Appendix B

Comment Letters

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Services of the San Francisco Public Utilities Commission

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December 6, 2013

BY US MAIL AND EMAIL

Ms. Marcia Liao
NPDES Wastewater Division
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
marcia.liao@waterboards.ca.gov

RE: Comments - Tentative Order for the San Francisco PUC Pulgas Dechloramination Facility NPDES Permit No. CA0038865

Dear Ms. Liao:

The City and County of San Francisco's Public Utilities Commission thanks you for the opportunity to comment on the Tentative Order issuing the National Pollutant Discharge Elimination System (NPDES) permit for the Pulgas Dechloramination Facility. We thank staff for its collaborative and cooperative efforts to develop the permit for this unique and significant part of San Francisco's and the Peninsula's public water service facilities.

We suggest a few modifications to ensure that the facility is in compliance when operated as designed and also to ensure that the release of waters to the reservoir protects the environment and public health. We have proposed clarifications where needed so that we have a clear understanding of the permit provisions.

We appreciate the time and effort that you and Bill Johnson have devoted to preparing this tentative order and to responding to the many questions that we have brought to your attention in recent months.

Please contact me if you have any questions.

Very truly yours,

Lori Schectel
Senior Environmental Compliance Planner
Natural Resources and Lands Management Division

cc: Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board
Tamarin Austin, State Water Board
Robyn Stuber, EPA, Region 9
Steve Ritchie, SFPUC
David Briggs, SFPUC
Chris Nelson, SFPUC
Paul Gambon, SFPUC
John Roddy, CAO

Enclosures: Comments on the Tentative Order released November 7, 2013;
Factual and typographical revisions to the Tentative Order

December 6, 2013

SFPUC's Comments on the Tentative Order released November 7, 2013
for the Pulgas Dechloramination Facility; NPDES Permit No. CA0038865

1. **Dechlorination versus Dechloramination**: Typically, flows through the facility up to 100mgd can be dechloraminated. Due to the nature of the water system and current technological constraints, dechloramination for flows up to 100mgd might not always be possible. Flows through the facility above 100mgd cannot be dechloraminated and can only be dechlorinated. There is no partial dechloramination. Page E-2-E-3, Table E-3, fn 4; Page F-4, II. A. 3; Page F-23, IV. D 2. c. iii.

2. **Effluent Limit Compliance**:
pH: On 10/31/13, in a response to questions raised by SFPUC, the RWQCB confirmed that an exceedance of the pH limit pursuant to footnotes 1 and 2, Table 4, will constitute non-compliance only if, through continuous monitoring of the receiving water, the discharge causes the natural background pH to be depressed below 6.5 or raised above 8.5, or if background is outside this range, the receiving water has been altered from normal ambient pH by more than 0.5 standard units (see Page 4, IV. Table 4, footnotes 1 and 2).

Total Residual Chlorine: The SFPUC continuously monitors using an online analyzer at the effluent. To ensure compliance with the requirements of Table 4, the SFPUC will calculate a four day rolling average calculating zeros for periods when no discharge occurs.

3. **Standard Provisions**:
Monitoring; Sampling and Analysis
Only samples for priority pollutants will be analyzed in a certified laboratory (see Page G-7, III. A.1.). Effluent samples are analyzed using an online analyzer at the facility and receiving water monitoring will be analyzed using a sonde or by a staff biologist on-site. Please consider rewording sec. II A. 1, if necessary to clarify.

Attachment G

Permit provision V1.A.2 refers to "applicable provisions" in Attachment G, but does not otherwise clarify which of these are applicable. Most of these provisions are directed at POTWs and possibly industrial facilities. Based on a review of these provisions as currently drafted, the following items in Attachment G do not appear applicable to this permit:

I Permit Compliance

I. C.1. Contingency Plan [refers to maintenance of sewerage facilities and other POTW components]

I. C.2. Spill Prevention Plan [is directed at POTWs; Pulgas facility does have a business plan]

I. D.2. Wastewater Facilities Status Report [re: wastewater collection, treatment, and disposal facilities]

I. D.3. Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs)

I.I. Other (2) - Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater

I.J. Storm water

These provisions apply to facilities that do not direct all storm water flows from the facility to the wastewater treatment plant headworks. [Stormwater is not discharged from this facility to waters of the state]

I.J. 1. Storm water Pollution Prevention Plan (SWPP Plan)

I J. 2. Source Identification

I.J. 3. Storm water Management Controls

I.J. 4. Annual Verification of SWPP Plan

I.K. Biosolids Management

III Monitoring

A.Sampling and Analysis

A.1. Use of Certified Laboratories (most analyses are performed by online sensors as noted in an earlier comment and we assume their use is appropriate)

A.3.a.3. The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows). [It is not possible to determine when the maximum peak effluent flows are due to the highly fluctuating flow pattern.]

