



RON CHAPMAN, MD, MPH
Director & State Health Officer

State of California—Health and Human Services Agency
California Department of Public Health



EDMUND G. BROWN JR.
Governor

September 20, 2013

Ms. Ann Stillman
County of San Mateo, Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063

Dear Ms. Stillman:

DOMESTIC WATER SUPPLY PERMIT 02-17-13P-4100509
County Service Area 7, Water System No. 4100509

Enclosed is the domestic water supply permit granted to the County of San Mateo, Department of Public Works by the State Department of Public Health to operate the water system known as County Service Area 7, subject to the conditions mentioned in the permit.

If you have any questions regarding this permit, please feel free to contact Ms. Van Tsang at (510) 620-3602.

Sincerely,

Eric Lacy, P.E.
District Engineer
Santa Clara District
Drinking Water Field Operations Branch
Department of Public Health

Enclosure

cc: San Mateo County Environmental Health Department



RON CHAPMAN, MD, MPH
Director & State Health Officer

State of California—Health and Human Services Agency
California Department of Public Health



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ENGINEERING REPORT

In the Matter of the Permit Application

From

County Service Area 7
Water System No. 4100509

Report Prepared By

Van Tsang, P.E.
Associate Sanitary Engineer

Approved By
Eric Lacy, P.E.
District Engineer
Santa Clara District

Domestic Water Supply Permit
September 20, 2013

Drinking Water Field Operations Branch

STATE OF CALIFORNIA

DOMESTIC WATER SUPPLY PERMIT

Issued To

County Service Area 7

4100509

By The

California Department of Public Health,

Division of Drinking Water & Environmental Management Branch



PERMIT NUMBER: 02-17-13P-4100509

DATE: September 20, 2013

WHEREAS:

1. On July 1, 2011, the regulatory authority for the water system known as County Service Area 7 was transferred from the San Mateo County Environmental Health Department to the Drinking Water Field Operations Branch of the California Department of Public Health (hereinafter, Department). In accordance with the requirements of the California Health and Safety Code (CHSC), the Department has made the decision to initiate an investigation and consider issuing a water supply permit.
2. This community water system is located on Highway 84 and Pescadero Creek Road in the La Honda area, San Mateo County.
3. County Service Area 7's actions are governed by the County of San Mateo, Board of Supervisors and managed by the County of San Mateo, Department of Public Works. The County of San Mateo, Department of Public Works therefore is responsible for compliance with all statutory and regulatory drinking water requirements and the conditions set forth in this permit.
4. The public water system for which the permit application has been submitted is as described briefly below:

The water system consists of one active surface water source (Alpine Creek), a Camp Glenwood packaged water treatment plant, a 500,000 gallon welded steel storage tank, two 70,000 gallon tanks, two 10,000 gallon tanks, and a distribution system. The distribution system consists of asbestos cement pipes, galvanized

pipes, PVC pipes and other materials. The distribution system water mains range from 1 inch to 4 inches in diameter.

A more detailed description of the permitted system is presented in the attached Engineering Report.

And WHEREAS:

1. The California Department of Public Health has evaluated all of the information submitted for County Service Area 7 and has conducted a physical investigation of the County Service Area 7 water system.
2. The California Department of Public Health has the authority to issue domestic water supply permits pursuant to Health and Safety Code Section 116540.

THEREFORE: The California Department of Public Health has determined the following:

1. The County Service Area 7 water system meets the criteria for and is hereby classified as a community water system.
2. The County Service Area 7 water system has sufficient source capacity to serve the anticipated water demand.
3. Provided the following conditions are complied with, the County Service Area 7 should be capable of providing water to consumers that is pure, wholesome, and potable and in compliance with statutory and regulatory drinking water requirements at all times.

THE COUNTY SERVICE AREA 7 IS HEREBY ISSUED THIS DOMESTIC WATER SUPPLY PERMIT TO OPERATE THE COUNTY SERVICE AREA 7 WATER SYSTEM.

The County Service Area 7 Water System shall comply with the following permit conditions:

General

1. County Service Area 7 shall comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards or orders adopted thereunder.
2. County Service Area 7 shall serve water to its customers only from approved sources. No other sources shall be used without prior approval from the Department. The only approved source for CSA7 is the Alpine Creek, Primary Station Code No. 4100515-001.

Surface Water Treatment

3. County Service Area 7 shall provide reliable treatment to water from its surface water supply that meets a minimum total reduction of 99.9% (3-log) for *Giardia lamblia* cysts and 99.99% (4-log) for virus through the filtration and disinfection process and a total removal of 99% (2-log) for *Cryptosporidium* through the filtration process at all times. When the Camp Glenwood WTP is operated in accordance with a Department approved Operations Plan and the performance monitoring, design, reliability, and operational requirements appropriate to conventional filtration, the filtration process is credited with 99.7% (2.5-log) *Giardia lamblia* cysts, 99% (2-log) virus and 99% (2-log) *Cryptosporidium* removal. Based upon the overall reduction requirements specified above, the inactivation requirements for the Camp Glenwood WTP are 0.5 log *Giardia lamblia* cysts and 2-log for virus through the disinfection process.

Filtration

4. The rapid mix, flocculation, clarifier/tube settler and filter shall be in use at all times during which the treatment plant is in operation.
5. The flow rates through the filter shall not exceed 3.0 gpm/ft² at any time.
6. County Service Area 7 shall operate the Camp Glenwood WTP so that the effluent water turbidity level, prior to the contact chamber, does not exceed:
 - a. 0.3 NTU in 95% of the measurements taken each month;
 - b. 1 NTU for more than one continuous hour;
 - c. 1 NTU at four-hour intervals; and
 - d. 1.0 NTU for more than eight consecutive hours.
7. County Service Area 7 shall determine compliance with the turbidity performance standard of the filter effluent, prior to the contact chamber, at least once every four hours that the system is in operation. Continuous turbidity measurements may be substituted for grab sample monitoring provided CSA7 validates the accuracy of the measurements on a weekly basis.

Disinfection

8. Disinfection treatment shall comply with the following performance standards:
 - a. Water delivered to the distribution system shall not contain a disinfectant residual of less than 0.2 mg/L for more than four hours in any 24 hour period.
 - b. The residual disinfectant concentrations of samples collected from the distribution system shall be detectable in at least 95 percent of the samples taken each month that the system serves water to the public.

9. County Service Area 7 shall comply with the disinfection requirements at all times. Compliance with the disinfection inactivation requirements will be determined using the CT concept.
10. County Service Area 7 shall measure and record the disinfectant residual concentration of the water being delivered to the contact chamber continuously. If there is a failure of continuous disinfection residual monitoring equipment, grab sampling every four hours may be conducted in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.
11. Disinfection facilities shall be operated in accordance with the following requirements:
 - a. A supply of chemicals necessary to provide continuous operation of disinfection facilities shall be maintained as a reserve or demonstrated to be available.
 - b. An emergency plan shall be developed as part of the operations plan and implemented in the event of disinfection failure to prevent delivery to the distribution system of any undisinfected or inadequately disinfected water. The plan shall be posted in the treatment plant or other place readily accessible to the plant operator.

Water Quality Monitoring and Reporting

12. County Service Area 7 shall monitor the raw water supply for total coliform and either fecal coliform or *E.coli* bacteria using density analysis no less than once each month.
13. County Service Area 7 shall measure the residual disinfectant concentration at least at the same points in the distribution system and at the same time as total coliforms are sampled in accordance with Section 64421, Title 22, California Code of Regulations.
14. County Service Area 7 shall comply with the water quality monitoring and reporting requirements for the following water quality constituents:
 - a. Bacteriological quality, in accordance with Article 3, Chapter 15, Title 22, CCR.
 - b. Inorganic chemicals, except for Nitrate, Nitrite, Asbestos and Perchlorate, in accordance with Section 64432, Chapter 15, Title 22, CCR.
 - c. Nitrate and Nitrite, in accordance with Section 64432.1, Chapter 15, Title 22, CCR.
 - d. Asbestos, in accordance with Section 64432.2, Chapter 15, Title 22, CCR.
 - e. Perchlorate, in accordance with Section 64432.3, Chapter 15, Title 22, CCR.
 - f. Radiological Chemicals, in accordance with Section 64442, Chapter 15, Title 22, CCR.
 - g. Volatile and Synthetic Organic Chemicals, in accordance with Section 64444, Chapter 15, Title 22, CCR.

