

Linda S. Adams Secretary for Environmental Protection

California Regional Water Quality Control Board

Central Coast Region



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To:

Roger W. Briggs, Executive Officer Central Coast Water Board 895 Aerovista Place, Suite 101 San Luis Obispo, CA 93401

From: Central Coast Water Board Prosecution Team ichel I **Michael Thomas** Harvey Packard David LaCaro

Date: January 12, 2009

Subject: Prosecution Team's Legal and Technical Analysis In Support of Proposed ACL Order No. R3-2008-0074, California Men's Colony, San Luis Obispo County

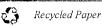
SUMMARY

Waste Discharge Requirements Order No. R3-2006-0032, NPDES Permit No. CA0047856, requires the California Men's Colony (Discharger) to comply with effluent limitations for total chlorine residual. According to monitoring reports submitted by the Discharger from July 1, 2006, to August 31, 2008, the Discharger violated effluent limitations for total chlorine residual on 20 separate occasions. Administrative Civil Liability Complaint No. R3-2008-0074 (Complaint) provides details of each violation.

California Water Code Section 13385(h) requires that a mandatory minimum penalty of \$3,000 be assessed for each serious violation. California Water Code Section 13385 authorizes the Central Coast Water Board to administratively impose civil liability in an amount not to exceed \$10,000 for each day in which any person violates an NPDES permit. Each of the 20 violations alleged in the Complaint is a violation of Order No. R3-2006-0032 and is subject to a minimum penalty of \$3,000 and a maximum penalty of \$10,000. The Prosecution Team proposes a total penalty of \$140,000.

DISCUSSION

Requirements: On July 7, 2006, the Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board), adopted *Waste Discharge Requirements* Order No. R3-2006-0032, NPDES Permit No. CA0047856, for the California Men's Colony, San Luis Obispo County (Order No. R3-2006-0032). In accordance with



Section IV of its NPDES Permit, the Discharger is required to comply with effluent limitations for total chlorine residual.

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Violations: As detailed in the Complaint, the Discharger committed the following violations:

		CIWQS		
	Violation	Violation		
#	Date	No.	Constituent	Permit Limit Reported Value
1	2/15/2007	566486	Chlorine Residual, Total	¹ >2.2 mg/L
Plant Upgrade (90 - day adjustment period) ²				
2	10/1/2007	698115	Chlorine Residual, Total	¹ 2.54 mg/L
3	10/2/2007	698118	Chlorine Residual, Total	¹ 0.61 mg L
4	10/3/2007	698119	Chlorine Residual, Total	¹ 0.32 mg/L
5	10/7/2007	698120	Chlorine Residual, Total	1 0.52 mg/L
6	10/16/2007	698116	Chlorine Residual, Total	2.92 mg/L
7	10/24/2007	698122	Chlorine Residual, Total	1 1.93 mg/L
8	10/25/2007	698123	Chlorine Residual, Total	¹ 0.52 mg/L
9	10/26/2007	698124	Chlorine Residual, Total	¹ 1.02 mg/L
10	11/4/2007	710011	Chlorine Residual, Total	10.74 mg/L
11	11/14/2007	710012	Chlorine Residual, Total	¹ 20.03 mg/L
12	11/17/2007	710013	Chlorine Residual, Total	¹ 20.03 mg/L
13	12/7/2007	764580	Chlorine Residual, Total	1 2.03 mgL
14	2/7/2008	783758	Chlorine Residual, Total	1.60 mg/L
15	2/8/2008	783759	Chlorine Residual, Total	¹ 0.45 mg/L
16	2/17/2008	783760	Chlorine Residual, Total	1 1.13 mg/L
17	5/19/2008	775625	Chlorine Residual, Total	1.6 mg/L
18	6/16/2008	764651	Chlorine Residual, Total	0.52 mg/L
19	6/17/2008	777462	Chlorine Residual, Total	1 2.0 mg/L
20	8/21/2008	786556	Chlorine Residual, Total	1 4.2 mg/L

¹ – Effluent limitation is identified in Section IV.A.1.a. of Order R3-2006-0032.

