

November 2, 2007

Mr. Michael McCann  
Assistant Executive Officer (Acting)  
C/O Compliance Assurance Unit  
California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, California 92123-4353

Mr. John Robertus  
Executive Officer  
California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, California 92123-4353

**CITIES OF VISTA AND CARLSBAD RESPONSE TO COMPLAINT NO. R9-2007-0099 FOR ADMINISTRATIVE CIVIL LIABILITY AGAINST THE CITIES OF VISTA AND CARLSBAD FOR VIOLATION OF NO. R9-2006-0003-DWQ, STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS (NCRU: 01-0764.02 & 01-0743.02: ebecker)**

Dear Mr. McCann and Mr. Robertus,

This letter is to transmit the Response from the Cities of Vista and Carlsbad (Cities) to Complaint No. R9-2007-0099 for Administrative Civil Liability against the Cities of Vista and Carlsbad for Violation of No. R9-2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and the supporting staff report (Complaint). The Cities are not able to waive our right to a public hearing on the matter due to concerns over material errors and omissions in the record. The Cities also have concerns with the Board's calculations of the proposed assessment of civil liability (ACL) amount and its appropriateness to the discharge and lack of consistency with State Board Water Quality Enforcement Policy and guidance.

Mr. Michael McCann  
Mr. John Robertus  
November 2, 2007  
Page 2

There is no disagreement on the part of the Cities that the spill to Buena Vista Lagoon was significant and unfortunate. Our review of the Complaint, however, leads us to conclude that it contains numerous factual errors that ultimately lead to erroneous conclusions regarding the nature of the discharge and the Cities' response to the discharge. The Cities have made continuous and ongoing efforts to meet with Board staff since the April 23<sup>rd</sup> submittal of the Investigative Order. The explicit and stated purpose of our request was to answer questions the Board staff may have regarding our submittals and to further assist the Board in preparation of an appropriate enforcement action, if any. Absent having had this opportunity for information interchange, the proposed ACL is not factually supported and, as a result, is not appropriately scaled.

Attached to this cover letter, you will find a detailed response to the Complaint and supporting Board staff report. The response addresses many factors of great concern to the Cities. These include clear factual corrections that are undisputed by the Board staff, corrections of interpretation as to City actions taken or outcomes if different actions had been taken during the spill repairs, and data submittal to fill acknowledged gaps in the Board staff's complaint record. Finally, we have included a thorough analyses of the ACL logic and calculations based on State Board policy (SWRCB 2002) and guidance (1996, amended 1997), as well as an inflation corrected analyses conducted by the Regional Board and the California Department of Fish & Game in support of the damage assessment for the August 23 and 24, 1994 Buena Vista Lagoon sewage spill.

We believe the early submittal of this information to the Board staff is of critical importance as there is nothing in the staff report to demonstrate that there has been any numeric or quantitatively objective calculation to support the Board staff's proposed ACL amount. Historically, the Board has performed numeric or quantitatively objective calculations of damages in Buena Vista Lagoon. The State Board's Water Quality Enforcement Policy suggests such a process, and the Order under which the Complaint has been issued requires adherence to the Enforcement Policy. Because the Complaint and staff report unfortunately omit specific discharger-beneficial parameters for lack of data that has not previously been requested from the Cities, we would hope that the Board staff and Board will take an opportunity to scrutinize this submittal package and consider amending the Complaint.

Notwithstanding our specific objections to various elements of the Staff Report and the need for or magnitude of the ACL, we would like to take this opportunity to express our appreciation for the assistance and good early communication we received working with Board staff during and immediately following the spill event. Mr. Bob Morris and Mr. Eric Becker have been helpful in working with the Cities staff and consultants and have championed efforts to assemble meetings between the Cities and the Board staff. We hope that this same good professional relationship continues through the enforcement process under which we presently find ourselves.

In the event that the Board, after fully considering the full record, finds that an ACL is appropriate, we would also like to note that the Cities are strongly supportive of keeping monies

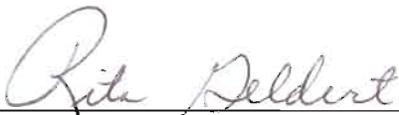
Mr. Michael McCann  
Mr. John Robertus  
November 2, 2007  
Page 3

local and expending funds on non-mandated system upgrades that enhance spill detection or response capabilities, local environmental projects, or other uses that benefit the public interests pertaining to water quality beneficial uses in or around Carlsbad and Vista. To this end, we would likely support appropriately scaled local benefit alternatives such as supplemental environmental projects (SEPs) in lieu of fully paying into the State Cleanup and Abatement Account.

The Cities reserve the right to submit additional comments, raise additional issues and to present evidence and testimony at any future meeting with staff or at any public hearing on this matter. The Cities ask that this letter, the Cities' Response, and the documents referenced herein, or attached, be incorporated into, and made a part of, the Record of this matter. As before, the Cities are eager and willing to meet with Board staff to discuss the material submitted here or in our initial Investigative Order response. We are strongly in favor of reaching agreement with staff on as many issues as possible prior to appearing before the Board on this complaint. Please let us know your availability to meet in the near future.

Also, as we move forward towards a hearing on the issue, the Cities would like to request that digital or hard copies of the full administrative record be provided to Board members for review. We make this request because we are concerned that the summary of the record has not been precise and balanced. Providing the full record would ensure Board members an opportunity to view the record in its entirety when considering the complaint.

*I certify under penalty of law 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, the information submitted is, 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.*



Rita Geldert  
City Manager, City of Vista



Glenn Pruim  
Public Works Director, City of Carlsbad

Cc:

Mr. Mark Stone  
General Manager  
Carlsbad Municipal Water District  
5950 El Camino Real  
Carlsbad, CA 92008

Bill Paznokas  
California Department of Fish & Game  
4949 Viewridge Drive  
San Diego, CA 92123

Mr. Michael McCann  
Mr. John Robertus  
November 2, 2007  
Page 4

Lawrence D. Pierce P.E.  
Director of Engineering/Public Works  
City of Vista  
600 Eucalyptus Avenue  
Vista, CA 92084-6240

Ron Wooton, Executive Director  
Buena Vista Lagoon Foundation  
P.O. Box 4516  
Carlsbad, CA 92008

Sharon Taylor  
Division Chief  
United States Fish & Wildlife Service  
6010 Hidden Valley Road  
Carlsbad, CA 92011

Keith Merkel  
Merkel & Associates, Inc.  
5434 Ruffin Road  
San Diego, CA 92123

Michael Hogan  
General Manager  
Encina Wastewater Authority  
6200 Avenida Encinas  
Carlsbad, CA 92011-1095

Cari Dale  
Assistant General Manager  
Carlsbad Municipal Water District  
5950 El Camino Real  
Carlsbad, CA 92008

John Brooks  
Special Agent  
United States Fish & Wildlife Service  
185 West F Street, Suite 440  
San Diego, CA 92101

Warren Wong  
California Department of Fish & Game  
4949 Viewridge Drive  
San Diego, CA 92123

**CITIES RESPONSE TO  
COMPLAINT NO. R9-2007-0099  
FOR ADMINISTRATIVE CIVIL LIABILITY AGAINST THE CITIES OF  
VISTA AND CARLSBAD FOR VIOLATION OF NO. R9-2006-0003-DWQ,  
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR  
SANITARY SEWER SYSTEMS  
(Reference: NCRU:01-0743.02 & 01-0764.02:ebecker)**

*November 2, 2007*

DISCHARGERS: CITY OF VISTA  
600 Eucalyptus Avenue  
Vista, California 92084  
Attn: Rita Geldert, City Manager

CITY OF CARLSBAD  
1635 Faraday Avenue  
Carlsbad, California 92008  
Attn: Glenn Pruum, Public Works Director

*I certify under penalty of law 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, the information submitted is, 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.*

  
\_\_\_\_\_  
Rita Geldert, City Manager  
City of Vista

  
\_\_\_\_\_  
Glenn Pruum, Public Works Director  
City of Carlsbad

# Table of Contents

<b>Executive Summary</b> .....	<b>1</b>
<b>1.0 Background</b> .....	<b>7</b>
<b>2.0 Significant Record Documents</b> .....	<b>9</b>
<b>3.0 Critical Corrections To The Complaint</b> .....	<b>11</b>
<b>4.0 Basis For Calculation Of A Proposed ACL</b> .....	<b>14</b>
4.1 BACKGROUND AND ISSUE .....	14
4.2 RECOMMENDED ANALYSES PROCESS .....	17
<b>5.0 Determination of Administrative Civil Liability</b> .....	<b>19</b>
5.1 NATURE, EXTENT, & GRAVITY OF THE SEWAGE DISCHARGE.....	19
<i>Initial Liability</i> .....	19
<i>Beneficial Use Liability</i> .....	21
Industrial Service Supply (IND) .....	22
Contact water recreation (REC-1) .....	22
Lagoon Use .....	23
Beach Use .....	24
Non-contact water recreation (REC-2) .....	24
Preservation of Biological Habitats of Special Significance (BIOL) .....	25
Warm Freshwater Habitat (WARM) .....	25
Wildlife Habitat (WILD) .....	28
Rare, Threatened, or Endangered Species (RARE) .....	28
Marine Habitat (MAR) .....	28
Estuarine Habitat (EST).....	28
Beneficial Uses Impact Summary.....	28
<i>Base Amount</i> .....	29
5.2 CONDUCT OF THE DISCHARGER .....	30
<i>Culpability Factor (CF1)</i> .....	31
Quantity of Sewage Discharge.....	31
Prevention of Discharge.....	32
Buena Vista Lagoon.....	35
<i>Notification Factor (CF2)</i> .....	37
<i>Clean-up And Cooperation Factor (CF3)</i> .....	37
<i>History of Violations Factor (CF4)</i> .....	39
Assessment Matrix.....	42
5.3 OTHER FACTORS .....	43
5.4 ECONOMIC SAVINGS .....	44
5.5 OTHER MATTERS AS JUSTICE MAY REQUIRE.....	45
5.6 ABILITY TO PAY AND ABILITY TO CONTINUE IN BUSINESS .....	46
<b>6.0 Recommended Assessment of Civil Liability</b> .....	<b>47</b>
<b>7.0 References</b> .....	<b>49</b>

## **List of Appendices**

- Appendix 1. SWRCB Order No. 2006-0003-DWQ
- Appendix 2. Guidance to Implement the Water Quality Enforcement Policy
- Appendix 3. Water Quality Enforcement Policy
- Appendix 4. SWRCB Order No. 2006-0003-DWQ Fact Sheet
- Appendix 5. SWRCB Staff Report in Support of Complaint No. 2000-74
- Appendix 6. SWRCB Staff Report in Support of Complaint No. 95-90
- Appendix 7. The Economic and Fiscal Impact of Carlsbad's Beaches
- Appendix 8. Corrosion Control Performance Monitoring in a Severely Corrosive Tidal Muck
- Appendix 9. Uniquely Severe Environments Letter
- Appendix 10. SWRCB Response to Supplemental Brief in Support of Petition for Review
- Appendix 11. Pipe Failure Response Costs

**CITIES' RESPONSE TO  
COMPLAINT NO. R9-2007-0099  
FOR ADMINISTRATIVE CIVIL LIABILITY AGAINST THE CITIES OF VISTA AND  
CARLSBAD FOR VIOLATION OF NO. R9-2006-0003-DWQ, STATEWIDE GENERAL  
WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS  
(Reference: NCRU:01-0743.02 & 01-0764.02:ebecker)**

**November 2, 2007**

**EXECUTIVE SUMMARY**

The cities of Vista and Carlsbad (Cities) jointly operate the Buena Vista force sewer main located adjacent to the southern edge of Buena Vista Lagoon. On the weekend of April 1, 2007 this polyethylene-encased, ductile iron force main ruptured as a result of unpredictable and undetectable exterior corrosion. The result of the rupture was the discharge of an estimated 7.329 million gallons of untreated sewage to Buena Vista Lagoon.

The diversion of over 2 million gallons of sewage to the Oceanside sanitary sewer system prevented additional discharge. The impoundment and recapture of sewage through 1 million gallons of containment at the Buena Vista Lift Station and pumper trucks and vacuums collection, as well as the diversion of 669,000 gallons of sewage, ensured that over 3.669 million gallons of potential discharge volume was prevented from release as part of the initial response. Withdrawal and treatment of sewage-contaminated lagoon water totaled 42.3 million gallons. The cost of discharge response by the Cities has exceeded \$750,000 with the predominant cost being associated with environmental protection, clean-up, and remediation.

On September 28, 2007, The Regional Board staff issued Complaint No. R9-2007-0099 proposing an assessment of civil liability (ACL) for the discharge in the amount of \$1,095,000 and establishing a tentative Regional Board hearing date of December 12, 2007 for the complaint. The Cities have reviewed this complaint and disagree with the premise that the discharge warrants an ACL. The Cities' Response outlines that position. Further, if the Executive Officer or the Board disagrees with the Cities and finds that an ACL is warranted, the Cities' response provides documentation that the Board Staff Report does not comply with the enforcement conditions (#6 and 7) of the State Board Order No. 2006-0003-DWQ under which the Complaint has been issued and an ACL is being sought. The Staff Report does not follow the State Board's *Water Quality Enforcement Policy* and State Board's *Guidance to Implement the Water Quality Enforcement Policy*. This Cities' Response to the Complaint also identifies significant technical errors on which the Complaint is based and makes a case that the proposed assessment is not consistent with past enforcement actions of the San Diego Regional Board. Specifically, the Cities' Response reviews prior complaints referenced in the Staff Report. We have examined these complaints, including the Board's documentation for limiting, expanding, and foregoing ACLs for various discharges and

portions of prior discharges. If the Board finds that an ACL is warranted, we have calculated an assessment amount that follows State Board Policy and Guidance, as well as past precedent of the Board. The Cities' Response goes through the basis for the calculated amount in great detail.

