
Lahontan Regional Water Quality Control Board

December 31, 2012

WDID NO. 6B360107001

To Interested Parties:

DRAFT CEASE AND DESIST ORDER - VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS FOR LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT, GRASS VALLEY WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY

The enclosed draft Cease and Desist Order is being provided for your review and comment. Hearing Procedures which specifies procedures and due dates for comments and additional materials in preparation for the public hearing will be sent under separate cover. The Water Board intends to consider the Cease and Desist Order for adoption during a public hearing at its regular meeting scheduled for March 13 and 14, 2013 in Lake Arrowhead, California.

Please contact Jehiel Cass or Mike Coony in our Victorville office or me at (530) 542-5436 if you have any questions regarding this matter.



Lauri Kemper, P.E.
Assistant Executive Officer

Enclosures: Draft Cease and Desist Order

cc: Attached Mailing List

**Lake Arrowhead CSD Mailing List
Tentative CDO**

Discharger

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**California Regional Water Quality Control Board
Lahontan Region**

**CEASE AND DESIST ORDER NO. R6V-2013-(-DRAFT-)
WDID NO. 6B360107001**

**LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT
VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS
BOARD ORDER NO. R6V-2009-0037
FOR
DOMESTIC WASTEWATER TREATMENT FACILITIES**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region (Water Board) finds:

1. Discharger and Facility

The Lake Arrowhead Community Services District (Discharger) provides wastewater (sewage) collection and treatment services for the Lake Arrowhead community in the San Bernardino Mountains. Wastewater is collected in a community sewer system and is treated at the Discharger's Grass Valley Wastewater Treatment Plant, hereafter called the facility. The facility design average daily flow is 3.75 million gallons per day (MGD). The facility can adequately treat this flow amount. The average daily flow in 2011 was 1.41 MGD. Treated wastewater is transported in the Hesperia outfall and is discharged to percolation ponds at the Hesperia Effluent Management Site, which is located about 2 miles south of Hesperia Lakes near the Mojave River. The capacity of the outfall is 4.0 MGD.

Lake Arrowhead is a mountain alpine resort community characterized by steep hillsides, shallow soils, and high precipitation rates (on average 46 inches per year). Because of shallow soils, some sewers are laid at shallow depths and are thus more subject to cracks from surface loads. The San Bernardino Mountains compress moisture in Pacific storms, resulting in substantially higher precipitation rates than in areas below the mountains. The combination of primary and secondary residences causes variations in dry weather wastewater flow.

2. Waste Discharge Requirements

Waste Discharge Requirements (WDR) in Order No. R6V-2009-0037 authorize the discharge of waste from the Grass Valley Plant to the Hesperia Effluent Management Site. To meet the WDRs, the Discharger provides secondary treatment using trickling filter technology and nitrogen removal using denitrification beds with methanol dosing as a carbon source.

The Water Board adopted the Lahontan Basin Plan and the WDRs implement the Basin Plan, as amended.

In addition, specifications I.D.1, I.D.3, and I.D.5 of Order No. 6-89-110 are in effect because the Discharger's past Cease and Desist Order (CDO) Nos. 6-93-44 and 6-93-44A1 were in regard to violations of these three specifications. The relationship between the WDR and past CDO Orders is presented in Figure A. As described in other findings, this CDO (1) replaces Cease and Desist Order Nos. 6-93-44 and 6-93-44A and (2) rescinds Specifications D.1, D.3, and D.5 in Order No. 6-89-110.

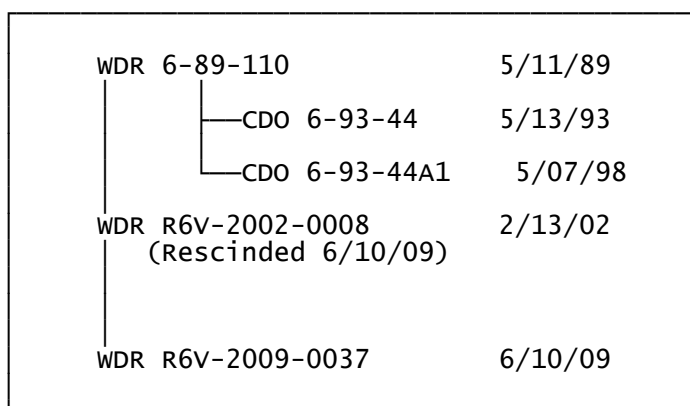


Figure A. WDR and past CDO Order Relationships

3. Violations

The Discharger's outfall capacity from the Grass Valley Plant to the Hesperia Effluent Disposal Site is 4.0 MGD. (Above 4.0 MGD, treated wastewater begins to flow out of stand pipe relief valves located at various points along the outfall). During large storms, excessive I/I cause the Grass Valley Plant influent flow to exceed the capacity of the outfall. Although the influent is treated at the plant, the Discharger must bypass flows in excess of the outfall's capacity to Grass Valley Creek. This bypass is an unauthorized discharge to surface waters. The occurrences and magnitude recent unauthorized discharges are presented in Table A. These unauthorized discharges violate the Basin Plan prohibition for the Mojave Hydrologic Unit, Discharger's WDRs, and are violations of the California Water Code (CWC) sections 13350 and 13385.

Table A. Violation Occurrences and Quantities.

