Donner Summit Public Utility District
Pollution Prevention Plan

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Prepared for
Donner Summit Public Utility District

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1.0 INTRODUCTION

On April 24, 2009 Donner Summit PUD received a Cease and Desist Order (CDO) (No. R5-2009-0035) requiring the District's Wastewater Treatment Plant (WWTP) to comply with requirements prescribed in Order No. R5-2009-0034 (NPDES Permit No. CA0081621). The Order contains new or more stringent effluent limitations for the following constituents which are addressed in this Plan.

- Ammonia
- Nitrate
- Copper
- Manganese
- Silver
- Zinc
- Cyanide
- Diclorobromomethane
- Aldrin
- Alpha BHC

Compliance with these effluent limitations is not immediately achievable. Therefore, the Regional Water Board issued a Cease and Desist Order (CDO) to allow a schedule for achieving compliance with the Order. Full compliance with effluent limitations is required no later than five years from the adoption date of the Order and CDO (April 23, 2014). To comply with the CDO, the District is required to submit a Pollution Prevention Plan (PPP) for the 10 constituents of concern by July 23rd 2009. In addition, the District is required submit progress report twice per year, on January 1st and July 1st, describing steps taken or implemented to achieve full compliance by the final compliance date. This document was prepared to fulfill the Pollution Prevention Plan (PPP) requirement of the CDO.

2.0 EFFLUENT LIMITATIONS

The CDO contains interim effluent limitations for ammonia, nitrate, copper, manganese, silver, zinc cyanide, diclorobromomethane, aldrin, and alpha BHC that are effective until April 23, 2014. These interim limitations will remain in place, as long as the District complies with the provisions of the CDO. Interim and final effluent limitations for the 10 constituents of concern are shown in Table 1.

Table 1
Donner Summit PUD WWTP Effluent Limitations

Constituent	Units	Interim Effluent Limitation (Daily Maximum)	Final Effluent Limitations			
			Annual Average	Daily Maximum	Instantaneous Maximum	Monthly Average
Ammonia as N	mg/L	39	--	5.6	--	2.1
Nitrate as N	mg/L	53	--	--	--	10
Copper	µg/L	24	--	3.1	--	1.5
Manganese	µg/L	275	50	--	--	--
Silver	µg/L	0.81	--	--	0.23	--
Zinc	µg/L	96	--	30	--	15
Cyanide	µg/L	103	--	8.5	--	4.3
Dichlorobromomethane	µg/L	5.7	--	1.2	--	0.56
Aldrin	µg/L	0.016	--	--	ND	--
Alpha BHC	µg/L	0.14	--	--	ND	--

ND = Non-detect

3.0 POLLUTION PREVENTION PLAN REQUIREMENTS

California Water Code (CWC) Section 13263.3 describes a Pollution Prevention Plan as containing the following elements:

1. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent;
2. An analysis of the methods that could be used to prevent the discharge of the pollutants;
3. An estimate of load reductions that may be attained through the methods identified in item 2;
4. A plan for monitoring the results of the pollution prevention program;
5. A description of the tasks, costs, and time required to investigate and implement elements in the pollution prevention plan;
6. A statement of pollution prevention goals and strategies, including immediate, short and long term action;
7. A description of existing pollution prevention programs;
8. An analysis, to the extent feasible, of any adverse environmental impacts that may result from pollution prevention actions; and
9. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

4.0 SOURCES OF CONSTITUENTS OF CONCERN

The Donner Summit PUD WWTP receives wastewater primarily from domestic and light commercial sources. Possible sources of these pollutants of concerns are presented in Table 2.

Table 2
General Sources of Constituents of Concern in WWTP Effluent

Constituent	Source
Ammonia	▪ Ammonia is an intrinsic constituent of the influent wastewater √
Nitrate	▪ Nitrate is produced in the WWTP from the oxidation of ammonia √
Copper	▪ Potable Water Supply ▪ Potable Water Distribution System Corrosion ▪ Infiltration/Inflow – leaching from natural deposits ▪ Dietary supplements ▪ Paint ▪ Pesticides
Manganese	▪ Infiltration/Inflow – leaching from natural deposits √ ▪ Potable Water Supply ▪ Dietary supplements ▪ Fertilizers ▪ Disinfectants ▪ Paint
Silver	▪ The primary source of silver is from the discharge of untreated or improperly treated silver-bearing fixer from photographic material processing. Including, but not limited to, development of silver bearing film, x-ray film or photographic paper
Zinc	▪ Potable Water Supply ▪ Infiltration/Inflow – leaching from natural deposits ▪ Paint ▪ Dietary supplements ▪ Pesticides ▪ Coating on galvanized pipe
Cyanide	▪ Rodent poison √ ▪ Generated in the WWTP by disinfection √ ▪ False high concentration due to sample preservation procedures √
Dichlorobromomethane	▪ Chlorine disinfection by-product in water and wastewater treatment √
Aldrin	▪ Aldrin was used as an insecticide. In 1974, EPA suspended nearly all uses of aldrin.
Alpha BHC	▪ An alpha isomer of benzene hexachloride insecticide that is a chlorinated hydrocarbon. Alpha-BHC is no longer produced/sold for domestic use.

√ indicates probable sources in the Donner Summit PUD service area

Recent available monitoring data were compiled for the purpose of assessing compliance with the final effluent limitations in the Order, which will become effective April 23, 2014, and to evaluate the data for insight into potential sources.