15. All water quality monitoring results analyzed by a certified laboratory shall be submitted to the Department via Electronic Data Transfer (EDT) using the assigned Primary Station Code (PS Code) of the monitoring site.

Operation and Maintenance

16. County Service Area 7 shall calibrate the turbidimeters in accordance with the manufacturer recommendations.
17. County Service Area 7 shall provide the following reliability features to the Camp Glenwood WTP:
 - a. Alarm devices to provide warning of coagulation, filtration, and disinfection failures. All devices shall warn a person designated by CSA 7 as responsible for taking corrective action, or have provisions to shut the plant down until corrective action can be taken.
 - b. Standby replacement equipment available to assure continuous operation and control of unit processes for coagulation, filtration and disinfection.
 - c. A continuous turbidity monitoring and recording unit on the filter effluent prior to the chlorine contact pipe.
18. County Service Area 7 shall revise its operations plan and submit for Department approval, no later than **December 31, 2013**. The operations plan shall be comprehensive to the extent that a new operator will be able to operate the Camp Glenwood WTP, using the plan, with minimal training. The operations plan shall include at minimum:
 - d. The treatment plant performance monitoring program
 - e. Unit process equipment maintenance program
 - f. Filter media inspection program
 - g. Operating personnel, including number of staff, certification levels and responsibilities
 - h. How and when each unit process is operated
 - i. Laboratory procedures
 - j. Procedures used to determine chemical dose rates
 - k. Records
 - l. Response to plant and watershed emergencies
 - m. Reliability features

19. County Service Area 7 shall operate the Camp Glenwood WTP in accordance with the approved operations plan. Planned modifications to incorporate new operating procedures shall be submitted to the Department for review and approval prior to implementation.
20. All persons responsible for the operation and maintenance of the water system shall be certified in accordance with Sections 63750.1 through 64413.7, inclusive, Title 22, CCR. A chief operator licensed at, as a minimum, Grade D1 and T1, shall be responsible for the operation of CSA7's distribution and treatment system.

Records and Reporting

21. County Service Area 7 shall maintain accurate and complete operation records for the Camp Glenwood WTP. The records shall include but not be limited to the following:
 - n. The results of all monitoring conducted in accordance with this permit and the Surface Water Treatment Rule.
 - o. Dates on which filter maintenance and inspections were performed and the results of any inspections.
 - p. Quantity of water produced, plant flow rates, filtration rates, hours of operation, and backwash rates.
 - q. Dates and description of major equipment and process failures and corrective actions taken.

Treatment plant records shall be retained for not less than three years, except where the Department has determined that longer retention times are necessary to complete legal actions taken under the provisions of the Health and Safety Code.

22. County Service Area 7 shall notify the Department as soon as possible, but no later than by the end of the next business day, or within 24 hours, whichever is less, by telephone or other equally rapid means whenever:
 - r. The turbidity of the filter effluent exceeds 5.0 NTU at any time.
 - s. The turbidity of the filter effluent exceeds 1 NTU for more than one continuous hour.
 - t. The turbidity of the filter effluent exceeds 1 NTU at four-hour intervals.
 - u. The turbidity of the filter effluent exceeds 1.0 NTU for more than eight consecutive hours.
 - v. There is a failure to maintain a minimum disinfectant residual of 0.2 mg/L in the water being delivered to the distribution system. CSA 7 shall report whether or not the disinfectant residual was restored to at least 0.2 mg/L within four hours.

- w. An event occurs which may affect the ability of the treatment plant to produce a safe, potable water including but not limited to spills of hazardous materials in the watershed and unit treatment process failures.
 - x. CSA 7 discovers the occurrence of an acute infectious illness that may be potentially attributed to the water system.
23. County Service Area 7 shall submit a monthly report on the operation of the treatment facility to the Department by the tenth day of the following month. The report shall be signed by the chief water treatment plant operator, plant superintendent or other person directly responsible for the operation of the water treatment plant.

This permit supersedes all previous domestic water supply permits issued for this public water system and shall remain in effect unless and until it is amended, revised, reissued, or declared to be null and void by the California Department of Public Health. This permit is non-transferable.

Any change in the source of water for the water system, any modification of the method of treatment as described in the Permit Report, or any addition of distribution system storage reservoirs shall not be made unless an application for such change is submitted to the California Department of Public Health.

This permit shall be effective as of the date shown below.

FOR THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

September 20, 2013
Date

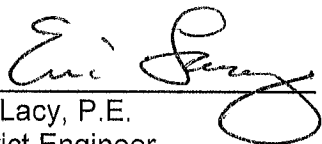

Eric Lacy, P.E.
District Engineer
Santa Clara District
Drinking Water Field Operations Branch
California Department of Public Health

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**Engineering Report
In the Matter of the Permit Application
From the
County Service Area 7
Water System No. 4100509
San Mateo County
September 2013**

**State of California Department of Public Health
Drinking Water Field Operations Branch
Van Tsang, P.E., Associate Sanitary Engineer
Eric Lacy, P.E., District Engineer**

I. Introduction

1.1 Purpose of Report

The water system has its origins in the 1920s when private developers diverted water from Alpine Creek to serve a small subdivision consisting primarily of vacation homes. The system was subsequently expanded to serve Glenwood Boys Ranch and nearby Sam McDonald Park located near La Honda in San Mateo County. The County of San Mateo Department of Public Works (hereinafter, DPW) began operating the water system in 1958 after the formation of a County Service Area, which is known as County Service Area 7 (hereinafter, CSA7). At that time, the only treatment provided for the raw creek source was chlorination. In 1985, CSA 7 applied for funds from the Safe Drinking Water Bond Law Act of 1984 to construct an infiltration gallery in the Alpine Creek and the Camp Glenwood Water Treatment Plant (WTP). Construction was completed in 1994. The WTP was fabricated by Rescue Engineers and can treat up to 50 gallons per minute (gpm).

A domestic water supply permit was issued to the CSA 7 public water system by the San Mateo County Environmental Health Department (hereinafter, County) in July 1985. The drinking water regulatory authority over CSA 7 was transferred from the County to the Drinking Water Field Operations Branch of the California Department of Public Health (hereinafter, Department) on July 1, 2011. After a thorough investigation of the CSA 7 water system, the Department has determined to issue a permit to CSA 7 to maintain and operate the existing CSA 7 water system, as in accordance with Section 116525 of the California Health and Safety Code.

The purpose of this report is to present a sanitary engineering and public health evaluation of the existing water system regarding the issuance of the permit.

1.2 Brief Description of Water System

County Service Area 7, located on Highway 84 and Pescadero Creek Road in the La Honda area, San Mateo County, provides potable water to 67 active service connections with an estimated population of 300. Water pumped from Alpine Creek (Primary Station Code (PS Code) No. 4100515-001) is treated at the Camp Glenwood WTP located on Pescadero Creek Road. The filtered and disinfected water gravity feeds the distribution system or is stored within a 500,000 gallon welded steel tank located up the hill from the treatment facility for gravity distribution. Water from the 500,000 gallon tank also supplies two 70,000 gallon tanks at the Glenwood Boys Ranch and a 10,000 gallon tank at the Hikers Hut in Sam MacDonald Park. From the Hikers Hut, water is lifted to a second 10,000 gallon tank at the horse camp. The distribution system consists of asbestos cement pipes, galvanized pipes, PVC pipes and other materials. The distribution system water mains range from 1 inch to 4 inches in diameter.

1.3 Source of Information

The information used in preparing this report was collected from the water system's files, discussions with County staff, and the field inspection conducted on August 2, 2011 by Ms. Van Tsang and Mr. Eric Lacy of the Department.

