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Central Valley Regional Water Quality Control Board

**ATTACHMENT G**  
**REQUIREMENTS FOR MONITORING WELL AND LANDFILL GAS INSTALLATION**  
**WORKPLAN AND**  
**MONITORING WELL INSTALLATION REPORTS**

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**1. Monitoring Well and Landfill Gas Well Installation Work Plan and Groundwater Sampling and Analysis Plan**

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

**A. General Information:**

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

**B. Drilling Details:**

On-site supervision of drilling and well installation activities  
Description of drilling equipment and techniques  
Equipment decontamination procedures  
Soil sampling intervals (if appropriate) and logging methods

**C. Monitoring Well Design (in narrative and/or graphic form):**

Diagram of proposed well construction details

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

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

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

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

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey  
Datum for survey measurements

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 shall be included as an appendix to the work plan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

## **2. Monitoring Well and Landfill Gas Well Installation Completion Report**

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

### **A. General Information:**

Purpose of the well installation project  
Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells  
Number of monitoring wells installed and copies of County Well Construction Permits  
Topographic map showing facility location, roads, surface water bodies  
Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

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

On-site supervision of drilling and well installation activities  
Drilling contractor and driller's name  
Description of drilling equipment and techniques  
Equipment decontamination procedures  
Soil sampling intervals and logging methods  
Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

### **C. Well Construction Details (in narrative and/or graphic form):**

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

**D. Well Development:**

Date(s) and method of development

How well development completion was determined

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

Field notes from well development should be included in report

**E. Well Survey (survey the top rim of the well casing with the cap removed):**

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix