



**COUNTY OF PLACER
FACILITY SERVICES DEPARTMENT**

Phone 530-886-4900 Fax 530-889-6809
www.placer.ca.gov

JAMES DURFEE, DIRECTOR
MARY DIETRICH, ASSISTANT DIRECTOR
WILL DICKINSON, DEPUTY DIRECTOR
JOEL SWIFT, DEPUTY DIRECTOR
VALERIE BAYNE, ADMIN. SVS. MANAGER

May 4, 2010

Diana C. Messina, Senior Engineer
NPDES - Sacramento Watershed Unit
Central Valley Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

**RE: INFEASIBILITY REPORT SUBMITTAL – PLACER COUNTY SEWER
MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT, NPDES
CA0078956**

Dear Ms. Messina:

Placer County Department of Facility Services (County) is submitting the attached Infeasibility Report regarding the Sewer Maintenance District 1 (SMD 1) Wastewater Treatment Plant (WWTP) prepared by Owen Psomas on behalf of the County. The report is a required component of our request for compliance schedules for the following constituents: aluminum; nitrate plus nitrite and nitrite; ammonia; ammonia as nitrogen; biochemical oxygen demand; chlorodibromomethane; bromodichloromethane; total suspended solids; total coliform; and turbidity. The County is also requesting a compliance schedule for implementation of the Equivalent and Continuous Monitoring System requirements of the tentative permit, NPDES CA0078956. The information included in the attached Infeasibility Report provides sufficient information to justify the compliance schedules.

If you have any questions or concerns please contact David Atkinson of my staff at (530) 886-4968.

Sincerely,



Will Dickinson, Deputy Director

WD/KS

Attachment
Infeasibility Report for the SMD 1 WWTP dated April 2010

11476 C Avenue Auburn CA 95603
Entrance at 2855 2nd Street

Administration – Building Maintenance – Capital Improvements – Museums – Parks
Property Management – Environmental Engineering - Utilities

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

Owen Psomas Project No. 6PLA170900

Prepared for:
Placer County, Department of Facility Services
11476 C Avenue
Auburn, California 95603



May 2010

Prepared by:
Owen Psomas
3377 Coach Lane, Suite K
Cameron Park, CA 95682
(530) 677-5286

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

TABLE OF CONTENTS

| Section | Title | Page |
|---------|--|------|
| | Table of Contents | i |
| | List of Tables | ii |
| | Glossary of Terms..... | iii |
| 1 | Introduction | 1 |
| | 1.1 Background | 1 |
| | 1.2 Reasonable Potential Analysis (RPA)..... | 1 |
| | 1.3 Purpose of this Infeasibility Report..... | 3 |
| 2 | Demonstration of Infeasibility to Immediately Comply | 3 |
| 3 | Potential Sources of Documented Pollutants | 3 |
| | 3.1 Aluminum..... | 5 |
| | 3.2 Ammonia-Nitrogen | 5 |
| | 3.3 BOD..... | 5 |
| | 3.4 Chlorodibromomethane..... | 6 |
| | 3.5 Bromodichloromethane | 6 |
| | 3.6 Nitrate and Nitrite Nitrogen..... | 6 |
| | 3.7 TSS..... | 6 |
| | 3.8 Total Coliform | 6 |
| | 3.9 Turbidity..... | 6 |
| 4 | Existing Source Control and Pollution Minimization Practices | 6 |
| 5 | Planned Additional Source Control and Pollutant Minimization Actions | 7 |
| | 5.1 Treatment Plant Startup, Performance Testing, and Optimization | 7 |
| | 5.2 Compliance Monitoring and Data Evaluation | 7 |
| | 5.3 Compliance Response Planning and Implementation | 7 |
| 6 | Requested Time Schedules | 8 |
| 7 | References..... | 9 |
| | 7.1 Literature Cited..... | 9 |