The calculated amount of an ACL, if the Board were to determine that an assessment is warranted at all, is fairly formulaic. This amount is calculated as a base amount that reflects the extent and severity of the violation and its impact on beneficial uses. The base amount is modified by multipliers addressing discharger conduct, including culpability, notification, cleanup and cooperation, and history of violations. This amount is then modified as appropriate based on other factors including economic benefit of the discharge to the discharger, staff costs, discharger's ability to pay, and any statutory limitations. The process is outlined in Table VII-1. The procedure to set ACL amounts of the State Water Resources Control Board Water Quality Enforcement Policy is as follows:

Table VII-1. Procedure to set ACL amounts

Step	Procedure
<b>A. Initial Liability</b>	Set an initial liability based on the extent and severity of the violation and the sensitivity of the receiving water. An initial liability should also be calculated for non-discharge violations.
<b>B. Beneficial Use Liability</b>	If possible, estimate the dollar value of any impacts of the violation on beneficial uses of the affected waters.
<b>C. Base Amount</b>	The Base Amount is a single amount that is a result of combining the figures derived from the first 2 steps. For many ACLs, the base amount will simply be the initial liability from step A, because the calculation of the beneficial use liability may not be appropriate. The base amount reflects the extent and severity of the violation and its impact on beneficial uses.
<b>D. Adjustment for discharger's conduct</b>	Determine factors to adjust the Base Amount with respect to the conduct of the discharger's history of violations and other considerations. Apply these factors to the Base Amount from step C.
<b>E. Adjustment for other factors</b>	Determine whether any other factors should be taken into consideration when setting the ACL amount. If appropriate, adjust the figure from Step D to include these factors.
<b>F. Economic Benefit</b>	Estimate the economic benefit to the discharger. Economic benefit is any savings or monetary gain derived from the acts that constitute the violation. Add the economic benefit to the amount in step E.
<b>G. Staff Costs</b>	Estimate the SWRCB and RWQCB staff costs resulting from the violation. Add this cost to the figure determined from steps A through F.
<b>H. Adjustment for ability to pay</b>	If appropriate, increase or reduce the figure from Steps A through G with respect to the discharger's ability to pay and ability to continue in business.
<b>I. Check against statutory limits</b>	Check the figure from steps A through H against the statutory maximum and minimum limits.

*(SWRCB Water Quality Enforcement Policy, 2002)*

When working through this process, the Cities have calculated an assessment liability of substantially less than that proposed by the Board staff Complaint. This is calculated as follows:

The calculation of base liability is the additive result of an initial liability and a beneficial use liability. The State Board's Enforcement Policy contemplates a heavy reliance on quantification of the actual impact to beneficial uses where these are available. Specifically, the Policy indicates that ***"[W]hen it is possible to calculate the Beneficial Use Liability, the RWQCBs should assess the extent to which the Beneficial Use Liability represents the entire harm resulting from the violation."*** Indeed, this direction was employed in the 1994 ACL where actual calculable damages were used as the sole element of the base liability. We would argue that this is appropriate in the present case as well.

$$\begin{array}{r r r r r} \textit{Initial Liability} & + & \textit{Beneficial Use Liability} & = & \textit{Base Amount} \\ \$0 & + & \$194,494.34 & = & \$194,494.34 \end{array}$$

The conduct factors of an assessment are used to modify the assessment amount based on several factors that are scored as increases, decreases, or no change from a multiplier value of 1.0. This document provides a significant summary as to how each of these factors was evaluated and provides support for recommended modifications based on these factors.

Perhaps the strongest argument for not assessing a civil liability in the case of the present discharge is found in the Culpability Factor analyzed through this process and the past actions of the Board where the initial discharge volume from a year 2000 force main rupture in Oceanside was excluded from the ACL because the very young age of the pipe made the break in the force main "not reasonably foreseeable." While the Oceanside pipe failure was presented in the Board's Staff Report as a primary factor in defining culpability, the Cities were not aware of the details of this prior rupture; but more importantly, upon recent investigations of the Oceanside event, it is clear that the prior Oceanside pipe rupture was not an indicator of the potential for the present Buena Vista force main rupture. In the Oceanside failure, an unlined ductile iron pipe failed due to external corrosion brought about by corrosive soil conditions. The Buena Vista force main was polyethylene encased which is the standard mitigation measure for ductile iron pipe construction in highly corrosive soil environments. Even as recently as 2006, investigation into the effectiveness of polyethylene encasement suggests a ten-fold protection level over raw ductile iron pipe in corrosive soil environments. As such, even if the Cities had specific knowledge regarding the failure details of the Oceanside pipe, it would not have altered the reasonable and prudent actions based on available information and cautious industry standard practices.

While the Cities believe that the Culpability Factor argues against any ACL, we have assigned a 0.5 value to this factor as a significant reduction based on the unforeseeable circumstances of the failure and the rapid and continuous response exhibited in the

control and termination of the discharge, including the diversion and/or recapture of over 3.669 million gallons prior to discharge to waters of the State.

The Notification Factor was not adjusted since the Cities made all of the appropriate notifications in a timely basis and as prescribed by law and permit conditions.

The Cleanup and Cooperation Factor is discussed in some detail in this document. The Cities responded immediately to the discharge with flow diversions, collections of discharge for treatment, parallel efforts to implement repairs, environmental monitoring, damage assessment, and aeration and pump-back to remediate effects and reclaim discharged waste. The cost of the environmental response exceeds \$400,000 along with other release response costs.

The unquantified removal of sewage associated with the 42.3 million-gallon lagoon pump back both assisted in containing the effects of the discharge to the east end of the lagoon and withdrew a substantial volume of sewage from the environment. This lagoon cleanup operation, combined with aeration and monitoring, ran continuously 24 hours per day and 7 days a week for as long as benefit existed. In addition to the costs of the operation, the Cities also realized additional expenditures for processing the pump-back water from the lagoon.

In the final analysis, the environmental effects were greatly mitigated by the actions taken by the Cities. As such, this factor has been given a substantial reduction to 0.5.

The History of Violation Factor assesses the Dischargers' history of violations. To assess this factor, we examined the history of discharge incidents, the volume of discharge, and the percent recovery from the annual reports maintained by the Regional Board. The history of discharge was evaluated numerically in the context of the average for all sewer agencies within Region 9. We compared the facility ownership weighted (89.6% Vista, 10.4% Carlsbad) violation history with the 5-year average for all dischargers. This comparison found a dischargers violation history that is 54% of the regional mean. We thus used a factor of 0.54 as an adjustment of this factor.

Summarizing these factors in accordance with the Water Quality Enforcement Policy, the Cities have calculated a conduct factor adjustment to the base value as presented in Table VII-2 summary format below and calculated as follows:

$$\begin{array}{r} \text{Base Amount} \times CF1 \times CF2 \times CF3 \times CF4 = \text{ACL} \\ \$194,494.34 \times 0.5 \times 1.0 \times 0.5 \times 0.54 = \$26,257 \end{array}$$

Table VII-2. Conduct Factors to adjust ACLs

Factor	Adjustment for
Culpability Factor (CF1)	<p>Discharger's degree of culpability regarding the discharge. Higher ACL amounts should be set for intentional or negligent violations than for accidental, non-negligent violations. A first step is to identify any performance standards (or, in their absence, prevailing industry practices) in the context of the violation. The test is what a reasonable and prudent person would have done or not done under similar circumstances.</p> <p><b>There was no way for the Cities to have anticipated the rupture of the force main. The young age of the pipe, the suitable material, and PE lining would all support an anticipated design life in excess of 50 years. There is no standard industry means of regular inspection of an encased force main of this scale without extreme measures of excavation, dewatering, and breaching the protective encasement membrane. In 2000, the Board did not find liability in the initial failure of an unlined force main because the <i>break in the force main was not reasonably foreseeable.</i></b></p> <p><b>We submit that this factor alone either eliminates the proposed ACL, or radically reduces the proposed ACL by a factor of 0.5 or less.</b></p>
Notification Factor (CF2)	<p>Extent to which the discharger reported the violation as required by law or regulation.</p> <p><b>The Cities made all reports as required by law. We recommend no change as a result of the Dischargers' conduct as the known notification requirements were met in a timely fashion.</b></p>
Cleanup and Cooperation Factor (CF3)	<p>Extent to which the discharger cooperated in returning to compliance and correcting environmental damage, including any voluntary cleanup efforts undertaken.</p> <p><b>The Cities have implemented extreme clean-up and discharge remediation efforts. The cost of these efforts has exceeded both the repair costs for the pipe and double the damage calculations for beneficial uses. The Cities have been cooperative with agencies and forthcoming with information. In addition, the Cities have gone well beyond the requirements of law to investigate, critique, learn from and enhance their capabilities in the future.</b></p> <p><b>We believe that the Cities' response should be considered to support a reduction of not less than a factor of 0.5 for any residual liability associated with the beneficial uses damage.</b></p>
History of violations factor (CF4)	<p>Prior history of violations</p> <p><b>The Cities' violations have resulted from discharges of sewage as a result of various factors associated with operation of a large wastewater collection system. The discharge record is better than industry standard when the events are standardized for the scale of the systems operated by the Cities. We have calculated a penalty reduction factor of 0.54 based on performance against the regional average.</b></p>

Other factors considered as adjustments include the Board's reported staff costs associated with the discharger event investigation and enforcement action. The Board staff estimates this cost at \$17,500. The failure of the Buena Vista line and the

discharge from this line does not result in any cost savings on the part of the Cities. In fact, the line, which was state of the art at the time of construction, failed after only half of its programmed lifecycle of 50 years. This is a shorter lifespan than the polyethylene encased ductile iron pipe material would normally be estimated to have, even in corrosive soil environments. The response has already cost the Cities in excess of \$750,000 and the Cities are moving forward with an accelerated pipeline replacement and relining in order to maintain parallel infrastructure redundancy. These actions are being taken, even though there is no knowledge of other locations on the pipe where abnormal rates of corrosion exist.

Based on consideration of all corrections, an ACL, if assessed, should not be greater than the calculated value above plus staff cost recovery. This is estimated as follows:

<b>ACL</b>	<b>+</b>	<b>Cost Recovery</b>	<b>=</b>	<b>Total Liability</b>
<b>\$26,257</b>	<b>+</b>	<b>\$17,500</b>	<b>=</b>	<b>\$43,757</b>

Again, the Cities do not believe an ACL is warranted based on the unforeseeable nature of the discharge and the rapid and exceptional commitment to the repair and environmental damage remediation. If the Board finds that issuance of an ACL is appropriate, however, that assessment must be based on SWRCB Policy, guidance, and precedent such that it is fair and equitable to the Cities and the public constituency represented.

Finally, in the event that the Board was to find that an ACL is warranted, we request that the Board look favorably upon a local Supplemental Environmental Project that benefits the public that would be affected by the costs of the ACL through either service impacts or sewer fees. The Cities anticipate the receipt of proposed SEPs in the near future. We anticipate supporting one or more of these SEPs to the extent that the SEP amount can be aligned with the liability calculated.

## 1.0 BACKGROUND

The City of Vista and the City of Carlsbad, "Cities", jointly own and operate a 24-inch force sewer main located south of Buena Vista Lagoon near Jefferson Street in the City of Carlsbad. The City of Vista owns 89.6% of the line; while the City of Carlsbad owns 10.4%. This force main connects the Buena Vista Sewage Lift Station with the Encina Wastewater Authority's treatment plant located on Avenida Encinas in Carlsbad. From March 31, 2007 through April 3, 2007, the Cities discharged an estimated 7.329 million gallons of untreated sewage from a rupture of the sewer main and as a result of repair period overflow from the containment berm at the adjacent Buena Vista Sewer Lift Station into Buena Vista Lagoon. The Cities prevented the discharge of an additional 3.669 million gallons through diversion of over 2 million gallons of sewage to the Oceanside system, the impoundment and recapture of 1 million gallons within the containment at the Buena Vista Lift Station, and the collection of 669,000 gallons for treatment using pumper trucks and vacuators at the Buena Vista Sewage Lift Station. Immediately upon system restoration, a pump-back of contaminated water at Buena Vista Lagoon was initiated to extract released sewage. This pump-back operation withdrew 42.3 million gallons of wastewater contaminated lagoon water from Buena Vista Lagoon. Lagoon aeration, contaminant postings, and environmental monitoring continued as dictated by environmental benefits. In total, the discharge resulted in the documented loss of 1,694 fish, 4 birds, as well as some invertebrates. The discharge response and clean-up costs have exceeded \$700,000, with the majority of the cost going towards environmental response costs.

As a result of the discharge into Buena Vista Lagoon, the Regional Board requested information to evaluate the actions taken to prevent the sewage discharge, to repair the failed pipeline, and to investigate the impacts to water quality (WQ) from the sewage discharges. This request was tendered to the Cities on April 6, 2007 in the form of Investigative Order (IO) No. R9-2007-0060. In accordance with the IO, the Cities provided a response to Board questions on April 23, 2007. Subsequent updates were provided to the Board regarding the discharge response and environmental monitoring at various periods following the IO submittal; and on September 19, 2007, a supplemental submittal was made to the Board following the issuance of the final pipeline failure investigation report.

On September 28, 2007, The Regional Board staff issued Complaint No. R9-2007-0099 proposing an assessment of civil liability (ACL) for the discharge in the amount of \$1,095,000 and establishing a tentative Regional Board hearing date of December 12, 2007 for the complaint. The Cities have been given an option of waiving their rights to a public hearing or proceeding to hearing on the complaint. The Cities have determined that a public hearing is necessary to address errors and omissions in the record, as well as to present information pertinent to the Board's consideration of the proposed ACL. The complaint provides that written evidence may be submitted to the Board by the Cities prior to 5 P.M. on November 13, 2007 in order to be considered by the Regional Board at the public hearing.