² – According to Section 13385(j)(1)(D)(i) of the California Water Code, mandatory minimum penalties are not assessed for new or reconstructed wastewater treatment units for a period of 90 days.

CIWQS – California Integrated Water Quality System mg/L - milligrams per liter

Complaint Issuance: On December 17, 2008, the Prosecution Team issued Administrative Civil Liability Complaint No. R3-2008-0074 to the Discharger by certified mail.

Violation History: Paragraph No. 7.e. of the Complaint documents the Discharger's history of violations. However, not all violations that are listed in Section 7.e. of the Complaint pertain to violations of total chlorine residual effluent limitations. As a result of past violations (e.g., sanitary sewer spills, effluent violations), the Discharger upgraded the wastewater treatment plant to optimize treatment quality and minimize effluent violations. The new wastewater treatment facility was completed May 31, 2007.



Maximum Civil Liability: The maximum civil liability for the violations alleged in the Complaint is \$10,000 per day per violation. The maximum liability the Central Coast Water Board may impose on the Discharger is \$200,000.

Minimum Civil Liability: California Water Code Section 13385(h) requires that the Water Board assess a mandatory minimum penalty of \$3,000 for each serious violation. Section 13385(h)(2) provides that a serious violation occurs if the discharge exceeds the effluent limitations for a Group II pollutant, as specified in Appendix A to section 123.45 of Title 40 Code of Federal Regulations, by 20 percent or more or for a Group I pollutant, as specified in Appendix A to section 123.45 of Title 40 Code of Federal Regulations, by 20 percent or more or for a Group I pollutant, as specified in Appendix A to section 123.45 of Title 40 Code of Federal Regulations, by 40 percent or more.

California Water Code section 13385(i) requires that the Central Coast Water Board assess a mandatory penalty of \$3,000 for each violation, not counting the first three violations, if the discharger does any of the following four or more times in a period of six consecutive months:

- a) Violates a waste discharge requirement effluent limitation;
- b) Fails to file a report pursuant to Section 13260;
- c) Files an incomplete report pursuant to Section 13260; or
- d) Violates a toxicity effluent limitation contained in the applicable waste discharge requirements where the waste discharge requirements do not contain pollutant-specific effluent limitations for toxic pollutants.

The Central Coast Water Board Prosecution Team proposed *Mandatory Minimum Penalty Order No. R3-2008-0054* at the September 5, 2008 Water Board meeting. After considering written and oral testimony presented before and at the hearing, the Water Board did not adopt the proposed order and directed the Prosecution Team to reevaluate the complaint. In Complaint No. R3-2008-0074 and Complaint No. R3-2008-0075, the Prosecution Team separates the total chlorine residual violations from the other violations (i.e., total coliform, dissolved oxygen, pH, copper, sulfate, dichlororomomethane, and chlorodibromomethane). Complaint No. R3-2008-0075 addresses the other violations.

Factors to Consider when Assessing Civil Liability: Pursuant to California Water Code Section 13385(e), the Central Coast Water Board must consider the following factors in determining the amount of liability for the total chlorine residual violations:

- □ Nature, circumstances, extent, and gravity of the violations
- UNALTHE Whether the discharge is susceptible to cleanup or abatement,
- Degree of toxicity of the discharge
- Discharger's ability to pay
- Effect on the Discharger's ability to continue in business
- a Voluntary cleanup efforts undertaken by the Discharger
- Discharger's prior history of violations
- Discharger's degree of culpability
- Economic benefit or savings, if any, resulting from the violation

- Other matters that justice may require.
- a. Nature, circumstances, extent, and gravity of the violations: The Discharger violated WDR Order No. R3-2006-0032 by failing to comply with the total chlorine residual effluent limitation. Each of the 20 violations is an instance where the discharger did not comply with the 99% compliance requirements as stated in the NPDES permit. According to the Discharger, many of these total chlorine residual violations occurred as a result of inadequate equipment. More specifically, the operators identified the following deficiencies with the new disinfection system:

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- 1. The facility operators identified a lag time between the dechlorination probe and the sodium bisulfide dosing pump. Disinfected wastewater would be pumped to the dechlorination probe (located in the pump room). The dechlorination probe would sense a particular concentration of chlorine residual and would send a signal to the sodium bisulfide dosing pump in order to dose the adequate amount of sodium bisulfide to dechlorinate. The operator found that it takes approximately 1.5 minutes for disinfected wastewater to be pumped to the dechlorinine probe, which increased the potential to release chlorinated wastewater to Chorro Creek. The operators have relocated the dechlorination probe next to the chlorine contact chamber, which has reduced the lag time between the dechlorination probe and sodium bisulfide pump by 30 seconds.
- 2. The facility operators identified that the dosing pipe from the sodium bisulfide pump was inadequately sized resulting in a lag time to dechlorinate the disinfected wastewater prior to discharge. The operator found that the existing sodium bisulfide dosing pipe was a two-inch diameter pipe. Using a dye test method, the operator was able to identify a four-minute lag time between the sodium bisulfide pump and the dosing on disinfected wastewater. As a result, the operator decreased the dosing pipe size to ³/₄ inches in order to decrease the lag time. Currently, the dosing time from the sodium bisulfide pump to the dechlorinating chamber has been reduced to two minutes.
- 3. The facility operators identified a lag time between the chlorine probe and the chlorine pumps. The chlorine probe was located in the chlorine contact channel. As chlorine-laden wastewater passed by the probe, information was sent to the chlorine pump to either increase or decrease chlorine dosing. The operator found that the transfer of information from the chlorine probe to the chlorine pump took approximately 15 minutes. As a result, chlorine dosing was inadequate. The Discharger has since moved the chlorine probe out of the channel and closer to the chlorine dosing mixing well. The operators estimate the response time to be 15 seconds, thus reducing the lag time between the probe and the pump.



Water Board staff believes that a combination of these deficiencies resulted in various chlorine residual releases. The Discharger's actions to mitigate violations as a result of the deficiencies warrant less than the maximum liability.

b. Discharge susceptibility to cleanup or abatement: High concentrations of chlorine residual in surface waters are not susceptible to cleanup because dissolved contaminants in such discharges often move rapidly downstream and disperse over extensive areas. Furthermore, degradation of chlorine in nature depends on many factors (e.g., concentration of chlorine discharged, volume of receiving water, photodegradation, bioabsobtion, and other factors.).

This consideration is neutral with respect to the maximum liability.

c. **Discharge toxicity:** The discharge of effluent containing chlorine in excess of the allowable effluent limitations can be toxic to fish and other aquatic organisms.

Water Board staff received a telephone call from the CMC staff on August 21, 2008, explaining that the facility exceeded the allowable total chlorine residual effluent limitation in the permit and that the exceedance apparently caused a downstream fish kill. Mr. Dennis Michniuk, Department of Fish and Game staff biologist, conducted an inspection (see attached Management of Chlorine Disinfection System Related to Recent MMP Violations). Mr. Michniuk documented that stickleback fish were alive on the upstream side of the effluent pipe. However, Mr. Michniuk observed dead fish approximately 300-feet downstream of the effluent pipe. Among the dead fish were four steelhead trout. some stickleback fish, and some crayfish. According to the August monthly selfmonitoring report submitted by the discharger, the total chlorine residual concentration released on August 21, 2008, was 4.2 mg/L (Line 20 in the table above). Other total chlorine residual violations identified in the table above 2.0 mg/L (daily maximum effluent limit) may have had deleterious impacts to aquatic life. It is plausible that fish kills have occurred previously as a result of chlorine releases.

If discharged at sufficiently high concentrations and volumes, toxic concentrations of chlorine could travel the entire downstream reach of Chorro Creek and reach Morro Bay. The Morro Bay National Estuary Program and Morro Bay shellfish growers suspect that chlorine from the CMC wastewater treatment facility may be responsible for a shellfish toxicity event that occurred in 2007.

The toxicity of chlorine warrants a penalty greater than the minimum. However, some of the chlorine violations are more serious than others. Six violations of the 20 identified in the table above violated the 99% compliance limitation. More specifically, the six violations were based on the exceedance of the 30 minutes excursion limitation. Therefore, this consideration may warrant less than the maximum liability.