A.3.c. Storm Water Monitoring [no stormwater discharge to surface waters]
A.3.d. 2) (page G-8). Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring
C. Standard Observations

IV Records
B.3. Wastewater Treatment Process Solids
B.4. Disinfection Process
B.5 Treatment Process Bypasses [addresses POTW blending]
B.6. Treatment Facility Overflows

4. **Factual and Typographical Edits**: See attachment T.O., Edited, F-3, F-4, and F-11.

B. The Discharger discharges dechloraminated or dechlorinated potable water to Crystal Springs Reservoir, a water of the United States.

Prior to making any change in the point of discharge, place of use, or purpose of use of the discharge that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. The Discharger filed a Report of Waste Discharge and submitted an application for issuance of its waste discharge requirements (WDRs) and NPDES permit on July 9, 2013.

II. FACILITY DESCRIPTION

A. Wastewater Treatment and Controls

1. **Background.** The Facility is located in a relatively undeveloped area in Redwood City and is part of the San Francisco Public Utilities Commission's regional water supply system that serves 2.6 million Bay Area residents, including 28 wholesale customers. The water entering the Facility, being potable, has been disinfected to prevent the growth of organisms and to control taste and odor. The Facility began operation in February 2004 when San Francisco Public Utilities Commission made a system-wide switch from chlorination to chloramination to provide longer lasting disinfectant residuals in the distribution system and to reduce levels of disinfection byproducts (e.g., trihalomethanes). Chloramine, the disinfectant formed through the addition of chlorine and ammonia, can be toxic to aquatic organisms and therefore must be removed before the water is discharged to the reservoir. The Facility dechloraminates drinking water in excess of consumer demands prior to storage in the Crystal Springs Reservoir.

   Attachment B provides a map of the area around the Facility.

2. **Source Water.** The water entering the Facility comes from the San Francisco Public Utilities Commission's Hetch Hetchy Reservoir and is supplemented by local source waters from Calaveras Reservoir and San Antonio Reservoir located in the East Bay. The volume of the flow entering the Facility fluctuates depending on the time of year, weather conditions, and customer demands. The fluctuation could be substantial and could occur suddenly (from 0 to 60 million gallons per day (MGD) within minutes).

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   Hetch Hetchy Reservoir collects primarily snowmelt from the Tuolumne River watershed, located entirely within Yosemite National Park. Because of its pristine source, Hetch Hetchy water contains typically lower mineral contents and therefore lower alkalinity (<15 mg/L as $CaCO_3$) than the waters of Calaveras Reservoir and San Antonio Reservoir (>100 mg/L as $CaCO_3$). Since the make-up of the Facility's influent flow (i.e., the ratio of Hetch Hetchy Reservoir water to local reservoir water) is dictated by the supply and demand of the region, the flows entering the Facility could vary widely in terms of alkalinity and, consequently, its buffering capacity.

3. **Treatment Processes.** The Facility, which is unstaffed, uses break point chlorination to remove chloramine from the source water. The treatment is carried out in a 10-foot diameter 1,913-foot-

long plug-flow contactor pipe. First, carbon dioxide is introduced to the inlet box to lower the pH. Sufficient chlorine, in the form of sodium hypochlorite, is then added to "breakpoint" to convert chloramine to chlorine and ammonia. This process converts the ammonia to nitrogen gas, which is off-gassed (ammonia removal). Next, at the outlet box, sodium bisulfite is added to quench the leftover chlorine by reducing free chlorine to chloride (chlorine removal). The water then enters a 650-foot open-concrete channel where additional detention time allows dechlorination to be completed prior to discharge.

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The dechloramination process requires the addition of three chemicals, each capable of affecting the pH (carbon dioxide and sodium bisulfite lower the pH and sodium hypochlorite raises the pH). For flows low in alkalinity (e.g., Hetch Hetchy source water), such pH changes could be pronounced and swift, making the control of chemical dose critical.

The design capacity for dechloramination is 100 MGD based on the required contact time for breakpoint chlorination, and the Facility operates in full dechloramination mode unless flows exceed 100 MGD. The Facility may occasionally experience flows greater than 100 MGD. In such circumstances, ammonia removal could be reduced. Full dechlorination would continue. The dechlorination design capacity is the same as the contactor pipe's hydraulic capacity (about 200 MGD). From November 2012 through November 2013, the median daily average flow was 20 MGD, with a range of 0 to 120 MGD.