4.1 AMMONIA AND NITRATE

Untreated wastewater contains ammonia and organic nitrogen, which are considered intrinsic constituents of the raw influent wastewater. The nitrogen present in raw wastewater is primarily combined with protienaceous matter and urea. Organic nitrogen is decomposed readily by bacteria to ammonia in the treatment process. There is no practical source control of ammonia load to the treatment plant but can be removed in the wastewater treatment plant by nitrification, where ammonia is oxidized to nitrate. Subsequently, nitrate can be converted to nitrogen gas, which escapes into atmosphere by the dentrification process.

The existing wastewater treatment plant is intended to provide ammonia and nitrate removal biologically by nitrification and dentrification. However, the WWTP can not reliably achieve the ammonia and nitrate final effluent limits especially in the winter months because of the sudden ammonia load increase combined with the low temperature. The District is currently investigating options to upgrade the wastewater treatment plant to comply with the final ammonia and nitrate effluent limits.

4.2 COPPER AND ZINC

The final average monthly effluent limitations for copper and zinc, based on hardness dependent CTR analysis for the protection of freshwater aquatic life, are 1.5 and 15 μg/L, respectively, with the final maximum daily effluent limitations for copper and zinc being 3.1 and 31 μg/L, respectively. Historical copper and zinc effluent concentrations consistently exceeded the final average monthly effluent limitations as show in Figure 1 and Figure 2. Historical effluent copper concentrations also consistently exceed the final maximum daily effluent limitation and historical effluent zinc concentrations periodically exceed the final maximum daily effluent limitation.

Only limited historical effluent copper and zinc data are available. However, the Monitoring and Reporting Program included in the current Order, effective in June of 2009, contains monthly effluent monitoring requirements for both copper and zinc. As a result, a more comprehensive effluent copper and zinc database will be available in the future to better characterize effluent concentrations and trends.

Copper contamination generally occurs from corrosion of household copper potable water supply pipes. Copper can not be directly detected or removed by the potable water treatment plant. Instead, EPA is requiring water systems to control the corrosiveness of their water if the level of copper at home taps exceeds an action level.

Copper and zinc are present in commercially available products such as paint, pesticides, and dietary supplements but these sources are believed to have insignificant contributions.