California Environmental Protection Agency

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d. Discharger's Ability to Pay the Liability and the Effect on the Discharger's Ability to Continue Business: The facility is owned and operated by the State of California. The Discharger's ability to pay is dependent on State funds allocated to the Department of Corrections and Rehabilitation. The Discharger is not eligible for state grants or low interest rate loans and does not have the capability to assess utility fees on their users.

However, the Discharger's payment of previous penalties suggests it is capable of paying the proposed penalty. Because the Discharger has provided no information upon which the Central Coast Water Board could make a finding that it does not have the ability to pay, or that imposing the maximum penalty would impact its ability to do business, this consideration does not warrant less than the maximum liability.

e. Violation history: <u>Cleanup and Abatement Orders and Time Schedule Order</u>. The Discharger has a long history of violations. The Discharger currently has various cleanup and abatement orders (Order No. 96-20, No. 98-82, No. 99-38, and No. 05-36) and a time schedule order (Order No. 06-88). The Discharger recently upgraded the facility, which has corrected most of the violations and facility deficiencies identified in the enforcement orders.

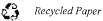
<u>November 20, 2007 Notice of Violation:</u> Central Coast Water Board staff issued a Notice of Violation (NOV) on November 20, 2007, for deficiencies observed at the newly upgraded facility. The NOV identified deficiencies with the bar screen, grinder pump facility, and the chlorine disinfection system. The Discharger, as a result of the NOV, has corrected issues regarding the bar screen and the grinder pump. However, the Discharger continues to address the disinfection system.

<u>Sanitary Sewer Overflow Penalty</u>: Most recently, the Central Coast Water Board issued an order in the amount of \$40,000 for a spill of untreated wastewater that occurred in January 2008 (Administrative Civil Liability Order No. R3-2008-0026 issued on September 5, 2008).

<u>Mandatory Minimum Penalties Complaint</u>: In addition to the violations alleged in this complaint, the Prosecution Team is also currently proposing mandatory minimum penalties for other effluent violations of Order No. R3-2006-0032. These violations are alleged in MMP Order No. R3-2008-0075 and include violations of effluent limitations for total coliform, sulfate, dissolved oxygen, pH, chlorodibromomethane, dichlorobromomethane, and copper.

The above consideration does not warrant less than the maximum liability.

f. Voluntary cleanup efforts: The Discharger did not conduct voluntary cleanup efforts in the receiving water. This factor is neutral with respect to liability because there were no voluntary cleanup activities the Discharger could have undertaken once the discharge occurred.



g. **Degree of culpability:** As the owner of the regulated facility, the Discharger is responsible for compliance. The current provisions of Order No. R3-2006-0032 have been in effect since for the past two permit cycles.

Although the Prosecution Team is confident that the Discharger is continually trying to optimize the current disinfection system, the current system is not adequate to prevent the releases of chlorine residual above the effluent limits. The continued use of chlorine for disinfection maintains the potential for receiving water impacts to aquatic life. However, the Discharger appears to be making an effort to mitigate releases through daily monitoring, adjustments to the existing system, and, ultimately, conversion to a UV disinfection system.

This consideration may warrant less than the maximum liability.

h. Economic benefit or savings: During the period of violations addressed by this complaint, the Prosecution Team knows of no significant economic benefit by the Discharger. It could be perceived that the Discharger benefited from saving the amount of sodium biosulfate (a dechlorination agent), which resulted in elevated concentrations of chlorine in the discharger's effluent. Using less sodium biosulfate could have saved the discharger money. However, most of these violations occurred as a result of malfunctioning dechlorination probes, lag times between the probes and the sodium biosulfite dosing pumps, and other factors. The Prosecution Team believes that the discharger did not have any benefit or savings from these identified violations.

Given the above consideration, the recommended civil liability recovers the Discharger's economic benefit derived from the alleged violations.

i. Other matters as justice may require: Central Coast Water Board staff spent time preparing and reviewing documents related to this enforcement action. Prior to this complaint, Water Board staff proposed MMP Order No. R3-2008-0054 to the Central Coast Water Board on September 5, 2008. Estimated staff costs (including Central Coast Water Board technical staff, administrative staff, supervisors, and legal counsel) are \$10,000.