This submittal has been prepared to provide a response to the Complaint and Staff Report. It conveys supplemental information and evidence for consideration leading up to and at the public hearing. This response does not supplant prior information submittals already on record. Further, documents referenced in this submittal should be considered part of the record, as if they are provided in full as attachments.

## 2.0 SIGNIFICANT RECORD DOCUMENTS

The following response document is based in large part on information present in the Cities' Investigative Order Dischargers' Response submittal and supplemental information submittals, a variety of technical documents that pertain to this discharge and prior discharges, and State Water Resources Control Board policy and guidelines, as well as material collected from varied sources including the Cities, state, and federal government publications.

Most of these supporting documents are being incorporated as appendices to this response. Due to size and ready availability, however, some of these documents are referenced here and omitted as attachments. Excerpts are provided where most applicable.

No.	Appendix	Reference
1	NA	<b>Discharger Response To Investigative Order No. R9-2007-0060, Discharge Of Untreated Sewage Into The Buena Vista Lagoon Within The City Of Carlsbad, San Diego County (Reference: Ncru:01-0743.02 &amp; 01-0764.02:Ebecker);</b> April 23, 2007 + Appendices
2	NA	<b>Cities of Vista and Carlsbad. September 19, 2007. Additional Information Submittal For Investigative Order No. R9-2007-0060, Discharge Of Untreated Sewage Into Buena Vista Lagoon Within The City Of Carlsbad, San Diego County (Reference: Ncru:01-0743.02 &amp; 01-0764.02:Ebecker),</b> September 19, 2007, letter from Keith Merkel to Eric Becker and John Odermatt + Appendices
3	1	<b>State Water Resources Control Board Order No. 2006-0003-DWQ. Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.</b> May 2, 2006.
4	2	<b>Guidance to Implement the Water Quality Enforcement Policy.</b> State Water Resources Control Board. April 1996, amended September 18, 1997.
5	3	<b>Water Quality Enforcement Policy.</b> State Water Resources Control Board. February 19, 2002
6	4	<b>Fact Sheet State Water Resources Control Board Order No. 2006-0003. Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.</b> May 2, 2006.
7	5	<b>Staff Report In Support of Complaint No. 2000-74;</b> City of Oceanside Spill to Buena Vista Creek. California Regional Water Quality Control Board, San Diego Region. April 17, 2000.
8	6	<b>Staff Report on the Discharge of Untreated Sewage from the Buena Vista Pump Station to Buena Vista Lagoon on August 23, 1994; In Support of Complaint No. 95-90;</b> California Regional Water Quality Control Board, San Diego Region. July 6, 1995 + Appendices

9	6	<b>Preliminary Report on Damage Assessment of the Buena Vista Lagoon Sewage Spill on August 23 and 24, 1994 and Preliminary Report on Cost Recovery for the Buena Vista Lagoon Spill</b> (prepared for August 23 and 24, 1994 spill). California Department of Fish & Game. Attachment #4 to Staff Report on the Discharge of Untreated Sewage from the Buena Vista Pump Station to Buena Vista Lagoon on August 23, 1994; In Support of Complaint No. 95-90; California Regional Water Quality Control Board, San Diego Region. July 6, 1995
10	7	<b>The Economic and Fiscal Impact of Carlsbad's Beaches: A Survey and Estimate of Attendance.</b> Philip King. December 12, 2005
11	8	<b>Ductile Iron Pipe Case Study: Corrosion Control Performance Monitoring in a Severely Corrosive Tidal Muck.</b> Corpro Companies, Inc. 2006
12	9	<b>Uniquely Severe Environments Letter.</b> Ductile Iron Pipe Research Association. May 14, 2004
13	10	<b>Regional Water Quality Control Board in Response to Supplemental Brief In Support of Petition for Review Submitted By the City of Oceanside (SWRCB/OCC File A-1300).</b> California Regional Water Quality Control Board San Diego Region. February 13, 2001
14	11	<b>Discharge Response Costs</b>

### 3.0 CRITICAL CORRECTIONS TO THE COMPLAINT

While the Cities have concerns regarding some of the interpretations made by the Board staff regarding information provided or gathered by the staff, we believe that much of this stems from misunderstandings of fact that lead to erroneous conclusions. Of greatest importance to the conclusions contained within the complaint are the following:

- The Board's Staff Report includes in the allegation that the discharge occurred from a 24-inch pipe located at the Buena Vista Pump Station (3.0 Allegations, lines 3-4). This should be corrected to indicate that the discharge occurred from the Buena Vista Force Main down system from the Buena Vista Pump Station. Prior discharges at the pump station that are later referenced in the complaint are unrelated to the present discharge and were the result of completely different factors.
- The Complaint Staff Report notes that the Cities' April 23, report states the discharge started sometime Friday, March 30, or Saturday, March 31, 2007 (4.1 Nature, Extent, & Gravity of the Sewage Discharge, line 3). The report, however, indicates that the discharge date was determined to be March 31, 2007 (IO Response 1.0 Background, paragraph 2; 4.4 Calculation of Wastewater Discharge Volume, paragraph 1). There are no references to March 30 in our submitted report, and no other areas of the Complaint appear to have the same error.
- The Complaint Staff Report asserts that ***"because the City of Carlsbad could not locate the pipeline as-built plans to ensure the exact location of the pipeline, the needed work to uncover and repair the pipeline was delayed"*** (4.1 Nature, Extent, & Gravity of the Sewage Discharge). This is not correct. While plans could not be immediately located for a 25 year old pipe at 1:30 AM by the responding engineers and public works supervisors, the determination that the pipe excavation and repair would require a specialty contractor and shoring was made prior to this search for as-built plans. Due to the saturation of soils around the pipe, the early excavation indicated that excavation wall failures would prevent safe access without acquisition of trench shoring (IO Response, Appendix 3, Sunday 4/1/07-21:30 hrs). The timing of the break and the need for a specialty contractor rendered the acquisition of the as-built plans, wholly irrelevant to the response needs and timeline for termination of the release.
- The Staff Report for the Complaint indicates that; ***"Warning signs were posted around the lagoon from April 2 through April 19 for a loss of 17 days of recreation. The coastal areas 600 feet south and 1200 feet north of the Buena Vista Lagoon outlet were also posted with warning signs as a precautionary measure, from April 2, 2007 until April 9, 2007, for an additional loss of 7 days of recreation"***. It should be noted that the ocean

posting is part of the total 17 day posting and once it was confirmed that sewage had not reached the ocean, these signs were removed leaving the lagoon postings for an additional 10 days.

- The Staff Report for the complaint indicates that; ***“The Dischargers reported a fish kill of approximately 1,700 individuals with some bird, bullfrog, and crayfish kills”***. It is prudent to clarify that these losses were quantified as 1694 fish, 4 birds, 1 bullfrog, and 3 crayfish based on regular survey and collections.
- The Staff Report indicates that ***“[T]he California Department of Fish & Game and United States Fish & Wildlife Service reported that the sewage discharge and subsequent repair work impacted the Light-footed Clapper Rail, a Federal and State endangered species”***. There has been no such determination of impact. In fact, in a May 31, 2007 letter to the Board from the USFWS, it was explicitly stated that “[P]otential impacts to the light-footed clapper rail, the Belding’s savannah sparrow, and other migratory bird species **are yet to be determined** [emphasis added]. This is based on a prior assertion made by the USFWS that, *[B]ased on 2007 survey data, light-footed clapper rails were nesting in the Buena Vista Lagoon near the discharge site at the time of the release (Zemba unpubl. data 2007 and pers. comm. 2007). Survey data (2006) also indicate that the Belding’s savannah sparrow (Passerculus sandwichensis beldingi) was also nesting in the lagoon at this time of the year (McKee-Lewis unpubl. data 2006). Disruption or flushing of breeding birds nesting in the lagoon, with associated impacts (including failure of nesting attempts), may* [emphasis added] *have occurred as a result of operational activities during the incident”*.

Please note that the Cities have provided information in our IO Response (pgs. 43-44) addressing the likelihood of affects to state and federally listed species. Among the information is a discussion of the fairly significant separation between the discharge point at the Lagoon wildlife viewing area and the clapper rails nesting sites. There is also a specific discussion that the distance between the pipeline rupture location and the clapper rails nesting site is approximately 800-1000 feet. Between these areas is extensive cattail marsh, a segment of marsh that has been removed by the Department of Fish & Game to maintain viewing access, and a wildlife viewing area and kiosk. Clean-up operations were all staged from existing designated fishing access points, at the concrete bridge structures, and in areas where the Department had removed shoreline vegetation. No staging or vegetation removal occurred in areas known to be occupied by listed species. The Board’s Staff Report appears to be overstated to conclude impacts to listed species beyond that which has been demonstrated or may be reasonably inferred with adequate factual support.

- The Staff Report indicates that ***“[T]he Dischargers could have implemented measures to reduce the amount of the discharge. The discharge was not discovered for almost 2 days because the Dischargers failed to have the capability to monitor the flow or pressure in the force sewer main.”*** This

statement is not correct. If the flow variance data are reviewed in Appendix 4 of the Dischargers' Response to the IO, it is clear that the variance measured on Saturday, March 31, was only 6.7% of that measured on Sunday, April 1. The variance was higher on Monday when the pipe was exposed and subject to less soil back pressure thus allowing a greater rate of release. If it is assumed that a relatively consistent rate of release occurred on Saturday as on Sunday, it is likely that the pipe leak began late Saturday night at about 10:30 PM. It was ultimately detected and called in at 6:52 PM on Sunday. This would mean that the discharge was likely detected approximately 20.5 hours after initial breach.

- The Staff Report indicates that ***“[T]he Dischargers recognized that the force sewer main needed improvement and/or replacement. As part of the City of Carlsbad’s 2003 Sewer Master Plan, the City of Carlsbad included a project to install a parallel force main from the Buena Vista Pump Station to I-5 likely using a high-density polyethylene pipe that is not susceptible to corrosion, but the City of Carlsbad failed to construct the parallel force main before the discharge.”*** Contrary to the Board Staff Report claims, however, the City of Carlsbad’s 2003 Sewer Master Plan, proposed to install a parallel force main from the Buena Vista Pump Station to I-5, not for reasons of concern over the competence of the existing pipe, but rather for capacity enhancements based on regional planning demands for sewer service. This upgrade did not include improvements to the existing pipe, as it was not nearing its recognized service life of 50 years. Parallel piping and lining of the existing pipe (dependent upon a parallel pipe for flow diversion) are now planned to be advanced to the earliest practical period based on a new understanding that potential corrosion areas may exist elsewhere on the pipe. This change in Master Plan programming was explained in the Discharger’s September 19 supplement to the IO response.

## 4.0 BASIS FOR CALCULATION OF A PROPOSED ACL

### 4.1 BACKGROUND AND ISSUE

The Cities have conducted a thorough review of the SWRCB documents that underpin the assessment of an administrative civil liability (ACL) and other enforcement actions that may be administered by the Regional Board or SWRCB under the California Water Code. Most specifically these documents include: 1) SWRCB Order No. 2006-0003-DWQ, the State Board Order under which a violation is being alleged, (Appendix 1); 2) *Guidance to Implement the Water Quality Enforcement Policy* (1996, amended 1997) (Appendix 2), 3) the current *State Water Resources Control Board Water Quality Enforcement Policy* (2002) that includes earlier enforcement guidance (Appendix 3); and 4) SWRCB Order No. 2006-0003-DWQ Fact Sheet (Appendix 4)

As a matter of policy, the State Board declared in its 1997 guidance that:

***It is the policy of the State Water Board that enforcement actions throughout the State shall be consistent, predictable, and fair.***

In its current Enforcement Policy, the State Board also indicates that:

***Enforcement actions should be appropriate for each type of violation and should be similar for violations that are similar in nature and have similar water quality impacts.***

Finally, Order 2006-0003 explicitly mandates the Board to follow the adopted State Board Enforcement Policy. This Order goes even further by obliging the Board to consider measures taken to contain, control, and mitigate discharges when contemplating enforcement actions. In considering these measures, the Order provides specific factors that must be considered. The specific language from Order No. 2006-0003 that is applicable is as follows:

6. ***In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:***
  - i. ***The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;***
  - ii. ***The Enrollee can identify the cause or likely cause of the discharge event;***
  - iii. ***There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives,***

*if the Enrollee does not implement a periodic or continuing process to identify and correct problems.*

- iv. The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;*
- v. The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:*
  - Proper management, operation and maintenance;*
  - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);*
  - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);*
  - Installation of adequate backup equipment; and*
  - Inflow and infiltration prevention and control to the extent practicable.*
- vi. The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.*
- vii. The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.*

- 7. When a sanitary sewer overflow occurs, the Enrollee shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.*

*The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:*

- i. Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;*
- ii. Vacuum truck recovery of sanitary sewer overflows and wash down water;*
- iii. Cleanup of debris at the overflow site;*
- iv. System modifications to prevent another SSO at the same location;*
- v. Adequate sampling to determine the nature and impact of the release; and*
- vi. Adequate public notification to protect the public from exposure to the SSO.*

**SWRCB Order No. 2006-0003**

The State Board's Enforcement Policy offers very specific guidance and direction in developing monetary assessments. These are outlined in section VII. *Monetary Assessments in Administrative Civil Liabilities (ACLs)*. This section outlines the steps that the Board must take in establishing a monetary assessment value. These steps encourage enumeration and quantification where possible. The Enforcement Policy also indicates that “[P]rior to issuing a complaint the RWQCB Executive Officer should consider each factor. This shall be documented in the ACL Complaint or in a staff report.” The text of the Policy goes on to indicate: “If the RWQCB issues an ACL Order, the order shall contain findings explaining the Board’s consideration of the factors. The documentation of elements such as economic

**benefit, staff costs and avoided costs are necessary for the appropriate distribution of the total liability.”**

While it can be argued that all of the factors required by the Water Code are included in the Complaint and staff report, it does not appear that the Enforcement Policy procedures to be used by SWRCB and RWQCB staff to develop a recommendation for the amount of the monetary assessment in an ACL have been followed. The steps in the procedure are provided to SWRCB and RWQCB staff in *Table VII-1 Procedures to Set ACL Amounts* within the Enforcement Policy (reproduced below). Further, the Enforcement Policy states that “[S]taff should carefully document each step in the **ACL Complaint, ACL Order, or the staff-report of the ACL**”. This has not been done.