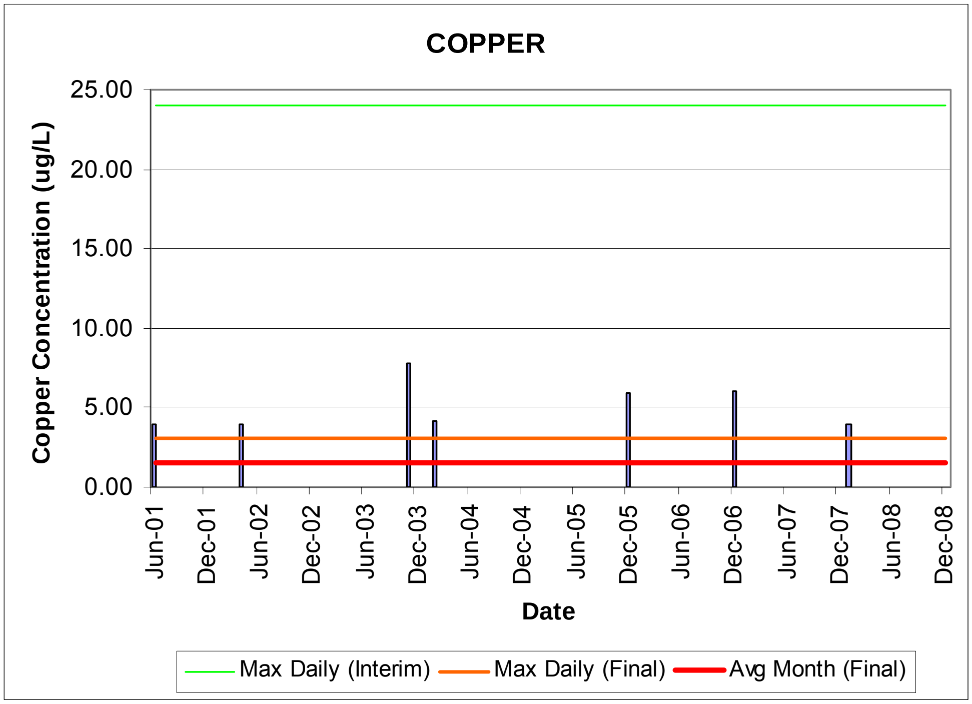

Figure 1
Copper Concentration Measured at DSPUD Effluent between 2001 and 2008

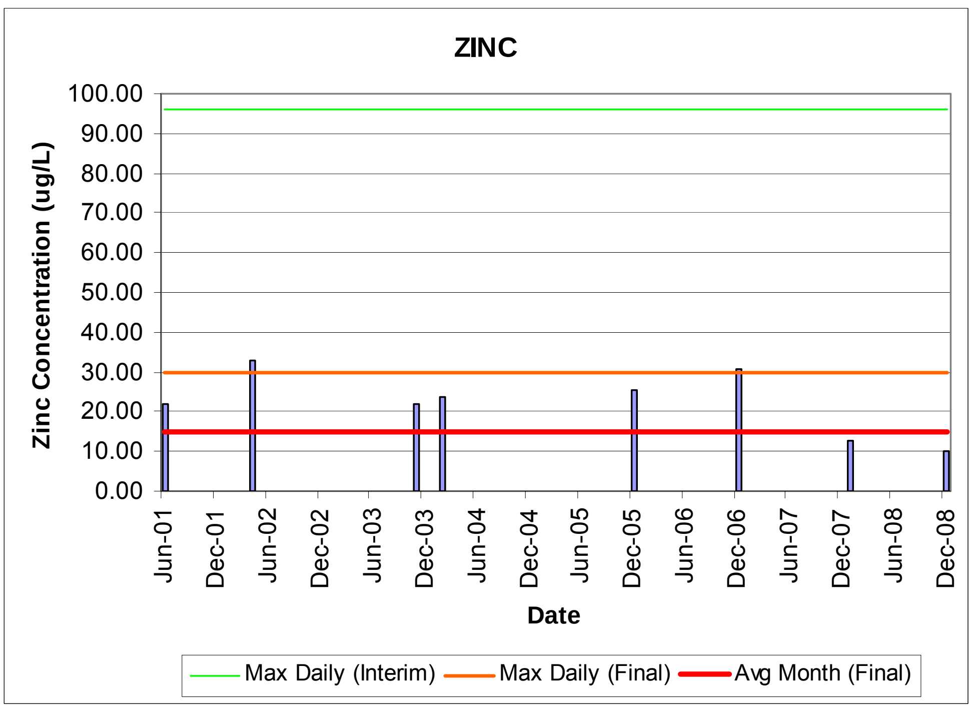

Figure 2
Zinc Concentration Measured at DSPUD Effluent between 2001 and 2008

4.3 MANGANESE

The final average annual effluent limitation for manganese, based on the drinking water Maximum Contaminant Level (MCL), is 50 µg/L. Although only limited historical manganese effluent data are available, recent concentrations exceeded the final average annual effluent limitation as show in Figure 3.

The Monitoring and Reporting Program included in the current Order, effective in June of 2009, contains monthly effluent monitoring requirements for manganese. As a result, a more comprehensive effluent manganese database will be available in the future to more accurately characterize effluent concentrations and trends.

The most recent Donner Summit Consumer Confidence report includes a single potable water supply manganese result of 7 µg/L, from a sample collected in 1997. Based on this result, the potable water supply does not appear to be a likely significant source of manganese in the service area. The District will continue to review potable water supply data as it becomes available. Manganese in wastewater may be attributed to leaching from natural deposits from infiltration and inflow into the collection system.

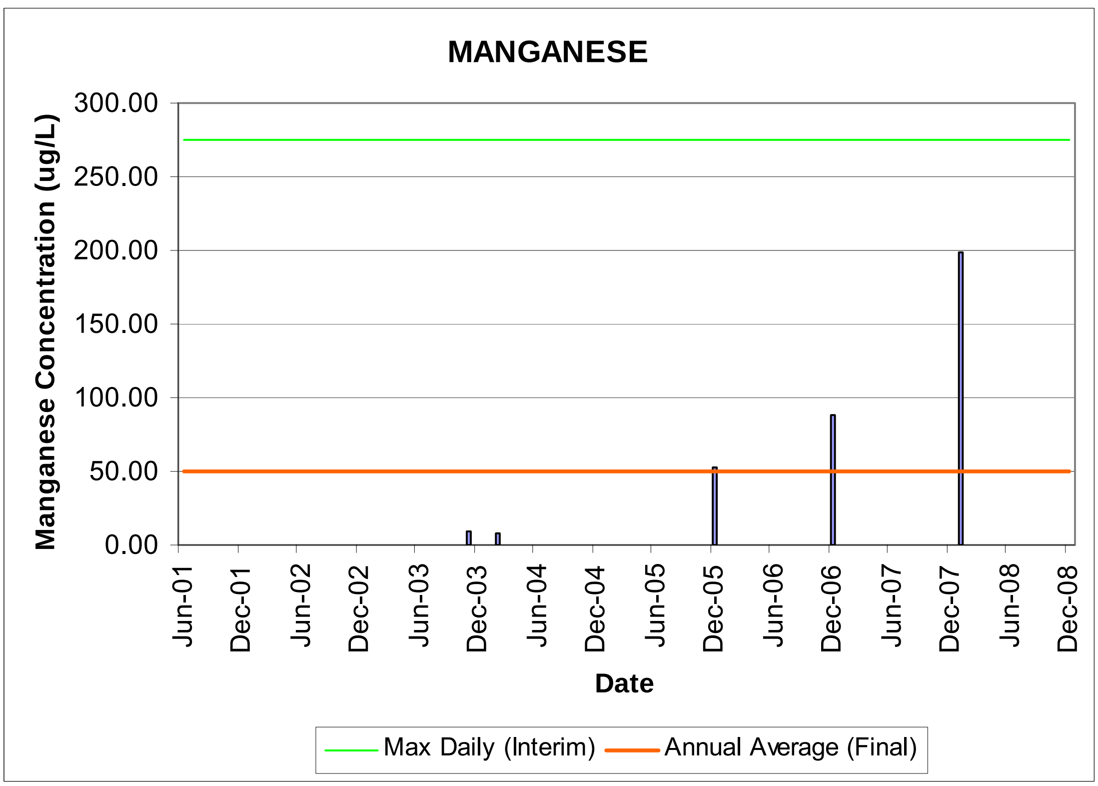

Figure 3
Manganese Concentration Measured at DSPUD between 2001 and 2008

4.4 SILVER

The final instantaneous maximum effluent limitation for silver, based on hardness-dependent standard for the protection of freshwater aquatic life, is 0.23 μg/L. Only limited, and no recent, historical silver effluent data are available, thereby making it difficult to determine whether or not the District will be able to consistently comply with the final effluent limitation for silver. The available effluent silver results are show in Figure 4.

