

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**ORDER NO. R3-2019-0051**

**WASTE DISCHARGE REQUIREMENTS AND  
WATER RECYCLING REQUIREMENTS**

**FOR THE**

**CAMBRIA COMMUNITY SERVICES DISTRICT  
EMERGENCY WATER TREATMENT FACILITY AND  
RECYCLED WATER RE-INJECTION PROJECT**

**ISSUED TO**

**Cambria Community Services District**

The California Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board) finds that:

**I. BACKGROUND**

1. The Cambria Community Services District (Discharger or CCSD) provides water supply to residents in and around the unincorporated area of Cambria, San Luis Obispo County.
2. The CCSD's potable water is supplied solely from groundwater wells in the San Simeon Creek and Santa Rosa Creek aquifers (i.e., San Simeon Valley and Santa Rosa Valley groundwater basins). The San Simeon Creek and Santa Rosa Creek aquifers (coastal stream aquifers) are relatively shallow and highly porous alluvial aquifers, with the groundwater typically depleted during the dry season and recharged during the rainy season.
3. In response to an ongoing severe drought emergency in 2014, the CCSD constructed, and now owns and operates the Cambria Emergency Water Treatment Facility and Recycled Water Re-Injection Project (EWS or Project) at the District's existing San Simeon well field and effluent percolation ponds property. Figure 1 shows the location of the EWS project.
4. The CCSD constructed and initially operated the EWS pursuant to Emergency Permit ZON2013-00589 issued by San Luis Obispo County on May 15, 2014 (Emergency Coastal Development Permit). The Emergency Coastal Development Permit states that the permit "is valid until such time that the CCSD-declared Stage 3 Water Shortage Emergency has ended, or the project has been authorized to continue to serve existing development through approval of a regular Coastal Development Permit, whichever is sooner. While processing the regular Coastal Development Permit, the emergency water facility may only be re-activated and utilized to produce water in the event of the occurrence of another Stage 3 Water

- Shortage Emergency and only after the CCSD has issued a formal declaration of the existence of such a Stage 3 Water Shortage Emergency.” The Emergency Coastal Development Permit further requires that the Discharger apply for a regular Coastal Development Permit for the project, which the CCSD did on June 13, 2014. To date, a regular Coastal Development Permit has not been issued to CCSD.
5. The EWS system treats impaired groundwater to recharge the San Simeon well field aquifer with treated water. The groundwater includes a blend of creek underflow, percolated wastewater treatment plant effluent, and a mix of the lower seawater wedge where it blends with freshwater.
  6. The EWS is capable of producing up to 844,000 gallons per day (gpd) of product water of varying quality. Up to 576,000 gpd of the recycled water (400 gallons per minute) may be injected into the shallow and porous aquifer to replenish the drinking water supply.
  7. In addition to re-injection of up to 576,000 gpd of reverse osmosis (RO) water, the CCSD potentially supplies approximately 72,000 gpd of membrane filtrate (MF) product water to San Simeon Creek to prevent dewatering of the fresh water lagoon and discharges up to 90,000 gpd of MF backwash to the CCSD percolation ponds.
  8. Discharge to the wastewater treatment plant percolation pond is permitted separately with Waste Discharge Requirements (WDR) Order No. 01-100, and discharge to San Simeon Creek is permitted separately through a low threat National Pollutant Discharge Elimination System (NPDES) permit.
  9. Up to 57,600 gpd of RO concentrate and cleaning solution wastes are stored onsite, then hauled away by tanker truck to an appropriately regulated disposal facility.

## **II. PURPOSE OF ORDER**

10. Order No. R3-2019-0051 (Order) replaces and updates Order No. 2014-0050, originally issued to a facility not yet constructed, to address the treatment of recycled water at the CCSD’s effluent percolation pond site, and the injection of the treated water into the aquifer.
11. The discharge of wastes to the evaporation pond, separately authorized via title 27 Order No. R3-2014-0047, has been eliminated. This replacement Order reflects the changes made to operations in response to the evaporation pond closing, details the addition of a dechlorination treatment unit at the facility, and limits the re-injection of advanced treated water into the San Simeon aquifer to a maximum of 400 gallons per minute (gpm).
12. On August 22, 2014, the CCSD submitted a Report of Waste Discharge requesting new waste discharge requirements and water recycling requirements (WDRs/WRRs) to reflect a proposal to operate the EWS facility and inject recycled water into the San Simeon aquifer for indirect potable reuse.
13. On September 10, 2014, the CCSD submitted an addendum to the title 22 engineering report (Cambria Emergency Water Supply title 22 engineering report)

for operation of the EWS facility to the Central Coast Water Board and the State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW). The CCSD later revised the Engineering Report in response to comments received from DDW and Central Coast Water Board staff. The CCSD submitted the final version on September 8, 2014, for review by DDW and the Central Coast Water Board. The amended Engineering Report was approved by DDW on September 9, 2014.

14. On July 14, 2014, DDW held a public hearing in Cambria to consider the planned EWS facility and conditions to be imposed on the Project to ensure protection of public health and ensure that the Project will not degrade groundwater quality as a source of domestic water supply. DDW submitted a letter to the Central Coast Water Board with conditions for the Project adopted by DDW on September 9, 2014. The DDW found that the Project will not degrade the quality of the water in the receiving aquifers as a source of domestic water supply, provided all of the conditions are met.
15. The DDW conditions referred to in Finding 13 are incorporated into the provisions of this Order (see Hereby Ordered VII).
16. On February 15, 2018, the CCSD submitted a new Report of Waste Discharge facilitating the update of Order No. R3-2014-0050 and includes a description of the changes in the method of disposal for RO concentrate and other cleaning wastes.

### **III. CCSD EMERGENCY WATER SUPPLY PROJECT**

17. The Cambria Community Service District owns and operates the EWS project located at 990 San Simeon-Monterey Creek Road, north of Cambria in San Luis Obispo County, as shown in Figure 1. The facility is adjacent to both San Simeon and Van Gordon Creeks.
18. The primary EWS project components are:
  - a. Source water extraction of up to 1,000,000 gallons per day from well 9P7 (Figure 2). Water in well 9P7 consists of secondary treated wastewater discharge to percolation ponds, creek underflow, and deep basin brackish water.
  - b. Advanced Water Treatment Plant (AWTP)
    - Membrane Filtration (MF)
    - Reverse Osmosis (RO)
    - Advanced Oxidation Process (AOP)
  - c. Aquifer recharge by injection of recycled water.
  - d. Fresh water lagoon protection discharge.
  - e. Discharge of MF backwash water to CCSD percolation ponds.
  - f. Storage of RO concentrate and cleaning wastewaters prior to disposal at an appropriately regulated facility.

Figure 3 shows a conceptual figure of the EWS product water and waste streams. The emergency water supply advanced treatment facilities include multiple unit processes providing redundant levels of treatment, including MF, RO, advanced

oxidation with ultra violet (UV) and hydrogen peroxide, chlorination, product water stabilization, and dechlorination. Equipment is pre-packaged and mounted in shipping containers for each of the primary unit processes. Figure 4 is a process flow diagram for the advanced water treatment system.

A. **Membrane Filtration** - The MF system provides pretreatment for the RO system to reduce the particulate and biological fouling of the RO membranes. The MF system will remove inert particulates, organic particulates, colloidal particulates, pathogenic organisms, bacteria, and other particles by the size-exclusion sieve action of the membranes. The MF system consists of the following components:

1. **Strainers** - Strainers are provided immediately upstream of the membrane system to protect the membranes from damage and/or fouling due to larger particles.
2. **MF Systems** - The MF system is a containerized system utilizing an open configuration that can utilize membranes from multiple different suppliers. MF system layout is based on the 33 gfd<sup>1</sup> instantaneous flux rate currently using Toray UF (ultrafiltration) membranes. Membrane integrity is confirmed using an online turbidimeter and by daily pressure decay tests. The system is fully automated for flow control, backwashing, daily maintenance cleaning, and periodic chemical cleaning in place.
3. **Break Tank** - The MF break tank serves as a flow equalization reservoir for the MF product water, prior to its being supplied to the RO system. The MF filtrate is conveyed to the MF break tank with residual pressure from the MF system. The MF break tank mitigates the impact of the variations in the MF filtrate flow (resulting from backwashes, cleanings, and integrity tests), by providing equalization volume between the MF and RO processes equivalent to approximately 15 minutes of the maximum RO feed flow. To prevent the excessive accumulation of the particles on the membrane surface, membrane backwashes are performed every 25 to 30 minutes. Overflow from the break tank is directed back to the secondary effluent percolation ponds.

B. **Reverse Osmosis System** - The RO facility includes the following processes:

1. RO feed supply pump
2. RO pre-treatment chemical addition (sodium hypochlorite, ammonia, anti-scalant and sulfuric acid for scale control)
3. Cartridge filters
4. Primary RO feed pumps
5. RO systems with interstage booster pumps

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<sup>1</sup> Flux or water flux is typically expressed as volume per area per unit of time. Flux is used to express the rate at which water permeates a reverse osmosis membrane. Typical units of measurement are gallons per square foot per day (gfd or gsfed) or liters per square meter per hour (L/m<sup>2</sup>/hr). The flux of a RO membrane is directly proportional to temperature and pressure. As a rule of thumb, flux decreases by about 1.5% per 1°F.

The following is a description of the various RO system components and associated processes:

Pre-Treatment Chemical Addition - Ammonium hydroxide and sodium hypochlorite are added downstream of the membrane filtration system for chloramination to control biological fouling of the RO membranes and pretreatment cartridge filters. The target combined chlorine concentration (chloramines) is 3 to 5 mg/L. The chemicals is flow-paced based on the MF feed flow rate and trimmed based on the combined chlorine concentration.