\$125/hour X 80 hours = \$10,000

Conclusion: The Discharger violated California Water Code Section 13385 by failing to comply with effluent limitations for total chlorine residual. Section 13385(e) of the California Water Code authorizes the Central Coast Water Board to administratively impose civil liability in an amount not to exceed \$10,000 for each violation.

The factors considered above, particularly the factors considering degree of culpability and the nature and circumstance of the violations, justify assessing less than the maximum amount of \$10,000 per violation. However, the factors, especially the toxicity

of the discharge, also justify an amount that is greater than the mandatory minimum penalty of \$3,000 per violation. The Prosecution Team proposes a penalty of \$7,000 per violation.

RECOMMENDATION

Adopt Administrative Civil Liability Order No. R3-2008-0074 imposing liability of \$140,000 against the Discharger.

ATTACHMENTS

- 1. Management of Chlorine Disinfection System Related to Recent MMP Violations, Regional Water Board Internal Memo, September 2008
- 2. Receipt for Delivery of Complaint No. R3-2008-0074
- 3. List of Exhibits Incorporated by Reference
- cc: Warden John Marshall California Men's Colony P.O. Box 8101 San Luis Obispo, CA 93409-8101

Chris Swanberg, Staff Counsel California Dept. of Corrections and Rehabilitation <u>Chris.swanberg@cdcr.ca.gov</u>

Jorge Leon, Sr. Staff Counsel State Water Resources Contorl Board Office of Enforcement jleon@waterboard.ca.gov

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Arnold Schwarzenegge Governor

TO: Burton Chadwick Harvey Packard Correspondence File Field File

David LaCaro 49 FROM:

DATE: September 3, 2008

SUBJECT: Management of Chlorine Disinfection System Related to Recent MMP Violations, California Men's Colony Wastewater Treatment Plant (CMC), San Luis Obispo County

I had a telephone conversation with John Kellerman regarding the current management of the CMC's chlorine disinfection process on August 18, 2008. Recently, CMC was ordered (Order No. R3-2008-0065) to pay penalties for 45 effluent violations (totaling \$135,000). A total of 14 total chlorine residual violations were assessed for mandatory minimum penalties.

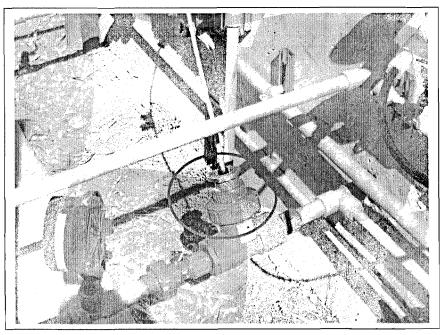
In accordance with the current NPDES permit compliance schedule, CMC is required to conduct a Trihalomethane (THM) study. The THM study identified alternative disinfection methods, cost estimates, and recommendations in order to reduce THMs in the effluent discharge. The study evaluated three disinfections methods; Ultraviolet (UV), Chlorine Dioxide, and Air Stripping. The study recommended upgrading the chlorine disinfection system to a UV disinfection system. The UV system will provide two important futures; eliminate THMs and total chlorine residual in the facility's effluent discharge. The CMC facility plans on converting their disinfection system to UV disinfection within the next five years (dependant on the State Budget). The CMC is currently undergoing a process to request funds for the UV disinfections upgrades from the state.

Water Board staff conducted a site visit on August 27, 2008, specifically to inspect the chlorine disinfection system, recent tweaks, and monitoring protocol. During in-office interviews, CMC staff explained that Carollo Engineers are contracted to provide new wastewater treatment plant service for fixes, replacements and continued consultation. In response to the recent mandatory minimum penalty, CMC staff has consulted with Carollo Engineers to conduct minor modifications to the disinfection system. These minor modifications include the following:

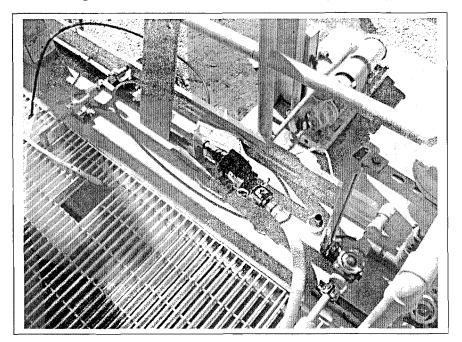


CMC Chlorination Inspection - 2 -

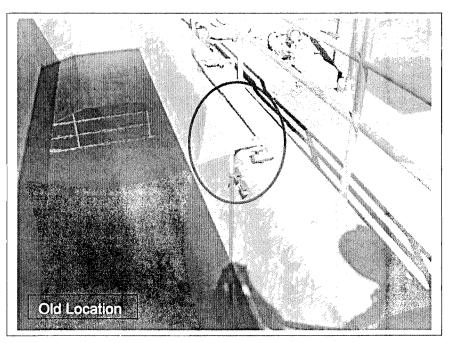
1) Relocating the sodium bisulfide (SBS) oxidation reduction potential (ORP) probe for the dechlorination chamber for faster response times. In the past, the dechlorination ORP probes were located in the SBS pump room. CMC staff reduced the lag time between the dechlorination ORP probe and the SBS pumps by moving the ORP probe next to the dechlortinating chamber (refer to photo below)

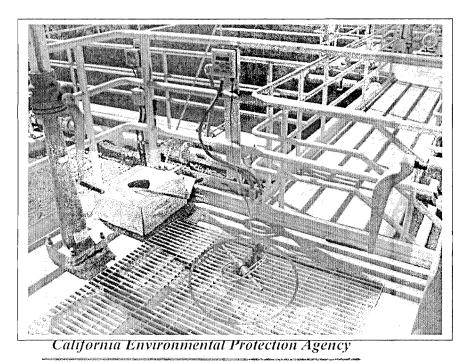


2) Reduced the size of the dosing pipe (from 2 inch line to a ³/₄ inch line) from the SBS tank to the dechlorination chamber. The reduction in size increased the time for SBS dosing into the dechlorination chamber (refer to photo below).



3) Relocated the chlorine ORP probe for the chlorine chamber for faster response times. In the past, the chlorine ORP probe was located in the chlorine contact serpentine channel. CMC staff reduced the lag time between the chlorine ORP probe and the chlorine pumps by moving the ORP probe in the chlorine contact chamber (refer to photos below).





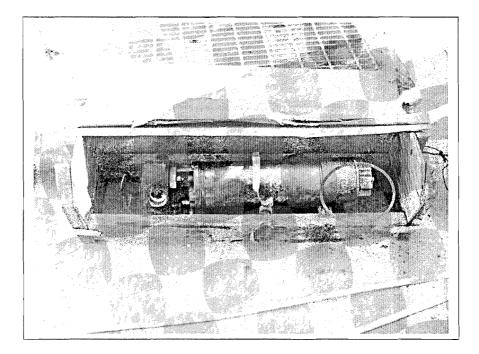


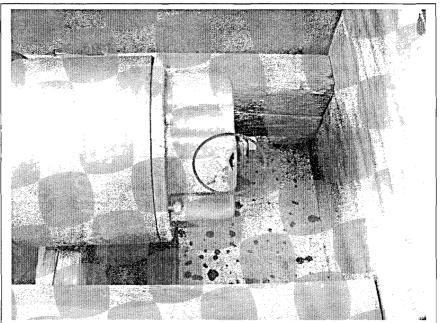
CMC Chlorination Inspection

- 4 -

New Location

4) Installed new chlorine mixer to provide adequate mixing in the chlorine contact chamber. Earlier a holding bracket for the chlorine mixer broke, which allowed the mixer to ruined power cables and secondary chlorine mixer (refer to photos below).