The Monitoring and Reporting Program included in the current Order, effective in June of 2009, contains monthly effluent monitoring requirements for silver. As a result, a more comprehensive effluent silver database will be available in the future to more accurately characterize effluent concentrations and trends, and determine compliance with the final effluent limitation.

Typical sources of silver include the discharge of untreated or improperly treated silver-bearing fixer from photographic material processing, including, but not limited to, development of silver bearing film, x-ray film or photographic paper. No such dischargers are known to exist within the service area.

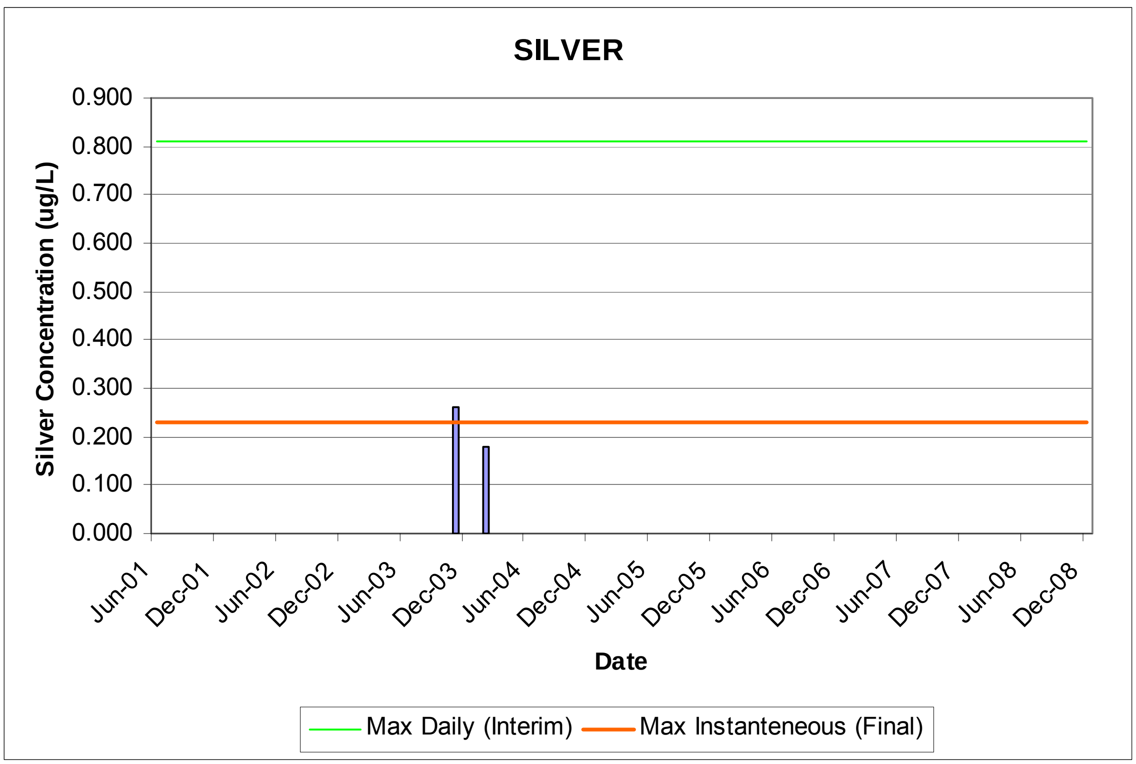

Figure 4
Silver Concentration Measured at DSPUD between 2001 and 2008

4.5 CYANIDE

The final average monthly and daily maximum effluent limitations for cyanide are 4.3 and 8.5 μg/L, respectively. The measured effluent cyanide concentrations have exceeded these limits as shown in Figure 5. This poses a concern that the effluent cyanide concentration may be exceeded when the final effluent limitations become effective.

Influent at municipal wastewater treatment plants typically contains cyanide at low or undetectable concentrations. Cyanide in municipal WWTP influent is generally derived from industrial sources such as, electroplating, steel production, or photographic finishing facilities. In Donner Summit, there are no such industries in the service area. It is possible that the source of cyanide could be from the disposal of rodent poison by seasonal residents within the District's service area. Although influent cyanide concentrations are usually low, many municipal WWTPs have reported periodic detection of elevated concentrations of cyanide in final effluent, and at concentration that exceed influent concentrations. Studies of apparent cyanide formation have shown that chlorination is the process where the cyanide concentration increase occurs. In another recent study, false positive cyanide results have been reported as a result of sample preservation. This indicates that final effluent limitation compliance may be met if unpreserved samples are analyzed can be analyzed as soon as possible after collection. Ideally, samples should be analyzed within 15 minutes of collection. However, quick analysis of samples for cyanide is likely not possible given the proximity of the District to qualified contract laboratories. Furthermore, this approach will require authorization from the Regional Water Board to deviate from conventional sample preservation methods.