Table VII-1. Procedure to set ACL amounts

Step	Procedure
<b>J. Initial Liability</b>	Set an initial liability based on the extent and severity of the violation and the sensitivity of the receiving water. An initial liability should also be calculated for non-discharge violations.
<b>K. Beneficial Use Liability</b>	If possible, estimate the dollar value of any impacts of the violation on beneficial uses of the affected waters.
<b>L. Base Amount</b>	The Base Amount is a single amount that is a result of combining the figures derived from the first 2 steps. For many ACLs, the base amount will simply be the initial liability from step A, because the calculation of the beneficial use liability may not be appropriate. The base amount reflects the extent and severity of the violation and its impact on beneficial uses.
<b>M. Adjustment for discharger’s conduct</b>	Determine factors to adjust the Base Amount with respect to the conduct of the discharger’s history of violations and other considerations. Apply these factors to the Base Amount from step C.
<b>N. Adjustment for other factors</b>	Determine whether any other factors should be taken into consideration when setting the ACL amount. If appropriate, adjust the figure from Step D to include these factors.
<b>O. Economic Benefit</b>	Estimate the economic benefit to the discharger. Economic benefit is any savings or monetary gain derived from the acts that constitute the violation. Add the economic benefit to the amount in step E.
<b>P. Staff Costs</b>	Estimate the SWRCB and RWQCB staff costs resulting from the violation. Add this cost to the figure determined from steps A through F.
<b>Q. Adjustment for ability to pay</b>	If appropriate, increase or reduce the figure from Steps A through G with respect to the discharger’s ability to pay and ability to continue in business.
<b>R. Check against statutory limits</b>	Check the figure from steps A through H against the statutory maximum and minimum limits.

*(SWRCB Water Quality Enforcement Policy, 2002)*

The Cities are troubled by the non-substantiated penalties proposed in the Complaint that result in a proposed fine of exactly \$0.15 per gallon of discharge. In response to our requests for records of analyses and calculations that were made to support the proposed assessment, Mr. Becker informed us that no calculation spreadsheet or other

formulaic assessment method was undertaken but that the cost is higher than the \$0.10 per gallon assessed on the 2000 discharge by the City of Oceanside (Appendix 5).

The Complaint staff report offers that, “[***T***he liability is calculated at \$0.15 per gallon and is substantially less than the statutory maximum.” While this statement is true and the Cities appreciate the spread between the maximum and the proposed assessment, it needs to be recognized that the statutory maximum is reserved to the gravest of circumstances when considering all factors, and these limits cannot be exceeded by law even for wanton abuses. In the State Board’s Guidance, it is noted that “***maximum potential assessments are huge for some violations. Setting ACL amounts at or near the maximum often is not practical nor is it always good public policy***”. As a result, it is comforting to know that the Board does not believe that the assessment should be near the maximum. We believe, however, that the amount should further be based on State Board policy of being “***consistent, predictable, and fair***” and the assessment should be “***similar for violations that are similar in nature and have similar water quality impacts***.”

We are, therefore, concerned about an omission of a documented assessment considering that a detailed analysis was previously made for the imposition of a prior ACL against the Cities for an unrelated release in 1994 at the Buena Vista Pump Station. In this prior release of 4.75 MG into Buena Vista Lagoon, the effects to the lagoon beneficial uses were more severe based on fish and invertebrate losses, but the nature of the discharge and types of effects were similar in scope. In this case, the Board, with assistance from the CDFG, specifically documented and numerically assessed the effects of the discharge to appropriately assessed liability (Appendix 6). In the 1994 discharge, the Board imposed a \$142,302 civil liability assessment on the Cities after completion of the documented assessment process. We would like to encourage a comparable process be used for the present discharge, especially given the magnitude of the proposed assessment.

The consideration of actual damages associated with the discharge is extremely important to the Cities in that it would allow an acknowledgment of the unforeseeable failure of the line and the reasonable acknowledgement of the tremendous beneficial and immediate actions taken by the Cities, at great expense, to recover discharged sewage and mitigate adverse effects of the discharge.

## **4.2 RECOMMENDED ANALYSES PROCESS**

To provide a specific response to the factors required to be considered and the findings contained in the Staff Report, the Cities would offer an alternative analysis framed in the context of direction of the State Board’s Water Quality Enforcement Policy, with consideration of past ACL actions pertaining to similar geography, types of affects to the beneficial uses of receiving waters, and discharge facts. We believe that an analysis based on consideration of prior events and actions taken by the Board, combined with the present event facts, would offer “***a consistent, predictable, and fair***” consideration and would ensure that “***similar for violations that are similar in nature and have***

***similar water quality impacts***” are treated similarly. As a result, we would encourage the Board to consider the prior 1994 ACL, the 1997 discharge during which no ACL was issued, and the 2000 ACL issued to the City of Oceanside. We believe that when evaluating the present discharge in the context of these prior actions, the facts strongly support either no ACL or a much-reduced assessment. An important consideration is the fact that none of the Cities’ prior releases are related or similar to the present discharge, and the Cities have consistently taken steps to modify and enhance their system both to protect against failures and to respond to unforeseeable failures as they are identified. Further evidence of the Dischargers’ commitment to proactive management of their sanitary sewer system is documented on Page 36 in Section 5.2.

The following section of this document is a reproduction of the Complaint Staff Report section *4.0 Determination of Administrative Civil Liability*, reproduced along with the applicable Enforcement Policy guidance and narrative insertions of information that will assist in correction of factual errors and quantification of factors.

## 5.0 DETERMINATION OF ADMINISTRATIVE CIVIL LIABILITY

The California Water Code lists a number of factors that must be taken into consideration when setting ACLs. California Water Code section 13327, governing ACL amounts for a wide variety of violations, states that:

[The Board] shall take into consideration the nature, circumstance, extent, and gravity of the violation or violations, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on ability to continue in business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters as justice may require.

*SWRCB Enforcement Policy*

***An administrative civil liability (ACL) is imposed pursuant to the procedures described in California Water Code (CWC) Section 13323. The procedures specify that the Regional Board Executive Officer issues a complaint to any person on whom the civil liability may be imposed. The complaint alleges the act or failure to act that constitutes a violation of law, the provision of law authorizing civil liability to be imposed and the proposed civil liability.***

***Persons or entities that discharge waste in violation of Waste Discharge requirements are subject to an ACL pursuant to California Water Code Section 13350, either on a daily basis not to exceed five thousand dollars (\$5,000) for each day the violation occurs, or on a per gallon basis, not to exceed ten dollars (\$10) for each gallon of waste discharged, but not both. The statutory maximum ACL amount for the March 31, 2007 to April 3, 2007 sewage discharges therefore is \$73,000,000. The amount of the ACL is based upon consideration of the following factors:***

*Staff Report No. R9-2007-0099*

## 5.1 NATURE, EXTENT, & GRAVITY OF THE SEWAGE DISCHARGE

### ***Initial Liability***

#### **A. INITIAL LIABILITY**

Set an Initial Liability based on factors related to the discharge - the nature, circumstances, extent, and gravity of the violation, the degree of toxicity of the discharge, and the susceptibility of the discharge to cleanup or abatement. This may include the consideration of information such as the pollutants contained in a discharge, the volume of the discharge, the sensitivity of the receiving water and its beneficial uses, threats to water quality and aquatic life, threats to human health and the volume of the receiving water relative to the discharge. The way that this amount is calculated will depend on the type of violation. For spills, effluent limitation violations, and similar violations, the initial water quality liability can be based on a per-gallon and/or per day charge.

For non-discharge violations such as late reports, failure to submit reports, and failure to pay fees, this initial water quality liability should be set considering the impact on the RWQCB's ability to effectively administer its water quality programs in addition to the above factors. These impacts include, but are not limited to, additional RWQCB staff costs beyond the normally required effort and the potential consequences of delayed clean-up, coordination, mitigation and enforcement response by the RWQCB due to late or omitted reports. For late or missing reports, the initial water quality liability amount could also consider impacts to water quality caused by the delay or failure. Timely follow-up on these violations acts as a deterrent to the violator and others and supports those dischargers who readily commit the resources necessary to comply with similar requirements.

*SWRCB Enforcement Policy*

*The Discharger's report dated April 23, 2007 states the discharge of untreated sewage from the 24-inch force sewer main into the Buena Vista Lagoon started sometime Friday March 30, 2007 or Saturday March 31, 2007. At approximately 7:00 PM on Sunday April 1, 2007, a private citizen observed the discharge and reported it to the police. The City of Carlsbad was notified and responded immediately to the report. By 8:00 PM, the City of Carlsbad confirmed the discharge (estimated at 1,000 to 2,000 gallons per minute). The Dischargers initially used a small backhoe in an attempt to excavate and repair the damaged force sewer main. Due to the location, depth, and lack of available force sewer main construction plans, the City of Carlsbad's initial efforts to repair the leak were inadequate. Because the City of Carlsbad could not locate the pipeline as-built plans to ensure the exact location of the pipeline, the needed work to uncover and repair the pipeline was delayed.*

*By the next day, April 2, 2007, the Dischargers contracted with a private pipeline company that was qualified to repair the pipe. Repair of the pipe included constructing a sheet piling coffer dam, dewatering the area around the leak, cutting out the damaged section, and installing a repair coupling. All repair work was completed by 12:00 on April 3, 2007 and the force sewer main was returned to service.*

*The Dischargers hired Schiff Associates (a corrosion engineer) to assess the condition of the failed pipe. Schiff Associates, in a report dated April 17, 2007, responded that the likely cause of the pipe failure was external corrosion, caused by damage to a protective polyethylene encasement. The report concluded the initial damage to the encasement may have occurred during installation of the force sewer main. The report recommends additional testing of the pipe material, testing of the encasement material, and testing of other sections of the pipe for external corrosion. The testing recommended is an electromagnetic conductivity survey of the pipe to identify potential areas of corrosion. The report also recommends the pipe be evaluated for the feasibility of installing cathodic protection to protect against further corrosion.*

**Staff Report No. R9-2007-0099**

As indicated previously, the pipeline repair work was not delayed as a result of commencing work with a backhoe that was undersized for the job. In a detailed forensic analysis of the nearly minute-by-minute chronology of the discharge response (IO Response, Appendix 3), we identified benefits of ready plan access that could have assisted in this and future discharge responses. In the present case, however, plan availability had little to do with the response time and much more to do with planning and executing non-critical path actions. Acquisition of a specialty contractor and required shoring sheetpiling late on a Sunday night was not practical. Contractors were on-site by 09:15 on Monday morning. Had the pipeline plans been on site Sunday night, it would have made no difference to the contractor response time since the plans themselves would not dictate a requirement for trench shoring to access the pipe and acquisition of the sheetpile and a pile-driving contractor was the critical path for making the repairs. This being said, it is clear in the chronology of events that there was uncertainty regarding the pipe that could have been eliminated by having the as-built plans in hand. In consideration of this release and others in the future, we identified actions needed to improve accessibility of plan documents. The Cities' Sanitary Sewer Overflow Response Plans (SSORPs) are predicated on learning and improving with each incident. This was in no way intended as a condemnation of the discharge response, but rather was intended to be a helpful lesson learned to enhance future actions.

The April 17, 2007 preliminary report by Schiff Associates did conclude that the failure was likely due to external corrosion as a result of damage to the protective polyethylene encasement that may have occurred during initial construction. The report went on to suggest additional testing and an evaluation of the feasibility of installing cathodic protection. Because these tests and evaluations were not completed at the time of the Cities' IO Response submittal, we noted in our cover letters to the IO Response that environmental response and forensic analyses were still underway; and as such, results should be considered preliminary and supplemental information would be forthcoming. Additional information was subsequently provided in our September 19, 2007 status report that also served as a transmittal for the final Schiff Associates Report. The final Schiff Report indeed maintained the cause of the failure as external corrosion as indicated in the preliminary report. It also provided additional information, however, that is pertinent to the discussions. This information should be reflected in the complaint. Specifically, the Schiff Report noted that ***“[P]ast actions as far as material selection were consistent with industry standards. The pipe material and polyethylene encasement appear to be state of the art for the construction period. It would not be uncommon for pipes of the same construction to have 50 to 100-year useful lives.”*** The Schiff Report further noted that ***“[T]he state of the art for the era the pipe was installed called for two choices: polyethylene encasement or leaving the pipe bare. Other pipe material systems, asbestos, cement, and reinforced plastic mortar, were used by the municipalities in the past were abandoned. The ductile iron met the structural requirements of the force main.”***

The Schiff Report noted that ***“[I]n light of the untimely failure of this type and age of pipe, additional investigation to evaluate possible external corrosion elsewhere should be part of the City’s SSO response plan. However, external corrosion and tears in the polyethylene encasement can not be easily detected. An electromagnetic conductivity (emag) survey of the soil along the alignment of the force main and any other iron pipes would provide information of similarly aggressive soils which could result in pipeline failures.”***

### ***Beneficial Use Liability***

#### **B. BENEFICIAL USE LIABILITY**

Review the designated beneficial uses of the receiving water and determine whether the violation has resulted in any quantifiable impacts related to beneficial uses. Quantitative information may only be available for a limited number of impacts such as beach closure days, but where readily available the RWQCB should consider it.