II. **Investigations and Findings**

2.1 Source of Supply

The County Service Area 7 water system draws its entire supply from the Alpine Creek at the Pescadero Creek Road Bridge (figure 1). According to the Permit for Diversion and Use of Water issued by the California Department of Water Resources Control Board (Board) on July 1, 1993, the permitted maximum diversion rate for CSA 7 is 0.035 cubic feet per second or approximately 7 million gallons of water per year. Water is pumped from an intake located along the east bank of Alpine Creek by means of a centrifugal pump located on a pad approximately 10 feet above the creek. The water is discharged through a 3 inch diameter pipeline to a 70,000 gallon redwood storage tank located adjacent to the treatment facility on Pescadero Creek Road. The reservoir is approximately 27 feet in diameter with a maximum water depth of about 16 feet. The intake pump consists of a 7 ½ horse power (HP) vertical, multistage-type centrifugal pump capable of pumping approximately 50 gallons per minute (gpm) at 275 foot head. The pump is controlled by the Programmable Logic Controller (PLC) based on the water level within the 70,000 gallon tank. From the 70,000 gallon tank, raw water is pumped to the Camp Glenwood WTP by a 1 ½ HP PACO Model 1250-6 centrifugal type pump designed to pump up to 50 gpm.

2.2 Treatment

Raw water from the Alpine Creek is treated at the Camp Glenwood WTP located on Pescadero Creek Road. The treatment system was fabricated by Rescue Engineers and installed in 1994. The treatment unit is a steel structure with inside dimensions of 9 feet 4 inches by 8 feet 6 inches wide and is divided into four compartments – rapid mix, flocculation, clarifier/tube settler and filter. Pumped flow from the 70,000 gallon tank is routed through a 2-inch PVC pipe that discharges into the rapid mix chamber. Flow into the treatment unit is throttled manually to 50

gpm by a ball valve. Hyperion 835 polyaluminum hydroxychloride, a polymer, is injected into the rapid mix chamber (figure 2) at a rate of 0.15 gallons per day using an LMI electronic chemical metering pump with a maximum output of 60 gallons per day. The polymer solution is prepared by mixing 500 milliliters (mL) of solution with 10,000 mL of water and stored within a 100 gallon capacity polyethylene chemical tank. The polymer dose is adjusted based on raw water turbidity. The rapid mix provides a 40 second detention time at a 50 gpm flow rate. Mixing energy is provided by a flange-mounted high speed (1,725 revolutions per minute (rpm)) mechanical mixer powered by a 1/3 HP motor.

From the rapid mix chamber, flow is routed to the flocculation chamber through 3 inch holes located at the bottom side of the rapid mix section. Mixing is accomplished by a paddle-type, low speed (6.5 rpm) mixer equipped with a 1/15 HP gear motor. Detention time is approximately 23 minutes at a 50 gpm flow rate.

The flocculated water then exits the flocculation section via five 5-inch diameter holes located at the bottom of the partition between the flocculation and tube settler sections. Water then flows upward through the tube settlers, while particulate matter settles out by gravity to the bottom of the clarifier. The settling tube chamber consists of multiple PVC tubes inclined at 60 degrees to the horizontal. Detention time within the tube settler chamber is approximately 45 minutes at the 50 gpm flow rate. Solids accumulated during operation are flushed from the tubes during each filter backwash.

After the settling tube chamber, the water then flows into a 6-inch wide launder (trough) at the surface of the tube settler section through 1-inch orifices in the launder walls. The launderer extends into the filter compartment to carry the settled water to the filter. The filter bed area is 16.6 square feet. The filter bed is 39 inches deep and is composed of three materials: anthracite coal (15 inches), filter sand (18 inches) and garnet sand (6 inches). The filter bed is supported by 16 inches of gravel. At a designed filter loading rate of 3.0 gallons per minute per square feet, the filter capacity is limited to 50 gpm. Filtered water is collected in ¼-inch diameter PVC perforated under drain laterals that drain to a 4-inch under drain header. A 2.5 % solution of sodium hypochlorite (NaOCl) is injected into the header before the water is pumped to the 500,000 gallon storage tank by a 7 ½ HP vertical multistage centrifugal type pump.

The NaOCl injection system consists of an LMI A741-813SI chemical metering pump capable of pumping up to 12 gpd and a 50 gallon capacity polyethylene solution tank containing 1 gallon of 12.5% HASA Multichlor mixed with 5 gallons of water. Free chlorine residual is continuously analyzed at the end of a ductile iron chlorine contact chamber that is 18 inches in diameter by 100 feet long. The chamber is located below ground outside the WTP. Free chlorine is analyzed by a Wallace and Tiernan Depolox 3 chlorine residual analyzer.

Backwash Cycle

The filters are backwashed after 24 hours of production and initiated automatically. The initial portion of the backwash is a drain-down cycle which lowers the water level to inches above the media bed. The filters are then backwashed for approximately 10 minutes at a rate of 15 gpm/ft² with finished water from the 500,000 gallon steel tank. The washwater from the filter backwash flows to the tube settler section via the launderer. The washwater then flows down through the tube settler tubes, scouring them to remove accumulated sludge, and out the drain to the wastewater tank. The backwash flow rate is controlled by a Griswold flow control valve. While the filters are backwashed, the media bed surface is also washed for eight minutes from a 4 inch backwash line. The surface wash piping system consists of six 1-¼ inch galvanized steel

pipe laterals fed from a 2-inch header pipe. The surface wash flow rate, 20 – 30 gpm, is monitored by a differential pressure sensor. Flow is controlled by an electronically actuated butterfly valve. After the backwash, water is filtered-to-waste until the turbidity is less than 0.3 NTU. The backwash water is pumped to two interconnected precast concrete holding tanks with a total volume of approximately 6,500 gallons. The backwash water is then pumped to a vegetated spray field adjacent to the WTP.

2.3 Alarms and Shutdown Features

The Camp Glenwood WTP alarm and shutdown system consists of a Sensaphone 2000 multi-functional and programmable dialer which alerts the operator when chlorine residual and turbidity are outside of their desired parameters. An alarm is triggered, the WTP shuts down and the operator is notified under the following conditions:

Raw water turbidity - alarm	10.0 NTU
Finished water turbidity - alarm	0.1 NTU
Finished water turbidity - shutdown	0.3 NTU
Finished water chlorine residual - alarm	1.1 mg/L (low) / 3.0 mg/L (high)
Finished water chlorine residual - shutdown	0.75 mg/L (low)

Normal operation of the Camp Glenwood WTP can only be reactivated after all alarms are manually reset.

2.4 Operation and Maintenance

Operation and maintenance of the Camp Glenwood WTP and the CSA 7 distribution system is being performed under contract with an outside entity. Currently, it is contracted with Bracewell Engineering Inc. and Mr. Christopher Hauge serves as the designated certified operator. Mr. Hauge is a certified Grade T2 Water Treatment Operator (30792) and Grade D2 Water Distribution Operator.

2.5 Storage Facilities

Primary storage is provided by a 500,000 gallon steel cylindrical tank located approximately 240 feet higher in elevation than the WTP. Water from the 500,000 gallon tank fills two 70,000 gallon tanks at the Glenwood Boys Ranch and is also pumped uphill to the 10,000 gallon tank at the Hikers Hut in Sam McDonald Park. From the tank at Hikers Hut, water is further lifted to a 10,000 gallon tank at the horse camp.

2.6 Watershed Sanitary Survey and Drinking Water Source Assessment

Section 64665, Chapter 17, Title 22 of the California Code of Regulations (CCR) requires suppliers using an approved surface water source to complete a watershed sanitary survey at least every five years. The survey and report must include physical and hydrogeological description of the watershed, a summary of source water quality monitoring data, a description of activities and sources of contamination, a description of any significant changes that have occurred since the last survey which could affect the quality of the source water, a description of watershed control and management practices, an evaluation of the system's ability to meet requirements of the Surface Water Treatment Rule (SWTR) and recommendations for corrective actions. A watershed sanitary survey has not been completed for the Alpine Creek

water source. Therefore, CSA7 must complete a Watershed Sanitary Survey for the Alpine Creek watershed by **July 1, 2014**.