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

LIST OF TABLES

| Table | Title | Page |
|-------|--|------|
| 1 | Constituents with Potential to Exceed Proposed NPDES Permit Effluent Limitations or Operational Requirements | 4 |
| 2 | Potential Sources of Pollutants of Concern | 5 |
| 3 | Compliance Schedule – Aluminum, Chlorodibromomethane, Dichlorobromomethane Nitrate plus Nitrite and Nitrite | 8 |
| 4 | Compliance Schedule – Ammonia, Turbidity, Total Coliform, BOD, Suspended Solids, Title 22 or Equivalent, and Continuous Monitoring System Requirements | 9 |

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

GLOSSARY OF TERMS

| Term | Description |
|-----------------------|--|
| ADWF | average dry weather flow |
| AF | acre feet |
| BOD | biochemical oxygen demand |
| CCR | California Code of Regulations |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| County | Placer County, Department of Facility Services |
| Cl or Cl ₂ | chlorine |
| CMC | Criteria Maximum Concentration |
| CTR | California Toxics Rule |
| CWA | Clean Water Act (Federal Water Pollution Control Act, PL 92-500 as amended) |
| DFG | State of California, Department of Fish and Game |
| DPH | State of California, Department of Public Health |
| DO | dissolved oxygen |
| EC | electrical conductivity |
| EPA | (see USEPA) |
| gpd | gallons per day |
| gph | gallons per hour |
| gpm | gallons per minute |
| h | hour |
| I/I | Infiltration and Inflow |
| kg | kilograms |
| lb/day | pounds per day |
| LF | lineal feet |
| MCL | maximum containment level |
| MEC | maximum effluent concentration |
| mgd | million gallons per day of water or wastewater flow (one mgd equals 694.4 gallons per minute). |
| mg/L | milligrams per liter (parts per million) |
| ml | milliliter |
| MPN | most probable number (organism count) |

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

GLOSSARY OF TERMS

| Term | Description |
|-----------------|--|
| N | nitrogen |
| NEPA | National Environmental Policy Act |
| NPDES | National Pollutant Discharge Elimination System. An enforceable permit system established by the Clean Water Act for discharges to surface water |
| NTR | National Toxics Rule |
| NTU | nephelometric turbidity unit(s) |
| O&M | operations and maintenance |
| RPA | Reasonable Potential Analysis |
| RWQCB | California Regional Water Quality Control Board, Central Valley Region |
| SMD 1 WWTP | Sewer Maintenance District 1 Wastewater Treatment Plant |
| SRF | State Revolving Fund |
| SWRCB | State Water Resources Control Board |
| THM | trihalomethane |
| TSS | total suspended solids |
| TTHMs | total trihalomethanes |
| µg/L | micrograms per liter (parts per billion) |
| USEPA | United States Environmental Protection Agency. |
| UV | ultraviolet light |
| WAS | waste activated sludge |
| WQC | water quality criteria |
| WQO | water quality objective |
| WWTP | Wastewater Treatment Plant |
| 40 CFR Part 403 | Federal pretreatment regulations promulgated under CWA |

**INFEASIBILITY REPORT
FOR THE
SEWER MAINTENANCE DISTRICT 1 WASTEWATER TREATMENT PLANT**

1 INTRODUCTION

1.1 Background. The Placer County, Department of Facility Services (County) owns and operates the Sewer Maintenance District No.1 Wastewater Treatment Plant (SMD 1 WWTP). Treated water from the SMD 1 WWTP is discharged to Rock Creek. The current waste discharge requirements are specified in Order No. R5-2005-0074, NPDES Permit No. CA0079316, Waste Discharge Requirements for Placer County Department of Facility Services, Placer County Sewer Maintenance District No. 1 Wastewater Treatment Plant, Placer County (NPDES Permit).

Rock Creek is a small, perennial creek of the western Sierra Nevada range. Rock Creek is a tributary to Dry Creek, the Bear River, and the Sacramento River, and is within the Upper Cool-Upper Auburn watershed.