The RO feed supply pumps MF filtrate from the MF break tank through the RO cartridge filters to the RO feed pumps. A three-stage RO configuration will increase recovery and reduce brine flow. The RO system is designed with target recovery of 92 percent.

The system uses three separate containers, one for each primary RO system and a separate container for the third stage system. The system includes two identical primary RO trains, equipped in separate containers and each treating half the flow. The primary RO has a two-stage design operating at approximately 85 percent recovery. The third stage RO container is equipped with one duty and one redundant third stage RO train. The third stage RO system targets approximately 50 percent recovery. The three RO containers share a common chemical cleaning system.

The cartridge filters located upstream of the RO, help protect the RO membranes from particulates that may be introduced to the MF filtrate in the MF break tank or through chemical addition.

Anti-scalant is added to control scaling of the RO membranes. Anti-scalant is fed upstream of the RO cartridge filters. Sulfuric acid is added to lower the pH of the RO feed water to prevent calcium carbonate and calcium phosphate from limiting the RO recovery.

The concentrate from the two primary RO trains is combined and delivered to a third stage RO system, located in a separate container. The third stage RO booster pump provides additional pressure required by the third stage RO to the primary RO concentrate stream. A redundant RO membrane train is supplied for the third stage RO system to allow continued operation during a membrane cleaning.

Membrane integrity is monitored continuously through conductivity and intermittently through weekly sampling for sulfate.

- C. **UV/Advanced Oxidation System** - The final advanced water purification process is disinfection and advanced oxidation, which are required for projects to comply with pathogenic microorganism reduction requirements included in DDW's groundwater recharge regulations.

Advanced oxidation is required to complete the full advanced treatment, achieving a minimum 0.5-log reduction of 1,4-dioxane. The UV reactors serve the dual

purpose of disinfection and advanced oxidation with addition of hydrogen peroxide upstream.

The UV disinfection process provides 6-log enteric virus reduction (towards the overall requirement of 12-log removal), 6-log Giardia cyst reduction (towards the overall requirement of 10-log removal), and 6-log Cryptosporidium oocyst reduction (towards the overall requirement of 10-log removal).

Advanced oxidation is considered the best available technology to address the destruction of trace organic compounds that are not fully removed by the RO membranes, notably NDMA (N-nitrosodimethylamine), flame retardants, and 1,4-dioxane. UV/peroxide destroys trace organic compounds through two simultaneous mechanisms:

1. The first mechanism is through UV photolysis (exposure to UV light) where UV photons are able to break the bonds of certain chemicals if the bond's energy is less than the photon energy.
2. The second mechanism is through UV light's reacting with hydrogen peroxide to generate hydroxyl radicals. The peroxide is added to the RO permeate upstream of the UV process at a dose of approximately 3.0 mg/L.
3. As noted above, the UV/peroxide system is the most common advanced oxidation technology for indirect potable reuse (IPR) and has been used extensively for the removal of trace organic compounds found in treated water. The UV/peroxide system has been designed to meet the groundwater recharge regulations, providing a minimum 0.5-log reduction of 1,4-dioxane, which serves as an indicator compound for other trace organic compounds.

D. **Chemical Systems** - Chemicals used at the EWS include sodium hypochlorite, ammonia, sulfuric acid and anti-scalant used with the RO system, hydrogen peroxide used with the UV disinfection, caustic soda and calcium chloride used for product water stabilization, and sodium bisulfite for dechlorinating product water prior to sending it to the San Simeon Lagoon for mitigation. In addition, citric acid, sodium hypochlorite, and caustic soda is used intermittently for chemical cleaning of the membranes. Each of the chemicals and their related uses is shown in Table 1 below.

**Table 1 – Chemicals Used at the EWS Facility**

|                     | <b>Raw Water</b>           | <b>Membrane Filtrate Water</b>                     | <b>Reverse Osmosis Product Water</b> | <b>Product Water for Groundwater Injection</b> |
|---------------------|----------------------------|----------------------------------------------------|--------------------------------------|------------------------------------------------|
|                     | Before Membrane Filtration | After Membrane Filtration – Before Reverse Osmosis | Before Ultra- violet Disinfection    | After Ultra- violet Disinfection               |
| Sodium hypochlorite | No                         | Yes                                                | No                                   | Yes                                            |
| Aqueous ammonia     | No                         | Yes                                                | No                                   | No                                             |
| Sulfuric acid       | No                         | Yes                                                | No                                   | No                                             |
| Anti-scalant (Acid) | No                         | Yes                                                | No                                   | No                                             |
| Hydrogen peroxide   | No                         | No                                                 | Yes                                  | No                                             |
| Sodium hydroxide    | No                         | No                                                 | No                                   | Yes                                            |
| Calcium chloride    | No                         | No                                                 | No                                   | Yes                                            |
| Sodium bisulfite    | No                         | No                                                 | No                                   | Yes <sup>1</sup>                               |

<sup>1</sup> Sodium bisulfite is used to de-chlorinate product water, if needed, to supplement membrane filtrate water sent to San Simeon Lagoon for mitigation.

**E. Post-Treatment Systems** - The post-treatment product water is pumped to the reinjection well, approximately 3,400 feet northeast of the EWS. Product water quality must be controlled to minimize corrosion of the conveyance pipeline and the pumping equipment, requiring product water stabilization using caustic soda and calcium chloride.

The post-treatment strategy includes the addition of calcium chloride to increase hardness and the addition of caustic soda to increase pH. This strategy allows operators to control hardness and pH independently, producing stable product water that can be matched to any desired combination of pH, hardness, and alkalinity.

A new sodium bisulfite dechlorination system was added downstream of the other post treatment systems which will allow MF filtrate mitigation water sent to San Simeon Lagoon to be supplemented or replaced with dechlorinated product water if circumstances warrant.

**19. Waste Discharge** - Major waste streams for the EWS include MF backwash, RO concentrate, and miscellaneous cleaning and analytical wastes. MF backwash waste and strainer backwash is returned to the CCSD's secondary effluent percolation ponds by gravity flow, without additional treatment or flow equalization. All chemical cleaning waste, RO concentrate, and analytical waste flows are now stored on-site in tanks before being trucked off-site to an appropriately regulated disposal facility.

There are four water/waste streams produced by this Project (Table 2):

**Table 2 - EWS Water/Waste Streams**

| Water Streams                                                                                                 | Waste Streams                                                                   | Flowrate<br>(Gallons Per Day) | Regulatory<br>Mechanism                                 |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------|
|                                                                                                               | Membrane filter backwash wastewater returned to the percolation ponds           | 90,000 gpd                    | Revised Existing WDRs Order No. 01-100                  |
| Membrane Filtrate product water discharged to San Simeon Creek to prevent dewatering of the freshwater lagoon |                                                                                 | 144,000 gpd                   | National Pollutant Discharge Elimination System Permit  |
|                                                                                                               | Reverse Osmosis concentrate and cleaning solutions trucked to disposal facility | 57,600 gpd                    | Offsite Disposal at an Appropriately Regulated Facility |
| Advanced treated product water, recharge to groundwater                                                       |                                                                                 | 576,000 gpd                   | Waste Discharge Requirements (title 22)                 |

The Project is capable of pumping up to one million gallons per day (gpd) from well 9P7 and can produce approximately 844,000 gpd of product water of varying quality, and 155,000 gpd of wastewater of varying quality. The injection of treated product water into well RIW-1 is limited to 576,000 gpd (400 gallons per minute).

20. The water quality of the EWS product water streams shown in Table 3 are averaged from monitoring reports from the 1<sup>st</sup> and 4<sup>th</sup> quarters of 2015, and the 4<sup>th</sup> quarter 2016 which were the main periods of EWS operation to date.

**Table 3 - Quality of Product Water**

| Parameter                      | Units | Membrane Filtrate Product<br>(Lagoon Mitigation Water) | Reverse Osmosis<br>Advanced Treated<br>Product Water<br>(Injection water) |
|--------------------------------|-------|--------------------------------------------------------|---------------------------------------------------------------------------|
| Ammonia - N (NH <sub>3</sub> ) | mg/L  | 0.43                                                   | 0.11                                                                      |
| Barium (Ba)                    | mg/L  |                                                        | 0.0007                                                                    |
| Boron (B)                      | mg/L  | 0.20                                                   | 0.19                                                                      |
| Chloride (Cl)                  | mg/L  | 27.9                                                   | 19.9                                                                      |
| Manganese (Mn)                 | mg/L  |                                                        | 0.0011                                                                    |
| Nitrate (N)                    | mg/L  | 2.27                                                   | 1.12                                                                      |
| Potassium (K)                  | mg/L  |                                                        | 1.4                                                                       |
| Sodium (Na)                    | mg/L  | 28.8                                                   | 39.6                                                                      |
| Strontium (Sr)                 | pCi/L |                                                        | 0.667                                                                     |
| Sulfate (SO <sub>4</sub> )     | mg/L  | 48.17                                                  | 21.39                                                                     |
| Total Dissolved Solids         | mg/L  | 391                                                    | 184                                                                       |
| Total Organic Carbon           | mg/L  | 0.66                                                   | 0.34                                                                      |
| Turbidity                      | NTU   | 0.208                                                  | 0.028                                                                     |

| Parameter | Units | Membrane Filtrate Product<br>(Lagoon Mitigation Water) | Reverse Osmosis<br>Advanced Treated<br>Product Water<br>(Injection water) |
|-----------|-------|--------------------------------------------------------|---------------------------------------------------------------------------|
| Caffeine  | µg/L  |                                                        | ND                                                                        |
| Sucralose | µg/L  |                                                        | 0.504                                                                     |
| NDMA      | µg/L  |                                                        | 0.131                                                                     |

21. **Designated Wastes** - The RO concentrate, chemical cleaning waste, and analytical instrument waste generated at the EWS facility are categorized as “designated waste” and were previously sent to the evaporation pond, regulated per title 27 via order No. R3-2014-0047.