According to the December 2002, Drinking Water Source Assessment for Alpine Creek, the creek is considered vulnerable to the following activities that were identified within the watershed:

- Low density septic systems
- Animal operations (horse camp)
- Agricultural drainage
- Wells – irrigation/agricultural
- Discharge from the WTP
- Irrigated and non-irrigated crops
- Fertilizer, pesticide/herbicide application
- Water supply wells
- Transportation corridors
- Injection wells/dry wells/sumps
- Campgrounds/recreational areas

2.7 Water Quality Monitoring

2.7.1 *Alpine Creek – Source Monitoring*

As a community water system, CSA 7 is required to monitor the Alpine Creek for General Mineral (GM), General Physical (GP), Inorganic Chemicals (IOC), Radioactivity (Gross Alpha), Volatile Organic Chemicals (VOC) and Synthetic Organic Chemicals (SOC). The monitoring frequency and status for Alpine Creek is attached in Appendix B.

2.7.2 Iron and Aluminum – Alpine Creek

As summarized in Table 1 below, the iron and aluminum concentrations range from non-detect to 690 ppb and non-detect to 660 ppb, respectively. The secondary maximum contaminant levels (SMCL) for iron and aluminum are 300 ppb and 200 ppb, respectively. All treated water iron and aluminum concentrations were non-detect. With the wide range of iron and aluminum levels in the raw water supply and the 2012 quarterly average exceeding the SMCLs, CSA 7 must continue to monitor the iron and aluminum concentration in the Alpine Creek and the treated water supply quarterly to demonstrate compliance with the drinking water standards in the water delivered to its customers.

Table 1. Alpine Creek Iron and Aluminum Levels

Sample Date	Iron (ppb) SMCL = 300 ppb	Aluminum (ppb) SMCL = 200 ppb
3/29/2012	690	660
5/16/2012	0	51
7/11/2012	0	0
8/13/2012	380	160
11/21/2012	430	160

4 Quarterly Averages*	328	238
2/14/2013	0	0
5/7/2013	0	0

*The July and August samples were averaged together and the values were used as the third quarterly results.

2.7.2 Bacteriological Quality – Alpine Creek

Section 64655, Chapter 17 Surface Water Treatment Rule, Title 22 of the California Code of Regulations (CCR) requires water suppliers using an approved surface water source to monitor the raw water supply for total coliform and either fecal coliform or *E.coli* bacteria using density analysis at least once each month.

2.7.3 Bacteriological Quality – Distribution System

Section 64423, Chapter 15, Title 22 of the CCR (Total Coliform Rule) requires community water systems to collect routine bacteriological water samples from sites that represent the water throughout the distribution system. Based on the classification, population served and total number of service connections, CSA 7 must collect a minimum of one bacteriological sample from the distribution system each month.

2.7.4 Stage 2 Disinfectants/Disinfection Byproducts Rule (DBPR)

The Stage 2 DBPR requires community water systems that treat their water with a chemical disinfectant other than ultraviolet light in any part of the treatment process or which provide water that contains a chemical disinfectant to monitor for and comply with the total trihalomethane (TTHM) and haloacetic acids (HAA5) MCLs of 80 ug/L and 60 ug/L, respectively. Community water systems providing disinfected surface water to less than 500 persons shall collect a minimum of one sample per year. Monitoring shall be increased to quarterly if the sample exceeds the MCL. As summarized in Table 2 below, CSA7 has historically and continues to exceed the TTHM MCL. As such, CSA is in violation of the TTHM MCL and is required to collect a minimum of one sample per quarter for TTHM analysis.

2.7.5 Lead and Copper Rule

The Lead and Copper Rule (LCR) requires community water systems to monitor lead and copper levels at the consumers' tap. The initial phase of the lead and copper monitoring consists of two consecutive six-month monitoring periods. Monitoring may be reduced to annually if the result of the two consecutive six-month monitoring rounds does not exceed the lead and copper action levels as specified in Section 64685 (c) (2), CCR. CSA7 must complete the three annual monitoring rounds (with the two initial six-month monitoring rounds counted as one year) with no exceedance of the lead and copper action levels before it is eligible for triennial reduced monitoring.

The number of sites that need to be sampled for each round of testing is based on the number of people served. According to Department records, CSA7 currently serves approximately 300 people. According to Table 64684 of the CCR, standard and reduced monitoring requires that 10 and 5 sites be sampled, respectively.

County Service Area 7 completed the first triennial monitoring round in September 2012. The lead and copper 90th percentile were nondetect and 0.088 mg/L, respectively. The results comply with the lead and copper action level of 0.015 mg/L and 1.3 mg/L, respectively. Therefore, the second triennial round of monitoring is due by September 30, 2015. All monitoring results shall be reported to the Department by the 10th of the following month.

2.8 Cross Connection Control Program

CSA 7 currently does not have a Cross Connection Control Program.

2.9 Technical, Managerial and Financial Capacity

CSA 7 was directed during the August 2, 2011 inspection to complete and submit the required TMF documents to demonstrate through its financial resources, technical resources, organizational structure and personnel that the system can comply with all applicable drinking water standards and regulations. As of the date of this permit, CSA 7 has not submitted the required TMF documents nor demonstrated adequate capacity. Therefore, by **November 15, 2013**, CSA 7 shall submit the required TMF documents to the Department for review.

III. **Appraisal of Sanitary Hazards and Safeguards**

CSA 7's raw water supply is provided by the Alpine Creek at the Pescadero Creek Road Bridge. The intake is located immediately below the bridge, making the creek vulnerable to activities and contamination from the road. According to the Drinking Water Source Assessment completed in December 2002, Alpine Creek is considered most vulnerable to septic systems, agricultural drainage, agricultural/irrigation wells and animal operations.

The TTHM and HAA5 concentrations collected within the distribution system have ranged from non-detect to 140 ug/L and non-detect to 48 ug/L, respectively. The MCL for TTHM and HAA5 is 80 ug/L and 60 ug/L, respectively. TTHM and HAA5 data collected from 2003 to present are provided in Table 2 below:

Table 2. TTHM and HAA5 Concentrations

Sampling Period	Sampling Date	Total Trihalomethanes (TTHM) (ug/L)	Haloacetic Acid (HAA5) (ug/L)
1 st Q 2003	3/26/2003	ND	-
3 rd Q 2003	9/2/2003	140	29
4 th Q 2003	12/18/2003	ND	-
3 rd Q 2004	8/30/2004	110	27
4 th Q 2004	12/29/2004	120	40
3 rd Q 2005	9/22/2005	70	36
3 rd Q 2006	9/19/2006	64	-
4 th Q 2006	11/21/2006	-	21
4 th Q 2006	12/8/2006	ND	-

3 rd Q 2007	9/13/2007	110	3.8
4 th Q 2007	12/14/2007	110	-
1 st Q 2008	3/13/2008	69	-
2 nd Q 2008	6/13/2008	83	-
3 rd Q 2008	9/30/2008	110	31
4 th Q 2008	12/9/2008	51	-
1 st Q 2009	3/9/2009	46	-
2 nd Q 2009	6/1/2009	39	-
3 rd Q 2009	9/16/2009	47	ND
3 rd Q 2010	9/7/2010	77.75	ND
1 st Q 2012	3/20/2012	120	45
2 nd Q 2012	6/12/2012	100	48
3 rd Q 2012	9/11/2012	100	43
4 th Q 2012	11/1/2012	89	26
1 st Q 2013	3/11/2013	94	27
2 nd Q 2013	5/6/2013	92	82.8

ND = nondetect

Section 64535.2 (b) of the CCR specifies that TTHM and HAA5 MCL compliance shall be determined based on the running annual arithmetic average (RAA) of four quarterly results. As a result of the TTHM MCL exceedance, Citation 02-17-13C-033 was issued on January 3, 2013 to CSA7. As directed in the citation, CSA7 must cease and desist violating the TTHM MCL standard, conduct quarterly public notification for the TTHM MCL violation and prepare and submit a Corrective Action Plan. As of the date of this permit, the submission of the Corrective Action Plan is pending.