*SWRCB Enforcement Policy*

***The sewage discharge had significant short term impacts to both water quality and beneficial uses. Bacterial samples collected from Buena Vista Creek and Lagoon indicated public contact was unsafe. Warning signs were posted around the lagoon from April 2 through April 19 for a loss of 17 days of recreation. The coastal area 600 feet south and 1200 feet north of the Buena Vista Lagoon outlet were also posted with warning signs as a precautionary measure, from April 2, 2007 until April 9, 2007, for an additional loss of 7 days of recreation. Water quality sampling results indicated that the untreated sewage***

***plume migrated throughout the eastern basin of the Buena Vista Lagoon and under the I-5 Freeway into the western basin, but it appears that the waste plume did not reach the Pacific Ocean. The approximate extent of the sewage discharge in the Buena Vista Lagoon is illustrated on the Incident Area Map (Figure 1, Keith Merkel & Associates, Inc.) in Appendix A.***

***The discharge of untreated sewage significantly impacted beneficial uses of surface waters by sensitive ecological receptors in the lagoon. The Dischargers reported a fish kill of approximately 1,700 individuals with some bird, bullfrog, and crayfish kills. The California Department of Fish and Game and United States Fish and Wildlife Services reported that the sewage discharge and subsequent repair work impacted the Light-footed Clapper Rail, a Federal and State endangered species. Potential long-term impacts to the lagoon continue to be assessed under the direction of the California Department of Fish and Game and the United States Fish and Wildlife Service.***

***Staff Report No. R9-2007-0099***

Buena Vista Lagoon is identified in the Basin Plan as supporting the following beneficial uses: industrial service supply (IND), contact water recreation (REC-1), non-contact water recreation (REC-2), preservation of biological habitats of special significance (BIOL), warm freshwater habitat (WARM), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), and marine habitat (MAR). These uses and impacts to these uses are discussed in detail within the Dischargers' Response to the issued IO. In addition, the discharge affected REC-1 and REC-2 beneficial uses of the Pacific Ocean as a result of precautionary contaminated water postings.

In the prior 1994 Complaint Staff Report, a detailed analysis and quantification of impacts to beneficial uses was undertaken. Using the format for analysis applied by the Board to the 1994 discharge, along with the relevant facts of the present discharge, we have calculated the beneficial use impacts. In accomplishing the analysis, we advanced the economic valuation of impacts to present worth using inflation indices and updated costing. Where values were inflated by calculation, this was based on the U.S. Bureau of Labor Statistics Inflation Calculator (2007) that resulted in an inflation factor of 1.41. We have also added factors that were not calculable in 1994 but are today. Most specifically, this includes the value of beach recreation on Carlsbad beaches and nutrient loading that was assigned an arbitrary value in 1994.

#### Industrial Service Supply (IND)

The lagoon does not presently offer industrial service supply uses, and the discharge to the lagoon did not have had adverse short or long-term effects on this use.

#### Contact water recreation (REC-1)

While designated for REC-1 uses, Buena Vista Lagoon is closed to on-water activities, wading, and swimming through use restrictions within the Buena Vista Lagoon Ecological Reserve and the San Diego Basin Plan. Fishing in the lagoon does occur and is designated as a REC-1 beneficial use. REC-1 designations do apply to coastal beaches that were also affected by the discharge response actions, although the discharge itself did not reach the coastal beaches. Contaminated water warnings were posted on the lagoon for 17 days and on the coastal beach for 7 days.

## Lagoon Use

In 1994, the Department of Fish & Game calculated the economic value of fishing loss to the lagoon as a result of the discharge and loss of fish in the east basin. This calculation was reported as follows:

*Through interviews conducted with the wardens who routinely monitor this area for fishermen and fishing activities it was determined that approximately 15 people utilize Buena Vista Lagoon for fishing on a daily basis. The Department's resource economist has supplied information that identifies the monetary value of a freshwater shoreline fishing day is valued at \$26.26 per person per day. Utilizing this information, the monetary damage assessment for the loss of fishing activity during the 21-day closure is as follows:*

$$21 \text{ days} \times 15 \text{ persons per day} \times \$26.26 = \$8271.90$$

*For the additional six months of loss of fishing in the easternmost basin of the lagoon, we determined that approximately half of the fishermen or 7.5 persons per day fish in the eastern basin. Utilizing this information, the monetary damage assessment for the loss of fishing activity during the additional six months in the eastern basin is as follows:*

$$180 \text{ days} \times 7.5 \text{ persons per day} \times \$26.26 = \$35,451.00$$

CDFG 1994

The claim of extended damages was ultimately rejected by the Board as follows:

*The Regional Board staff believes that the second part of the fishing loss calculation (for the additional six month period of substandard fishing) might be too high. Since some people may resume fishing in the lagoon, not knowing that all or most of the fish in some areas have been killed, Regional Board staff has dropped the \$35,451.00 assessment from the DFG assessment.*

Regional Board 1994

Today, the lagoon shoreline is highly inaccessible, and authorized fishing access is restricted to a designated fishing shoreline along the northeastern portion of the east basin and various points in the other basins. In addition, according to fishermen on the lagoon, fishing is better near the bridges of downstream basins as a result of cattail marsh and sediment infill of the lagoon. For this reason, it is probably reasonable to continue to use 15 fishermen for the lagoon and 7.5 fishermen per day as a liberal estimate of fishing pressures on the east basin. We have advanced the valuation of per day economic benefit to 2007 dollars using an inflationary rate of 1.41 as discussed previously. Using the closure period of 17 days, the value of lost fishing opportunity in the lagoon is as follows:

$$17 \text{ days} \times 15 \text{ fishermen/day} \times \$26.26/\text{fisherman} \times 1.41 = \$9,441.78$$

(REC-1Lagoon)

Based on the same logic as expressed in 1994, the calculated value of six additional months of substandard fishing was not included in the estimated impact to beneficial uses. Had it been included, this value would be an additional \$49,985.91.

## Beach Use

Beach and coastal access is of great value to the City of Carlsbad and the North County region as a whole. In 2005, Carlsbad commissioned a study of beach use economics (Appendix 7). The study concluded that 600,000 people visit Carlsbad beaches each year during the summer months from June-September and that the economic benefit of a beach visitor day in the summer is \$66.08 per person day. The study divided the beaches into reaches in order to develop an understanding of visitor distribution patterns. The reach affected by precautionary beach closure associated with the Buena Vista Force Main rupture is Reach 1a. This reach is approximately 3,000 feet long from north end of Carlsbad Beach at (St. Malo) to the south end of the Army Navy Academy. This beach reach supported an average use by 250 persons during the summer peak season. Beach postings associated with the discharge extended over an 1,800-foot segment of the 3,000-foot reach (60%).

If it were assumed that summer peak use were indicative of non-peak periods and the mix of visitors and residents remained comparable (visitors tend to spend more) and that posting of the beaches for water contact resulted in a complete loss of beach uses during the posting period, the posting would have resulted in an impact to 150 persons per day for a period of 7 days at a value of \$66.08 per person day. While these assumptions are highly liberal towards increasing the loss of value, they were maintained for lack of ability to otherwise scale the numbers and in recognition that perception of closure likely extends beyond the posted area of closure.

This lost beneficial use value of beach REC-1 and REC-2 is calculated as follows:

$$7 \text{ days} \times 150 \text{ visitors/day} \times \$66.08/\text{visitor} = \$69,384$$

*(REC-1 Coastal Beach)*

### Non-contact water recreation (REC-2)

Non-contact water recreation that was adversely affected at the lagoon principally includes wildlife viewing. The discharge occurred within a popular viewing area that was taken over by discharge response activities on April 1, 2007. This area remained closed through the discharge response period. Bird watching is a principal REC-2 use at the lagoon.

No long-term adverse affects to REC-2 uses are anticipated.

The calculation of loss of non-contact recreation again follows closely along the lines of that performed for the 1994 assessment by the Department of Fish & Game. The Department used lagoon census data collected in a public use survey performed in 1993 by the Buena Vista Audubon Society combined with daily value per visitor of \$50.84 provided by the Department's resource economist to determine the following losses associated with the 21 day lagoon closure.

$$21 \text{ days} \times 82 \text{ persons per day} \times \$50.84 = \$87,546.48$$

*CDFG 1994*

For the present discharge, the majority of the lagoon was not closed except for water contact. Only areas within the east basin were blocked to public access for REC-2 uses as a result of construction period erection of barricades along Lagoon Drive and occupying the wildlife viewing area. It was later determined that the Department of Fish & Game has locked the gates to the wildlife viewing area and this area is not available to public access except for infrequent uses. For these reasons, it is not possible to obtain a legitimate estimate of users displaced from REC-2 pursuits. If extremely liberal assumptions are made, however, the same formula applied in 1994 may be used with an inflation index being added. In this case, the estimated losses would be calculated as follows:

$$17 \text{ days} \times 82 \text{ persons/day} \times \$50.84/\text{visitor} \times 1.41 = \$99,928.05$$

(REC-2)

Preservation of Biological Habitats of Special Significance (BIOL)

The wastewater discharge occurred into the Buena Vista Lagoon Ecological Reserve, an area designated as a State Ecological Reserve by the Fish & Game Commission under California Code of Regulations, Title 14, Section 630. The discharge adversely affected freshwater and avian resources, as well as minor amounts of vegetated habitat within this reserve. The discharge did not result in any permanent losses of biological habitats of special significance. The specific affects to resources are discussed under the beneficial use categories most specifically applicable including (WARM, WILD, and RARE). As a result, no valuation is attributed here to avoid double counting of costs.

Warm Freshwater Habitat (WARM)

The discharge resulted in mortality of a documented 1,694 non-native freshwater fish from affected portions of the lagoon and some macro invertebrates. These losses were highly reduced from the losses suffered in the smaller 1994 discharge event. Following the valuation procedures used in the 1994 Department of Fish & Game resource damage assessment, the impacts are summarized in the table below:

<b>FISH</b>	<b>NUMBER</b>	<b>VALUE PER FISH*</b>	<b>TOTAL</b>
Largemouth bass	187	\$7.05	\$1,318.35
Bluegill	648	\$1.65	\$1,069.20
Crappie	5	\$3.53	\$17.65
Bullhead	604	\$3.17	\$1,914.68
Carp	36	\$1.41	\$50.76
Gambusia/misc forage fish	1	**	
		<b>TOTAL</b>	<b>\$4,370.64</b>

<b>INVERTEBRATE</b>	<b>NUMBERS</b>	<b>VALUE PER ORGANISM</b>	<b>TOTAL</b>
Crayfish	3	\$0.21	\$0.63
Bullfrog	1	***	\$0.00
		<b>TOTAL</b>	<b>\$0.63</b>

\*Values came from using the Bureau of Labor Statistics Inflation Calculator to determine current values from the value per fish or organism in the 1994 CDFG report.

\*\* No value is assigned to this species as it is provided free from the County of San Diego as a vector control agent.

\*\*\*No value is assigned to this species because it is a pest species targeted in active eradication efforts in the region.

In addition to fish and invertebrate losses, the discharge is considered to have been responsible for the loss of four birds (a California gull, two American coots, and one gadwall). Following an equivalent process as used for determining the value of fish and invertebrates, the value of the bird losses were calculated. Costs for birds were derived based on identification of purchase values from wild game and poultry farms. It was difficult to obtain purchase price valuation for the California gull and American coot since these species have no commercial value and are not commonly traded. Value for the gadwall was obtained by searching wild game farms on the internet and obtaining prices for farm-raised birds. For gadwall, the price of \$45 per pair (\$22.50 each) was obtained from Roberts Waterfowl. Other farms sold this species at a comparable price when available. For the American coots, a comparable value was used as this species could easily be obtained through regular trapping programs from urban lakes or raised by a bird farm if there was an available market. The value of the California gull could not be located easily, and use of waterfowl and gallinule prices would be inappropriate as the husbandry practices for this bird would be different than typical farm-raised species. Absent a valid market cost for gulls, we reviewed the cost of replacement for gulls oiled or killed in oil spills. The most comparable value for gull replacement was \$167 based on 1990 prices reported in (Tinney 1990). Inflating this cost to 2007 prices would raise the cost to \$234. The table below summarizes the market replacement cost for birds lost to the discharge.

<b>BIRDS</b>	<b>NUMBER</b>	<b>VALUE PER BIRD</b>	<b>TOTAL</b>
Gadwall	1	\$22.50	\$22.50
American Coot	2	\$22.50	\$45.00
California Gull	1	\$234.00	\$234.00
<b>TOTAL</b>			<b>\$301.50</b>

In addition to the direct losses of aquatic resources, the discharge of sewage pollutants results in increased pollutant loading of the lagoon. In 1994, the Board Staff Report acknowledged potential prolonged effects of sewage pollution in the lagoon. The Board staff report read as follows:

*The persistence of sewage pollutants in the lagoon presents a potential for long term water quality impacts. The MEC water quality data reveal that algal mats and associated periods of oxygen depression were present in many areas of the lagoon under non-spill conditions. As such, the lagoon may be expected to be uniquely sensitive to any additional loadings of nutrients. Regional Board staff believes that an assessment of at least \$5,000 is reasonable for the long-term impact from the loading of nutrients and other pollutants to the lagoon from the sewage spill.*

*Regional Board 1994*

The potential effects of nutrient loading from the discharge were explored in the Dischargers' Response to the IO. In this evaluation, it was noted that the lagoon is recognized in the San Diego Basin Plan as impaired for aquatic life, contact recreation, and non-contact recreation (RWQCB 1996 and 1998). Pollutants determined to be critical in the 303(d) listing as impaired waters were nutrients, sediment, and bacteria. As such, any additional nutrient load or bacterial load would be a concern. In both the 1996 and 2002 303(d) lists, nutrients and bacteria were listed as low priority in the list of priority pollutants.