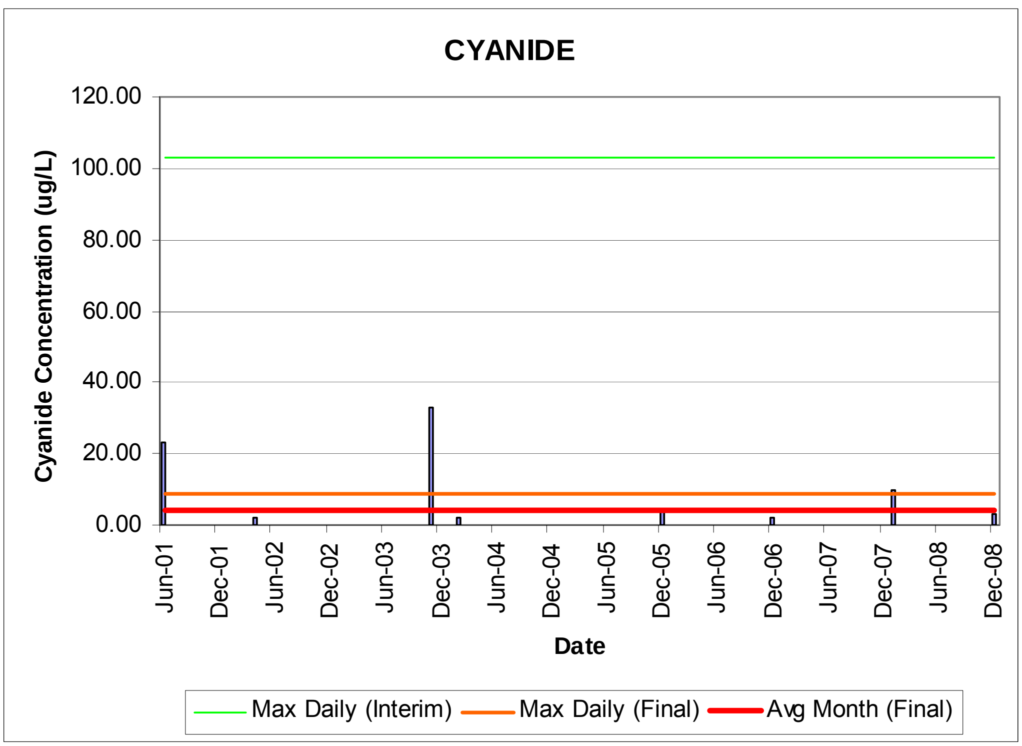

Figure 5
Cyanide Concentration Measured at DSPUD between 2001 and 2008

4.6 DICHLOROBROMOMETHANE

Chlorine disinfection of wastewater effluent is the most likely source of dichlorobromomethane in the WWTP effluent. The final effluent limitations for dichlorobromomethane are 0.56 µg/L as a monthly average and 1.2 µg/L as a daily maximum. Based on the limited historical data, the monthly average and daily maximum final effluent limitations were exceeded one time (December 2005). Historical dichlorobromethane results are shown in Figure 6.

The Monitoring and Reporting Program included in the current Order, effective in June of 2009, contains monthly effluent monitoring requirements for dichlorobromomethan. As a result, a more comprehensive effluent dichalorobromomethane database will be available in the future to more accurately characterize effluent concentrations and trends, and determine compliance with the final effluent limitations.

If ammonia is present in the wastewater effluent at the time of previous sampling events, it is likely that disinfection byproduct formation was limited. When ammonia is present, chlorine forms chloramines and the disinfection process is referred to as chloramination, which is known to substantially reduce disinfection byproducts compared to chlorination. Disinfection byproducts in the effluent can increase if the nitrification system is improved and disinfection is by chlorination.