As described in much greater detail in the County's NPDES permit application dated November 2009, major improvements to the existing treatment plant are proposed with an expected completion date of April 2015. After completion of the SMD 1 WWTP Upgrade Project, the treatment process will include the following major components:

- New headworks with improved screening and grit removal equipment.
- New primary clarifiers.
- New flow equalization facilities.
- New aeration basins with biological nutrient removal capability.
- New secondary clarifiers.
- New tertiary filters.
- New ultraviolet disinfection facilities.
- New post-disinfection effluent aeration facilities.
- Converted Waste Activated Sludge (WAS) holding basins.
- Solids process improvements, including new and two renovated anaerobic digesters.

1.2 Reasonable Potential Analysis (RPA). The Central Valley Regional Water Quality Control Board (RWQCB) has initiated the renewal process for NPDES Permit No. CA0078956 for the SMD 1 WWTP. On March 12, 2010, the RWQCB issued a tentative permit. Appendix G of the tentative draft presented the results from the RPA conducted by RWQCB staff. The purpose of the RPA is "to determine whether the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality objectives." The RWQCB developed proposed effluent limits whenever:

- The observed maximum effluent concentration (MEC) exceeds applicable water quality objectives and criteria (WQO/WQC) or;
- A receiving water background concentration for a pollutant constituent exceeds an applicable WQO/WQC and the constituent was detected in the effluent.

The RWQCB has requested that the County submit an Infeasibility Report that demonstrates that compliance with some of the proposed permit limitations is currently infeasible. In order for a compliance schedule to be included in the proposed NPDES permit for the identified constituents, the Infeasibility Report must include the following justification:

1. *Documentation that the Discharger has made diligent efforts to quantify pollutant levels in the discharge and identify the sources of the pollutants in the waste stream. The documentation must include the results of those efforts and a statement that the Discharger will continue to monitor priority pollutants.*
2. *Documentation of source control and/or pollution minimization efforts is currently underway or completed. The documentation must include a discussion on all the actions necessary to reduce the pollutants in the waste stream at the source and an update on current actions being implemented for source control, etc.*
3. *A proposed schedule for additional source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades). The schedule must include an outline and time schedule to accomplish specific milestones, such as:*
 - a. *Facility optimization and analysis of influent/effluent monitoring data to achieve compliance and evaluate technologies available to meet effluent limitations;*
 - b. *Source water data (i.e., quarterly monitoring reports); and*
 - c. *Process controls and strategies to meet effluent limits.*
4. *Documentation demonstrating that the proposed schedule is as short as practicable, including a time schedule of tasks to accomplish each milestone."*

In accordance with Section 2.1 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (referred to as the Statewide Implementation Plan or SIP), this Infeasibility Report will address the following constituents with proposed effluent limitations based on the California Toxics Rule (CTR) or National Toxics Rule (NTR) criteria:

- Chlorodibromomethane; and
- Dichlorobromomethane.

In addition, the report will address the following non-CTR/NTR constituents with proposed effluent limitations or other criteria:

- BOD;
- Total suspended solids;
- Aluminum;
- Ammonia (as Nitrogen);
- Nitrite (as Nitrogen);
- Nitrate plus Nitrite (as Nitrogen);
- Total Coliform; and
- Turbidity.

1.3 Purpose of this Infeasibility Report. The purpose of this report is to present information in support of the County's request for compliance schedules associated with the reissued NPDES permit for the SMD 1 WWTP. Information presented in this report demonstrates it is infeasible for the County to achieve immediate compliance with some of the proposed effluent limitations.

The requested compliance schedules will provide County with the opportunity to design, construct, and startup the new SMD 1 WWTP improvements, and/or implement other measures to achieve compliance. Other measures may include, but would not necessarily be limited to, additional source control and modifications in treatment plant operations and/or other facility improvements.

2 DEMONSTRATION OF INFEASIBILITY TO IMMEDIATELY COMPLY

Table 1 lists the constituents with the potential to exceed the NPDES identified permit effluent limitations, and the corresponding maximum effluent concentration (MEC) based on results from SMD 1 WWTP effluent sampling between July 2005 and June 2009. The list includes chlorodibromomethane, bromodichloromethane, aluminum, ammonia (as nitrogen), BOD, nitrite (as nitrogen), nitrate + nitrite (as nitrogen), total coliform, TSS, and turbidity.