Event No. 1 Beginning 01/02/2005, 23.4 in rain on 23.4 in snow Discharge 13.876 million gallons (Mgal) to Grass Valley Creek			
Date	Rainfall in.	Daily Flow, MGD	To Grass Valley Creek?
01/02/2005	0.1	2.549	No
01/03/2005	2.2	2.138	No

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01/04/2005	0	1.912	No
01/05/2005	0	1.772	No
01/06/2005	0	1.561	No
01/07/2005	3.3	3.157	No
01/08/2005	8.2	6.547	Yes
01/09/2005	3.1	7.133	Yes
01/10/2005	6.5	7.905	Yes
01/11/2005	0	7.070	Yes
01/12/2005	0	3.456	Yes

Event No. 2 Beginning 02/10/2005, 17 in rain. Discharge 12.064 Mgal to Grass Valley Creek and 8.134 Mgal to Hillside Ponds

Date	Rainfall in.	Daily Flow, MGD	To Grass Valley Creek?
02/10/2005	1.0	1.807	No
02/11/2005	3.5	3.314	No
02/12/2005	0	2.904	No
02/13/2005	0	3.104	No
02/14/2005	0	2.958	No
02/15/2005	0	2.498	No
02/16/2005	0	2.459	No
02/17/2005	2.2	2.459	No
02/18/2005	2.2	3.363	No
02/19/2005	2.2	3.662	No
02/20/2005	2.2	3.825	Yes
02/21/2005	2.2	4.383	Yes
02/22/2005	1.4	3.841	Yes
02/23/2005	0	4.156	Yes
02/24/2005	0	4.079	Yes
02/25/2005	0	4.020	Yes
02/26/2005	0	3.662	Yes
02/27/2005	0	1.993	Yes

Event No. 3 Beginning 01/27/2008, 4.5 in rain on 20 in snow
 Discharge 0.880 Mgal to Grass Valley Creek

Date	Rainfall in.	Daily Flow, MGD	To Grass Valley Creek?
01/27/2008	4.5	3.358	Yes

Event No. 4 Beginning 02/06/2010, 6.7 in rain on 18 in snow,
 Discharge of 0.67 Mgal to Grass Valley Creek

Date	Rainfall in.	Daily Flow, MGD	To Grass Valley Creek?
02/05/2010	1.2	2.282	No
02/06/2010	5.5	4.980	Yes
02/07/2010	0	3.274	Yes

Event No. 5 Beginning 12/17/2010, 30 in rain
 Discharge of 9.184 Mgal to Grass Valley Creek

Date	Rainfall in.	Daily Flow, MGD	To Grass Valley Creek?
12/16/2010	0.2	0.997	No
12/17/2010	1.3	1.339	No
12/18/2010	0.8	1.552	No
12/19/2010	7.0	4.076	No
12/20/2010	9.1	7.339	Yes
12/21/2010	4.7	7.552	Yes
12/22/2010	6.9	7.633	Yes
12/23/2010	0	4.288	Yes
12/24/2010	0	3.734	Yes

The National Oceanic and Atmospheric Administration provides precipitation frequency estimates for storm events that have average recurrence intervals ranging from one to 1,000 years and durations ranging from 5-minutes to 60-days. For Lake Arrowhead, a 100 year, 24 hour storm event is 16.5 inches.¹

4. Descriptions of Violations

a. Narrative requirements

The Discharger violated the narrative requirements listed in Table B.

Table B. Narrative Requirements.

No	Requirement	6-89-110	R6V-2009-0037
1.	There shall be no discharge, bypass, or diversion of raw or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.	I.D.1	I.D.1
2.	All facilities used for collection, transport, treatment, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.	I.D.3	I.D.3
3.	Neither the treatment nor the discharge shall cause pollution, threatened pollution, or nuisance as defined in the California Water Code.	I.D.5	I.D.7

Requirement I.D.1 of Board Order 6-89-110 and R6V-2009-0037 was violated when the Discharger discharged wastewater to Grass Valley Creek under the occurrences identified in Table A.

¹ NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES, Volume 6, Version 2, Lake Arrowhead (04-4671), http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca

Requirement I.D.3 of Board Order 6-89-110 and R6V-2009-0037 was violated for the events listed in Table A because a significant reduction in the treatment efficiency occurred when flows to the facility exceeded the treatment plant design capacity of 3.75 MGD.

Requirement I.D.5 of Board Order 6-89-110 and Requirement I.D.7 of Board Order R6V-2009-0037 was violated because the discharges identified in Table A contained inadequately-treated sewage. Surface waters containing partially or untreated sewage contains pathogenic organisms and constitutes pollution and/or a nuisance as defined in the California Water Code. Available bacteriological (total coliform) sample results during unauthorized discharges are shown in Table C.

Table C. Event 1 and 2 Coliform Results.

Date	Value	Units
01/18/2005	46	Most probable number per 100 mL
02/23/2005	79	Most probable number per 100 mL
02/26/2005	8	Most probable number per 100 mL

b. Numeric requirements

Title II of the Clean Water Act included a construction grants program to assist municipalities in complying with the Act. The regulations for administration of the program are in the Code of Federal Regulations, Title 40, Part 35, Subpart I. In particular, the regulations defined the eligibility requirement to receive a construction grant. For I/I, EPA specified the condition for grant eligibility criteria to expand the treatment facility to treat excessive I/I. The criteria include the following I/I definitions:

(16) Excessive infiltration/inflow. The quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow. (See §§35.2005(b) (28) and (29) and 35.2120.)

(28) Nonexcessive infiltration. The quantity of flow which is less than 120 gallons per capita per day (domestic base flow and infiltration) or the quantity of infiltration which cannot be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis. (See §§35.2005(b)(16) and 35.2120.)

(29) Nonexcessive inflow. The maximum total flow rate during storm events which does not result in chronic operational problems related to hydraulic overloading of the treatment works or which does not result in a total flow of more than 275 gallons per capita per day (domestic base flow

plus infiltration plus inflow). Chronic operational problems may include surcharging, backups, bypasses, and overflows. (See §§35.2005(b)(16) and 35.2120).

The status of the three Federal requirements incorporated into the Discharger's WDRs is described below:

(1) Excessive infiltration/inflow

The scope of this requirement is to determine the cost effectiveness of I/I correction. The requirement for the cost effectiveness evaluated was incorporated into Requirement 5.b. of past CDO 6-93-44A1. The Discharger completed the report, and submitted the *Facilities Planning and Project Report for I/I Remediation and Effluent Disposal Facilities* in July 1999 (1999 I/I Facilities Plan).