Designated wastes are defined in California Water Code (Water Code) section 13173 as “Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state...”.

The evaporation pond is subject to cease and desist order No. R3-2017-0016 and is not available to receive any additional designated wastes.

Going forward, the Discharger will truck these wastes off-site to an appropriately regulated facility for disposal, such as San Luis Obispo County’s South County Wastewater Treatment Plant.

22. **Time and Hours of Operation** - The EWS has typically operated 8-hours per day, 5-days per week for 6-months of the year, when drought conditions are most severe. The facility may operate longer hours in the future at the discretion of the Discharger, unless other state or local agencies restrict the hours of operation.

#### IV. RECYCLED WATER INJECTION SYSTEM

23. **Injection Facilities** - Injection well RIW-1 is located on the east side of the CCSD property approximately 300 feet north of San Simeon Creek and 500 feet south of San Simeon Creek Road (Figure 2). Well RIW-1 is approximately 1,300 feet west of wells SS-1 and SS-2 and approximately 1,700 feet northeast of the water treatment facility and effluent ponds. The property is a 92-acre, unimproved, open field vegetated with grass, shrubs, and some trees and varies in elevation from approximately 20 to 25 feet above mean sea level. The CCSD production wells, SS-1, SS-2 and SS-3, are located on the eastern end of the property, and a gravel road connects the wells and transverses this portion of the property.

24. **Injection Well** - Well RIW-1 is 100 feet deep and constructed of 10-inch diameter mild steel well casing with 45 feet of type 304L stainless steel, wire-wrap screen with 0.08-inch wide slot openings. There is mechanical coupler for dissimilar metals separating the mild steel casing and stainless-steel screen. The well is screened from 50 to 95 feet below ground surface (bgs) and has a 5-foot stainless steel sediment trap below the well screen. The CCSD may inject no more than 400 gpm into the well.

The wellhead facilities are above grade. Wellhead facilities include steel pipe, a flow control valve, a flow meter, and isolation valves to remove above-ground equipment. There are no pumps or noise-generating equipment installed at the injection well site. A small panel is above grade and adjacent to the well for the controls of the foot valves, which are located below ground in the well to maintain a backpressure on the well piping.

25. **Extraction and Supply Wells** - CCSD has three production wells in the basin: SS-1, SS-2, and SS-3 (Figure 2). They are screened between 30 to 75 feet bgs (SS-2) and 30 to 105 feet bgs (SS-1 and SS-3). The wells pump at 400 gpm. Well SS-3 is seldom used. Well SS-3 is not operated during EWS operations. Well 9P7 was formerly used as a gradient control well adjacent to the effluent percolation ponds, and it now supplies water to the advanced water plant. The approximate pumping rate from 9P7 is 591 gpm (852,000 gpd), with 400 gpm (576,000 gpd) of fully treated water pumped into RIW-1, and approximately 100 gpm (144,000 gpd) of membrane filtrate product water discharged to San Simeon Creek as needed to prevent dewatering of the freshwater lagoon. The rate of discharge to the Lagoon is subject to an adaptive management plan and may vary.

## V. SURFACE WATER STUDIES

26. Table 4 below summarizes the water quality in San Simeon Creek, and site locations are shown on Figure 1. The data in Table 4, collected by the Central Coast Ambient Monitoring Program (CCAMP) from 2001 through 2017, show that water quality at monitoring site 310SSC is degraded. The data also show water at monitoring site 310SSU (the upstream station) is of high quality.

**Table 4 – Surface Water Quality in San Simeon Creek (Source: CCAMP)**

| Pollutants (mg/L)     | Surface Water Monitoring Sites |                   |
|-----------------------|--------------------------------|-------------------|
|                       | 310SSC (downstream)            | 310SSU (upstream) |
| Chloride              | 130 <sup>B</sup>               | 12.9 <sup>C</sup> |
| Nitrogen (Total) – TN | 2.38 <sup>B</sup>              | 0.31 <sup>C</sup> |
| TN – (Range)          | 0.51 – 10.0                    | 0.01 – 3.92       |
| Nitrate as N          | 3.39 <sup>A</sup>              | 0.1 <sup>C</sup>  |
| Nitrate as N (Range)  | 0.021 - 28 <sup>D</sup>        | 0.01 - 0.88       |
| Phosphorus (Total)    | 0.84 <sup>D</sup>              | 0.05 <sup>C</sup> |
| Orthophosphate        | 1.14 <sup>B</sup>              | 0.02 <sup>C</sup> |
| Salinity (ppt)        | 0.69 <sup>D</sup>              | 0.25 <sup>C</sup> |
| Sodium                | 174.2 <sup>B</sup>             | 16 <sup>C1</sup>  |
| TDS                   | 848 <sup>B</sup>               | 305 <sup>C</sup>  |

A = Mean for all years (2001-2017); B = Mean for all years (2015-2017 through August); C = Mean for years (2002-2015); D = years 2001-2015; 1 = no data for 2003;

Land use in the San Simeon Creek watershed includes a state campground, a gravel mining facility, range land, natural landscapes, various agriculture operations (row crops, orchard, and vineyard). Throughout the watershed, there are approximately 53 parcels with houses, septic systems, and domestic wells.

## VI. GROUNDWATER STUDIES

**27. Hydrogeology of Project Area** - Groundwater occurs in the alluvial deposits beneath San Simeon Creek, which drains the western flanks of the Santa Lucia Range in San Luis Obispo County and discharges into the Pacific Ocean. The alluvial aquifer is recharged primarily by seepage from San Simeon Creek, which typically flows during the winter and spring rainy season. The CCSD uses wells along San Simeon Creek in a thin, narrow groundwater basin within the alluvium.

The CCSD's San Simeon well field consists of three potable water supply wells located approximately one mile inland from the ocean. The CCSD also utilizes a series of percolation ponds between the well field and the ocean where secondary treated waste water is recharged back to the aquifer. Pumping during the dry season results in seasonal declines in groundwater levels since production is by removal of water from storage in the aquifer when the stream is not flowing. In addition to the CCSD water supply wells and effluent discharge, there are privately operated water wells for both domestic and agricultural uses in the area.

### 28. Groundwater Quality

A. CCSD groundwater data for years 2001 through 2012 from water supply and monitoring wells are presented below in Table 5. These data indicate groundwater in upper San Simeon Creek (upstream of the wastewater discharge) is supportive of beneficial uses, and it should be noted that the nitrate concentrations in well SS3 had an average concentration of 0.8 mg/L NO<sub>3</sub> as N. The data for well 9P7 show that pollutant concentrations in groundwater were elevated when compared to samples from SS3, but that water quality supported beneficial uses. Finally, the data for well 16D1 (downgradient of the CCSD wastewater discharge) showed that pollutant concentrations in groundwater were elevated when compared to samples from SS3 and 9P7, and the water quality was not supportive of beneficial uses because samples from well 16D1 exceeded water quality objectives on average during this timeframe for nitrate, sodium, and chloride.

**Table 5 - Groundwater Quality in the San Simeon Basin**

| Annual Average (mg/L) | Groundwater Quality Average for years 2001 -2012* |     |      |
|-----------------------|---------------------------------------------------|-----|------|
|                       | SS3                                               | 9P7 | 16D1 |
| Nitrate as N          | 0.8                                               | 4.8 | 12.1 |
| TDS                   | 357                                               | 501 | 769  |
| Sodium (Na)           | 20                                                | 54  | 123  |
| Chloride (Cl)         | 21                                                | 72  | 170  |
| SO <sub>4</sub>       | 43                                                | 56  | 85   |
| Boron                 | 0.2                                               | 0.2 | 0.3  |

\*Sample size range = 19 - 26 samples depending on well and constituent

- C. A report by Jones & Stokes (1991)<sup>2</sup> confirmed that groundwater below the CCSD discharge was seeping into surface waters. The Jones & Stokes report stated, “the lagoon is formed by seepage of groundwater into the creek, principally near the upstream end of the lagoon,” which is adjacent to the wastewater disposal area.
- D. In April 2015 the EWS was shut down due to exceedances of the effluent limit for nitrate as nitrogen. In response the Discharger implemented a reconfiguration of its treatment processes at the municipal wastewater treatment plant to reduce overall nitrogen levels in the effluent discharging to the percolation ponds. When the EWS was restarted in December 2015, nitrogen levels were significantly reduced in the treated water reinjected into the aquifer. Table 6 below shows groundwater quality averages for 2015 thru 2017.

**Table 6 - Groundwater Quality in the San Simeon Basin**

| Annual Average<br>(mg/L) | Groundwater Quality<br>Average for years 2015 -2017* |      |      |
|--------------------------|------------------------------------------------------|------|------|
|                          | SS3                                                  | 9P7  | 16D1 |
| Nitrate as N             | 0.37                                                 | 3.13 | 3.91 |
| TDS                      | 359                                                  | 380  | 596  |
| Sodium (Na)              | 20                                                   | 26   | 98   |
| Chloride (Cl)            | 21                                                   | 29   | 101  |
| SO <sub>4</sub>          | 47                                                   | 46   | 85   |
| Boron**                  | 0.2                                                  | 0.2  | 0.3  |

\* Sample size range = 19 - 27 samples depending on well and constituent.

\*\*Boron sample size = 10

29. **Recycled Water Retention Time** - The CCSD conducted tracer tests to determine the retention time of injected treated water. The tests show how much time elapses between treated water injection and extraction by the CCSD water supply wells.

Results of the initial tracer study at a higher injection flow rate of 437 gallons per minute showed the bromide ion tracer measured in well SS2 did not meet the required minimum 60-day aquifer residence time.