Measures already taken by the County to achieve compliance includes:

- Proceeding with the approximately \$60 million SMD 1 WWTP Upgrade project. A preliminary design report has already been prepared. The project will substantially upgrade primary, secondary, tertiary, disinfection, and solids treatment processes at the existing treatment plant.
- In accordance with the existing SMD 1 WWTP NPDES Permit, preparing and submitting a number of reports related to these pollutants to the RWQCB:
- Continuing with projects that decrease infiltration/inflow (I/I).

The requested schedules for meeting the proposed effluent limitations are presented in Section 6 of this report. The requested schedules are driven primarily by the need to construct WWTP upgrades and, thereby, reflect the shortest practical time frame to meet the requirements

3 POTENTIAL SOURCES OF DOCUMENTED POLLUTANTS

The County has conducted a number of studies and has prepared a number of reports that address the potential sources for these pollutants. These studies include:

- Cease and Desist Order No. 2 Report (Nitrate and Nitrite) – July 2007.
- Cease and Desist Order No. 3 Report (Non-CTR Constituents and Turbidity) – July 2007.
- Provision F.10. Report on Study (CTR Constituents) – July 2007.
- BPTC Analysis Report – January 2008.
- I/I Reduction Program Compliance Report – January 2009.
- Industrial Pretreatment Program Report – September 2005.
- Pollution Prevention Plan for Sewer Maintenance District No. 1 – August 2005.

The County wastewater collection system receives wastewater from residential and commercial users. There are no significant industrial users. However, as noted in the County's Report of Waste Discharge, which was submitted in October 2009, there are two users that discharge groundwater remediation wastes to the WWTP.

Table 1. Constituents with Potential to Exceed Proposed NPDES Permit Effluent Limitations or Operational Requirements.

| Constituent | Units | RWQCB RPA | | MEC | County Effluent Data 7/05 Through 6/09 | |
|---------------------------------|------------|-------------------------------|---------------|-------|---|-----|
| | | Proposed Effluent Limitations | | | Samples Greater than Average Monthly Limitation | |
| | | Average Monthly | Maximum Daily | | Number | % |
| Chlorodibromomethane | µg/L | 0.41 ^a | 0.82 | 0.97 | 1 of 7 | 14 |
| Bromodichloromethane | µg/L | 0.56 ^a | 1.5 | 14 | 18 of 24 | 72 |
| Aluminum, Total Recoverable | µg/L | 68 | 151 | 162 | 9 of 24 | 28 |
| Ammonia (as Nitrogen) | mg/L | 1.4 | 3.9 | 28 | 529 of 1094 | 59 |
| BOD | mg/L | 10 | 25 | 13.3 | 2 of 781 | 24 |
| Nitrite (as Nitrogen) | mg/L | 1.0 | - | 3.12 | 70 of 1094 | 0 |
| Nitrate + Nitrite (as Nitrogen) | mg/L | 10 | - | 49 | 36 of 1094 | 100 |
| Total Coliform | MPN/100 ml | 2.2/23/240 ^b | | >1600 | 63 of 1095 ^{c,d} | 17 |
| TSS | mg/L | 10 | 25 | 23.5 | 427 of 784 | 0 |
| Turbidity | NTU | 2/5/10 ^e | | | 24 of 1035 ^{f,g} | <1 |

Notes:

- ^a California Toxics Rule (CTR) human health criterion for the consumption of water and organisms.
- ^b Proposed effluent limitations: 2.2 MPN 7-day median, 23 MPN not more than once in 30 days, and 240 MPN instantaneous maximum.
- ^c No average monthly limitation is proposed, 7-day median limitation of 2.2 MPN/100ml used.
- ^d Total coliform exceeded 240 MPN/100 ml on 1 occasion.
- ^e Proposed operational requirements: 2 NTU daily average, 5 NTU not more than 5% of time in a 24-hour period, and 10 NTU maximum.
- ^f No average monthly limitation is proposed, average daily limitation of 2 NTU used.
- ^g Turbidity also exceeded 5 NTU on 43 occasions and 10 NTU on 6 occasions.