The distribution system consists of asbestos cement pipes, galvanized pipes, PVC pipes and other materials. Part of the distribution system was constructed in the 1920s and the water mains are reaching the end of their useful lives. The distribution system water mains are undersized and range from 1 inch to 4 inches in diameter. For this reason, maintaining adequate water supply and pressure to all parts of the system has been a problem during high water demand periods. Water pressure as low as 10 psi has been observed in small areas served by the water system. Section 64602, Waterworks Standard, Chapter 16, Title 22 of the CCR specifies that the minimum operating pressure in the water main throughout the distribution system must be at least 20 pounds per square inch (psi) at all times. Operating with water pressures less than 20 psi can lead to significant contamination through backflow of unapproved sources. Therefore, CSA 7 needs to thoroughly evaluate the size and conditions of all distribution system pipelines and the pressures supplied to your customers. Actions must be taken to improve the water pressure to a minimum of 20 psi at all times throughout the distribution system. If the water mains must be replaced, please note that Section 64573 of the

CCR specifies that newly installed water mains shall have a nominal diameter of at least four inches.

Section 64655 (b) of the SWTR requires water systems using an approved surface water source to monitor the raw water supply for total coliform and either fecal coliform or *E.coli* bacteria using density analysis no less than once each month. Such monitoring allows for an ongoing assessment of the raw water bacteriological quality and will alert the system to changes in raw water quality that may be associated with changing conditions in the watershed, climatic changes, or unexpected changes due to unknown causes. In addition to the bacteriological monitoring requirements within the SWTR, the Federal Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), required filtered water systems serving fewer than 10,000 people to sample their source water for *E.coli* at least once every two weeks from October 1, 2008 to September 30, 2009. Results of the *E.coli* analyses under the LT2ESWTR were used to determine if the water system must also sample their source water for Cryptosporidium. The arithmetic mean of the Cryptosporidium concentrations was used to determine if additional treatment is required. CSA7 has monitored the raw water supply at the Alpine Creek for total coliform and *E.coli*, in accordance with the SWTR and LT2ESWTR, since August 2008. The range in the Most Probable Number (MPN) for total coliform and *E.coli* was 63.8 to >2,419.6 MPN per 100 mL (average 672.3 MPN/100 mL) and <1 to >2419.6 MPN per 100 mL (average 114.4 MPN/100 mL from August 2008 to July 2012; average 46.4 MPN/100 mL from October 1, 2008 to September 30, 2009 during the LT2ESWTR monitoring), respectively. Based on the results of the LT2ESWTR, Cryptosporidium monitoring and additional treatment was not required. The second round of source water monitoring under LT2ESWTR begins on April 1, 2015. If significant changes in water quality occur in the future, reevaluation of the treatment requirements will be necessary.

The SWTR requires a water supplier using an approved surface water source to provide multibarrier treatment that reliably ensures at least a total of 3-log reduction of *Giardia lamblia* cysts and a total of 4-log reduction of viruses through filtration and disinfection and a total of 2-log removal of Cryptosporidium through filtration. When operated in conformance with the WTP's operations plan and the performance monitoring, design, reliability, and operational requirements appropriate to conventional filtration, the Camp Glenwood WTP can adequately remove 2.5-log *Giardia lamblia* cysts, 2-log viruses and 2-log Cryptosporidium through filtration. The remaining 0.5-log reduction of *Giardia lamblia* cysts and 2-log reduction of viruses must be satisfied through the disinfection process. The degree of pathogen inactivation provided by disinfection is determined using the CT concept, where C is the disinfectant residual concentration (in mg/L) and T is the contact time (in minutes). Contact time is achieved within a 100 feet section of 18 inch ductile iron pipeline located below ground outside of the WTP. A T_{10}/T baffling factor of 1.0 was assigned to the contact pipe. Based on the parameters used in determining CT, the CSA 7 is capable of meeting the inactivation requirements when using sodium hypochlorite.

The turbidity level of the filtered water must be equal to or less than 0.3 NTU in at least 95 percent of the measurements taken each month and must not exceed 1 NTU for more than one continuous hour, 1 NTU at four-hour intervals and 1.0 NTU for more than eight consecutive hours. To determine compliance with the filtration performance standards, CSA 7 must measure the turbidity level of the filter effluent, prior to the contact pipeline, at least once every four hours that the system is in operation. Continuous turbidity measurements may be substituted for grab sample monitoring provided CSA 7 validates the accuracy of the measurements on a weekly basis. Validation may be accomplished by comparing the turbidity values obtained from the online turbidimeters with values measured on a turbidity field test kit or bench top turbidimeter.

The measured values between the online and bench top turbidimeter or field test kit should be within ten percent of each other. CSA 7 utilizes a HACH 1720E online turbidimeter to measure the turbidity level of the filter effluent. Weekly validations are conducted using a HACH 2100P turbidity field test kit and the results are recorded onto a field log book. Review of the log books indicates that the online turbidimeter and field test kit are within ten percent of each other. In addition to weekly validations, quarterly calibrations using primary standards must also be conducted to both raw and finished water online turbidimeters.

Section 64659 of the SWTR requires surface water treatment plants be equipped with alarm devices to provide warning of coagulation, filtration, and disinfection failures. All devices must warn the operator to provide corrective actions or have the provisions to shut the plant down until corrective actions can be taken. Currently, the Camp Glenwood WTP is equipped with an alarm system to notify the designated operator when the chlorine residual drops below 1.1 mg/L or exceed 3.0 mg/L. The operator will also be notified if turbidity levels in the filter effluent exceed 0.1 NTU. The WTP will also shut down if the filter effluent turbidity exceeds 0.3 NTU and 10 NTU for raw water. Alarms for coagulation failure are currently not provided. Standby replacement equipment are available to assure continuous operation and control of unit processes for coagulation, filtration and disinfection.

Section 64661 of the SWTR requires water systems to operate treatment plants in accordance with an operations plan that has been approved by the Department. The operations plan should consist of CSA 7's treatment plant performance monitoring program, unit process equipment maintenance program, filter media inspection program, operating personnel, including number of staff, certification levels and responsibilities; how and when each unit process is operated; laboratory procedures; procedures used to determine chemical dose rates; records; response to plant and watershed emergencies; and reliability features. CSA7's current operations plan does not adequately address all the elements required above. Therefore a revised operations plan shall be submitted to the Department by **December 31, 2013**.

Section 64660 (a) of the SWTR requires all surface water treatment plants be operated by operators certified by the Department. Due to the complexity of the water treatment plant and the distribution system, CSA7 meets the criteria of a T1 (treatment) and D1 (distribution) system, and therefore, must designate a water system operator with at least a D1 and T1 state certification. CSA7 complies with the distribution and treatment certification requirements by contracting with Mr. Christopher Hauge of Bracewell Engineering Inc. Mr. Hauge is a Grade T2 WTO and Grade D2 WDO.

Section 7584, Chapter 5, Title 17 of the California Code of Regulations requires water suppliers to protect the public water supply from contamination by implementation of a cross connection control program (CCCP). The CCCP, for the purpose of addressing the requirements of Section 7585 through 7605 shall include, but not be limited, to the following elements:

- a) The adoption of operating rules or ordinances to implement the CCCP,
- b) The conducting of surveys to identify water user premises where cross-connections are likely to occur,
- c) The provisions of backflow protection by the water user at the user's connection,
- d) The provisions of at least one person trained in cross-connection control to carry out the CCCP,
- e) The establishment of a procedure or system for testing backflow preventers, and
- f) The maintenance of records of locations, tests and repairs of backflow preventers.

CSA7 currently does not have a CCCP and therefore must adopt a program by **December 31, 2013**. By **July 1, 2014**, CSA7 shall survey and identify all water user premises where cross-connections are likely to occur. By **December 31, 2014**, CSA7 shall install and test all required backflow prevention assemblies to ensure their proper operations. Also, by **December 31, 2014**, CSA7 shall be full compliance with Section 7584.