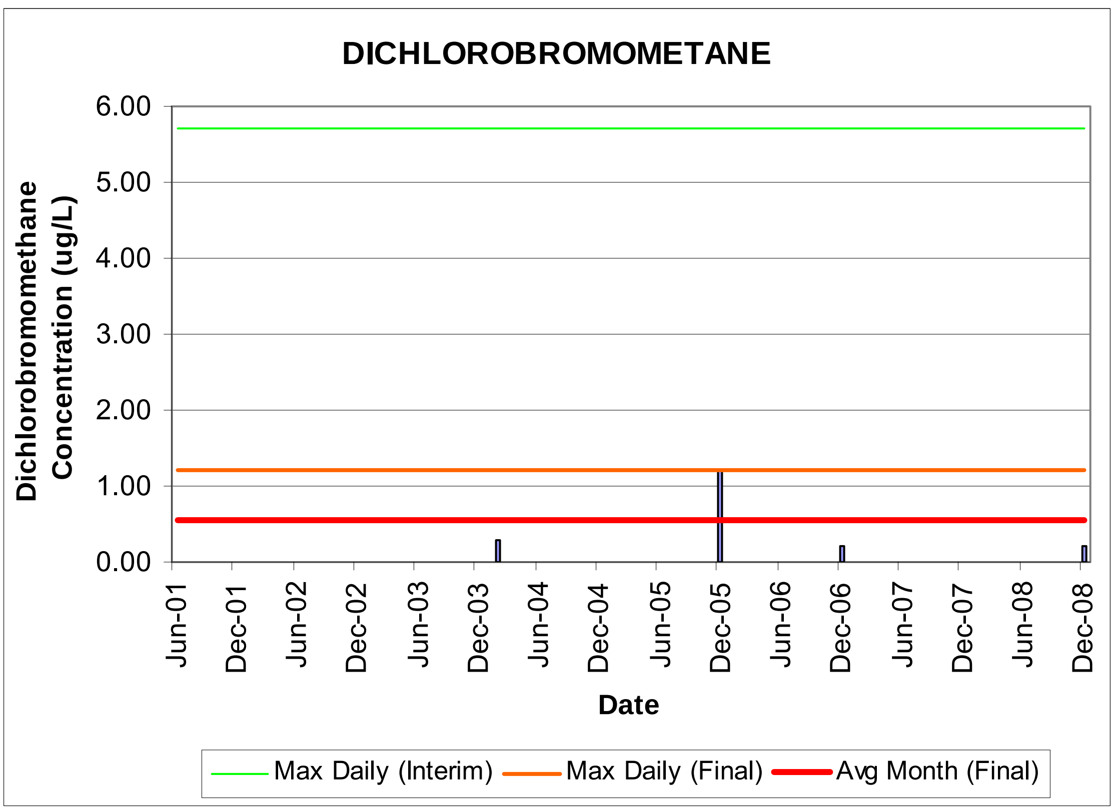

Figure 6
Dichlorobromomethane Concentration Measured at DSPUD between 2001 and 2008

4.7 ALDRIN

Aldrin has been used as an insecticide and a termiticide. In 1974, EPA suspended nearly all uses of aldrin. Ultimately, all uses on food crops were banned. Use as a subterranean termiticide was continued until the late 1980s when the sole importer ceased importing it and canceled its registration. Two minor uses of aldrin that were still allowed include; moth proofing in manufacturing, and application to roots and tops of nonfood plants. These two uses have since ceased voluntarily by industry.

Since 2001, the aldrin concentrations in the WWTP effluent have not been detectable with a detection limit of 0.002 µg/L, with the exception of a February 2004 sample in which aldrin was reported at a concentration below the level at which the result could be quantified. Historical WWTP effluent aldrin data are presented in Table 3. The final maximum instantaneous aldrin effluent limitation is "ND" (or not detected). The interim instantaneous maximum effluent limitation for aldrin is 0.016 µg/L.

Table 3
Aldrin Effluent Concentration

Date	Aldrin (µg/L)
Jun-01	<0.002
Apr-02	<0.002
Nov-03	<0.002
Feb-04	0.005*
Dec-05	<0.002
Dec-06	<0.00028
Jan-08	<0.005
Dec-08	<0.005

* Estimated value; detected but not quantified.

4.8 ALPHA BHC

Alpha-BHC, a human carcinogen, is an alpha isomer of benzene hexachloride insecticide that is a chlorinated hydrocarbon. Alpha-BHC is no longer produced or sold for domestic use. Since 2001, alpha BHC has not been detected in the effluent, with the exception of a sample collected in November 2003, in which alpha BHC concentration was 0.044 µg/L. It is worth noting that a common isomer, gamma BHC (lindane, a persistent chlorinated hydrocarbon pesticide) was not detected in the same sample suggesting the possibility of a laboratory error with regards to the detection of alpha BHC. Historical WWTP effluent alpha BHC data are presented in Table 4. The final maximum instantaneous alpha BHC effluent limitation is "ND" (or not detected). The interim instantaneous maximum effluent limitation for alpha BHC is 0.14 µg/L.

Table 4
Alpha BHC Effluent Concentration

Date	Alpha BHC (µg/L)
Jun-01	<0.005
Apr-02	<0.005
Nov-03	0.044
Feb-04	<0.005
Dec-05	<0.005
Dec-06	<0.00028
Jan-08	<0.005
Dec-08	<0.002

5.0 SOURCE CONTROL

As specified in the California Water Code, a PPP should include an analysis of methods that could be used to prevent the discharge of pollutants into the WWTP. An analysis of possible source control methods for the ten constituents of concern are presented in this section. In addition to the source control measures identified in this Plan, the District is currently in the process of developing a Facilities Plan which will address in detail the constituents included in this Plan. Progress on the implementation of source control measures described in this section will be reported to the Regional Water Board semi-annually, on January 1 and July 1 of each year.

5.1 AMMONIA AND NITRATE

Ammonia and nitrate are intrinsic constituents of domestic wastewater and they are unlikely to be present at significant levels in commercial waste steams. Therefore, makes source control infeasible. Thus the District intends address these constituents through improved treatment. The District is currently in the process of evaluating a number of alternatives for improvements to the biological processes to remove ammonia and nitrate.

5.2 COPPER, SILVER, AND ZINC

Currently there are no known significant copper, silver, or zinc sources within the service area. Recent (December 07 and December 08) zinc results are below final effluent limitations.

District intends to address these constituents through the implementation of technical studies to develop site specific water quality objectives and reopen and amend the Order to include appropriate effluent limitations based on site specific objectives. These technical studies will include the implementation of water effect ratio studies for these three metals.

5.3 MANGANESE

There are currently not any known significant manganese sources within the service area. However, one suspected source of manganese is the leaching from natural deposits during instances of infiltration and inflow. In the past, effluent manganese samples have been collected on an annual basis during winter months. The monitoring program, summarized in Section 7, includes monthly effluent monitoring for manganese. The results from this monitoring program will be used to better characterize effluent manganese concentrations and determine if there are any seasonal trends. Following the evaluation of 12 months of effluent data, the District will determine appropriate source control measures to identify and reduce manganese sources.