In this report, the Discharger identified and evaluated four alternatives. The alternative description, I/I reduction goal, and present worth costs (2000 year cost basis) are presented in Table D.

Table D. Alternatives to Address Excessive I/I.

No	Improvements	I/I reduction	Present worth cost (\$M)
1	15 Mgal effluent storage impoundments to retain storm induced effluent flow	20 %	5.032
2	Second outfall line	20 %	8.640
3	Treatment upgrade and Grass Valley Creek discharge during major storms	20 %	4.224
4	Enhanced I/I reduction	40 %	9.500

Based on cost effectiveness, the apparent best alternative was Alternative 3. However, the Discharger selected Alternative 1 because it offered habitat enhancements and recycled water opportunities such as water for fire suppression.

Implementation commenced after submission of the Facilities Planning Report. The Discharger could not implement Alternative 1 because the proposed storage ponds required extensive land area and the US Forest Service would not lease the land for this use.

The Discharger then decided to implement Alternative 3 and applied for a National Pollution Discharge Elimination System (NPDES) permit to discharge effluent to Grass Valley Creek. Water Board staff prepared a draft NPDES permit in early 2008 and found

that the Discharger may not meet the California Toxics Rule (CTR) for selected constituents. The Discharger collected special samples in December 2010. The sample results confirmed that the Discharger could not meet CTR. Failure to meet CTR would result in mandatory minimum penalties and therefore the Discharger and Water Board staff considered this alternative unacceptable and infeasible.

Alternative 2, second outfall line, is not feasible because the project would cause significant environmental impacts including disruption steep hillsides, resulting in erosion and sediment runoff, habitat removal, and permanent visual impacts.

After considering both the feasibility of the possible alternatives and the costs, the Discharger selected Alternative 4, enhanced I/I reduction. The other projects, though less expensive, had unavoidable issues that resulted in elimination from implementation.

The Discharger has complied with the requirement to determine the excessive I/I flow cost effectiveness requirement in both the Federal regulation in 40 CFR 35.2005(b)(28), 40 CFR 35.2005(b)(29), 40 CFR 35.2120, as well as requirement 5.b. of past CDO 6-93-44A1.

(2) Non-excessive infiltration

The Federal requirement defines non-excessive infiltration to be less than 120 gallons per capita per day. This requirement was included in the WDR for the first time with Order R6V-2002-0008 and was continued in Order R6V-2009-0037 as requirement I.D.5.

Pursuant to Investigative Order R6V-2011-0083, the Discharger produced the Past Inflow/Infiltration Activities Report. The Discharger showed in a quantitative manner that system-wide infiltration meets the Federal non-excessive infiltration requirement. Water Board staff conducted its own evaluation in 2007 and found that infiltration is not excessive. Therefore, at this time, the Water Board considers the Discharger in compliance with (1) the Federal requirement for non-excessive infiltration and (2) requirement I.D.5 of WDR Order R6V-2009-0037. If the implementation of controls required by this Order or the receipt of new information regarding infiltration shows that the problems with inflow and infiltration are not being adequately addressed, the Water Board may request an updated evaluation of excessive infiltration.

(3) Non-excessive inflow

The Federal requirement defines non-excessive inflow to be less than 275 gallons per capita per day. This requirement was included in the WDR for the first time with Order R6V-2002-0008 and was continued in Order R6V-2009-0037 as requirement I.D.6.

Pursuant to Investigative Order R6V-2011-0083, the Discharger produced the Past Inflow/Infiltration Activities Report. The Discharger showed in a quantitative manner that the maximum system-wide inflow value of 483 gal-capita/day does not meet the Federal non-excessive inflow requirement and WDR Order R6V-2009-0037, requirement I.D.6. (In deriving the maximum inflow value, the Discharger assumed a dry weather per-capita flow of 80 gal-capita/day and a permanent population of 15,800).

c. Requirement violation summary

The violation status for the Discharger is the following:

- Requirement I.D.1 of Board Order 6-89-110 and R6V-2009-0037 was violated when the Discharger discharged wastewater to Grass Valley Creek under the occurrences identified in Table A.
- Requirement I.D.3 of Board Order 6-89-110 and R6V-2009-0037 was violated during large storm events. During these occurrences the treatment efficiency decreased since the facility received influent flows above the treatment capacity.
- Requirement I.D.5 of Board Order 6-89-110 and Requirement I.D.7 of Board Order R6V-2009-0037 were violated because the discharge contained inadequately-treated sewage. Surface waters containing raw or partially treated sewage contains pathogenic organisms and constitutes a pollution and/or nuisance as defined in the California Water Code.
- Requirement I.D.6 of Board Order R6V-2009-0037 is violated because the Discharger does not meet the Federal non-excessive inflow limit of 275 gallons per capita per day.

The Federal non-excessive infiltration and non-excessive inflow apply only after a cost-effective analysis demonstrates that the alternative of I/I correction is less expensive than the alternative of facility expansion to treat excessive flow. The Discharger completed the cost-effective analysis with an outcome that I/I correction is the most cost effective alternative.

5. Discharger Corrective Actions

a. Past CDO 6-93-44A1, Reporting Requirement 3.

(1) Requirement

Reporting requirement no. 3 of past CDO 6-93-44 states the following:

LACSD [The Discharger] shall submit progress reports summarizing accomplishments toward obtaining compliance with WDRs, the Basin Plan and the CWC [California Water Code] on September 1, 1993, again on January 1, 1994, and semi-annually thereafter until such time that compliance with the WDRs, the Basin Plan and the CWC is achieved.

(2) Reported I/I Correction Progress

The Discharger has an ongoing program to collect the I/I reduction data and report the data in progress reports. The last report received before Investigative Order No. R6V-2011-0083 is the report dated July 13, 2011. Quantitative data from the report is presented in Table E.

Table E. Discharger Reported I/I Corrective Activities since 1993.

Activity	Quantity
Manholes rehabilitated	1139 manholes
Gravity sewers slip-lined, rehabilitated, or replaced	50,000 linear feet.