A second tracer study was conducted in the fall of 2016 and concluded that at an average recharge rate of 406.9 gallons per minute (gpm), the residence time for recharged water, under average basin conditions, significantly exceeded the required 60-day residence time. In a letter dated October 10, 2017, the State Water Resources Control Boards Division of Drinking Water (DDW) accepted the second tracer study results, under the condition that the injection of recycled water does not exceed 400 gpm into RIW-1.

## VII. REGULATION OF RECYCLED WATER

30. The Regional Water Boards are responsible for issuing water reclamation requirements for the beneficial use of recycled water. The State Water Board and Regional Water Boards are responsible for issuing waste discharge requirements for the beneficial use of recycled water that includes a discharge to waters of the state.

31. State authority to oversee recycled water use is shared by the State Water Board DDW and the Regional Water Boards. DDW is the division with the primary responsibility for establishing water recycling criteria under title 22 of the Code of Regulations to protect public health.
32. The State Water Board adopted Resolution No. 77-1, *Policy with Respect to Water Reclamation in California*, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the state. On September 26, 1988, the Central Coast Water Board also adopted Resolution No. 88-012, which encourages the beneficial use of recycled water and supports water recycling projects.
33. The State Water Board adopted the Recycled Water Policy (State Water Board Resolution No. 2009-0011) on February 3, 2009, and first amended the Policy on January 22, 2013. The Policy was amended a second time on December 11, 2018, with an effective date of April 8, 2019. The stated purpose of the Policy is to encourage the safe use of recycled water from wastewater sources that meets the definition in Water Code section 13050(n), in a manner that implements state and federal water quality laws and protects public health and the environment. This Order implements the Recycled Water Policy.
34. Section 13523(a) of the Water Code provides that a Regional Water Board, after consulting with and receiving recommendations from the Department of Public Health<sup>3</sup>, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements (WRRs) for water that is used or proposed to be used as recycled water. Pursuant to Water Code section 13523, the Central Coast Water Board has consulted with DDW and received its recommendations. On July 14, 2014, DDW participated in a public hearing to consider the proposed Cambria Emergency Water Supply Project. On September 9, 2014, DDW transmitted to the Central Coast Water Board its conditions concerning the Cambria Emergency Water Supply Project.
35. Section 13540 of the Water Code requires that recycled water may only be injected into an aquifer used as a source of domestic water supply if DDW finds the recharge will not degrade<sup>4</sup> the quality of the receiving aquifer as a source of water supply for domestic purposes. In its conditions, DDW determined that “provided that WRR meets all of the above conditions DDW finds that the Cambria Emergency Water Supply Project can provide injection recharge water that will not degrade groundwater basins as a source of water supply for domestic purposes.”
36. Section 13523(b) of the Water Code provides that reclamation requirements shall be established in conformance with the uniform statewide recycling criteria established pursuant to Water Code section 13521. Section 60320 of title 22 currently includes requirements for groundwater recharge projects. The State Water Board adopted

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<sup>3</sup> As of July 1, 2014, administration of the Drinking Water Program and oversight of recycled water criteria was transferred from the Department of Public Health to the State Water Board, and now resides with the State Boards Department of Drinking Water (DDW).

<sup>4</sup> Groundwater is degraded; however, the degraded water will support beneficial uses.

uniform water recycling criteria for groundwater recharge on July 15, 2014.

**VIII. OTHER APPLICABLE PLANS, POLICIES AND REGULATIONS**

**A. Regional Board Water Quality Control Plan (Basin Plan)**

- 37. The Central Coast Water Board has adopted the *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan). The Basin Plan designates beneficial uses for surface and groundwater; establishes narrative and numeric water quality objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and to conform with the state’s anti-degradation policy; and includes implementation provisions, programs, and policies to protect all waters in the region. In addition, the Basin Plan incorporates applicable State Water Board and Central Coast Water Board plans and policies and other pertinent water quality policies and regulations.
- 38. The Basin Plan incorporates the California Code of Regulations (CCR) title 22 primary Maximum Contaminant Levels (MCLs) by reference. This incorporation is prospective, including future changes to the incorporated provisions as the changes take effect. The Basin Plan states that groundwater designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents and radionuclides in excess of the MCLs. The Basin Plan also specifies concentrations that cause nuisance or adversely affect beneficial uses.
- 39. The Basin Plan contains beneficial uses and water quality objectives (WQO) for the San Simeon Valley groundwater basin, which is the receiving water affected by the injection of recycled water from the Project. The beneficial uses and water quality objectives of the San Simeon Valley groundwater basin are as follows:

**Table 7 - Beneficial Uses of Groundwater**

| Receiving Water                                       |      |       | Beneficial Uses                                                                                          |                                 |
|-------------------------------------------------------|------|-------|----------------------------------------------------------------------------------------------------------|---------------------------------|
| San Simeon Valley (3-35)<br>(an alluvial aquifer)     |      |       | Municipal and Domestic Water Supply (MUN), Industrial Service Supply (IND),<br>Agricultural Supply (AGR) |                                 |
| Water Quality Objectives for San Simeon Valley (3-35) |      |       |                                                                                                          |                                 |
|                                                       | WQO  | Units | Source: Basin Plan<br>Table 3.1                                                                          | Source: Basin Plan Table<br>3.2 |
| Aluminum                                              | 5    | mg/L  |                                                                                                          | X                               |
| Ammonia (NH4-N)                                       | 5    | mg/L  | X                                                                                                        |                                 |
| Arsenic                                               | 0.1  | mg/L  |                                                                                                          | X                               |
| Bicarbonate (HCO3)                                    | 90   | mg/L  | X                                                                                                        |                                 |
| Beryllium                                             | 0.1  | mg/L  |                                                                                                          | X                               |
| Boron                                                 | 0.75 | mg/L  |                                                                                                          | X                               |
| Cadmium                                               | 0.01 | mg/L  |                                                                                                          | X                               |
| Chloride                                              | 106  | mg/L  | X                                                                                                        |                                 |
| Chromium                                              | 0.1  | mg/L  |                                                                                                          | X                               |
| Cobalt                                                | 0.05 | mg/L  |                                                                                                          | X                               |
| Copper                                                | 0.2  | mg/L  |                                                                                                          | X                               |
| Fluoride                                              | 1.0  | mg/L  |                                                                                                          | X                               |
| Iron                                                  | 5.0  | mg/L  |                                                                                                          | X                               |

| Receiving Water                                       |                  |         | Beneficial Uses                                                                                       |                              |
|-------------------------------------------------------|------------------|---------|-------------------------------------------------------------------------------------------------------|------------------------------|
| San Simeon Valley (3-35)<br>(an alluvial aquifer)     |                  |         | Municipal and Domestic Water Supply (MUN), Industrial Service Supply (IND), Agricultural Supply (AGR) |                              |
| Water Quality Objectives for San Simeon Valley (3-35) |                  |         |                                                                                                       |                              |
|                                                       | WQO              | Units   | Source: Basin Plan Table 3.1                                                                          | Source: Basin Plan Table 3.2 |
| Lead                                                  | 0.1              | mg/L    |                                                                                                       | X                            |
| Lithium                                               | 2.5 <sup>a</sup> | mg/L    |                                                                                                       | X                            |
| Manganese                                             | 0.2              | mg/L    |                                                                                                       | X                            |
| Mercury                                               | 0.01             | mg/L    |                                                                                                       | X                            |
| Molybdenum                                            | 0.01             | mg/L    |                                                                                                       | X                            |
| Nickel                                                | 0.2              | mg/L    |                                                                                                       | X                            |
| Nitrite                                               | 10               | mg/L    |                                                                                                       | X                            |
| pH                                                    | 6.5-8.4          |         | X                                                                                                     |                              |
| Salinity                                              | 0.75             | mmho/cm | X                                                                                                     |                              |
| Selenium                                              | 0.02             | mg/L    |                                                                                                       | X                            |
| Sodium                                                | 69               | mg/L    | X                                                                                                     |                              |
| Vanadium                                              | 0.1              | mg/L    |                                                                                                       | X                            |
| Zinc                                                  | 2.0              | mg/L    |                                                                                                       | X                            |

a – Recommended maximum concentration for irrigation of citrus is 0.075 mg/L

40. The Basin Plan contains the following specific water quality objectives:

**MUNICIPAL AND DOMESTIC SUPPLY (MUN)**

- Bacteria - The median concentration of coliform organisms over any seven-day period shall be less than 2.2/100 mL.
- Organic Chemicals - Groundwater shall not contain concentrations of organic chemicals in excess of the limiting concentrations set forth in California Code of Regulations, title 22, chapter 15, article 5.5, section 64444.5, table 5 and listed in Basin Plan Table 3-1.
- Chemical Constituents - Groundwater shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, title 22, chapter 15, article 4, section 64435, tables 2 and 3.
- Radioactivity - Groundwater shall not contain concentrations of radionuclides in excess of the limits specified in California Code of Regulations, title 22, chapter 15, article 5, section 64443, Basin Plan table 4.

**AGRICULTURAL SUPPLY (AGR)**

- Groundwater shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension Service guidelines provided in Basin Plan table 3-1.

In addition, water used for irrigation and livestock watering shall not exceed the concentrations for those chemicals listed in Basin Plan Table 3-2. No controllable water quality factor shall degrade the quality of any groundwater resource or adversely affect long-term soil productivity. The salinity control aspects of groundwater management will account for effects from all sources.