The lagoon is already moderately to highly eutrophic depending upon particular areas and particular years. Absent relatively immediate consumption by algae, additional nutrients may be temporarily sequestered in the lagoon sediments until released as the lagoon warms and algal and vascular vegetation growth is accelerated. Considerable sediment nutrients may result in spring algal blooms and, thus, hugely cyclic diurnal DO levels. Such effects, however, were not referenced as occurring in specific association with the 1994 and 1997 discharge events. As a result, a more thorough consideration of the proportional load of nutrients from the 2007 discharge was undertaken. A mass loading calculation was completed to estimate the approximate percentage of the total annual load of nitrogen, in the form of total nitrogen and total phosphorus contributed to the lagoon by the pipe rupture.

For the 2007 discharge, the concentrations of nitrogen and phosphorus, when accumulated over the entire release volume, would translate into mass loading rates of approximately 0.61 tons of nitrogen and 0.03-0.12 tons of phosphorus, assuming no benefits of atmospheric loss of ammonia and no reduction of sewage from the pump-back operation; both highly conservative assumptions. Without discounting the loading by an unknown but substantial percentage of effluent recapture and atmospheric ammonia loss, the annual percentage of nitrogen loading contributed to the lagoon would be approximately 0.85% of the total annual load. For phosphorus, the load would be approximately 0.4%-1.8%. Given the relatively minor contribution to nutrient loading of the discharge and the low rainfall winter, it was not expected that the lagoon would experience particularly high algal blooms during the Spring and Summer 2007 seasons. This was indeed borne out by observation during the past season when no atypical blooms were noted in the lagoon.

It is difficult to establish an economic value to beneficial use degradation where the effects cannot be quantified. There is, however, no dispute that additional nutrient loading and other pollutants are adverse stressors of the lagoon. For consistency, we have retained the concept of the 1994 Board staff report recommendation for an assessment of \$5,000 for the 4.65 MG discharge. When scaled to the discharge volume of 7.3 MG and adjusted for inflation, the calculation for residual adverse effects would be:

$$\mathbf{\$5,000/4.65\ MG \times 7.3\ MG \times 1.41 = \$11,067.74}$$

With the calculated values for species losses and value added for prolonged effects, the beneficial use impact to WARM is calculated as:

$$\mathbf{\$4,370.64}_{(fish)} + \mathbf{\$0.63}_{(inverts.)} + \mathbf{\$301.50}_{(birds)} + \mathbf{\$11,067.74}_{(pollutant\ load)} = \mathbf{\$15,740.51}$$

**(WARM)**

#### Wildlife Habitat (WILD)

Wildlife habitat impacts from the discharge are limited to effects of the discharge response. Wetland habitat impacts are predominantly temporary in nature and have resulted from establishing pumping and aeration sites at existing clearings. In total, 152 square feet of freshwater marsh were impacted at existing clearings and 350 square feet of non-tidal alkali marsh were impacted. In all cases where the wetland damage has occurred, it was expected that viable rootstock would allow for rapid recovery of the trampled vegetation. This, in fact, did occur during the 2007 summer season, and there are no apparent residual effects of the trampling.

The majority of the impacted habitat actually occurred outside of waters of the state within the uplands where the pipeline rupture occurred and excavation of the pipe was performed. Non-wetland upland habitat was removed from the wildlife viewing area and at an entry point where a fence was taken down to access the north side of the lagoon from South Vista Way. The principal impacts occurred within the actual repair area in a location that has been a restoration site. No cost has been assessed to this factor since the impact to wetland habitat was highly restricted and has recovered. The Cities are committed to restoration of the upland vegetation damage and are working with CDFG as the landowner and manager on this upland restoration issue at the staging area.

#### Rare, Threatened, or Endangered Species (RARE)

At the present time, there is no evidence that rare, threatened, or endangered species have been harmed as a result of the discharge. This is discussed in detail within the Dischargers' Response to the IO.

#### Marine Habitat (MAR)

Marine Habitat beneficial uses were not adversely affected by the discharge, and no long-term effects to these resources are anticipated.

#### Estuarine Habitat (EST)

The potential beneficial use of Estuary Habitat was not adversely affected by the discharge.

#### Beneficial Uses Impact Summary

Based on the numeric analyses conducted following the guidance of the Enforcement Policy and the model of the 1994 discharge assessment, the calculated beneficial uses liability assessment can be summarized as follows:

NO.	BENEFICIAL USE	LIABILITY AMOUNT
1	REC-1 LAGOON	\$9,441.78
2	REC-1 COASTAL BEACH	\$69,384.00
3	REC-2	\$99,928.05
4	WARM	\$15,740.51
<b>TOTAL</b>		<b>\$194,494.34</b>

**Base Amount**

**C. BASE AMOUNT**

The Base Amount is the Initial Liability, the Beneficial Use Liability or a combination of the Initial Liability and the Beneficial Use Liability. When it is possible to calculate the Beneficial Use Liability, the RWQCBs should assess the extent to which the Beneficial Use Liability represents the entire harm resulting from the violation. The RWQCBs may, at their discretion, find it appropriate to combine the amounts from Steps A and B in a way that reflects the significance of the impacts quantified in Step B relative to the total impacts of the violation.

The way that the Initial Liability and the Beneficial Use Liability should be combined will depend on how the violation harms the beneficial uses of the receiving waters and the extent to which this harm has been quantified. For example, a sewage spill will typically result in a wide variety of impacts, such as fish kills, degradation of wildlife habitat, and beach closures. For a sewage spill to the ocean in an urban area with high beach use, impacts on beach recreation may represent most of the harm resulting from the spill. If it is possible to estimate the value of the lost beach recreation in step B, it is appropriate to take this value and add it to some portion of the Initial Liability amount to reflect the total impact.

For a sewage spill contaminating a beach in a remote area, where beach use is relatively low, impacts on beach use may be less important than other impacts, such as degradation of wildlife habitat and harm to a pristine environment. In such a case, the combined liability (steps A and B) may be based more heavily on the Initial Liability, because the impacts quantified in step B may be less significant relative to the entire impacts of the violation.

*SWRCB Enforcement Policy*

The calculation of base liability as outlined in the State Board’s Enforcement Policy contemplates a heavy reliance on quantification of the actual impact to beneficial uses where these are available. Specifically, the Policy indicates that **“[W]hen it is possible to calculate the Beneficial Use Liability, the RWQCBs should assess the extent to which the Beneficial Use Liability represents the entire harm resulting from the violation.”** Indeed, this direction was employed in the 1994 ACL where actual calculable damages were used as the sole element of the base liability. We would argue that this is appropriate in the present case as well for the following reasons.

First, the application of the Beneficial Use Liability is the most factually supportable basis for an assessment. Second, this methodology has been applied previously, and thus it is predictable and fair. Finally, the discharged sewage principally consists of non-conserved pollutants such as BOD, nutrients, and bacteria. The Cities conducted considerable clean-up and toxicity reduction through pump-back reclamation and aeration. As a result, the actual volume and toxicity of residual sewage unrecovered

from the lagoon is not fully known. As such, a volume-based assessment erroneously penalizes the Cities for recovered sewage and fails to recognize the tremendous recovery and remediation efforts.

## 5.2 CONDUCT OF THE DISCHARGER

### D. CONDUCT OF THE DISCHARGER

The Base Amount from Step C must then be adjusted to reflect the conduct of the discharger. This adjustment reflects factors such as the degree of culpability of the discharger, any voluntary cleanup efforts undertaken and the discharger's history of violations. This adjustment can be made by determining values for the four factors in Table VII-2, and using them to determine a conduct factor that is applied to the Base Amount. The RWQCB may apply the various conduct factors using percentages. A percentage less than 100 percent may be appropriate for a discharger that made exemplary efforts such as voluntary cleanup. Percentages greater than 100 percent are appropriate for dischargers that demonstrated less than exemplary behavior such as delaying notification of a spill. Large multiplier percentages 200 - 500 percent may be appropriate for cases involving falsification of data or other deliberate acts or in cases where the discharger disregarded warnings from Board staff or other parties about the threat of discharge.

This calculation is:

$$ACL = \text{Base Amount} \times CF1 \times CF2 \times CF3 \times CF4$$

Note: Conduct factors should be expressed as a decimal (e.g. 90% = .9).

**Table VII-2. Conduct Factors to adjust ACLs**

Factor	Adjustment for
Culpability Factor (CF1)	Discharger's degree of culpability regarding the discharge. Higher ACL amounts should be set for intentional or negligent violations than for accidental, non-negligent violations. A first step is to identify any performance standards (or, in their absence, prevailing industry practices) in the context of the violation. The test is what a reasonable and prudent person would have done or not done under similar circumstances.
Notification Factor (CF2)	Extent to which the discharger reported the violation as required by law or regulation.
Cleanup and Cooperation Factor (CF3)	Extent to which the discharger cooperated in returning to compliance and correcting environmental damage, including any voluntary cleanup efforts undertaken.
History of violations factor (CF4)	Prior history of violations

In considering the discharger's prior history of violations careful consideration should be given to whether or not past violations that were not subject to previous ACLs should be included in the current ACL. Where there is a pattern of violations or the violation was intentional, the assessed liability could be substantially affected when considerations such as aggregate impacts and economic benefit are included.

*SWRCB Enforcement Policy*

## **Culpability Factor (CF1)**

### Quantity of Sewage Discharge

*The Dischargers could have implemented measures to reduce the amount of the discharge. The discharge was not discovered for almost 2 days because the Dischargers failed to have the capability to monitor the flow or pressure in the force sewer main. Capability to monitor the force main flow could have alerted the Dischargers of a reduction of flow through the sewage system.*

*The Dischargers reported that the Buena Vista Pump Station is inspected daily. The Dischargers also reported that when a call was received alerting them to a possible sewage spill, the spill was confirmed by a visual observation. While the better option would be for the Dischargers to install a redundant force main to be used for emergency situations, at the very least visual observations of the force main at various times of the day in the vicinity of the lagoon should be conducted to ensure that a sewage spill is not occurring.*

*The Dischargers reported that the Buena Vista Pump Station is inspected daily. However, it was a member of the public that initially called the City of Carlsbad Police Department to notify the City of the ongoing sewage discharge. The police then notified the City of Carlsbad on-duty person. The on-duty personnel notified City of Carlsbad Public Works personnel, who inspected the location and confirmed the spill. More reliable options exist to determine when a spill has occurred or is ongoing, such as alarms and monitoring devices that send an alarm when pressure drops, and/or installation of a redundant force main to be used for emergency situations. As this spill incident reveals, reliance on limited daily visual observation of the force main in the vicinity of the lagoon is not a sufficient tool that can be relied upon to ensure that a sewage spill is not occurring.*

*Further delays to the timely response to the spill occurred when the Dischargers did not initially have copies of the construction details of the force sewer main, leading to the delay in deploying the appropriate equipment to complete the repair. Lack of adequate construction details resulted in the Dischargers hiring a contractor that did not have the equipment capable of doing the repair work. These preventable delays resulted in greater volume of untreated sewage discharged to the lagoon.*

**Staff Report No. R9-2007-0099**

It should be clarified that we believe the discharge was discovered approximately 20.5 hours after pipeline rupture based on flow variance calculations (see Section 3.0). The Cities noted in the Dischargers' Response to the IO that it may have been possible to detect the pipe rupture and sewage release earlier if there had been monitoring capacity in the force main comparable to the pump stations. The Cities indicated that they would explore the technology for implementing such automated monitoring and alarms building off of the current sewer monitoring system. The Response also noted that **"preliminary indications are that there may be additional means to enhance the ADS system or install alternative systems that would improve leak detection through use of system pressure and flow variance and point-to-point differential. While these tools are widely available for potable and raw water pipelines, it is not clear if comparable systems are readily available for wastewater systems."** The technologies for monitoring pressurized force mains for leaks are still developing, and such monitoring is not presently a "prevailing industry practice". Subsequent to the discharge, the Cities have further investigated sensor technologies with the specific

objective of monitoring force mains for ruptures comparable to that of the Buena Vista Force Main. As was reported in the September 19 supplemental information submittal to the IO, it has been confirmed that additional sensors could be installed that would improve leak detection through use of system pressure and flow variance. The Dischargers have committed to installing automated alarm systems for potential leaks in this and other force main systems within their individual and collective operations areas. EWA has completed the installation of pressure and flow variance sensors at Buena Vista and Raceway Pump Stations. Real-time alarms, however, still rely on flow or pressure differential ranges. As such, small leaks or early ruptures may still go undetected, while larger ruptures should be detected earlier. The City of Carlsbad has met with ADS, Inc. to discuss the feasibility of a system that would provide real time flow tracking information. Carlsbad has coordinated with EWA to implement the system upgrades in the coming months. Along these same lines, the City of Carlsbad has initiated discussions with FlowMetrix, a company that employs fixed-base leak detection devices in pressurized pipe. The technology is used presently on pressurized water pipelines. The City of Carlsbad, however, is still exploring its alternative use on pressurized sewer pipelines, as this is a non-standard application of the equipment. In addition, the City of Carlsbad has had several meetings with Smartcover to discuss implementing flow change alarms on the Buena Vista force main. This would be a new use of the Smartcover technology as well.

While it is conceptually clear that an automated monitoring system would provide enhanced discharge detection, it is also empirically clear that such monitoring systems are only now emerging as potential technologies for the specific application desired. These are not standard in the industry; and thus, it is not reasonable to find the Cities culpable for failing to have such equipment in place at the time of the release.

As indicated previously, the pipeline repair work was not delayed as a result of commencing work with a backhoe that was undersized for the job. The critical path actions for the response were acquisition of a specialty contractor and required shoring sheetpiling to allow safe access to the deep pipe in unstable sediments. Concurrent with the search for a contractor, it should also be noted that a parallel effort was initiated by the Cities to install a high-line diversion around the rupture. By pursuing parallel corrective actions, the Cities improved the chances of a more rapid termination of the discharge. It ultimately proved that the direct repair approach was the victor over a diversion and repair approach. This is documented in detail within the Dischargers' Response.