In the Discharger's July 13, 2011 progress report, the Discharger references its 2008 Wastewater Facilities Master Plan (hereafter referred to as 2008 Master Plan). The 2008 Master Plan was hand-delivered to Water Board staff on February 29, 2008.

b. Investigative Order No. R6V-2011-0083, Past Inflow/Infiltration Activities Report

(1) Requirement

Although the Discharger complied with the progress-reporting requirement of CDO No. 6-93-44, the requirement failed (1) to delineate different types of I/I reduction activities and (2) to compare the progress relative to the whole system. Therefore, in Order No. R6V-2011-0083, the Water Board required the Past Inflow/Infiltration Activities Report to collect this information. The

Investigative Order time period is from June 1, 1998 to November 1, 2011.

(2) Reported I/I Correction Progress

The Discharger completed and submitted the Past I/I Activities Report on April 27, 2012. The information in the report for gravity sewer rehabilitation is presented in Table F.

Table F. Gravity Sewer Rehabilitation.

Activity	Quantity (linear feet)
Slip-lining	42,952
Rehabilitation	8,945
Replacement	1,455
Total	53,352 ¹

¹This value is different than the value of 50,000 linear feet reported in the past CDO Progress Report. The value in the progress report is a rounded value.

While each of these rehabilitation methods is acceptable for reducing I/I, replacement, relative to other rehabilitation, provides the highest improvement in I/I reduction. Yet of the total rehabilitation, only 2.7 percent ($1,455 \div 53,352$) is replacement.

According to Table 3-1 of the 2008 Master Plan, the Discharger has 1,034,201 linear feet of gravity sewer. The percentage of gravity sewers that has been replaced between 1998 and 2011 (13½ years) is 0.14% ($1,455 \div 1,034,201$).

c. Investigative Order No. R6V-2011-0083, 2008 Master Plan Status Report

(1) Background

The 2008 Master Plan identifies a specific capital improvement program for I/I reduction over the period of the Plan, which is from 2008 to 2030. The I/I reduction programs consist of 4 phases, and the phases are presented in relative chronological order in Attachment A of this Order. The first three phases are various system analyses, and the fourth phase is I/I reduction projects. The Discharger was to use the characterization results to develop I/I reduction project scope and priority. The costs are presented in Attachment B of this Order. In terms of estimated costs, annual I/I reduction project costs averaged 6 times higher from 2011 to 2015 than from 2016 to 2025. Therefore, most of the I/I reduction projects were to be completed by 2015.

(2) Requirement

The 2011 Investigative Order required the Discharger to submit a 2008 Master Plan Status Report. The Report was required to include:

- Schedule completion date as identified in the 2008 Master Plan
- Implementation status (e.g. completed projects, anticipated project schedule)
- Explanation of why activities or activity sub-types were completed later than scheduled or have been delayed
- Financial status (e.g., activity is funded or activity is not funded).

(3) Submitted Status Reports

The Discharger submitted three reports:

- 2008 Master Plan Status Report on February 1, 2012
- Revised 2008 Master Plan Status Report on April 20, 2012
- Inflow Remediation Plan on October 1, 2012

In a March 7, 2012 letter to the Discharger, Water Board staff found the 2008 Master Plan Status Report to be unacceptable because the Discharger did not adequately address the requirements of the Investigative Order. The Discharger was required to submit a revised report by April 27, 2012.

The summary of the Revised 2008 Master Plan Status Report is as follows:

- The Discharger is 2 to 4 years behind the 2008 Master Plan schedule
- The Discharger's Board of Directors has not authorized the I/I characterization tasks and projects that were identified in the 2008 Master Plan

The Water Board requested an addendum from the Discharger that describes the short term and long-term approach to reduce I/I via a letter dated August 21, 2012.

The Discharger submitted the addendum on October 1, 2012, which is titled Inflow Remediation Plan. This plan differs from the 2008 Master Plan as follows:

- The 2008 Master Plan I/I reduction activities cover the period of 2008 to 2030, whereas the Inflow Remediation Plan covers activities through February 2013.
- In regard to the flow characterization task, the 2008 Master Plan funded flow characterization for the entire system in the first year, whereas the Inflow Remediation Plan funds flow characterization for one drainage of the sanitary sewer system.

With these reports, the Water Board finds the Discharger has yet to commit to a system-wide I/I reduction program and is in violation of Cease and Desist Orders 6-93-44 and 6-93-44A-1.

6. Final compliance date considerations

The 2008 Master Plan includes the Discharger's program for I/I reduction. The Discharger's I/I reduction program cost and schedule is graphically shown in Attachment B.

In the development of a final compliance date for this Cease and Desist Order, the Water Board has performed an analysis of the Discharger's 2008 Master Plan I/I reduction program and all more recent Discharger submissions.

- (a) The Discharger, as of December 2012, has yet to launch its 2008 proposed I/I reduction program. Therefore, the Discharger is four years behind the schedule in the 2008 Master Plan.
- (b) The Water Board's review of the Discharger's I/I reduction program cost and schedule shows that the Discharger's schedule is not realistic, even if the Discharger were to begin an I/I reduction program in January 2013. First, a three-year period to perform characterization is too brief given the linear feet of sewer, steep terrain, and large storm event frequency. Large storms occur once every two to three years. Given the variables, a 4-year (2013 to 2017) period is reasonable to fully characterize the Discharger's sanitary sewer system. Enough information should be known in three years so that I/I construction projects may commence in the 4th year of the I/I reduction program.