## **B. State Water Resources Control Board Policies**

41. The Sources of Drinking Water Policy (Resolution No. 88-63) provides that all waters of the state, with certain exceptions, are to be protected as existing or potential sources of municipal and domestic supply. Exceptions include waters with existing high dissolved solids (i.e., greater than 3,000 mg/L), low sustainable yield (less than 200 gallons per day for a single well), waters with contamination that cannot be treated for domestic use using best management practices or best economically achievable treatment practices, waters within particular municipal, industrial and agricultural wastewater conveyance and holding facilities, and regulated geothermal groundwaters.
42. DDW has established a notification level of 10 nanograms per liter (ng/L) for N-nitrosodimethylamine (NDMA). The notification level is the concentration level of a contaminant in drinking water delivered for human consumption that DDW has determined, based on available scientific information, does not pose a significant health risk but warrants notification. Notification levels are established as precautionary measures for contaminants that may be considered candidates for establishment of maximum contaminant levels but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels and are not drinking water standards. DDW has established a response level of 300 ng/L for NDMA. The response level is the concentration of a contaminant in drinking water delivered for human consumption at which DDW recommends that additional steps, beyond notification, be taken to reduce public exposure to the contaminant.
43. On October 8, 1968, the State Water Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Resolution 68-16), establishing an anti-degradation policy for the State Water Board and Regional Water Boards. Resolution No. 68-16 requires that existing high quality of waters be maintained unless a change is demonstrated to be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of waters, and will not result in water quality less than that prescribed in applicable policies. Resolution No. 68-16 also prescribes waste discharge requirements for discharges to high quality waters that will result in the best practicable treatment or control of the discharge necessary to ensure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State is maintained. The Central Coast Water Board's Basin Plan implements, and incorporates by reference, the state anti-degradation policy.
44. This Order is consistent with Resolution No. 68-16 (Anti-degradation policy). Groundwater recharge with recycled water for later extraction and use in accordance with the Recycled Water Policy and state and federal water quality laws is to the benefit of the people of the State of California. Nonetheless, groundwater recharge projects using recycled water have the potential to lower water quality within a basin. The Central Coast Water Board finds that, based on available information and monitoring data, any change in the existing high quality of the groundwater basin as a result of groundwater recharge allowed by this Order is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will

not cause exceedance of applicable water quality standards for the basin. As described in the findings herein, the CCSD is implementing the best practicable treatment or control of the recycled water to be injected into the basin for groundwater recharge. Compliance with this Order will protect present and anticipated beneficial uses of the groundwater, ensure attainment of water quality prescribed in applicable policies, and avoid any conditions of pollution or nuisance.

### **C. Climate Change**

45. The EWS project's objective as initially intended and permitted was to address the water supply related drought effects of climate change for the community of Cambria (i.e., to augment the water supply). The EWS project was constructed to provide an additional source of water for the community during periods of prolonged drought. Periods of prolonged drought are predicted to become more frequent as the effects of climate change become more pronounced.
46. Central Coast Water Board staff will continue to coordinate with California Coastal Commission and county staff to incorporate climate change adaptation strategies into any future permit revisions.

### **D. Human Right to Water**

47. California Water Code section 106.3, subdivision (a) states: "It is a policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitation purposes." This Order is consistent with the human right to water policy by requiring the discharger to comply with effluent limits that will protect the municipal and domestic supply (MUN) drinking water beneficial use.

### **E. Disadvantaged Community Status**

48. The EWS facility is not located in an area identified as a disadvantaged community (DAC) on the California Department of Water Resources DAC Mapping Tool<sup>5</sup> as either a place, tract, or block group per 2016 census data. The CCSD serves water to 6,032 residents in the community of Cambria. Of the 6,032 residences served, the DAC Mapping Tool identified approximately 934 residents in the village area of Cambria to be consider a disadvantaged block group per the 2016 census data.

### **F. California Water Code**

49. Pursuant to Water Code section 13263(g), discharges of waste into waters of the state are privileges, not rights. Nothing in this Order creates a vested right to continue the discharge. Water Code section 13263 authorizes the Central Coast Water Board to issue waste discharge requirements that implement any relevant water quality control plan.

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<sup>5</sup> The DAC Mapping Tool (<https://gis.water.ca.gov/app/dacs/>) is used to inform statewide Integrated Water Resources Management (IRWM), Sustainable Groundwater Monitoring Act (SGMA), and California Water Plan implementation efforts.

50. Section 13267(b) of the Water Code states, in part:

*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region shall furnish under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*

Section 13267(d) of the Water Code states, in part:

*[A] regional board may require any person, including a person subject to waste discharge requirements under section 13263, who is discharging, or who proposes to discharge, wastes or fluid into an injection well, to furnish the state board or regional board with a complete report on the condition and operation of the facility or injection well, or any other information that may be reasonably required to determine whether the injection well could affect the quality of the waters of the state.*

51. The need for the technical and monitoring reports required by this Order, including the Monitoring and Reporting Program, is based on the Report of Waste Discharge (ROWD) and Engineering Report; the DDW conditions; the California Environmental Quality Act (CEQA) Initial Study; and other information in the Central Coast Water Board's files for the EWS facility. The technical and monitoring reports are necessary to ensure compliance with these waste discharge requirements and water recycling requirements. The burden, including costs, of providing the technical reports required by this Order bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

52. This Order includes limits on quantities, rates, and concentrations of chemical, physical, biological, and other pollutants in the advanced treated recycled water that is injected into groundwater.

## **VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND NOTIFICATION**

53. The construction, operation, and issuance of Order No. R3-2014-0050 for the EWS was initially exempt from provisions of CEQA pursuant to proclamations by the Governor, dated January 17, 2014, and April 25, 2014, declaring a drought State of Emergency in California and declaring a continued State of Emergency. Directive 12 of the April 25, 2014 proclamation stated as follows:

*The California State Water Resources Control Board, Department of Drinking Water (DDW), the Office of Emergency Services, and the Office of Planning and Research will assist local agencies that the Department of Public Health has identified as vulnerable to acute drinking water shortages in implementing solutions*

*to those water shortages.*

Directive 19 of the April 25, 2014 proclamation suspended the CEQA environmental review requirements for actions taken under Directive 12, and for all necessary permits needed to implement those actions, when the Office of Planning and Research “concur[s] that local action is required.” The Central Coast Water Board concluded that the issuance of Order No. R3-2014-0050 was consistent with Directives 12 and 19 of the April 25, 2014 proclamation.

54. The construction, operation, and issuance of Order No. R3-2014-0050 for the EWS was also initially an emergency project exempt from the provisions of CEQA in accordance with title 14 California Code of Regulations, section 15269(c).
55. This Order is an update to Order No. R3-2014-0050 authorizing discharges from the EWS. The EWS shares systems that are identical to a different project, the Cambria Sustainable Water Facility (SWF), for which the CCSD as lead agency certified a Revised Final Subsequent Environmental Impact Report (SEIR) on July 27, 2017. The SEIR is subsequent to the Cambria Water Master Plan Program EIR certified on August 21, 2008. In addition to the shared system with the EWS, the SWF includes proposed modifications that are not part of the EWS and are not addressed by this Order.
56. Central Coast Water Board staff reviewed the portions of the SEIR applicable to operation of the EWS and did not identify any potentially significant environmental effects within the jurisdiction of the Central Coast Water Board that could not be mitigated for the EWS. Central Coast Water Board staff reviewed the SEIR as it pertains to the SWF, being mindful that the SWF is a different project than the EWS.
57. The Central Coast Water Board, as a responsible agency under CEQA, has considered the SEIR and associated documents as they relate to the EWS and the adoption of this Order, and concurs with CCSD’s approval of the relevant CEQA documents. The Central Coast Water Board finds that the environmental effects of the EWS operation and adoption of this Order are identified in SEIR. The Central Coast Water Board further finds that the EWS operation and adoption of this Order will not have significant adverse impacts on the environment provided that the relevant mitigation presented in the SEIR and the required Adaptive Management Plan are carried out as conditioned in this Order (see General Requirement IV 6. in this Order). In adopting this Order, the Central Coast Water Board has eliminated or substantially lessened the less-than-significant effects on water quality.
58. Any person aggrieved by this action may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this 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 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 at:

[http://waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://waterboards.ca.gov/public_notices/petitions/water_quality).

59. The Central Coast Water Board has notified the CCSD and interested agencies and persons of its intent to update Order R3-2014-0050, for the production and use of recycled water and has provided them with an opportunity to submit written comments. The Central Coast Water Board, in a public meeting, heard and considered all comments pertaining to this Order.

**THEREFORE, IT IS HEREBY ORDERED** that Order No. 2014-0050 is terminated except for purposes of enforcement, and that pursuant to California Water Code sections 13263, 13267, and 13523 the CCSD, its agents, successors, and assigns, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations and guidelines adopted thereunder, and California Code of Regulations title 22, division 4, chapter 3, shall comply with the requirements in this Order.

#### **I. INFLUENT SPECIFICATIONS**

The influent to the CCSD EWS system shall consist of secondary treated wastewater discharge to percolation ponds in basin storage, creek underflow, and deep basin brackish water with limited recharge as described in the approved 2014 title 22 Engineering Report.

#### **II. RECYCLED WATER TREATMENT SPECIFICATION**

Treatment of the recycled water shall be as described in the findings of this Order and the conditions issued by DDW.