5.4 CYANIDE

Cyanide could be present in the influent, possibly due to household disposal of rodent poison in toilets. Cyanide may also be produced during disinfection, or is a false positive result due to sample preservation. The District will collect cyanide data in accordance with the monitoring program outlined in Section 7 of this Plan.

Several cyanide compliance strategies may be pursued by the District. These strategies include:

SOURCE REDUCTION

Under this strategy, the District would undertake a public education and outreach program regarding the proper disposal of hazardous materials, including rodent poison.

TREATMENT PROCESS EVALUATION

Under this strategy, the District would conduct an evaluation of the treatment process to determine if cyanide is generated during the disinfection process.

CHANGE SAMPLING PRESERVATION TECHNIQUE

Because sample preservative can lead to false positive cyanide results, the District may request that the Regional Water Board allow the collection of unpreserved samples for cyanide determination, granted that the samples be analyzed as soon as is feasible after collection.

5.5 DICHLOROBROMOMETHANE

Dichlorobromomethane is unlikely be present in the influent. Therefore, this compound cannot be controlled through source control efforts. Chlorine disinfection of the treated effluent is the likely source of dichlorobromomethane in the effluent. Since 2001, the monthly average final effluent limitation was exceeded one time (December 2005). However, it is possible that dichlorobromomethane concentration could increase in the future following WWTP upgrades for nitrification.

There are three possible methods by which disinfection byproducts can be mitigated. These methods are described below.

DILUTION IN THE RECEIVING WATER

Dilution credits are not currently allowed in the Order. However, there are provisions to reopen and amend the Order to allow dilution credits if the District installs a diffuser or conducts a mixing zone study and meters the flow of the South Yuba River at the point of discharge. Obtaining dilution credits for dichlorobromomethane and any other disinfection byproducts that might occur in the future would result in more appropriate and less restrictive effluent limitations. Dilution credits would be based on long-term average flows in the South Yuba River and should be substantial.

PRACTICING CHLORAMINATION INSTEAD OF CHLORINATION

If the use of chlorine is to be continued or if sodium hypochlorite were to be used, adding some ammonia to mitigate disinfection byproducts should be considered. At this time, it is not known whether chloramination would be fully successful in mitigating disinfection byproducts, particularly if dilution credits are not obtained.

CHANGING DISINFECTION PROCESS

By switching to the use of ozone or UV disinfection, the chlorine disinfection byproducts could be eliminated. However, this would involve substantial capital and ongoing operation and maintenance costs.

5.6 ALDRIN AND ALPHA BHC

Aldrin and Alpha BHC are insecticides that are no longer produced or sold for domestic use. Furthermore, these two constituents have not been detected in the WWTP effluent since February 2004 (Aldrin) and November 2003 (Alpha BHC). Therefore, it does not appear that these constituents are currently an issue at the WWTP. Nonetheless, the District will address these constituents through public education and outreach effort. In addition, the District will ensure that analysis of samples for these constituents is performed by a qualified contract laboratory with appropriate QA/QC.

6.0 LOAD REDUCTIONS

As specified in the CWC, a PPP should include an estimate of load reductions that may be attained through identified reduction methods. Because of the limited data available, it is not possible to reasonably estimate possible load reductions at this time. However, the District is implementing a monitoring program, outlined in Section 7 of this Plan, that will generate adequate data for the characterization of effluent wastewater quality. After the collection of 12 months of monitoring data, the District will conduct an evaluation and estimate load reductions that may be attained through the implementation of source control measures. The results of this evaluation will be reported to the Regional Water Board in semi-annual progress reports.

7.0 MONITORING PLAN

The monitoring program outlined in this section will be initiated following the effective date of the Order. The monitoring program will be focused on the collection of representative samples and analysis of samples by qualified analytical laboratories with an appropriate level of QA/QC. Periodically during the implementation of this monitoring plan, sample collection procedures and analytical laboratories will be evaluated and changed as necessary to ensure that the goals of the monitoring program are consistently met.

As specified in the Order, the District is required to monitor ammonia and nitrate once a week and the rest of pollutants of concern on a monthly basis. This monitoring program should provide adequate data for the characterization of effluent water quality and to assess the effectiveness of any pollution prevention strategies implemented by the District.

If determined to be necessary, based on the results of recent monitoring data, a disinfection process optimization program may be initiated to determine potential reductions of dichlorobromomethane.

The District's proposed PPP monitoring plan is summarized in Table 5.

Table 5
DSPUD Pollution Prevention Monitoring Plan

Parameter	Sample Type	Minimum Sampling Frequency	Location
Ammonia (as N)	Grab	1/week	Effluent
Nitrate (as N)	Grab	1/week	Effluent
Copper	Grab	1/month	Effluent
Manganese	Grab	1/month	Effluent
Silver	Grab	1/month	Effluent
Zinc	Grab	1/month	Effluent
Cyanide	Grab	1/month	Effluent
Dichlorobromomethane	Grab	1/month	Effluent
Aldrin	Grab	1/month	Effluent
Alpha BHC	Grab	1/month	Effluent

Following the 12 months of implementing the monitoring program, the District will evaluate appropriate future source reduction strategies and conduct a review of the monitoring program to determine if any additional sampling locations within the WWTP or collection system are necessary to better identify potential sources of these constituents.

8.0 INVESTIGATION AND IMPLEMENTATION TASKS, COST AND TIME

A description of tasks to investigate and implement the PPP elements is provided in Table 6. Also included are estimated costs, including labor and expenses, to implement the individual tasks.