- (c) The scheduling of most projects in the first third of the Discharger’s I/I reduction program is also not realistic. Capital-improvement programs usually have a ramp-up phase for the first few years (increasing over the three years), and then the funding remains constant during the duration of the program.
- (d) The 17-year program results in an average cost of \$900,000 per year. Based on review of the Discharger’s 2008 Master Plan Status Report and a focus on the I/I reduction activities described in the 2008 Master Plan rather than other projects and programs, the Discharger has the ability to finance the I/I reduction improvements at this level. Based on review of all the information that the Discharger has provided, a system-wide I/I reduction is achievable in a 13-year period. With the program beginning in July 2013, the completion date for the I/I program is June 30, 2026. Therefore, the Water Board in this Order is specifying June 30, 2026 as the final compliance date for achieving compliance with the non-excessive I/I requirements of WDR in Order R6V-2009-0037.

7. Interim compliance dates

The Water Board is specifying intermediate compliance dates to demonstrate that the Discharger is making progress towards achievement of final compliance.

8. Final Compliance standard

The final compliance standard is the system non-excessive inflow limitation. Water Board derives this limitation using the following equation:

$$\left\{ \begin{array}{l} \text{Non-excessive} \\ \text{flow limitation} \\ \text{MGD} \end{array} \right\} = \left\{ \begin{array}{l} \text{System dry} \\ \text{weather flow} \\ \text{MGD} \end{array} \right\} \times \frac{\left\{ \begin{array}{l} \text{Inflow per} \\ \text{capita criterion} \\ \text{gal/capita-day} \end{array} \right\}}{\left\{ \begin{array}{l} \text{System per} \\ \text{capita flow} \\ \text{gal/capita-day} \end{array} \right\}}$$

The definition of the terms on the right side of the equation is the following:

- System dry weather flow is the average daily flow from collection system service area
- Inflow per capita criterion is 275 gallons per capita per day (or gal/capita per day), as defined in 40CFR Part 35 and requirement I.D.6. of WDR in Board Order R6V-2009-0037
- System per capita flow is influent flow divided by the served population.

Normally system dry weather flow would be the average dry weather flow to the wastewater treatment facility. However, Lake Arrowhead is a resort area, and their sanitary sewer system serves both permanent and second-home residences. The sanitary sewer system is designed to serve both permanent and second-home residents. Therefore, any system dry-weather flow value must include the contribution from second-home residents.

Dry weather flows corresponds to the California dry weather season, which is from May to September each year. The existing average dry weather flow during these months from 2009 to 2012 is 1.125 MGD. The system dry-weather flow, however, must account for second-home residents. Therefore, the Water Board uses the maximum dry weather daily flow in each year from 2009 to 2012 to derive the system dry weather flow. The system dry-weather flow is the average of the yearly maximum dry weather flow, which is calculated as follows

Date	Flow	
July 4, 2009	1.495	
July 4, 2010	2.247	Average: 1.92 MGD
July 3, 2011	2.285	
September 2, 2012	1.628	

Average = 1.92 MGD = system dry weather flow.

The Discharger developed the value of 80 gallons per capita per day in its 1983 Sewer Master Plan. However, the Discharger's value probably is underestimated and does not include current existing water treatment plant backwash and flow from major commercial users, including lodging establishments. Therefore, the Water Board has selected a system per capita per day flow of 90 gal per capita per day. This figure does not factor population increases over the duration of the time schedule contained in this Order.

The values for system dry weather flow, inflow per capita criterion, and system per capita values are inserted into the above equation to calculate the non-excessive inflow limitation:

$$\left\{ \begin{array}{l} \text{Non-excessive} \\ \text{flow limitation} \\ \text{MGD} \end{array} \right\} = 1.92 \times \frac{275}{90}$$

$$\left\{ \begin{array}{l} \text{Non-excessive} \\ \text{flow limitation} \\ \text{MGD} \end{array} \right\} = 5.9 \text{ MGD}$$

The non-excessive flow limitation needs to be compared with the 1999 I/I Facilities Plan. The Discharger's selected I/I reduction program in the 2008 Master Plan is the same as Alternative 4 of the 1999 I/I Facilities Plan. The I/I reduction objective of Alternative 4 is 40%. The maximum recorded plant flow was 8.5 MGD on January 17, 1993. Therefore, the 100-year maximum daily flow is projected to be 9.0 MGD. This flow consists of two components: (1) sewage and (2) 100 year I/I flow. The selected sewage flow value is the existing dry-weather flow of 1.125 MGD, rounded to 1.1 MGD. The 100 year I/I flow then is 7.9 MGD.

The calculation of a plant flow that reflects a 40% I/I reduction objective is the following:

$$\left\{ \begin{array}{l} \text{Reduced 100} \\ \text{year I/I flow} \\ \text{MGD} \end{array} \right\} = \left\{ \begin{array}{l} \text{100 year I/I} \\ \text{flow} \\ \text{MGD} \end{array} \right\} \times 0.6$$

$$\left\{ \begin{array}{l} \text{Reduced 100} \\ \text{year I/I flow} \\ \text{MGD} \end{array} \right\} = 7.9 \times 0.6$$

$$\left\{ \begin{array}{l} \text{Reduced 100} \\ \text{year I/I flow} \\ \text{MGD} \end{array} \right\} = 4.7 \text{ MGD}$$

$$\left\{ \begin{array}{l} \text{Future 100 year} \\ \text{maximum flow} \\ \text{MGD} \end{array} \right\} = \left\{ \begin{array}{l} \text{Reduced 100} \\ \text{year I/I flow} \\ \text{MGD} \end{array} \right\} + \left\{ \begin{array}{l} \text{Existing dry} \\ \text{weather flow} \\ \text{MGD} \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{Future 100 year} \\ \text{maximum flow} \\ \text{MGD} \end{array} \right\} = 4.7 + 1.1$$

$$\left\{ \begin{array}{l} \text{Future 100 year} \\ \text{maximum flow} \\ \text{MGD} \end{array} \right\} = 5.8 \text{ MGD}$$

Therefore, the proposed non-excessive inflow limitation is consistent with Alternative 4 of the 1999 I/I Facilities Plan.

10. Final Compliance Standard – Infiltration

By definition, infiltration is excess flow into a community sewer system after abatement of storm effects. According to EPA non-excessive I/I standards, the period of infiltration begins 7 days following a storm event.