Table 2 presents a summary of the potential sources for each of the pollutants of concern. Table 2 is based on our current understanding of the domestic water supply quality, the existing SMD 1 WWTP system, potential sources that the County was identified, and generally acknowledged sources within the wastewater industry.

The water supply for the SMD 1 WWTP service area consists of treated water supplied by either Nevada Irrigation District (NID) or Placer County Water Agency (PCWA). The water supply that is provided by NID and/or PCWA is treated to meet State and Federal drinking water standards.

Table 2. Potential Sources of Pollutants of Concern

| Constituent | Potential Sources in SMD 1 WWTP Effluent |
|-----------------------------|--|
| Aluminum, Total Recoverable | Domestic water supply. Domestic and non-domestic wastewater; wastewater treatment processes; water treatment plants, ceramic manufacturers, and sediments containing clay entering the collection system with infiltration/inflow (I/I). |
| Ammonia-Nitrogen | Domestic and non-domestic wastewater. |
| BOD | Domestic and non-domestic wastewater. |
| Chlorodibromomethane | Domestic water and treated wastewater disinfection process (disinfection by-product). Domestic and non-domestic wastewater. |
| Bromodichloromethane | Domestic water treated wastewater disinfection process (disinfection by-product). Domestic and non-domestic wastewater. |
| Nitrate and Nitrite | Domestic and non-domestic wastewater. Oxidation of ammonia compounds in the wastewater treatment process. |
| TSS | Domestic and non-domestic wastewater. Sediments containing suspended solids entering collection system with infiltration/inflow (I/I). |
| Total Coliform Bacteria | Domestic and non-domestic wastewater. |
| Turbidity | Domestic and non-domestic wastewater. |

Pollutants in the SMD 1 WWTP effluent can originate from one or more sources, including potable water supplies, residential and non-residential wastewater, infiltration/inflow, dust, and the wastewater treatment processes. The following describes the potential sources in greater detail. In most cases, the specific sources are currently unknown.

- 3.1 Aluminum.** One of the most abundant elements on the face of the earth, aluminum occurs in many rocks and ores, but never as a pure metal in nature. Aluminum may result from sediments containing clay. Aluminum is contained in alum, which is one of the most common coagulants used for potable water treatment in the United States. The most probable sources of Aluminum include water treatment plants, a ceramic manufacturer, and sediments containing clay that enter the collection system with I/I.
- 3.2 Ammonia-Nitrogen.** Sources of Ammonia-Nitrogen include untreated domestic wastewater. Biological nitrification, which is used to treat wastewater at the SMD 1 WWTP, converts ammonia to nitrate. However, the existing WWTP is not designed for year-round compliance with the ammonia effluent limitation.
- 3.3 BOD.** Biochemical Oxygen Demand, or BOD, is a measure of the quantity of oxygen consumed by microorganisms during the decomposition of organic matter, and is an indirect measure of biodegradable organic compounds in water.

In waterways, natural sources of BOD include organic matter entering the water (leaf fall from vegetation near the water's edge, aquatic plants) and drainage from organically rich areas like swamps and bogs. There are also anthropogenic (human) sources of organic matter. Major point sources, which may contribute high levels of BOD, include wastewater treatment facilities and meat and food processing plants. Typical nonpoint sources include agricultural runoff, urban runoff, and livestock operations.

The most likely sources for this pollutant in SMD 1 WWTP effluent is wastewater from domestic and non-domestic services.

3.4 Chlorodibromomethane. Chlorodibromomethane is a disinfection by-product (i.e., a by-product created during chlorine disinfection). The sources of chlorodibromomethane in the SMD 1 WWTP effluent include the final effluent disinfection process, and the domestic water supply disinfection process. The domestic (residential) wastewater sources include consumer products (e.g., chlorine bleach, chlorine-based disinfectants).