NSF Standard 60 addresses the health effects implications of treatment chemicals and related impurities. It ensures that the chemicals used for treatment of drinking water contain impurities below the maximum acceptable levels. CSA7 uses HASA MultiChlor 12.5 NaOCl and Hyperion 835 polyaluminum hydroxychloride, both NSF 60 approved chemicals.

IV. Conclusion and Recommendations

It is the finding of this report that County Service Area 7 can meet the requirements specified in Section 116270 through 116750, inclusive of the California Health and Safety Code providing the provisions recommended below are met. It is recommended that a water supply permit be granted to County Service Area 7 to operate the water system subject to the following provisions:

General

1. County Service Area 7 shall comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards or orders adopted thereunder.
2. County Service Area 7 shall serve water to its customers only from approved sources. No other sources shall be used without prior approval from the Department. The only approved source for CSA7 is the Alpine Creek, Primary Station Code No. 4100515-001.

Surface Water Treatment

3. County Service Area 7 shall provide reliable treatment to water from its surface water supply that meets a minimum total reduction of 99.9% (3-log) for *Giardia lamblia* cysts and 99.99% (4-log) for virus through the filtration and disinfection process and a total removal of 99% (2-log) for *Cryptosporidium* through the filtration process at all times. When the Camp Glenwood WTP is operated in accordance with a Department approved Operations Plan and the performance monitoring, design, reliability, and operational requirements appropriate to conventional filtration, the filtration process is credited with 99.7% (2.5-log) *Giardia lamblia* cysts, 99% (2-log) virus and 99% (2-log) *Cryptosporidium* removal. Based upon the overall reduction requirements specified above, the inactivation requirements for the Camp Glenwood WTP are 0.5 log *Giardia lamblia* cysts and 2-log for virus through the disinfection process.

Filtration

4. The rapid mix, flocculation, clarifier/tube settler and filter shall be in use at all times during which the treatment plant is in operation.
5. The flow rates through the filter shall not exceed 3.0 gpm/ft² at any time.

6. County Service Area 7 shall operate the Camp Glenwood WTP so that the effluent water turbidity level, prior to the contact chamber, does not exceed:
 - a. 0.3 NTU in 95% of the measurements taken each month;
 - b. 1 NTU for more than one continuous hour;
 - c. 1 NTU at four-hour intervals; and
 - d. 1.0 NTU for more than eight consecutive hours.
7. County Service Area 7 shall determine compliance with the turbidity performance standard of the filter effluent, prior to the contact chamber, at least once every four hours that the system is in operation. Continuous turbidity measurements may be substituted for grab sample monitoring provided CSA7 validates the accuracy of the measurements on a weekly basis.

Disinfection

8. Disinfection treatment shall comply with the following performance standards:
 - a. Water delivered to the distribution system shall not contain a disinfectant residual of less than 0.2 mg/L for more than four hours in any 24 hour period.
 - b. The residual disinfectant concentrations of samples collected from the distribution system shall be detectable in at least 95 percent of the samples taken each month that the system serves water to the public.
9. County Service Area 7 shall comply with the disinfection requirements at all times. Compliance with the disinfection inactivation requirements will be determined using the CT concept.
10. County Service Area 7 shall measure and record the disinfectant residual concentration of the water being delivered to the contact chamber continuously. If there is a failure of continuous disinfection residual monitoring equipment, grab sampling every four hours may be conducted in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.
11. Disinfection facilities shall be operated in accordance with the following requirements:
 - a. A supply of chemicals necessary to provide continuous operation of disinfection facilities shall be maintained as a reserve or demonstrated to be available.
 - b. An emergency plan shall be developed as part of the operations plan and implemented in the event of disinfection failure to prevent delivery to the distribution system of any undisinfected or inadequately disinfected water. The plan shall be posted in the treatment plant or other place readily accessible to the plant operator.

Water Quality Monitoring and Reporting

12. County Service Area 7 shall monitor the raw water supply for total coliform and either fecal coliform or *E.coli* bacteria using density analysis no less than once each month.
13. County Service Area 7 shall measure the residual disinfectant concentration at least at the same points in the distribution system and at the same time as total coliforms are sampled in accordance with Section 64421, Title 22, California Code of Regulations.
14. County Service Area 7 shall comply with the water quality monitoring and reporting requirements for the following water quality constituents:
 - a. Bacteriological quality, in accordance with Article 3, Chapter 15, Title 22, CCR.
 - b. Inorganic chemicals, except for Nitrate, Nitrite, Asbestos and Perchlorate, in accordance with Section 64432, Chapter 15, Title 22, CCR.
 - c. Nitrate and Nitrite, in accordance with Section 64432.1, Chapter 15, Title 22, CCR.
 - d. Asbestos, in accordance with Section 64432.2, Chapter 15, Title 22, CCR.
 - e. Perchlorate, in accordance with Section 64432.3, Chapter 15, Title 22, CCR.
 - f. Radiological Chemicals, in accordance with Section 64442, Chapter 15, Title 22, CCR.
 - g. Volatile and Synthetic Organic Chemicals, in accordance with Section 64444, Chapter 15, Title 22, CCR.
15. All water quality monitoring results analyzed by a certified laboratory shall be submitted to the Department via Electronic Data Transfer (EDT) using the assigned Primary Station Code (PS Code) of the monitoring site.

Operation and Maintenance

16. County Service Area 7 shall calibrate the turbidimeters in accordance with the manufacturer recommendations.
17. County Service Area 7 shall provide the following reliability features to the Camp Glenwood WTP:
 - a. Alarm devices to provide warning of coagulation, filtration, and disinfection failures. All devices shall warn a person designated by CSA 7 as responsible for taking corrective action, or have provisions to shut the plant down until corrective action can be taken.
 - b. Standby replacement equipment available to assure continuous operation and control of unit processes for coagulation, filtration and disinfection.

- c. A continuous turbidity monitoring and recording unit on the filter effluent prior to the chlorine contact pipe.
18. County Service Area 7 shall revise its operations plan and submit for Department approval, no later than **December 31, 2013**. The operations plan shall be comprehensive to the extent that a new operator will be able to operate the Camp Glenwood WTP, using the plan, with minimal training. The operations plan shall include at minimum:
- d. The treatment plant performance monitoring program
 - e. Unit process equipment maintenance program
 - f. Filter media inspection program
 - g. Operating personnel, including number of staff, certification levels and responsibilities
 - h. How and when each unit process is operated
 - i. Laboratory procedures
 - j. Procedures used to determine chemical dose rates
 - k. Records
 - l. Response to plant and watershed emergencies
 - m. Reliability features
19. County Service Area 7 shall operate the Camp Glenwood WTP in accordance with the approved operations plan. Planned modifications to incorporate new operating procedures shall be submitted to the Department for review and approval prior to implementation.
20. All persons responsible for the operation and maintenance of the water system shall be certified in accordance with Sections 63750.1 through 64413.7, inclusive, Title 22, CCR. A chief operator licensed at, as a minimum, Grade D1 and T1, shall be responsible for the operation of CSA7's distribution and treatment system.

Records and Reporting

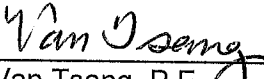
21. County Service Area 7 shall maintain accurate and complete operation records for the Camp Glenwood WTP. The records shall include but not be limited to the following:
- n. The results of all monitoring conducted in accordance with this permit and the Surface Water Treatment Rule.
 - o. Dates on which filter maintenance and inspections were performed and the results of any inspections.

- p. Quantity of water produced, plant flow rates, filtration rates, hours of operation, and backwash rates.
- q. Dates and description of major equipment and process failures and corrective actions taken.

Treatment plant records shall be retained for not less than three years, except where the Department has determined that longer retention times are necessary to complete legal actions taken under the provisions of the Health and Safety Code.