In the Discharger's service area, community sewer system flow drops quickly following rainfall periods. The Discharger has conducted analysis that shows that the Discharger meets the EPA criterion for non-excessive infiltration, which is 120 gal per capita per day. Rather than determining if the Discharger currently meets the non-excessive infiltration criterion, the Water Board will first observe the effects of inflow correction required by this Order before requiring the Discharger remove flows caused by infiltration.

11. Relationship to Existing Orders

- a. This Order replaces and supersedes the requirements in Cease and Desist Orders adopted for violations of Order Nos. 6-93-44 and 6-93-44A1.
- b. WDR requirements 1.D.1, 1.D.3, and 1.D.5 of Order No. 6-89-110 are the basis for Cease and Desist Orders 6-93-44 and 6-93-44A1. Because this Order replaces and supersedes the previous Cease and Desist orders, requirements of 1.D.1, 1.D.3, and 1.D.5 in Board Order 6-89-110 no longer need to remain in effect.

12. California Water Code

California Water Code Section 13301 states, in part, "When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action."

The Discharger's acts and failure to act have caused or permitted waste to be discharged or deposited where it has or could be discharged or deposited where it has or could discharge to waters of the state and has created, and continues to threaten to create a condition of pollution and nuisance.

The Water Board is authorized to seek this proposed CDO based on CWC 13301.

13. Submittal of Technical Reports

Pursuant to California Water Code section 13267, subdivision (a), the Water Board may investigate the quality of any waters of the state within its region “in connection with any action relating to any plan or requirement authorized by this division.” The need for a technical report pursuant to California Water Code section 13267, subdivision (b) must bear a reasonable relationship to the benefits to be obtained from the report. In compliance with California Water Code section 13267, subdivision (b), the Water Board is required to provide a written explanation with regard to the need for the report and shall identify the evidence that supports requiring the person to provide the report. In this case:

- a. The Discharger is in violation of its waste discharge requirements and the required information is needed to evaluate the Discharger’s interim compliance efforts.
- b. The Water Board needs periodic reports to track the progress of the Discharger in implementing the I/I reduction program it needs to comply with waste discharge requirements.

14. California Environmental Quality Act

This enforcement action is being taken to enforce provisions of the California Water Code and, as such, it is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15308, Chapter 3, Division 6, Title 14, California Code of Regulations.

15. Notification of Interested Parties

The Water Board notified the Discharger and interested parties of public hearings scheduled for the Regional Board meetings on March 13, 2013. During the public hearings conducted during these meetings, the Water Board heard and considered all comments related to the proposed Order.

16. Petitions

Any person adversely affected by this action of the Water Board may petition the State Water Resources Control Board for review of this action. The State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100 (e-mail or facsimile copies acceptable) must receive the petition within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

Therefore, it is hereby ordered that, pursuant to Water Code sections 13301 and 13267, the Discharger shall cease and desist from discharging wastes or threatening to discharge wastes, in violation of provisions specified in Water Board WDR Order No. R6V-2009-0037, and shall comply with the other provisions of this Order:

Order

I. Final Standard

By **June 30, 2026**, the maximum daily flow (on any day up to and including a 100-year storm event) from the Discharger's community sewer system shall not exceed 5.8 MGD. This reflects a 40% reduction in the 100-yr maximum I/I flow of 7.9 MGD with a base average dry weather flow of 1.1 MGD.

II. Interim Standard

A. By **March 31, 2018**, take actions in accordance with the Discharger's I/I reduction plan to reduce excessive inflow by 10%. To achieve this standard, the maximum daily flow (on any day up to and including a 100-year storm event) from the Discharger's community sewer system must not exceed 8.2 MGD. This reflects a 10% reduction in the 100-yr maximum I/I flow of 7.9 MGD with a base average dry weather flow of 1.1 MGD.

B. By **March 31, 2021**, Take actions in accordance with the Discharger's I/I reduction plan to reduce excessive inflow by 25%. To achieve this standard, the maximum daily flow (on any day up to and including a 100-year storm event) from the Discharger's community sewer system must not exceed 7.0 MGD. This reflects a 25% reduction in the 100-yr maximum I/I flow of 7.9 MGD with a base average dry weather flow of 1.1 MGD.

III. Reports

A. By **June 15 of each year**, beginning June 15, 2013, the Discharger must submit an annual I/I system analysis status report describing actions taken to complete Steps 1, 2 and 3 as shown on Attachment A of this Order.

By **June 15, 2017**, the Discharger must submit a final I/I system analysis status report describing actions taken to complete Steps 1, 2, and 3 as shown on Attachment A of this Order.

Each status report including the final report, must contain the following information commencing with September 14, 2012, for each of the 22 flow basins indicated on Figure 5-2 of the 2008 Master Plan:

1. Flow monitoring and rainfall analysis results;
 2. Field surveys for each basin targeted for further analysis, including, but not limited to:
 - a. Linear feet of sewer line evaluated and detected locations of I/I from closed circuit TV or other surveys,
 - b. Linear feet of sewer line with suspected elevated I/I and detected location, and
 - c. Number of inspected manholes and number of manholes with cracks, holes, etc that indicate I/I source;
 3. Results of computer model calibration;
 4. Cost effectiveness analysis; and
 5. Identified I/I correction projects that are placed on the Discharger's capital improvement program, to include scope, cost, and schedule.
 6. In the final I/I system analysis report due June 30, 2017, the Discharger must also identify all proposed actions, estimated annual costs, and an implementation schedule to meet the interim and final standards described in Order No's. 1 and 2, above. The final report must also explain or justify why the proposed actions will achieve the anticipated flow reductions.
- B. By **September 30, 2013, and annually thereafter**, the Discharger must submit an I/I project completion and outfall analysis report. The report must:
1. Describe I/I reduction projects and activities completed including, but not limited to, expenditures, location, extent, and sewer sizes,
 2. Include projects that were completed in the previous fiscal year, beginning with Fiscal Year 2012-13 (July 1, 2012 through June 30, 2013), and
 3. Evaluate outfall flow and precipitation events for the prior Fiscal Year including, but not limited to the following:
 - Precipitation dates (day, including snowfall),
 - Amount (inches),
 - Duration (minutes or days),
 - Temperature (deg F),
 - Statement comparing the precipitation event to a 100-year event,
 - Outfall line flow for each date (MGD),