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To date, the Facility has never experienced flows exceeding 200 MGD. If that were to occur, excess water would flow over an overflow weir (304ft.)at the headworks to the discharge channel. It would be dechlorinated with sodium bisulfite at an auxiliary dosing point under the Pulgas Temple. The dechlorinated, but not dechloraminated, flow would then be blended with the rest of the treated water before discharge. Operations in this dechlorination-only mode may occur during very high flows or when the system requires repairs or maintenance.

Attachment C provides a schematic process flow diagram with a detailed layout of the Facility.

B. Discharge Point and Receiving Water

The Facility has one discharge point (Discharge Point No. EFF-001) at the southern tip of Crystal Springs Reservoir, located at the terminus of the 650-foot concrete trench. Once beyond the trench, the discharge moves through an approximately 1,100-foot natural channel before entering the main body of the reservoir. Crystal Springs Reservoir is a pair of artificial lakes, Upper Crystal Springs Reservoir and Lower Crystal Springs Reservoir, which extend 6 to 7 miles along Interstate 280. The two lakes are hydraulically connected via two culverts and are operated as a single reservoir. Water from Crystal Springs Reservoir is pumped to the San Andreas Reservoir and then to the Harry Tracy Treatment Plant for treatment prior to delivery to drinking water customers. The primary outflow from the Crystal Springs Reservoir is Lower San Mateo Creek, which receives limited flows from Crystal Springs Dam and descends to Lower San Francisco Bay.

C. Summary of Previous Requirements

This Order is the first issuance of this new NPDES permit. The discharge has not been subject to previous permit requirements.

year. For discharges to waters with salinities between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater objectives (the latter calculated based on ambient hardness) for each substance.

Crystal Springs Reservoir, being a storage facility for potable water, is a freshwater environment. The reasonable potential analysis and WQBELs are based on freshwater water quality criteria and objectives.

e. **Receiving Water Hardness.** Ambient hardness is used to calculate freshwater water quality objectives that are hardness-dependent. In determining the water quality objectives for this Order, a hardness of 48 mg/L as $CaCO_3$ was used. This is the lowest hardness the Discharger observed at Lower Crystal Springs Reservoir from May 2001 to July 2006.

f. **Metal Translators.** Effluent limitations for metals must be expressed as total recoverable metal (40 C.F.R. § 122.45[c]). Since water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In this Order, CTR default translators were used to determine the water quality objectives for metals as total recoverable metal.

3. **Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)**

Assessing whether a pollutant has reasonable potential to exceed a water quality objective is the fundamental step in determining whether a WQBEL is required.

a. **Methodology.** SIP section 1.3 sets forth the methodology used for this Order for assessing whether a pollutant has reasonable potential to exceed a water quality objective. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:

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i. **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective (MEC ε water quality objective).

ii. **Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the water quality objective (B > water quality objective) *and* the pollutant is detected in any effluent sample.

iii. **Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

b. **Effluent Data.** The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected for copper, zinc, and trihalomethanes from October 2008 through August 2012, for ammonia from March 2013 through May 2013, for pH from February 2012 through September 2013, and for total residual chlorine from

11/18/13

To: Water Resources Control Engineering
California Regional Water Quality Control Board
San Francisco Bay Region

From: Henry Hopa
889 Mowry Ave #170
Fremont, CA 94536

Re: Tentative Order for Pulgas Dechlorination Facility - Comments Permit No. CA0038865
No. R2-2014-00XX

(1) This Order is for NPDES Permit for the Referenced facility - As such, any discharges are permitted. The sumps at the facility (6 sumps + 2 sumps inside) have waste water which previously was discharged into soil. Since, solids as well as water enter the sumps, these sumps should be interceptor (2 steps) to capture oil/grease, solids. then cleaned out as Hazardous Waste. No more discharging waste water into soil.

(2) In the event a catastrophic event occurs there is 30,000 gal of Hypochlorite and 30,000 gal of sodium bisulfate in Tanks should these tanks Rupture or leak

the fumes of chlorine and sulfate will create an acid cloud. Have the facilities run scrubbers (air) to remove the gases from the spill. As a reminder, the area around the referenced facility is Public and as such, Duty of Care should be provided an NPDES Language

(3) Present Permit is based on EIS Dated 10 years ago need to implement a new study to determine present conditions and to add the Sump details and air scrubbers (needed)