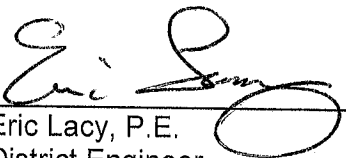
- 22. County Service Area 7 shall notify the Department as soon as possible, but no later than by the end of the next business day, or within 24 hours, whichever is less, by telephone or other equally rapid means whenever:
 - r. The turbidity of the filter effluent exceeds 5.0 NTU at any time.
 - s. The turbidity of the filter effluent exceeds 1 NTU for more than one continuous hour.
 - t. The turbidity of the filter effluent exceeds 1 NTU at four-hour intervals.
 - u. The turbidity of the filter effluent exceeds 1.0 NTU for more than eight consecutive hours.
 - v. There is a failure to maintain a minimum disinfectant residual of 0.2 mg/L in the water being delivered to the distribution system. CSA 7 shall report whether or not the disinfectant residual was restored to at least 0.2 mg/L within four hours.
 - w. An event occurs which may affect the ability of the treatment plant to produce a safe, potable water including but not limited to spills of hazardous materials in the watershed and unit treatment process failures.
 - x. CSA 7 discovers the occurrence of an acute infectious illness that may be potentially attributed to the water system.
- 23. County Service Area 7 shall submit a monthly report on the operation of the treatment facility to the Department by the tenth day of the following month. The report shall be signed by the chief water treatment plant operator, plant superintendent or other person directly responsible for the operation of the water treatment plant.

Report Prepared by:



Van Tsang, P.E.
Associate Sanitary Engineer

Report Reviewed by:



Eric Lacy, P.E.
District Engineer
Santa Clara District

APPENDIX

Appendix A. Camp Glenwood Water Treatment Plant Schematic

Appendix B. Alpine Creek Water Quality Monitoring Schedule



Camp Glenwood Water Treatment Plant Schematic

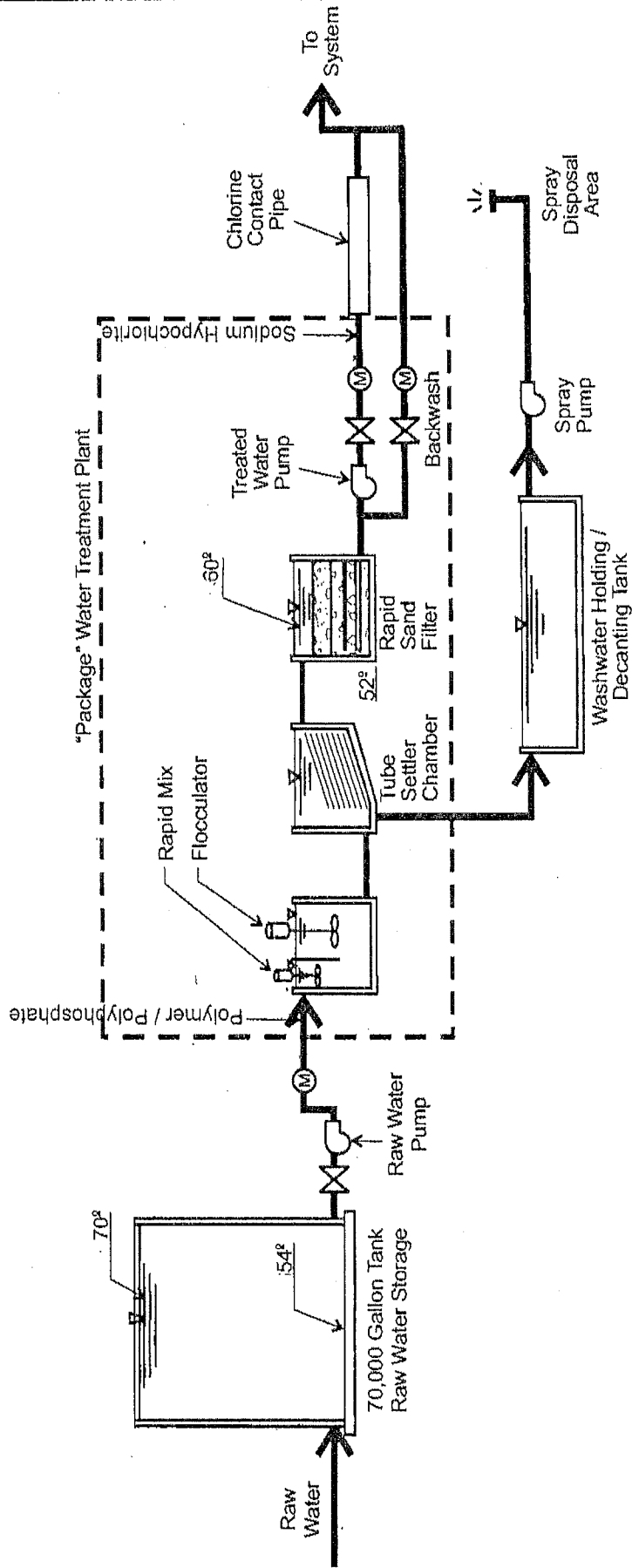


Figure 3-1
Existing Camp Glenwood Water Treatment Plant

Alpine Creek Water Quality Monitoring Schedule



DATE: 09/18/13
 REPORT: R0117/1

STATE OF CALIFORNIA
 DRINKING WATER PROGRAM
 LAST SAMPLE DATE AND MONITORING SCHEDULE

PAGE: 1
 TIME: 16:09

SYSTEM NO: 4100509 NAME: COUNTY SERVICE AREA 7 COUNTY: SAN MATEO
 SOURCE NO: 001 NAME: ALPINE CREEK - RAW PSCODE: 4100509-001 CLASS: C555 STATUS: AR

GROUP IDENTIFICATION	CONSTITUENT IDENTIFICATION	LAST SAMPLE	COUNT	FREQ	MODIFIED SCHEDULE	NEXT SAMPLE DUE
SECONDARY/GP						
	00440 BICARBONATE ALKALINITY	2012/07/11	3	12		2013/07
	00916 CALCIUM	2012/07/11	3	12		2013/07
	00445 CARBONATE ALKALINITY	2012/07/11	3	12		2013/07
	00940 CHLORIDE	2012/07/11	3	12		2013/07
	00081 COLOR	2012/07/11	5	12		2013/07
	01042 COPPER	2012/07/11	3	12		2013/07
	38260 FOAMING AGENTS (MBAS)	2012/07/11	3	12		2013/07
	00900 HARDNESS (TOTAL) AS CaCO3	2012/07/11	2	12		2013/07
	71830 HYDROXIDE ALKALINITY	2012/07/11	3	12		2013/07
	01045 IRON	2013/08/14	11	3	*	2013/11
	00927 MAGNESIUM	2012/07/11	3	12		2013/07
	01055 MANGANESE	2012/07/11	3	12		2013/07
	00086 ODOR THRESHOLD @ 60 C	2012/07/11	5	12		2013/07
	00403 PH, LABORATORY	2012/07/11	2	12		2013/07
	01077 SILVER	2012/07/11	3	12		2013/07
	00929 SODIUM	2012/07/11	3	12		2013/07
	00095 SPECIFIC CONDUCTANCE	2013/07/24	6	12		2014/07
	00945 SULFATE	2012/07/11	3	12		2013/07
	70300 TOTAL DISSOLVED SOLIDS	2012/07/11	6	12		2013/07
	82079 TURBIDITY, LABORATORY	2012/07/11	3	12		2013/07
	01092 ZINC	2012/07/11	3	12		2013/07
INORGANIC						
	01105 ALUMINUM	2013/08/14	11	3		2013/11
	01097 ANTIMONY	2012/07/11	3	12		2013/07
	01002 ARSENIC	2012/07/11	3	12		2013/07
	81855 ASBESTOS	2012/05/02	1	108		2021/05

FREQ IS NUMBER OF MONTHS BETWEEN SAMPLES. WHEN FREQ IS 0, SAMPLE IS DUE NOW.
 WHEN FREQ IS 999, NO SAMPLES ARE REQUIRED. COUNT IS NUMBER OF SAMPLES IN THE DATABASE.