- Statement whether an overflow event occurred (date),
 - Estimated overflow volume (gallons),
 - Estimated overflow duration (days), and
 - Comparison of overflow event to outfall line capacity.
- C. By **June 15, 2013, and annually thereafter**, the Discharger must submit an I/I project plan that describes I/I reduction actions that will be completed the subsequent Fiscal Year. The project plan must include both system analysis activities and I/I rehabilitation projects. The annual project plan must contain the following:
1. Specific I/I reduction projects that the Discharger has budgeted to be completed for the coming fiscal year.
 - a. For system analysis activities, describe the activity, the activity type (e.g., sub-basin flow monitoring), activity objective, location, number of feet of sewer, number of manholes, or other actions planned.
 - b. For rehabilitation projects, the Discharger must describe the project, project type (e.g replacement), project objective, project location, number of feet of sewer to be lined, grouted, repaired or replaced, size of sewers, and location and number of manholes to be inspected, repaired or replaced, or other actions planned.
 2. Certification, signed by the District's General Manager, that the District's board of directors has authorized funds to complete the planned projects.
 3. Beginning in 2018 project plan, and annually thereafter, describe how the project plan meets or exceeds the anticipated activities and costs proposed in the final system analysis report.
 4. Failure to achieve the expected excess I/I flow reductions will be considered a violation of the Order unless met within 18 months of the year when the interim or final standard applies.
 5. Beginning in 2018, compare budget to expected cost expenditures from final system analysis report and explain when expenditures budgeted are less than proposed in final system analysis report. Provide plan to achieve proposed expenditures established in the final system analysis report.
- D. Signatory Requirements. All reports required pursuant to this Cease and Desist Order shall be signed and certified by a duly authorized representative of the Discharger and submitted to the Water Board. A

person is a duly authorized representative of the Discharger only if: (1) the authorization is made in writing by the Discharger and (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

- E. Certification. Include the following signed certification with all reports submitted pursuant to this Order: "I certify under penalty of perjury under the laws of the State of California that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted, the document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- F. Report Submittals. All monitoring and technical reports required pursuant this Order shall be submitted via electronic e-mail and hard copy to:

California Regional Water Quality Control Board-Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392
Attn: Mike Coony
Email: mcoony@waterboards.ca.gov

IV. Rescissions

- A. Cease and Desist Orders 6-93-44 and 6-93-44A-1 are hereby rescinded.
- B. Waste Discharge Requirements in Board Order 6-89-110 are hereby rescinded.

V. Enforcement Notification

Failure to comply with the terms or conditions of this Cease and Desist Order may result in additional enforcement action, which may include the imposition of administrative civil liability pursuant to California Water Code section 13350 or 13385 for up to \$10,000 a day for each violation or \$10 per gallon discharged; and/or section 13268 for up to \$1,000 a day for each violation; and/or referral to the Attorney General of the State of California for injunctive relief or civil or criminal liability. The Water Board reserves its right to take any further enforcement action authorized by law, and by seeking this Cease and Desist Order does not authorize any action or non-action by the Discharger.

I, Patty Z. Kouyoumdjian, Executive Officer, hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region on March 10, 2013.

Patty Z. Kouyoumdjian
EXECUTIVE OFFICER

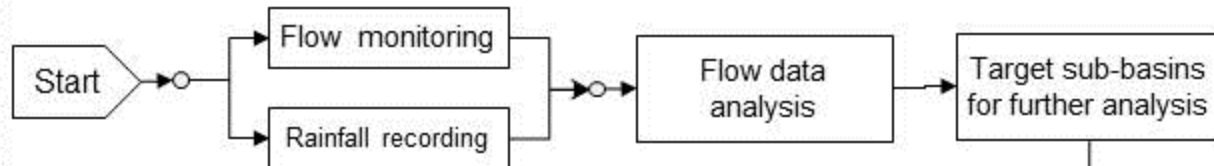
Attachments:

- A. 2008 Master Plan I/I reduction phases
- B. 2008 Master Plan I/I reduction program cost and schedule
- C. Water Code Section 13267 Fact Sheet

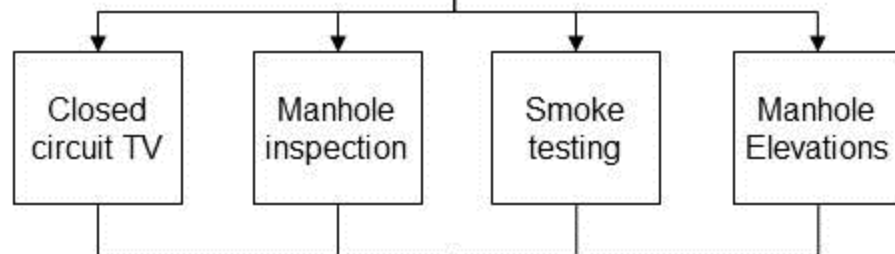
S:\Enforc Orders 2013\Lake Arrowhead CSD\leLkArrowProposedCdoRev1.docx

2008 Master Plan and 2012 Status Report, I/I Assessment Plan

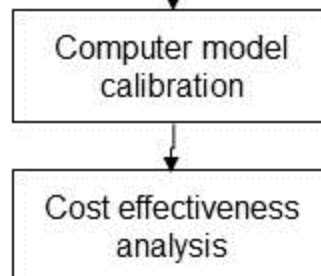
Step 1. Identify areas to target for further analysis