Table 6
Investigation and Implementation Task Summary

Task	Approx. Cost	Approx. Completion Date
Implement Monitoring Program (tap water, influent, effluent)	$10,000/yr	Ongoing
Prepare and Implement Disinfection System Optimization and Sampling Program (if necessary)	$20,000	9/1/10
Evaluate potable water supply Corrosion Control Program	Unknown	Ongoing
Evaluate options for wastewater treatment plant upgrade	$30,000	06/10/09
Implement alternate treatment measures	Unknown	4/1/14
Implement community outreach and education program.	$25,000	12/1/10
Develop Facilities Plan	$300.000+	Aug. 2009

9.0 POLLUTION PREVENTION GOALS AND STRATEGIES

The ultimate goal of this pollution prevention plan is to gather water quality data and to control the concentrations of concern at the District's WWTP and to achieve compliance with final effluent limitations in the District's Order that go into effect April 23, 2014. The constituents of concern include ammonia, nitrate, copper, manganese, silver, zinc, cyanide, dichlorobromomethane, aldrin, and alpha BHC.

Compliance with the final effluent limitations will require modifications to the wastewater treatment plant and may require modification to the chemicals used in water treatment system.

Short-term and immediate actions include the implementation of a monitoring program to adequately characterize water quality and to assess the success of implemented pollution prevention actions.

Long-term actions include using monitoring program results to track effluent water quality trends and to determine if and where targeted pollution prevention efforts are appropriate, as well as to implement any strategies, including treatment system modification, identified as being viable in the reduction the pollutants of concern in the WWTP effluent.

10.0 EXISTING POLLUTION PREVENTION EFFORTS

The District is not currently implementing any formal pollution prevention efforts. However, the District has been actively investigating wastewater management options, including alternatives of wastewater treatment to reduce ammonia and nitrate. This effort was completed June 10, 2009. Additionally, the District is currently in the process of developing a Facilities Plan that is expected to be completed in August 2009.

11.0 ADVERSE ENVIRONMENTAL IMPACT

The CWC specifies that a PPP should include an analysis, to the extent feasible, of any adverse environmental impacts that may result from the implementation of the pollution prevention program. At this time, there is no indication that the implementation of any of the pollution prevention measures identified in this plan will cause, or contribute to, any adverse environmental impacts.

If during the implementation of this Plan, new source control or additional treatment measures are identified, the newly identified measures will undergo an analysis to determine if any of the measures have the potential to cause adverse environmental impacts. If any of these measures are determined to have the potential to cause adverse environmental impacts, the measures will not be implemented.

12.0 COSTS AND BENEFITS

The CWC specifies that a PPP contain an analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program. Estimated costs, including labor and expenses, are presented in Table 6. At this time there is not enough data available to conclusively identify all sources of pollutants of concern, and an analysis of the costs and benefits of all potential pollution prevention measures can not be conducted. The implementation of the monitoring program in conjunction with the source reduction strategies outlined in this document is a necessary element that will allow the identification of sources to target that will provide the greatest benefit in load reductions.

As stated above, there is no practical method for ammonia and nitrate reductions in the influent wastewater. Therefore, to comply with final effluent limitations, these constituents must be removed in the wastewater treatment plant. The cost of upgrading the wastewater treatment plant to remove nitrogen is substantial. For all other constituents, the cost of implementation the pollution prevention can range from relatively inexpensive to a moderate expense, depending on whether additional unit processes needs to be constructed or if simple chemical addition/substitution can be employed. Initial efforts will focus on the least expensive alternatives that can effectively provide the necessary load reductions.

If major disinfection modifications are not required, optimization of the existing effluent disinfection system could be relatively inexpensive and have the benefit of potentially reducing the dichlorobromomethane concentration. However, the optimization process may not reduce dichlorobromomethane concentrations to levels below the final effluent limitations. Dilution credits are not currently allowed in the Order. However, there are provisions to reopen the Order and allow dilution credits, if the District installs a diffuser, conducts a mixing zone study, and meters the flow of the South Yuba River at the point of discharge. The dilution potential will ensure that the high cost of disinfection system modification provides a benefit.

13.0 CONCLUSIONS

This plan was developed for the purpose of meeting the requirements of the Cease and Desist Order No. R5-2009-0035 and the CWC. Conclusions drawn during the development of this PPP are summarized below.

- Major upgrade to the wastewater treatment plant is required to comply with ammonia and nitrate final limitations.
- More data are required in order to make informed decisions regarding appropriate source control measure. The monitoring plan included in this Plan will provide adequate data to steer future source control decisions.
- It is not currently known if optimizing the current effluent disinfection system alone will reduce the dichlorobrommethane to the permitted levels. Dichlorobromomethane concentrations may be higher after WWPT upgrade to full nitrification. Alternative disinfection versus reopening the permit to get dilution credits will be evaluated.
- Source reduction through public outreach may reduce effluent Cyanide, Aldrin and Alpha BHC concentrations.
- If feasible, given the proximity of the District to a qualified laboratory, The District may request approval from the Regional Water Board to collect unpreserved cyanide samples for analysis as soon as possible after sampling in order to avoid the potential false positive results that can be associated with sample preservation.

The implementation status of this PPP will be reported to the Regional Water Board January 1st and July 1st of each year in Progress Reports, as required by the CDO. The progress reports will include details regarding steps that have been implemented toward achieving compliance with the Order, and recommendations for additional measures as necessary to achieve full compliance by April 23, 2014.