### Prevention of Discharge

***The Dischargers failed to implement measures that could have prevented the discharge. This sewage spill occurred in the same area and from similar cause attributed to a 1.7 million gallon sewage spill, during January 2000, into Buena Vista Lagoon from a force main owned by the City of Oceanside. In May of 2000, the Regional Board assessed civil liability against the City of Oceanside in the amount of \$334,615. In 2000, the City of Oceanside's concluded that their spill resulted from a corroded ductile iron pipe force main. The force main was installed in 1980 under similar conditions and in the same general vicinity of the Discharger's failed force main pipeline. The City of Oceanside's***

***corrosion engineer determined that the May 2000 spill was caused by exterior corrosion. Corroded portions of the City of Oceanside's pipeline were identified, repaired, and reported to the City as being in good condition. The City returned the pipeline back into service, during February 2000, only to have it fail again twelve days later, resulting in a discharge approximately 200,000 gallons of sewage into the Buena Vista Lagoon.***

***With knowledge of the condition of Oceanside's failed force main in 2000 and the extremely corrosive soil in the vicinity of their force main, the Dischargers failed to implement any additional measures to evaluate the condition of their force sewer main and identify potential problem areas. The Dischargers failed to conduct an internal survey or conduct other inspections of the force sewer main. Even though the Dischargers were fully aware of potential risks to the force sewer main, the Dischargers chose not to implement adequate preventative measures, such as, replacing or relining the pipe, installing a backup system, or at a minimum installing monitors and alarms that could have all reduced the volume of sewage discharge if not eliminate the discharge from occurring in March and April 2007.***

***The Dischargers recognized that the force sewer main needed improvement and/or replacement. As part of the City of Carlsbad's 2003 Sewer Master Plan, the City of Carlsbad included a project to install a parallel force main from the Buena Vista Pump Station to I-5 likely using a high-density polyethylene pipe that is not susceptible to corrosion, but the City of Carlsbad failed to construct the parallel force main before the discharge. As with Oceanside, the Dischargers have reported that the sections of pipeline on either side of the corroded area were in good condition. Yet the Dischargers have put the potentially corroded force sewer main back into service without upgrades or new lining.***

***On September 19, 2007, the Dischargers submitted, to the Regional Board, a final corrosion report by Schiff Associates identifying the existing force sewer main as being at risk for further failure and recommending lining or replacing the pipe. Based on recommendations in the report and potential for future failure, the Dischargers now propose to install a new parallel force sewer main and line the existing pipe within 3 years, instead of in 2017 that was originally scheduled. The Dischargers propose to monitor the existing force sewer with weekly inspections and install flow and pressure meters.***

***Staff Report No. R9-2007-0099***

The Complaint Staff Report is excessively presumptive about what was known by the Cities regarding the circumstances of the 2000 rupture of the Oceanside force main. The Staff Report incorrectly ascribes knowledge about the event that the Cities did not possess. As a result of this assumed knowledge, the Staff Report concludes that the Dischargers then willfully put off replacement of a line with knowledge that it suffers from the same risks as the failed Oceanside line. These allegations are flatly incorrect conclusions based on erroneous assumptions.

First, the Cities did not know the details of the Oceanside force main failure in 2000. The Oceanside line was owned and operated by a different agency as an element of a different disposal system. The cause of the failure and the circumstances surrounding the failure were not transferred to the Cities. As a result of the present Staff Report, however, an investigation of the Board's records regarding the discharge was undertaken to determine whether the suggested knowledge would have resulted in the conclusions alleged by the Staff Report. Ironically, it was determined that the Oceanside pipe was not polyethylene encased (PE) as was standard for corrosive soils.

This fact alone is so significant to the anticipated performance of ductile iron pipe in corrosive soils as to have lead to a dismissal of the corrosion as a concern for the Buena Vista Force Main. As was indicated in the Schiff Report, polyethylene encasement was state of the art for corrosive soil environments at the time the pipeline was installed. In addition, as late as May 2006, data continues to be developed that indicates the polyethylene encasement of pipes in highly corrosive soils will improve the lifespan of the material by a factor of 10 over unprotected pipe (Horton et al. 2006, Appendix 8). Further, in a 2004 letter clarifying recommendations beyond PE as they pertain to highly corrosive soil environments, the Ductile Iron Pipe Research Association continued to express the unique and rare circumstances for exterior corrosion failure of PE ductile iron pipes (Appendix 9).

***The term “uniquely severe environments” was incorporated in the 1999 revision of ANSI/AWWA C105/A21.5. It states “Research has shown that polyethylene encasement alone is a viable corrosion protection system for ductile- and gray-iron pipe in most environments. However, other options should be considered for environments where all the following characteristics co-exist: (1) soil resistivity  $\leq 500$  ohm-cm; (2) anaerobic conditions in which sulfate-reducing bacteria thrive [neutral pH (6.5 to 7.5), low or negative redox-potential (negative to +100 mV), and the presence of sulfides (positive or trace)]; and (3) water table intermittently or continually above the invert of the pipe.”***

***One of the reasons for this classification was due to the fact that DIPRA had observed some corrosion under polyethylene encasement in its Everglades, Florida test site. However, those specimens were installed prior to the development of the current standard procedure for encasement below the water table which calls for circumferential wraps of tape at two-foot intervals. Secondly, the margin for error is smaller and the consequences of a poor installation more severe in this type of environment.***

***This recommendation is a cautionary one, consistent with DIPRA’s historically conservative approach. This is evident since there are pipes in service in similar environments today with no apparent problems being reported, including the first pipeline encased in polyethylene in 1958 located in LaFourche Parish, Louisiana.***

**DIPRA 2004**

Also, contrary to the Board Staff Report claims, the City of Carlsbad’s 2003 Sewer Master Plan, proposed to install a parallel force main from the Buena Vista Pump Station to I-5, likely using a high-density polyethylene pipe, not for reasons of concern over the competence of the existing pipe, but rather for capacity enhancements based on regional planning demands for sewer service. This upgrade did not include improvements to the existing pipe, as it was not nearing its recognized service life of 50 years. Parallel piping and lining of the existing pipe (dependent upon a parallel pipe for flow diversion) are now planned to be advanced to the earliest practical period based on a new understanding that potential corrosion areas may exist elsewhere on the pipe. This change in Master Plan programming was explained in the Discharger’s September 19 supplement to the IO response. Again, it bears repeating that at the present time, there are no known additional areas of PE breach or corrosion on the pipe. Further, there is no way to inspect the condition of the pipe. As a result, the reprogramming of CIP schedules within the Master Plan and the addition of lining of the existing pipe are being implemented as a matter of prudence given the new knowledge of potential risk.

When considering the full scope of the Buena Vista Force Main failure, including information that was unknown and that which was known or knowable by the Cities, there was no reason to suspect a failure of the line. The line was younger than half its conservative service life. The pipe was polyethylene encased, which was state of the art at the time of installation and remains a standard for corrosive environments. The Oceanside force main failure occurred to a bare ductile iron pipe of the same vintage and the circumstances were unknown to the Cities.

The unanticipated failure in the present circumstance actually parallels closely the surprise failure of the Oceanside pipeline. In Oceanside's case, the Board clarified that the unforeseeable failure of the pipe was not a cause for assessment of civil liabilities. Rather, the Board found fault with Oceanside's response after a discharge alarm was sounded (Appendix 10). Specifically, the Board found as follows:

***“Besides not assessing a \$10,000 per day liability, the SDRWQCB did not assess any liability against Oceanside for the first 323,850 gallons of the January 31, 2000 spill. The SDRWQCB determined that it was fair to forego assessing any per-gallon liability for this portion of the illegal discharge because the first break in the force main was not reasonably foreseeable due to its relatively recent installation [emphasis added]. The SDRWQCB imposed liability of \$0.10 per gallon only for that volume of sewage discharged after Oceanside crews responded to an alarm, made an incorrect diagnosis, and left the pump station until the weekday crew could come in to evaluate the situation.”***

***SDRWQCB's February 15, 2001 Response to the Supplemental Brief in Support of Petition for Review Submitted by the City of Oceanside SWRCB/OCC File A-1300 (Page 5, Section II, Paragraph 4)***

Equal treatment with respect to this issue would warrant the Board setting aside any assessment for discharge prior to discharge detection and separately evaluating the performance of the Cities relative to post-detection responsiveness. In the Dischargers' Response to the IO, the discharge volumes were presented from beginning to end of discharge. That portion of the discharge occurring prior to detection constituted 39% of the total discharge, or 2.87MG (223,000 gallons on 3/31 and 2.65 MG on 4/1). This 39% should be completely removed from any further consideration, and the Cities' response to the detected discharge should be evaluated relative to the residual volume released. In this circumstance, the discharge that occurred wasn't as a result of negligent or untimely actions by the Dischargers. Subsequent to detection, there was no way to stop it until the repairs were completed. Although the release itself was unavoidable, the Cities took immediate actions to limit, recapture, and clean up the discharge that was unavoidable.

### Buena Vista Lagoon

***The Discharger's force main runs along the edge of the Buena Vista Lagoon, which is owned and maintained by the California Department of Fish & Game (CDFG). Because of the lagoon's unique and highly valued coastal wildlife habitat, the CDFG has designated the Buena Vista Lagoon as an ecological reserve. Based upon available water quality data, the lagoon is listed on the Clean Water Act section 303(d) impaired waterbody.***

***Due to the unique qualities of the lagoon, the Dischargers should have implemented additional measures to prevent sewage spills to this enclosed coastal lagoon.***

The Staff Report suggests that additional measures should have been implemented to prevent sewage discharges to the lagoon. There are no additional measures identified, however, and the report does not acknowledge the system history and measures that have been taken to protect the lagoon. These include early replacement of pipes as a result of developing failure history for the materials, construction within road right-of-ways, and continued development of discharge response actions and capabilities as a part of a cooperative preparedness effort through discharge drills, discharge debriefings, and mutual aid programs. These are detailed in the Dischargers' Response to the IO.

It should be noted that the force main was originally constructed in 1963 as a 16-inch diameter asbestos cement pipe (ACP) and was located entirely within Jefferson Street. At the time of the original pipeline construction, Jefferson Street was aligned along the lagoon edge, and the utilities, including the force main, were constructed within the roadway below pavement and subgrade. In approximately 1970, two 16-inch diameter reinforced plastic mortar pipes (RPMP) were constructed to replace the easterly most portion of the original ACP force main. While considered state-of-the-art in the 1970s and expected to have 50-year plus life spans, RPMP pipes began to show high failure rates, with breaks from fatigue occurring fairly often. Although the two 16-inch force mains in Jefferson Street had not suffered any failures, these pipes were retired in 1982 after only 12 years of service and replaced with a superior 24-inch DIP that extended from the Buena Vista Lift Station westerly. This pipeline replacement was exclusively a pre-emptive action to protect against discharges as a result of pipe ruptures. As indicated earlier, this shows the Dischargers' commitment to proactive management of their sanitary sewer system. Jefferson Street was realigned away from the lagoon edge; making room for the present wildlife viewing area, while the underground utilities have remained in their current alignment.

It should also be noted that designation of Buena Vista Lagoon as an impaired waterbody under section 303(d) post-dated the construction of the Buena Vista Force Main. While this designation provides a special recognition of impairment within the lagoon, it would not have altered material selection decisions at the time of pipe installation, as there was not a better-suited pipe material available. Further, standard maintenance for a force main of the Buena Vista force main type would be maintenance and exercising of valves and inspection and maintenance of force main air release valves. Inspection and maintenance of valves at the Buena Vista Lift Station and the single force main air release valve on the pipe have been performed regularly by EWA. The lift station maintenance is on going, and the air release valve has been inspected or maintained a total of 34 times since 2000.

The Carlsbad Master Plan proposal to parallel the line with a new, high-density polyethylene pipe is a continued enhancement of materials based on new product capabilities for pressure piping. This material was not available in 1982 when the line

was constructed. Even today, high-density, polyethylene plastic pipe lacks the performance history of DIP; and as such, properties are largely based on theoretical assessments, laboratory generated deterioration curves, and advanced aging processes. This material, however, is considered by industry standards to be an enhanced material over DIP and will, therefore, be used in the replacement project.

### **Notification Factor (CF2)**

The Cities made all notices required by law in association with the discharge event. There does not appear to be any dispute on this issue by the Board staff, responsible agencies, or the public.