Step 2. Field surveys and inspection activities



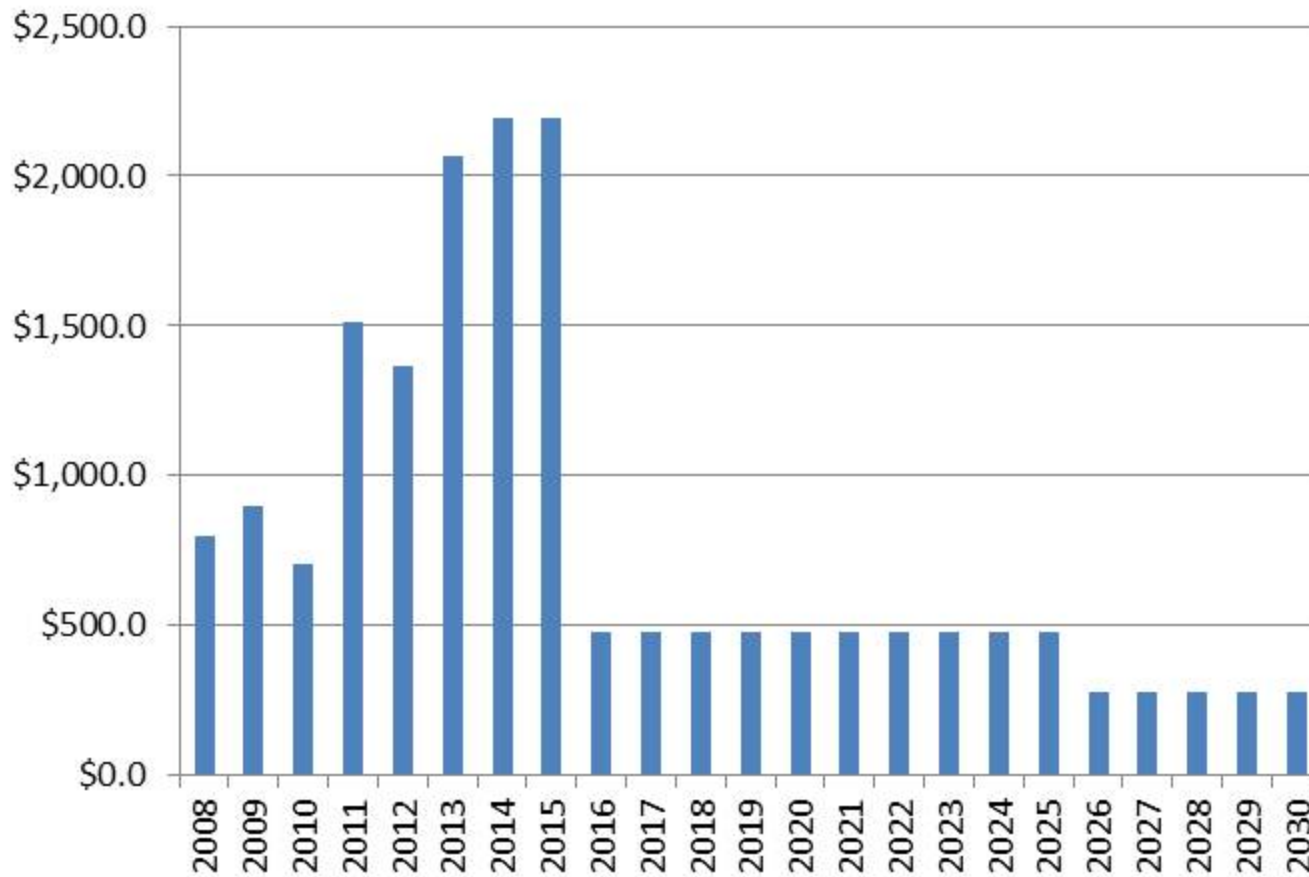
Step 3. Analysis of field data.



Step 4. Improvements to correct I/I

- I/I Correction activities
- Scope
 - Cost
 - Schedule

2008 Master Plan Collection System I/I Reduction Costs by year, \$ k



Year	Cost, \$k
2008	\$800.0
2009	\$900.0
2010	\$702.5
2011	\$1,515.0
2012	\$1,365.0
2013	\$2,065.0
2014	\$2,192.5
2015	\$2,192.5
2016	\$476.0
2017	\$476.0
2018	\$476.0
2019	\$476.0
2020	\$476.0
2021	\$476.0
2022	\$476.0
2023	\$476.0
2024	\$476.0
2025	\$476.0
2026	\$276.0
2027	\$276.0
2028	\$276.0
2029	\$276.0
2030	\$276.0
Total	\$17,872.5

**Fact Sheet – Requirements for Submitting Technical Reports
Under Section 13267 of the California Water Code**

October 8, 2008

What does it mean when the regional water board requires a technical report?

Section 13267¹ of the California Water Code provides that "...the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged...waste that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires".

This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?

Providing the required information in a technical report is not an admission of guilt or responsibility. However, the information provided can be used by the regional water board to clarify whether a given party has responsibility.

Are there limits to what the regional water board can ask for?

Yes. The information required must relate to an actual or suspected discharge of waste, and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The regional water board is required to explain the reasons for its request.

What if I can provide the information, but not by the date specified?

A time extension can be given for good cause. Your request should be submitted in writing, giving reasons. A request for a time extension should be made as soon as it is apparent that additional time will be needed and preferably before the due date for the information.

Are there penalties if I don't comply?

Depending on the situation, the regional water board can impose a fine of up to \$1,000 per day, and a court can impose fines of up to \$25,000 per day as well as criminal penalties. A person who submits false information is guilty of a misdemeanor and may be fined as well.

What if I disagree with the 13267 requirement and the regional water board staff will not change the requirement and/or date to comply?

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

Claim of Copyright or other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

If I have more questions, who do I ask?

Requirements for technical reports normally indicate the name, telephone number, and email address of the regional water board staff person involved at the end of the letter.

¹ All code sections referenced herein can be found by going to www.leginfo.ca.gov. Copies of the regulations cited are available from the Regional Board upon request.