DATE: 09/18/13
 REPORT: R0117/1

STATE OF CALIFORNIA
 DRINKING WATER PROGRAM
 LAST SAMPLE DATE AND MONITORING SCHEDULE

PAGE: 2
 TIME: 16:09

SYSTEM NO: 4100509 NAME: COUNTY SERVICE AREA 7
 SOURCE NO: 001 NAME: ALPINE CREEK - RAW

COUNTY: SAN MATEO CLASS: C5SS STATUS: AR
 PSCODE: 4100509-001

GROUP IDENTIFICATION	CONSTITUENT IDENTIFICATION	LAST SAMPLE	COUNT	FREQ	MODIFIED SCHEDULE	NEXT SAMPLE DUE	DUE
01007	BARIUM	2012/07/11	3	12	2013/07	2013/07	DUE NOW
01012	BERYLLIUM	2012/07/11	3	12	2013/07	2013/07	DUE NOW
01027	CADMIUM	2012/07/11	3	12	2013/07	2013/07	DUE NOW
01034	CHROMIUM (TOTAL)	2012/07/11	5	12	2013/07	2013/07	DUE NOW
01291	CYANIDE	2012/07/26	3	12	2013/07	2013/07	DUE NOW
00951	FLUORIDE (F) (NATURAL-SOURCE)	2012/07/11	3	12	2013/07	2013/07	DUE NOW
71900	MERCURY	2012/07/11	3	12	2013/07	2013/07	DUE NOW
01067	NICKEL	2012/07/11	3	12	2013/07	2013/07	DUE NOW
A-031	PERCHLORATE	2012/07/11	3	12	2013/07	2013/07	DUE NOW
01147	SELENIUM	2013/07/24	6	12	2014/07	2014/07	DUE NOW
01059	THALLIUM	2012/07/11	3	12	2013/07	2013/07	DUE NOW
	NITRATE/NITRITE	2012/07/11	3	12	2013/07	2013/07	DUE NOW
	71850 NITRATE (AS NO3)	2013/07/17	9	3	2013/10	2013/10	DUE NOW
	00620 NITRITE (AS N)	2012/07/11	4	36	2015/07	2015/07	DUE NOW
	RADIOLOGICAL						
	01501 GROSS ALPHA	2007/11/15	2	108	2016/11	2016/11	DUE NOW
	REGULATED VOC						
	34030 BENZENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	32102 CARBON TETRACHLORIDE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	77093 CIS-1,2-DICHLOROETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34423 DICHLOROMETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34371 ETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	46491 METHYL-TERT-BUTYL-ETHER (MTBE)	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34301 MONOCHLOROBENZENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	77128 STYRENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34475 TETRACHLOROETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34010 TOLUENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW

FREQ IS NUMBER OF MONTHS BETWEEN SAMPLES. WHEN FREQ IS 0, SAMPLE IS DUE NOW.
 WHEN FREQ IS 999, NO SAMPLES ARE REQUIRED. COUNT IS NUMBER OF SAMPLES IN THE DATABASE.

DATE: 09/18/13
 REPORT: R0117/1

STATE OF CALIFORNIA
 DRINKING WATER PROGRAM
 LAST SAMPLE DATE AND MONITORING SCHEDULE

PAGE: 3
 TIME: 16:09

SYSTEM NO: 4100509 NAME: COUNTY SERVICE AREA 7
 SOURCE NO: 001 NAME: ALPINE CREEK - RAW

COUNTY: SAN MATEO CLASS: CSSS STATUS: AR
 PSCODE: 4100509-001

GROUP IDENTIFICATION	CONSTITUENT IDENTIFICATION	LAST SAMPLE	COUNT	FREQ	MODIFIED SCHEDULE	NEXT SAMPLE DUE	DUE NOW
	34546 TRANS-1,2-DICHLOROETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	39180 TRICHLOROETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34488 TRICHLOROFLUOROMETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	39175 VINYL CHLORIDE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	81551 XYLENES (TOTAL)	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34496 1,1-DICHLOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34501 1,1-DICHLOROETHYLENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34506 1,1,1-TRICHLOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	81611 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34511 1,1,2-TRICHLOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34516 1,1,2,2-TETRACHLOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34536 1,2-DICHLOROBENZENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34531 1,2-DICHLOROETHANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34541 1,2-DICHLOROPROPANE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34551 1,2,4-TRICHLOROBENZENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34561 1,3-DICHLOROPROPENE (TOTAL)	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	34571 1,4-DICHLOROBENZENE	2012/03/29	2	12	2013/03	2013/03	DUE NOW
	REGULATED SOC						
	77825 ALACHLOR	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	39033 ATRAZINE	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	38710 BENTAZON	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	34247 BENZO (A) PYRENE	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	81405 CARBOFURAN	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	39350 CHLORDANE	2012/01/30	1	36	2015/01	2015/01	DUE NOW
	38432 DALAPON	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	A-026 DI(2-ETHYLHEXYL)ADIPATE	2011/12/27	1	36	2014/12	2014/12	DUE NOW
	39100 DI(2-ETHYLHEXYL)PHTHALATE	2011/12/27	1	36	2014/12	2014/12	DUE NOW

FREQ IS NUMBER OF MONTHS BETWEEN SAMPLES. WHEN FREQ IS 0, SAMPLE IS DUE NOW.
 WHEN FREQ IS 999, NO SAMPLES ARE REQUIRED. COUNT IS NUMBER OF SAMPLES IN THE DATABASE.

DATE: 09/18/13
 REPORT: R0117/1

STATE OF CALIFORNIA
 DRINKING WATER PROGRAM
 LAST SAMPLE DATE AND MONITORING SCHEDULE

PAGE: 4
 TIME: 16:09

SYSTEM NO: 4100509 NAME: COUNTY SERVICE AREA 7
 SOURCE NO: 001 NAME: ALPINE CREEK - RAW

COUNTY: SAN MATEO
 PSCODE: 4100509-001 CLASS: CSSS STATUS: AR

GROUP IDENTIFICATION	CONSTITUENT IDENTIFICATION	LAST SAMPLE	COUNT	FREQ	MODIFIED SCHEDULE	NEXT SAMPLE DUE
38761	DIBROMOCHLOROPROPANE (DBCP)	2011/12/27	1	36		2014/12
81287	DINoseb	2011/12/27	1	36		2014/12
78885	DIQUAT	2011/12/27	1	36		2014/12
38926	ENDOTHALL	2011/12/27	1	36		2014/12
39390	ENDRIN	2012/01/30	1	36		2015/01
77651	ETHYLENE DIBROMIDE (EDB)	2011/12/27	1	36		2014/12
79743	GLYPHOSATE	2011/12/27	1	36		2014/12
39410	HEPTACHLOR	2012/01/30	1	36		2015/01
39420	HEPTACHLOR EPOXIDE	2012/01/30	1	36		2015/01
39700	HEXACHLOROBENZENE	2012/01/30	1	36		2015/01
34386	HEXACHLOROCYCLOPENTADIENE	2012/01/30	1	36		2015/01
39340	LINDANE	2012/01/30	1	36		2015/01
39480	METHOXYCHLOR	2012/01/30	1	36		2015/01
82199	MOLINATE	2011/12/27	1	36		2014/12
38865	OXAMYL	2011/12/27	1	36		2014/12
39032	PENTACHLOROPHENOL	2011/12/27	1	36		2014/12
39720	PICLORAM	2011/12/27	1	36		2014/12
39516	POLYCHLORINATED BIPHENYLS, TOTAL, AS DC	2012/01/30	1	36		2015/01
39055	SIMAZINE	2011/12/27	1	36		2014/12
A-001	THIOBENCARB	2011/12/27	2	36		2014/12
39400	TOXAPHENE	2012/01/30	1	36		2015/01
39730	2,4-D	2011/12/27	1	36		2014/12
39045	2,4,5-TP (SILVEX)	2011/12/27	1	36		2014/12

FREQ IS NUMBER OF MONTHS BETWEEN SAMPLES. WHEN FREQ IS 0, SAMPLE IS DUE NOW.
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