Description of drilling equipment and techniques.
4. Equipment decontamination procedures.
5. Well boring log (provide for each well):
 - a. Well boring number and date drilled.
 - b. Borehole diameter and total depth.
 - c. Total depth of open hole (i.e., total depth drilled if no caving or back-grouting occurs).
 - d. Depth to first encountered groundwater and stabilized groundwater depth.
 - e. Detailed description of soils encountered, using the Unified Soil Classification System.

C. Well Construction Diagram (required for each well)

1. Monitoring well number and date constructed.
2. Casing and screen material, diameter, and centralizer spacing (if needed).
3. Length of well casing.
4. Length and position of slotted casing and size of perforations.
5. Thickness, position and composition of surface seal, sanitary seal, and sand pack.
6. Type of well caps (bottom cap either screw on or secured with stainless steel screws).

D. Well Development (required for each well)

1. Date(s) and method of development.
2. How well development completion was determined.

3. Volume of water purged from well and method of development water disposal.

E. Well Survey (required for each well)

1. Present the well survey report data in a table.
2. Reference elevation at the top rim of the well casing with the cap removed (feet above mean sea level to within 0.01 foot).
3. Ground surface elevation (feet above mean sea level to within 0.01 foot).
4. Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum, or acceptable alternative (provide rationale).

F. Water Sampling

1. Present water sampling data in a table.
2. Date(s) of sampling.
3. Sample identification.
4. How well was purged.
5. How many well volumes purged.
6. Levels of temperature, EC, and pH at stabilization.
7. Sample collection, handling, and preservation methods.
8. Analytical methods used.
9. Laboratory analytical data sheets.
10. Water level elevation(s).
11. Groundwater contour map.

G. Soil sampling (if applicable)

1. Present soil sampling data in a table.
2. Date(s) of sampling.
3. Sample collection, handling, and preservation methods.
4. Sample identification.
5. Analytical methods used.
6. Laboratory analytical data sheets.

H. Well Completion Report(s)

As defined in California Water Code section 13751. Blank forms are available from the California Department of Water Resources' website. Section shall be submitted under separate cover.

I. Appendix

Shall include at a minimum, copies of the following:

1. County-issued well construction permits.
2. Registered engineer or license surveyor's report and field notes.
3. Field notes from well development.