3.5 Bromodichloromethane. Bromodichloromethane is a disinfection by-product. The sources of bromodichloromethane in the SMD 1 WWTP effluent include the final effluent disinfection process, and the domestic water supply disinfection process. The domestic (residential) wastewater sources include consumer products (e.g., chlorine bleach, chlorine-based disinfectants).

3.6 Nitrate and Nitrite Nitrogen. Sources of Nitrate-Nitrogen and Nitrite-Nitrogen include domestic wastewater. Biological nitrification, which is used to treat wastewater at the SMD 1 WWTP, converts ammonia to nitrate. Nitrogen enters the domestic wastewater stream primarily as urea and combined in feces and other organic material. Although industrial discharges can add significant quantities of Nitrogen to the wastewater stream, there are no known industries (e.g., feedlots and fertilizer manufacturers) discharging wastes that are high in Nitrogen.

3.7 TSS. Sources of TSS include untreated domestic wastewater. There are no known industries discharging wastes that are high in suspended solids into the SMD 1 sewer collection system.

3.8 Total Coliform. Sources of total coliform bacteria include untreated domestic wastewater. There are no known industries discharging wastes that are high in total coliform bacteria into the SMD 1 sewer collection system.

3.9 Turbidity. Sources of turbidity include untreated domestic wastewater. There are no known industries currently discharging wastes that are high in turbidity.

4 EXISTING SOURCE CONTROL AND POLLUTION MINIMIZATION PRACTICES.

Because the SMD 1 WWTP service area contains primarily residential and commercial users, the County has not conducted pollution prevention activities for the constituents discussed in this analysis. However, the County code does include prohibitions against discharges to the sewer system that contain substances or have characteristics which, either alone or by interaction with other wastewaters, cause or threaten to cause:

- Damage to the publically owned treatment works (POTW).
- Interference with or impairment of, operation of maintenance of County facilities, including flow overloading.
- Obstruction of flow.

- Danger to life or safety of any person.
- Interference with treatment or disposal processes.
- Flammable or explosive conditions.
- Noxious or malodorous gases or odors.
- Discoloration or any other condition in the quality of the County's treatment plant effluent such that water quality requirements cannot be met by the County.

The County Code sets uniform requirements for discharges into the wastewater collection and treatment system, including the disposal of industrial wastes. All development applications for businesses that establish within the County undergo building plan review and approval through the Community Development Resource Agency.

5 PLANNED CONSTRUCTION AND ADDITIONAL SOURCE CONTROL AND POLLUTANT MINIMIZATION ACTIONS

Achieving full compliance with any or all of the constituents will require treatment plant modifications which would involve engineering design, and construction of the proposed improvements at the SMD 1 WWTP. The schedule for that construction is presented in Section 6. In addition, the County is proposing the following additional actions to address permit compliance. The actions include three distinct components: (1) treatment plant startup and optimization; (2) compliance monitoring and (3) long-term compliance response planning and implementation, if compliance problems continue to exist and improvements are deemed necessary.

- 5.1 Treatment Plant Startup, Performance Testing, and Optimization.** After the new facilities are placed in service, the plant operators will need a startup and performance testing period to optimize the treatment processes and effluent quality.
- 5.2 Compliance Monitoring and Data Evaluation.** Compliance monitoring will be utilized to confirm effluent concentrations and potential sources for aluminum, and determine if additional actions such as source control, or operations modifications are needed.
- 5.3 Compliance Response Planning and Implementation.** Should compliance monitoring confirm that the effluent quality produced at the SMD 1 WWTP exceeds the NPDES permit limitations for a specific constituent and the upgrade project would not be expected to be sufficient to achieve compliance, the County would initiate the planning and implementation of appropriate response activities. Several options are available to provide for successful future compliance, including, but not limited to: (a) source control and pollutant minimization actions; (b) development and implementation of alternative operational strategies; or (c) further upgrades to aspects of the SMD 1 WWTP facilities and treatment processes. As required, the County will implement its industrial pretreatment program to regulate pollutants contributed by non-residential users and on-going I/I efforts to mitigate the quantity of sediment that enters the sewer system. The appropriate response may require program/study development and implementation, engineering feasibility and alternatives development, alternatives screening and selection, engineering pre-design, design, and construction.