#### **III. RECYCLED WATER DISCHARGE LIMITS**

1. The Discharger shall not inject treated product water into the aquifer at a rate that exceeds 400 gallons per minute or 576,000 gpd.
2. The advanced treated recycled water injected at well RIW-1 shall not contain pollutants in excess of the following limits:

**Table 9 – Reverse Osmosis Recycled Water Discharge Limits, Groundwater ReInjection**

| Constituents   | Units     | Concentration | Monitoring Frequency             | Compliance Interval         |
|----------------|-----------|---------------|----------------------------------|-----------------------------|
| Ammonia as N   | mg/L      | 0.1           | Weekly grab or 24-hour composite | Sample Result: No averaging |
| Boron          | mg/L      | 0.32          | Monthly                          | Running Annual Average      |
| Chloride       | mg/L      | 70            | Monthly                          | Running Annual Average      |
| Nitrate as N   | mg/L      | 2.3           | Weekly grab or 24-hour composite | Sample Result: No averaging |
| Sodium         | mg/L      | 62            | Monthly                          | Running Annual Average      |
| Sulfate        | mg/L      | 43            | Monthly                          | Running Annual Average      |
| TDS            | mg/L      | 357           | Monthly                          | Running Annual Average      |
| Total Coliform | MPN/100ml | <2.2          | Daily grab                       | Weekly Maximum              |

3. Compliance with the recycled water discharge limits shall be determined after the injection point for sodium hypochlorite and before injection into the San Simeon Creek alluvial aquifer.

#### **IV. MEMBRANE FILTER BACKWASH WATER TREATMENT SPECIFICATION**

Treatment of the membrane filter backwash water shall be as described in the findings of this Order and the conditions issued by DDW.

#### **V. GENERAL REQUIREMENTS**

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.
2. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, is prohibited.
3. The EWS facility and injection wells shall be adequately protected from inundation and damage by storm flows.
4. Recycled water use or disposal shall not result in earth movement in geologically unstable areas.
5. Odors of sewage origin shall not be perceivable at any time outside the boundary of the EWS facility.
6. The CCSD shall at all times properly operate and maintain all treatment facilities and control systems (and related appurtenances) that are installed or used by the CCSD to achieve compliance with the conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate

operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

7. A copy of these requirements shall be maintained at the EWS facility and available at all times to operating personnel.
8. For any material change or proposed change in character, location, or volume of recycled water or its uses, the CCSD shall submit at least 120 days prior to the proposed change, an engineering report or addendum to the existing engineering report to the Central Coast Water Board and DDW (pursuant to Water Code Division 7, chapter 7, article 4, section 13522.5 and CCR title 22, division 4, chapter 3, article 7, section 60323) for approval. The engineering report shall be prepared by a qualified engineer registered in California.

## **VI. REVERSE OSMOSIS REJECT WASTE**

1. Reverse osmosis concentrate and other cleaning wastes previously sent to the title 27 surface impoundment shall be stored on-site in tanks which are either double-walled or are provided with secondary containment, before being trucked to an appropriately regulated disposal facility.
2. The area used to transfer RO concentrate to tanker trucks shall be constructed so as to contain any reasonably foreseeable spillage that may occur during the transfer process.

## **VII. PROVISIONS**

1. Injection of the advanced treated recycled water shall not cause or contribute to an exceedance of water quality objectives in groundwater.
2. Groundwater Well Replacement: Replacement or addition of injection wells to the Cambria Emergency Water Supply Project will not require a report of material change, filing of a new Report of Waste Discharge, or submitting an updated Engineering Report, provided:
  - a. The additional injection capacity does not violate any requirement in this Order;
  - b. At least 30 days prior to installation of an additional well, the CCSD submits, in writing, the purpose, design, and location of the well to DDW and the Central Coast Water Board;
  - c. Within 90 days after the installation or replacement of the well, the CCSD submits, in writing, the complete geologic and electrical logs and as-built construction diagrams of the injection wells to DDW and the Central Coast Water Board.
3. The CCSD shall submit to the Central Coast Water Board, under penalty of perjury, self-monitoring reports according to the specifications contained in the current Monitoring and Reporting Program (MRP), as directed by the Executive Officer and signed by a designated responsible party.
4. The CCSD shall notify the Central Coast Water Board and DDW by telephone or electronic means within 24 hours of knowledge of any violations of this Order or any

- adverse conditions as a result of the use of recycled water from the EWS facility; written confirmation shall follow within five working days from date of notification. The report shall include, but not be limited to, the following information, as appropriate:
- a. The nature and extent of the violation;
  - b. The date and time when the violation started, when compliance was achieved, and when injection was suspended and restored, as applicable;
  - c. The duration of the violation;
  - d. The cause(s) of the violation;
  - e. Any corrective and/or remedial actions that have been taken and/or is taken with a time schedule for implementation to prevent future violations; and,
  - f. Any impact of the violation.
5. This Order does not exempt the CCSD from compliance with any other laws, regulations, ordinances, or permits which may be applicable, including but not limited to the Emergency Coastal Development Permit; it does not legalize the recycling and use facilities; and it leaves unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.
  6. This Order does not alleviate the responsibility of the CCSD to obtain other necessary local, state, and federal permits to operate the EWS or to construct facilities necessary for compliance with this Order, nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.
  7. This Order may be modified, revoked and reissued, or terminated for cause, including but not limited to, failure to comply with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; or acquisition of new information that could have justified the application of different conditions if known at the time of Order adoption. The filing of a request by the CCSD for modification, revocation and reissuance, or termination of the Order or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
  8. The CCSD shall furnish, within a reasonable time, any information the Central Coast Water Board or DDW may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The CCSD shall also furnish the Central Coast Water Board, upon request, with copies of records required to be kept under this Order for at least three years.
  9. In an enforcement action, it shall not be a defense for the CCSD that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the CCSD shall, to the extent necessary to maintain compliance with this Order, control production of all discharges until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

10. This Order includes the attached *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (2013)*. If there is any conflict between the provisions stated in this Order and the Standard Provisions, the provisions stated in this Order shall prevail.
11. This Order includes MRP No. R3-2014-0050 (revised June 28, 2018). If there is any conflict between provisions stated in the MRP and the Standard Provisions, those provisions stated in the MRP shall prevail.
12. The DDW conditions that are not explicitly included in this Order are incorporated herein by this reference and are enforceable requirements of this Order. Any violation of a term in this Order that is identical to a DDW Condition will constitute a single violation.

### **VIII. STATE WATER BOARD DIVISION OF DRINKING WATER REQUIREMENTS**

- 1 The maximum allowable rate for the injection of product water in RIW-1 is 400 gallons per minute.
- 2 The DDW recommends the treatment facility be classified as a T3, which would require a Grade T3 chief operator and Grade T2 shift operator. The chief operator is the person who has overall responsibility for the day-to-day operation of the treatment facility. The shift operator is the person in direct charge of the operation of the treatment facility for a specific period of a day.
- 3 The CCSD will collect quarterly samples from each monitoring well for the pollutants in Tables 64449-A and B, secondary standards.
- 4 The AWTP contains a multi-barrier treatment facility in order to comply with the Groundwater Replenishment Regulations. The following monitoring and reporting requirements must be included in the OMMP [operations maintenance and monitoring plan] and reported to the DDW and the Central Coast Water Board monthly.
  - a. To demonstrate the log reduction credit given to the CCSD Wastewater Treatment Plant (WWTP) and facilities up to the influent of the AWTP, the WWTP effluent shall be monitored continuously for turbidity and daily for coliform concentrations. The CCSD will report monthly to the DDW and Central Coast Water Board the daily WWTP effluent coliform analysis, the daily WWTP effluent average turbidity, daily WWTP effluent maximum turbidity and the percent of time the WWTP effluent turbidity is greater than 5 NTU.
  - b. The CCSD will monitor and report the AWTP influent for turbidity continuously, total organic carbon (TOC) and total coliform weekly. If a sample of the influent to the AWTP is positive for total coliform, the sample shall be analyzed for E. coli. Turbidity measurements shall be recorded every 15 minutes and the daily average and daily maximum shall be reported.
  - c. The micro filtration membrane (MF) effluent will be monitored for turbidity continuously. The daily average and maximum turbidity reading and the percent of time that the turbidity is greater than 0.2 NTU needs to be reported.
  - d. Membrane integrity testing (MIT) shall be performed on the MF membrane unit a minimum of once every 24 hours of operation.

- i. The Reverse Osmosis (RO) system will not be credited pathogen reduction. The log removal value (LRV) for *Cryptosporidium* shall be calculated and the value reported after the completion of each MIT.
- ii. The MIT shall have a resolution that is responsive to an integrity breach on the order of 3  $\mu\text{m}$  or less.
- iii. Calculations of the LRV shall be based on a pressure decay rate (PDR) value with an ending pressure that provides a resolution of 3 microns or less.
- iv. The MIT shall have a sensitivity to verify a LRV equal to or greater than 4.0.
- e. at this facility; however, minimal monitoring is required to ensure the integrity of the system. CCSD needs to monitor the effluent of each RO unit (Stage 1 and 2) and the third stage RO unit (Stage 3) continuously for conductivity. The CCSD will report the average and maximum conductivity from the effluent of each unit daily. The RO effluent will be monitored for TOC weekly and reported in the monthly report.
- f. The UV/peroxide system shall be operated as has been designed to meet the groundwater recharge regulations, providing a minimum 0.5-log reduction of 1,4-dioxane. The UV system is a Trojan UVPhOx 72AL75, which was pilot-tested at the City of San Diego IPR Demonstration Facility at a 1.0 mgd flow rate. Based upon this testing, power level shall be 13 kW or greater; and UV intensity shall be 21  $\text{mW}/\text{cm}^2$  or higher.
- g. The UV system must be operated with online monitoring and built-in automatic reliability features that must trigger automatic diversion of effluent to waste by the following critical alarm setpoints.
  - i. UV intensity below 21  $\text{mW}/\text{cm}^2$
  - ii. Power level below 13 kW
  - iii. Ballast failure
  - iv. Multiple lamp failure and
  - v. Complete UV reactor failure
- h. On-line monitoring of UV intensity, flow, UV transmission (UVT), and power must be provided at all times. Flow meters UV intensity sensors, and UVT monitors must be properly calibrated to ensure proper disinfection. At least monthly, all duty UV intensity sensors must be checked for calibration against a reference UV intensity sensor. The UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
- i. The monitoring and reliability features, including automatic shutdown capability, shall be demonstrated to DDW during a plant inspection prior to final approval.
- j. Chlorine will be added to the effluent stream of the RO along with caustic soda and calcium chloride. A free chlorine residual shall be provided from the AWTP to the injection well. The log reduction of virus and *Giardia* will be calculated and reported daily. The CCSD will monitor the free chlorine residual continuously and report the daily average and minimum concentration. The CCSD will monitor and report the minimum water temperature and the maximum pH of the water daily. Also, the CCSD will report the minimum contact time from the AWTP to the injection well daily.
- k. Based on the calculation of log reduction achieved daily by the entire treatment facility, from the WWTP to the public water supply wells, the CCSD will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for *Giardia* and *Cryptosporidium*) have been achieved. An overall log reduction calculation will be provided only for those days when a portion of the treatment facility does not achieve the credits listed in Table 5-1 of the ER.