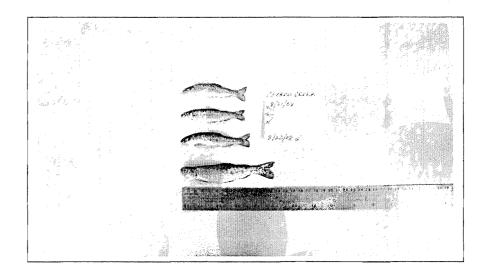


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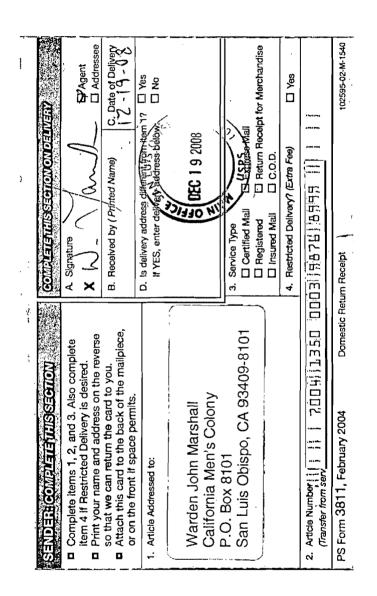
CMC staff believes that minor modifications to the current disinfections system (i.e., reducing lag times between ORP probes and associated pumps installing new mixers) may temporarily eliminate total chlorine residual exceedances. CMC is actively consulting Carollo Engineers to further optimize the current disinfection system in anticipation for the UV disinfections system.

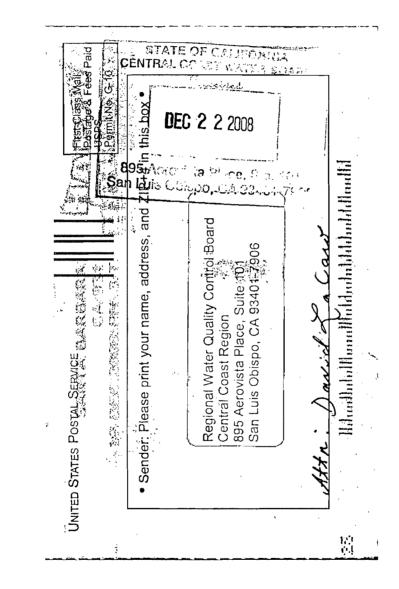
AUGUST 21, 2008 CHLORINE RELEASE:

On August 21, 2008, Water Board staff received a telephone call from the CMC Staff (Bob Barlogio), explaining that the facility exceeded the allowable total chlorine residual effluent limitation¹. The chlorine residual release caused a downstream "fish kill" event. Immediately following the chlorine release, CMC staff notified the Department of Fish and Game. Mr. Dennis Michniuk (DFG Staff Biologist) responded to the notifications and conducted an inspection on August 21, 2008. Mr. Michniuk explained that stickle-back fish were alive on the upstream side of the effluent pipe. However, Mr. Michniuk observed dead fish approximately 300-feet downstream of the effluent pipe. Among the dead fish were four steelhead trout (refer to photo below), some stickle back fish, and some crayfish.



¹ ND = less than 0.1 mg/L. Compliance determination for total chlorine residual shall be based on 99% compliance. To determine 99% compliance with the effluent limitation specified above for total chlorine residual, the following conditions shall be satisfied: (1) the total time during which the total chlorine residual values are above 0.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month; (2) no individual excursion from 0.1 mg/L shall exceed 30 minutes; and (3) no individual excursion shall exceed 2 mg/L.





List of Exhibits Incorporated by Reference California Men's Colony ACL Order No. R3-2008-0074

- 1. Waste Discharge Requirements Order No. R3-2006-0032, NPDES Permit No. CA0047856, for the California Men's Colony, San Luis Obispo County (Order No. R3-2006-0032)
- 2. CMC monitoring reports covering the period from July 1, 2006, to August 31, 2008
- 3. ACL Complaint No. R3-2008-0074
- 4. State Water Resources Control Board Water Quality Enforcement Policy, which can be found on the internet at the following link: <u>http://www.waterboards.ca.gov/board_info/agendas/2008/feb/0219_10current</u> <u>policy.doc</u>)

The above-described documents can be found in the Central Coast Water Board's files and on the internet at the following link: <u>http://www.waterboards.ca.gov/centralcoast/</u>

S:\NPDES\NPDES Facilities\San Luis Obispo Co\CMC WWTP\MMP No. R3-2008-0074 (Cl2)\List of Exhibits Incorporated by Reference - cl2.doc