6 REQUESTED TIME SCHEDULES

As shown in Table 1, based upon results of past effluent monitoring, the SMD 1 WWTP effluent concentrations have exceeded each of the proposed effluent limitations. The SMD 1 WWTP will have difficulty consistently complying with the proposed effluent limitations until sufficient testing has occurred to demonstrate the performance of the Upgrade Project; additional source control

monitoring has occurred and control measures have been implemented; changes have been made in wastewater or potable water treatment plant operations; and/or other remedies have been identified and implemented, including additional "clean" sampling to demonstrate that no reasonable potential exists. Adequate time is required for treatment plant startup and performance testing; initial data evaluations; engineering feasibility and alternatives development (including initiation of special studies, as needed), alternatives screening and selection; and pre-design, design, and possible construction of facility upgrades. A performance period is necessary in accordance with SRF Loan requirements.

Furthermore, the SMD 1 WWTP is expected to meet proposed limitations for Bromodichloromethane, and Dibromochloromethane through ultraviolet light (UV) disinfection in the SMD 1 WWTP Upgrade project rather than chlorine disinfection currently used. However, the ability to comply with proposed limits for these constituents cannot be fully ascertained until the Upgrade Project becomes operational and effluent data are collected. The UV disinfection facilities cannot remove these constituents, but significantly reduce the potential for generating these disinfection by-products during wastewater disinfection.

The proposed time schedules are summarized in Tables 3 and 4.

Aluminum, Nitrate plus Nitrite and Nitrite, Chlorodibromomethane, Dichlorobromomethane. Compliance with the proposed aluminum, nitrate plus nitrite, and nitrite effluent limits will require construction and operation of treatment plant improvements, and possibly identification and control of potential pollutant sources.

Table 3 shows the estimated duration for each of the required tasks and the estimated completion dates. Since the project may be at least partially funded using a State Revolving Fund (SRF) loan, a duration of 5 months is proposed for obtaining bids, and receiving Approval-to-Award and an SRF loan agreement from the SWRCB. Further, a 36-month construction period is needed because the WWTP upgrades must be constructed sequentially while the existing treatment facilities remain in service. Upon completion of construction, 4 months has been provided to startup, test, and optimize the treatment process.

Table 3. Compliance Schedule – Aluminum, Chlorodibromomethane, Dichlorobromomethane, Nitrate plus Nitrite and Nitrite.

| Task | Estimated Duration (Months) | Estimated Completion Date |
|--|-----------------------------|---------------------------|
| Award final design and environmental consultant contracts | --- | May 2011 |
| Design improvements and prepare California Environmental Quality Act (CEQA) document | 13 | 31 July 2011 |
| Complete final design | --- | 31 July 2011 |
| Complete CEQA document | --- | 31 July 2011 |
| Obtain bids and project funding, and award construction contract | 5 | 31 December 2011 |
| Construct improvements | 36 | 31 December 2014 |
| Startup and performance testing | 4 | 30 April 2015 |
| Full compliance with effluent limitations | --- | 1 May 2015 |

Ammonia, Turbidity, Total Coliform, BOD, Total Suspended Solids, Ammonia (as Nitrogen), Total Coliform, and Turbidity. Effluent Limitations and the Title 22 or Equivalent and Continuous Monitoring Systems Requirements. Compliance schedules are also requested for these limitations and requirements. Based on existing monitoring data, the treatment plant has periodically had difficulty in complying with the effluent limitation requirements year-round because the plant was originally designed around 1960 to comply with the requirements seasonally. Therefore, due to design constraints, there is no feasible method to optimize existing treatment unit processes in order to immediately meet these effluent limitations. It is reasonable to expect that the SMD 1 WWTP will continue to experience such difficulties until the Upgrade project is complete and fully operational. In addition, the tentative permit includes the new Title 22 or Equivalent and Continuous Monitoring System requirements that will also require completion of the upgrade project.