- I. CCSD shall sample the monitoring well for general mineral/physicals, inorganics, radioactivity (gross alpha and uranium) and volatile organic chemicals. CCSD shall take these samples monthly for the first year of operation. CCSD may request, from the Division, a reduction in this monitoring after the first year.
- m. The CCSD will submit the required annual and five-year reports per Section 60320.228.

## **IX. REOPENER**

1. This Order may be reopened to include the most scientifically relevant and appropriate limitations for this discharge, including a revised Basin Plan limit based on monitoring results, anti-degradation studies, or other Central Coast Water Board or State Water Board policy, or the application of an attenuation factor based upon an approved site-specific attenuation study.
2. The WDRs/WRRs may be reopened to modify limitations for pollutants to protect beneficial uses, based on new information not available at the time this Order was adopted.
3. After additional monitoring, reporting and trend analysis documenting aquifer conditions, this Order may be reopened to ensure the groundwater is protected in a manner consistent with state and federal water quality laws, policies, and regulations.
4. This Order may be reopened to incorporate any new regulatory requirements for sources of drinking water or injection of recycled water for groundwater recharge to aquifers that are used as a source of drinking water, that are adopted after the effective date of this Order.
5. This Order may be reopened upon a determination by DDW that treatment and disinfection of the Cambria Community Services District emergency advanced treated product water is not sufficient to protect human health.

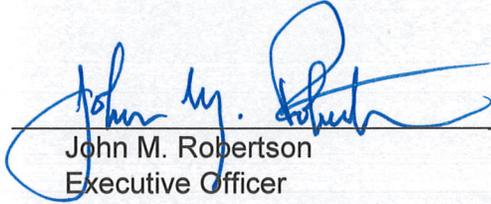
## **X. ENFORCEMENT**

The requirements of this Order are subject to enforcement under Water Code sections 13261, 13263, 13264, 13265, 13268, 13350, 13300, 13301, 13304, 13350, and enforcement provisions in Water Code, Division 7, Chapter 7 (Water Reclamation).

## **XI. EFFECTIVE DATE OF THE ORDER**

This Order takes effect on May 17, 2019 and supersedes Order No. R3-2014-0050, which is hereby terminated except for enforcement purposes.

I, John M. Robertson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the Regional Water Quality Control Board, Central Coast Region on May 17, 2019.



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John M. Robertson  
Executive Officer

WDR Program  
ECM # 809684  
R:\RB3\Shared\WDR\WDR Facilities\San Luis Obispo Co\Cambria WWTP\Emergency Water Supply Project\WDR  
Update 2019\Final R3-2019-0051\WDR\_WRR Cambria R3-2019-0051\_final.docx

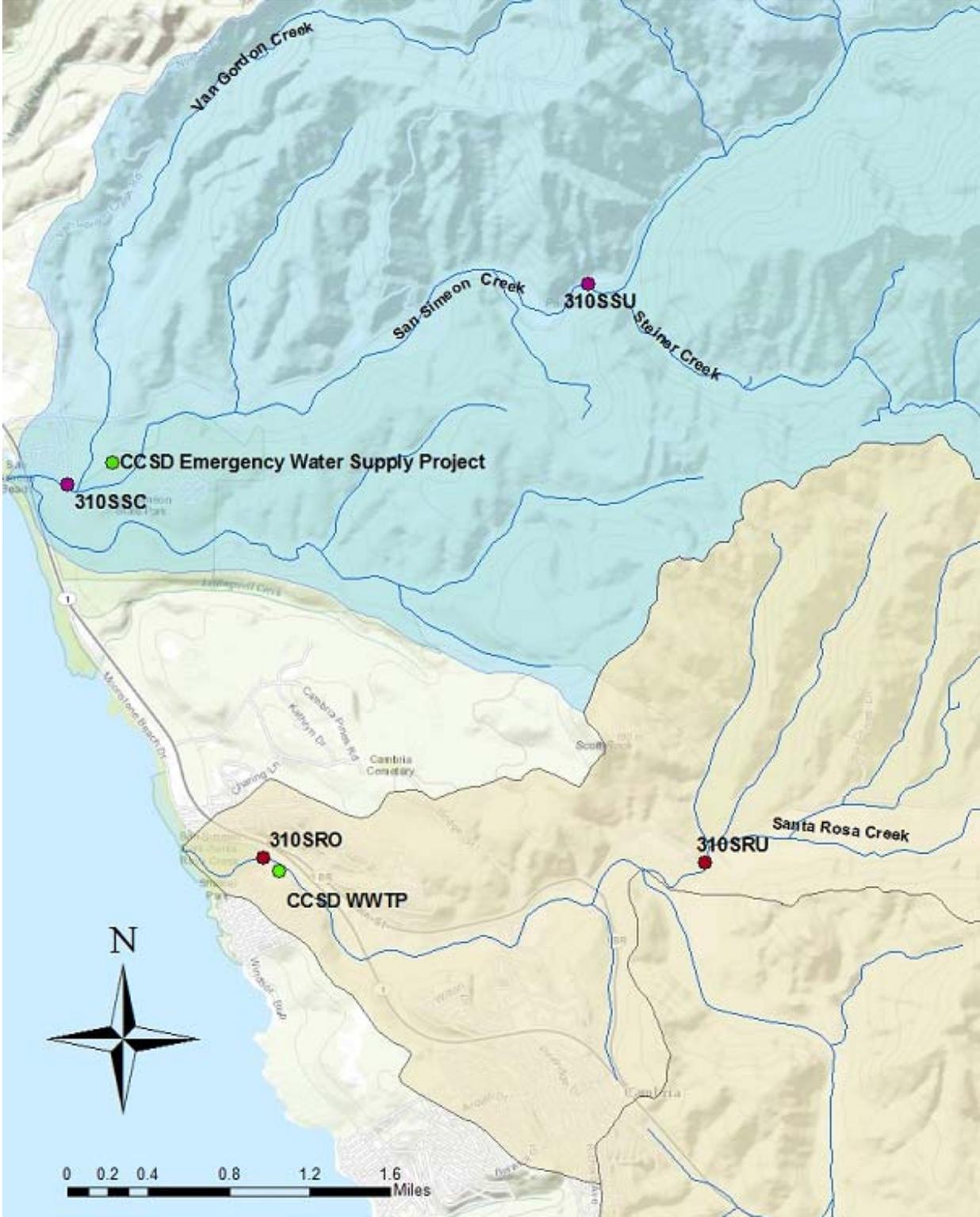


Figure 1 - Location of the Cambria Emergency Water Supply Project

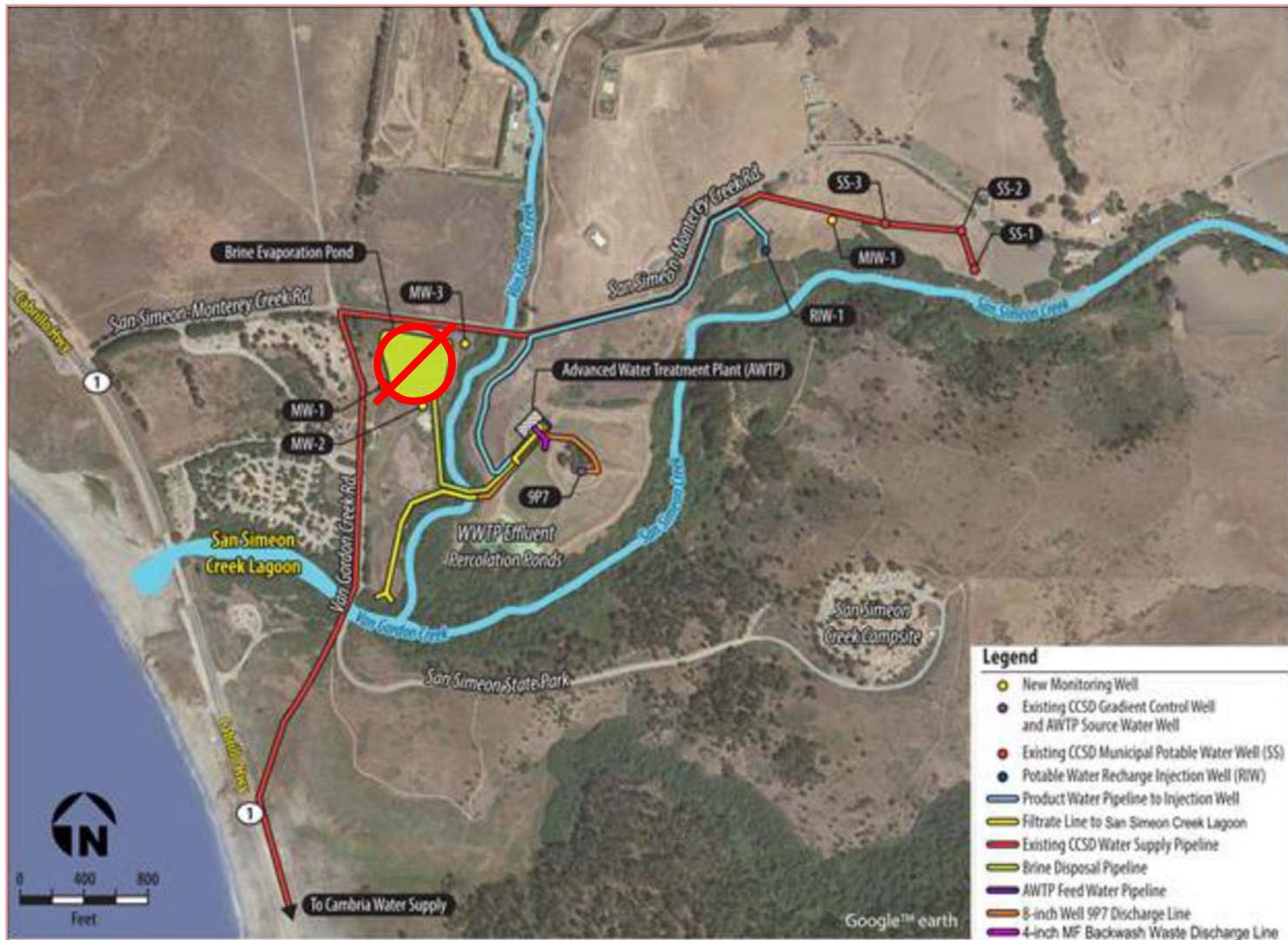


Figure 2 - Emergency Water Supply Project (Extraction Well, Treatment Plant, Percolation Ponds, Groundwater Injection Site, Water Supply Wells)

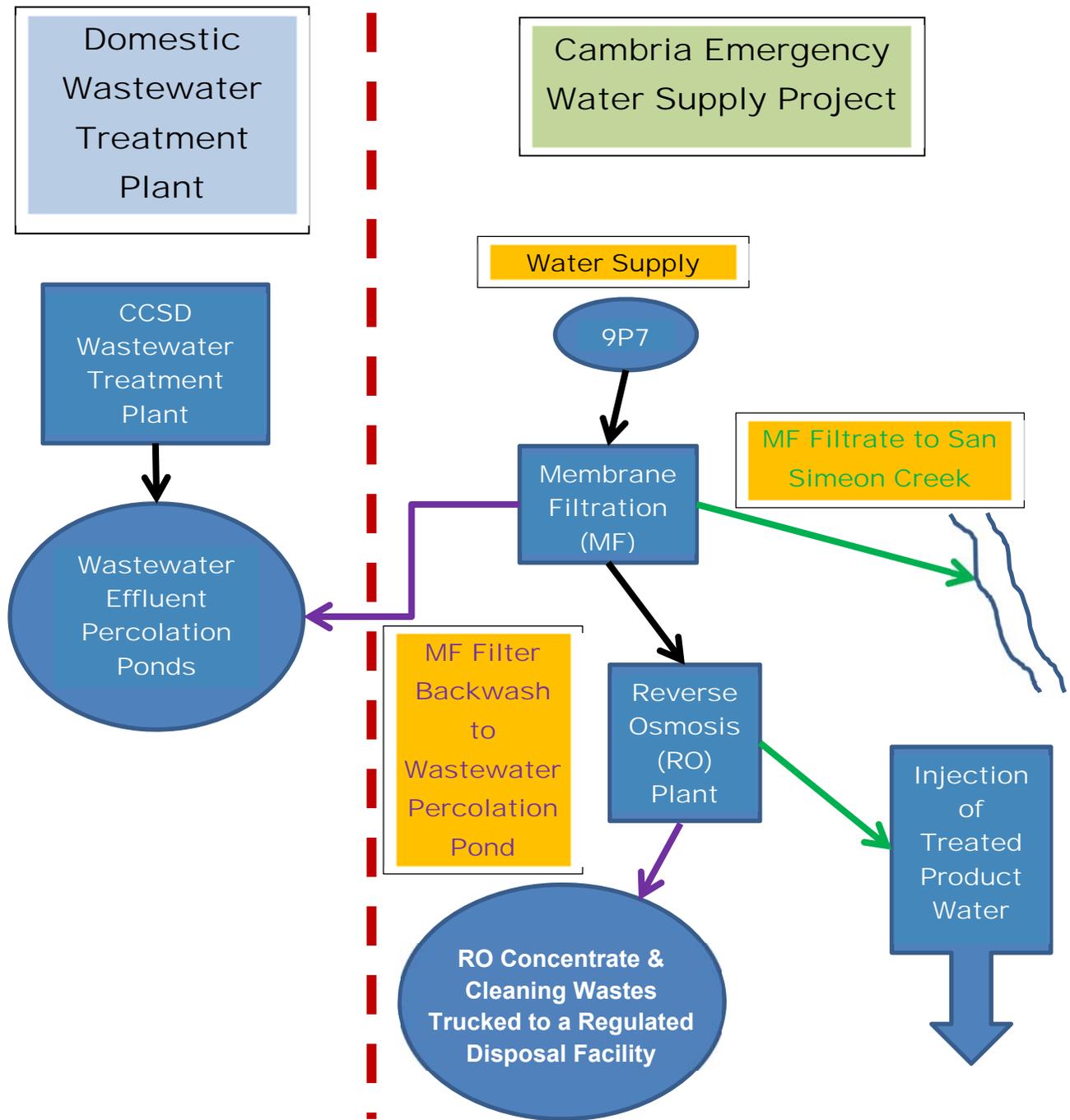


Figure 3 - Cambria Emergency Water Supply Project Water and Waste Streams

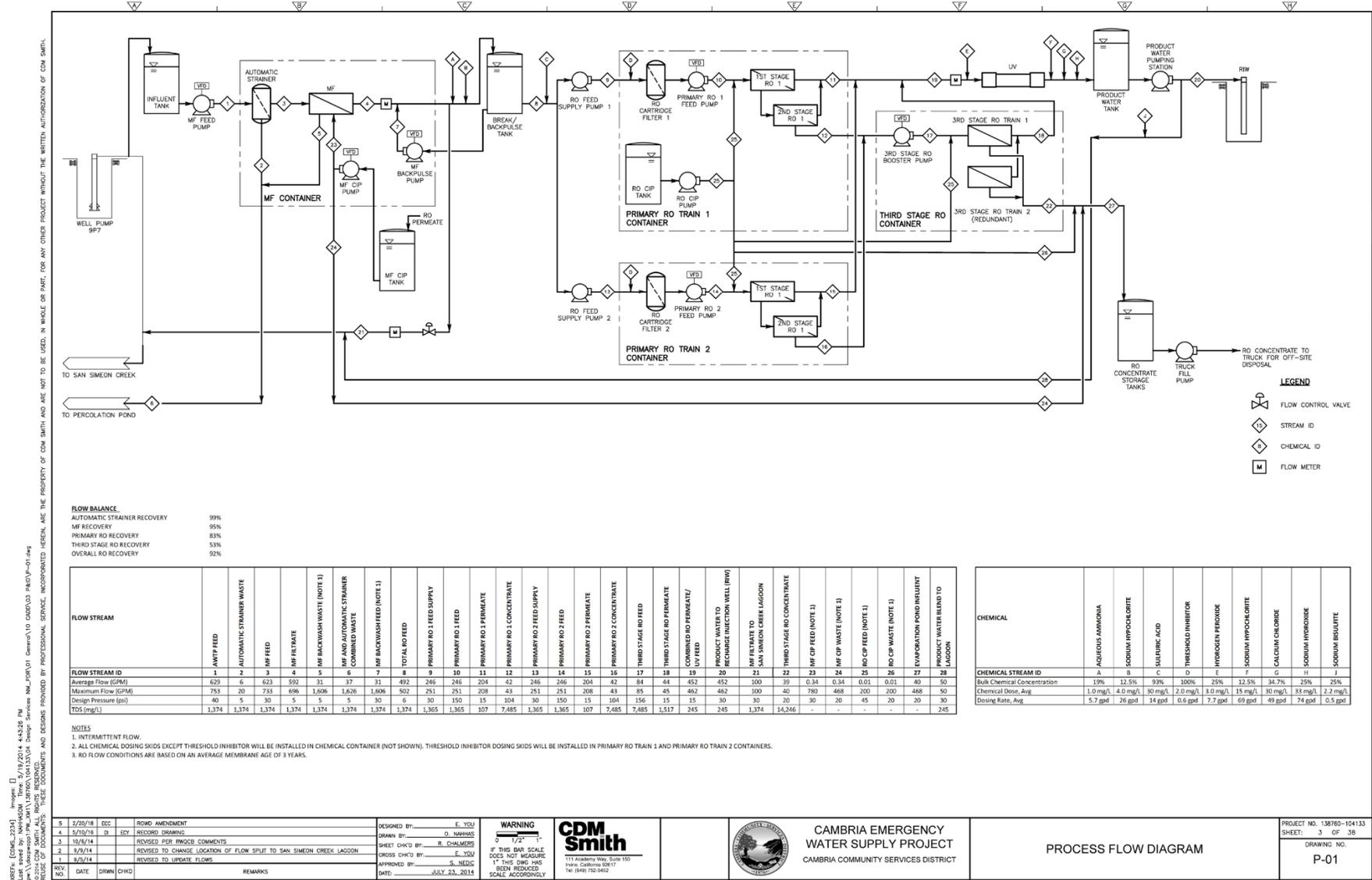


Figure 4 - CCSD Advanced Water Treatment Flow Process Diagram