Table 4 shows the estimated duration for each of the required tasks and the estimated completion dates. Since the project may be at least partially funded using a State Revolving Fund (SRF) loan, a duration of 5 months is proposed for obtaining bids and receiving Approval-to-Award and an SRF loan agreement from the SWRCB. Further, a 36-month construction period is needed because the WWTP upgrades must be constructed sequentially while the existing treatment facilities remain in service. Upon completion of construction, 4 months has been provided to startup, test, and optimize the treatment process.

Table 4. Compliance Schedule – Ammonia, Turbidity, Total Coliform, BOD, Suspended Solids, Title 22 or Equivalent, and Continuous Monitoring System Requirements.

| Task | Estimated Duration (Months) | Estimated Completion Date |
|--|-----------------------------|---------------------------|
| Award final design and environmental consultant contracts | --- | May 2011 |
| Design improvements and prepare California Environmental Quality Act (CEQA) document | 13 | 31 July 2011 |
| Complete final design | --- | 31 July 2011 |
| Complete CEQA document | --- | 31 July 2011 |
| Obtain bids and project funding, and award construction contract | 5 | 31 December 2011 |
| Construct improvements | 36 | 31 December 2014 |
| Startup and performance testing | 4 | 30 April 2015 |
| Full compliance with effluent limitations | --- | 1 May 2015 |

7 REFERENCES

7.1 Literature Cited:

- California Regional Water Quality Control Board, Central Valley Region. Water Quality Control Plan (Basin Plan) Central Valley Region Sacramento River and San Joaquin River Basins, 1998.
- Owen Engineering & Management Consultants, Inc., and Robertson-Bryan, Inc., Data Collection Plan in Support of NPDES Permit Study Provision R.10 and Cease & Desist Order Item #3, December 2006.
- Owen Engineering & Management Consultants, Inc., Placer County SMD 1 Wastewater Master Plan Cease and Desist Order Item No. 2, Data Collection Plan, June 2007.

- Owen Engineering & Management Consultants, Inc., Placer County SMD 1 Wastewater Master Plan Cease and Desist Order Item No. 2 Report (Nitrate and Nitrite), July 2007.
- Owen Engineering & Management Consultants, Inc., Placer County SMD 1 Wastewater Master Plan Cease and Desist Order Item No. 3 Report (Non-CTR Constituents and Turbidity), July 2007.
- Owen Engineering & Management Consultants, Inc., Placer County SMD 1 Wastewater Master Plan Provision F.10 Report on Study (CTR Constituents), July 2007.
- Owen Psomas, SMD 1 WWTP Upgrade and Expansion Preliminary Design Report, Placer County, California, April 2010.
- Owen Psomas, Report of Waste Discharge SMD 1 Wastewater Treatment Plant, NPDES Permit No. CA0079316, September 2009.
- Owen Psomas, Placer County SMD 1 Wastewater Master Plan BPTC Analysis Report, January 2008.
- Owen Psomas, Placer County SMD 1 Wastewater Master Plan, Facility Assessment Report, Project No. 06-306, December 2007.
- Owen Psomas, Letter to David Atkinson, Placer County Department of Facility Services, Project No. 06-306.4, October 19, 2007.
- Placer County Sewer Maintenance District No. 1, I/I Reduction Program Report, January 2009.
- Placer County Sewer Maintenance District No. 1, Industrial Pretreatment Program Volumes 1 and 2, September 2005.
- Placer County Department of Facility Services, Pollution Prevention Plan for Sewer Maintenance District No. 1, August 2005.
- State Water Resources Control Board. Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. California Environmental Protection Agency, 2005.
- U.S. Environmental Protection Agency. Technical Support Document for Water Quality-Based Toxics Control. EPA 505290001. Office of Enforcement and Permits, Office of Water Regulations and Standards. Washington, D.C., 1991.