### **Clean-up And Cooperation Factor (CF3)**

#### **Response to Discharge**

*The Discharger's report dated April 23, 2007 states the discharge of untreated sewage from the 24-inch force sewer main into the Buena Vista Lagoon began sometime Friday March 30, 2007 or Saturday March 31, 2007. At approximately 7:00 PM on Sunday April 1, 2007, a private citizen observed the discharge and reported it to police. Sometime after receiving a call from a private citizen about a sewage spill on April 1, 2007, the Dischargers diverted 2 million gallons of sewage to the City of Oceanside's sanitary sewer system for treatment, thereby reducing the potential volume of the untreated sewage being discharged into the Buena Vista Lagoon.*

*The City of Carlsbad was notified by the Carlsbad Police Department and responded immediately to the report. By 8:00 PM, the City of Carlsbad confirmed the discharge (estimated rate of ranged from 1,000 to 2,000 gallons per minute). The City of Carlsbad initial response was to bring a small backhoe to the site in an attempt to excavate and repair the damaged force sewer main. This proved to be wholly inadequate, due to the location, depth, and lack of available force sewer main construction plans. Compounding the delay was the City of Carlsbad could not locate the appropriate plans to ensure the exact location of the pipeline. Consequently, this further delayed the need to uncover and repair the pipeline.*

*By the next day, April 2, 2007, the Dischargers contracted with a private pipeline company that was qualified to repair the pipe. Repair of the pipe included constructing a sheet piling coffer dam, dewatering the area around the leak, cutting out the damaged section, and installing a repair coupling. All repair work was completed by 12:00 on April 3, 2007 and the force sewer main was returned to service.*

*After the initial delays, the Dischargers implemented reasonable steps to terminate, evaluate, and cleanup the discharge. The Dischargers immediately monitored part of the lagoon for dissolved oxygen and bacteria to determine the extent of the sewage plume. The Dischargers also began aerating the lagoon to increase dissolved oxygen and protect aquatic life. From April 3 through April 10, over 40 million gallons of a mixture of lagoon water and sewage was pumped into the sanitary sewer system for treatment at the Encina Water Pollution Control Facility in Carlsbad. These cleanup efforts by the Dischargers expedited the cleanup of the Buena Vista Lagoon.*

**Staff Report No. R9-2007-0099**

The Complaint Staff Report understates and underplays the response of the Cities to the discharge. As discussed earlier, the Cities' response was swift and deliberate. It was organized under an incident command structure more typical of major police and fire responses, and it was underpinned by coordinated support of not less than five mutual aid agencies. Response moved forward continuously and aggressively from the time the discharge was identified on a Sunday night. Parallel efforts were undertaken to divert flows, pursue repair solutions (including both a direct repair and a separate highline bypass), implement environmental response, and coordinate agency, public, and media communications. At no time during the discharge or ongoing period of pump-back and aeration did City staff and/or contractors not man the site. We strongly encourage the Board members and Board staff to not only review the Dischargers' Response Section 4.3, Chronology of Events, but also Appendix 3, Combined Chronology of Events, to obtain a full appreciation of the extent of actions that were being undertaken in parallel. This review will also reaffirm that the elements of the response that have been condemned as resulting in delay, truly did not affect the timeliness or effectiveness of the response.

The extent of the response has been overwhelming and costly. The investment in the response by the Cities has been documented to date in Appendix 11. In total, the Cities have expended over \$700,000 through October 15, 2007 in association with the discharge. This has been summarized as follows:

<b>Pipeline Repairs</b>	<b>Environmental Response</b>	<b>Investigation and Reporting</b>	<b>Total Expenditures</b>
\$242,498	\$411,588	\$90,917	\$745,003

Under the current Complaint, there is no acknowledgement of the value of reduction of impact as a result of the clean-up and remediation efforts undertaken during and following the discharge event. This clean-up effort was highly acknowledged as beneficial by the resource agencies and Board staff while underway, but we are concerned that they are now apparently dismissed at the point of assessment of liabilities. This is especially troubling since the 1994 efforts to remediate discharge damage were criticized in the prior Staff Report as too little too late. The present response was rapid, well orchestrated, and substantial based largely on lessons learned from the prior discharge event and critiques. In the present response, the Cities not only reclaimed and removed a substantial amount of the sewage released to the lagoon, but actually reduced the footprint of effect by temporarily reversing the flow gradient in the lagoon. The Cities carefully documented creek inflow rates, stationed pumps strategically, and monitored lagoon water levels in a balanced extraction of sewage contaminated water that ultimately resulted in the withdrawal and sewerage of 42.3 MG of contaminated water without adverse effects on lagoon levels. In addition, the Cities installed and operated multiple aerators to consume biochemical oxygen demand. Pumps and aerators, along with environmental response monitoring and testing, continued 24 hours per day for 7 days a week for as long as the remediation actions were beneficial. This environmental response ultimately cost the Cities in excess of \$400,000 and was by far the most costly element of the discharge response. This environmental response investment, however, kept impacts to a substantially reduced rate from those seen in the 1994 discharge (Appendix 6).

## **History of Violations Factor (CF4)**

***In 1994, a total 4.75 million gallons of untreated sewage was discharged from a force sewer main, into Buena Vista Lagoon. That reported cause was a ruptured pipe caused by a contractor. The spill resulted in a significant fish and shrimp kill. At that time, the Regional Board imposed a \$142,302 civil liability on the Dischargers.***

***In 1997, a failure at the Buena Vista Lift Station resulted in the discharge of 1.75 million gallons of untreated sewage into Buena Vista Lagoon. The Dischargers cleaned up the spill by pumping 4.7 million gallons of combined sewage and surface water from the lagoon into the sanitary sewer system for treatment. THE REGIONAL BOARD DID NOT ASSESS CIVIL LIABILITY FOR THE SEWAGE DISCHARGE IN 1997. From July 2006 through July 2007, the Dischargers have had a total of 21 overflows for a total of 7,725,707 gallons (including 7,300,000 to Buena Vista Lagoon) of raw sewage discharged from the Dischargers' sanitary sewer system.***

**Staff Report No. R9-2007-0099**

In order to assess the history of violations as a factor, it is important to examine the circumstances of the individual discharges and question whether the events are related or pervasive in the context of the Dischargers' operations. In the case of the 4.75 MG discharge in 1994, in strict violation of legal and contract mark-out requirements, a contractor drilling a foundation caisson pile at the Buena Vista Lift Station accidentally drilled into a 16-inch diameter force main, causing 4.75 million gallons of sewage to discharge into the Buena Vista Lagoon. The 1997 discharge resulted from a flange failure within the lift station that failed during a flow test event to verify correct operation of pumps, valves, and switches under maximum load. Following shutdown of the pumps, an alarm went off indicating that the dry well within the lift station was flooding. With the station flooding, access to necessary valves to alter flows was cut off by rising sewage in the station. Several failed attempts to close the valves occurred during the day with the final closure of the isolation valve to the dry well being accomplished by a diver. The discharge event resulted in an estimated 1.75 million gallons of raw sewage discharging into the lagoon between 11:45 am and 5:00 pm on 2/25/97.

In the case of the 1994 discharge event, a contractor operating in violation of mark out requirements caused the discharge. This event was deemed negligent, and there was an assessment of liability by the Board. In the 1997 event, an unforeseeable failure during testing resulted in the discharge. This event was not deemed to be negligent, and no assessment was levied.

The present major discharge event has been discussed in depth, but also was not negligent and was unforeseeable. As with the rejection of an ACL in the 1997 case and in keeping consistent with the early exclusion of Oceanside's pipe rupture discharge in 2000, the facts of the present case do not warrant an assessment for negligent actions.

When considering the recent year's history of 21 incidents of release, it is important to note that these events include all scales of discharge that must be contextualized with the size of the collection systems of the two agencies and the magnitude of sewage handled during the same yearlong period. Vista's sewer system handles 2.4 billion

gallons of sewage per year and Carlsbad's system handles a comparable 2.6 billion gallons of sewage per year. In this context, Vista and Carlsbad's collective discharge events total  $6.8 \times 10^{-3}$  percent of the sewage handled in the system.

Historically the Cities have performed better than the norm for sewer agencies within the region. The last 5 years of published data FY2001-2002 through FY2005-2006 were obtained through the San Diego Regional Water Quality Control Board's web site at (<http://www.waterboards.ca.gov/sandiego/programs/ssso/>). These data are provided to the Board and summarized as a reporting requirement of Board Order 96-04. We analyzed these data to determine what the true history of performance has been for the Cities relative to violations. We examined the two agencies separately and collectively as a weighted average of ownership in the Buena Vista Force Main. The parameters examined are those that may be standardized to system scale across all of the sewer agencies in the region. These include 1) number Sanitary Sewer Overflows (SSO) per 100 miles of system; 2) total discharge volume/-million gallons processed, and 3) percent of release volume recovered. The results of this analysis are as follows:

**5-year Average 2001-2006 Sanitary Sewer Overflow Reported Data**

	Region Average	Vista	Carlsbad	Ownership Weighted
#SSO/100 mi. system	3.6	3.5	5.3	3.7
SSO gal./Mgal.	29.1	9.8	1.2	7.6
% volume recovered	22.2%	75.1%	34.5%	64.2%

It is clear than the Cities of Vista and Carlsbad have a better performance record than the regional average individually and as a function of ownership weighted interest in the Buena Vista Force Main. The presentation of raw numbers of discharges or volumes without context is an unfair characterization of the Cities performance history.

While the Cities continue to strive for a no-discharge record, the present discharge record clearly indicates that the Cities outperform the standard. For this reason, we have calculated a positive change for the History of Violation Factor (CF4). This calculation is based on an average of the ratio comparison of the regional standard performance (Region Average) and the facility ownership weighed performance (Ownership Weighted) of the two Cities for each the three factors discussed above. For the number of discharges per 100 miles, the ratio is 1.02 meaning that the Cities performed slightly worse than average. For the discharge volume, the ratio was 0.26 meaning the Cities performed approximately 4 times better than the average. For the discharged volume recovered, the ratio was 0.35 meaning the Cities performed approximately 3 times better than the average for the region. The average of the three ratios is 0.54 that suggests that on whole the Cities have a 5-year history of performance about twice as well as the regional average. We are proposing use of this average ratio as a weighting factor for CF-4.

**Table VII-2. Conduct Factors to adjust ACLs**

Factor	Adjustment for
Culpability Factor (CF1)	<p>Discharger's degree of culpability regarding the discharge. Higher ACL amounts should be set for intentional or negligent violations than for accidental, non-negligent violations. A first step is to identify any performance standards (or, in their absence, prevailing industry practices) in the context of the violation. The test is what a reasonable and prudent person would have done or not done under similar circumstances.</p> <p><b>There was no way for the Cities to anticipate the rupture of the force main. The young age of the pipe, the suitable material, and PE lining would all support an anticipated design life in excess of 50 years. There is no standard industry means of regular inspection of an encased force main of this scale without extreme measures of excavation, dewatering, and breaching the protective encasement membrane. In 2000, the Board did not find liability in the initial failure of an unlined force main because the <i>break in the force main was not reasonably foreseeable.</i></b></p> <p><b>We would recommend that this factor alone either eliminate the proposed ACL, or radically reduce the proposed ACL by a factor of 0.5 or less.</b></p>
Notification Factor (CF2)	<p>Extent to which the discharger reported the violation as required by law or regulation.</p> <p><b>The Cities made all reports as required by law. We are recommending no change as a result of the Dischargers' conduct as the known notification requirements were met in a timely fashion.</b></p>
Cleanup and Cooperation Factor (CF3)	<p>Extent to which the discharger cooperated in returning to compliance and correcting environmental damage, including any voluntary cleanup efforts undertaken.</p> <p><b>The Cities have implemented extreme clean-up and discharge remediation efforts. The cost of these efforts has exceeded both the repair costs for the pipe and double the damage calculations for beneficial uses. The Cities have been cooperative with agencies and forthcoming with information. In addition, the Cities have gone well beyond the requirements of law to investigate, critique, learn from and enhance their capabilities in the future.</b></p> <p><b>We believe that the Cities' response should be considered to support a reduction of not less than a factor of 0.5 for any residual liability associated with the beneficial uses damage.</b></p>
History of violations factor (CF4)	<p>Prior history of violations</p> <p><b>The Cities' violations have resulted from discharges of sewage as a result of various factors associated with operation of a large wastewater collection system. The discharge record is better than industry standard when the events are standardized for the scale of the systems operated by the Cities. We have calculated a penalty reduction factor of 0.54 based on performance against the regional average.</b></p>

Based on the analyses above, the Cities believe that if an assessment were to be levied, that assessment must be derived following State Board Enforcement Policy. Specifically the assessment must be calculated from applicable standards this calculation would follow that outlined in the Policy as follows:

$$\begin{array}{rclcl}
 \textit{Initial Liability} & + & \textit{Beneficial Use Liability} & = & \textit{Base Amount} \\
 \$0 & + & \$194,494.34 & = & \$194,494.34
 \end{array}$$

After calculation of the Base Amount, the Conduct Factors are used to adjust the amount to determine the proposed ACL. This is accomplished as indicated in the Policy and specifically for the present incident as shown below:

$$\begin{array}{rclclclcl}
 \textit{Base Amount} & \times & \textit{CF1} & \times & \textit{CF2} & \times & \textit{CF3} & \times & \textit{CF4} & = & \textit{ACL} \\
 \$194,494.34 & \times & 0.5 & \times & 1.0 & \times & 0.5 & \times & 0.54 & = & \$26,257
 \end{array}$$

In the 1997 Guidance document, the State Board recommended evaluation of a proposed assessment within an Assessment Matrix that uses a minor to major rating of the “Environmental Significance” of the discharge along with a minor to major rating of the “Compliance Significance” of the discharger. This tool was employed in the evaluation of the 2000 Oceanside discharge to determine the reasonableness of the proposed assessment.

*“Environmental Significance” relates to the violation itself: the gravity of the violation(s) – nature, circumstances, extent, and degree of toxicity of the discharge; and whether the discharge is susceptible to cleanup or abatement. The “Compliance Significance” deals with the discharger: voluntary cleanup efforts undertaken by the discharger; the violator’s prior history of violations; and the violator’s degree of culpability.*

*SWRCB Guidance 1997*

<b>Assessment Matrix</b>			
<b>COMPLIANCE SIGNIFICANCE (DISCHARGER)</b>	<b>ENVIRONMENTAL SIGNIFICANCE (DISCHARGE)</b>		
	<b>MINOR</b>	<b>MODERATE</b>	<b>MAJOR</b>
<b>MINOR</b>	\$100-\$2,000	\$1,000-\$20,000	\$10,000-\$100,000
<b>MODERATE</b>	\$1,000-\$20,000	\$10,000-\$100,000	\$50,000-\$200,000
<b>MAJOR</b>	\$10,000-\$100,000	\$50,000-\$200,000	\$100,000 to maximum

*SWRCB Guidance 1997*

In the present case, there is no question that the discharge was major in terms of Environmental Significance based on the environmental impacts and the sensitivity of Buena Vista Lagoon. The Cities, however, invested a huge amount on effective voluntary clean-up; the Cities have a much better than average record of performance for SSO violations, and the pipeline rupture was unlikely and unforeseen given the young age of the pipe and the polyethylene encasement. As such, it is believed that the Compliance Significance is minor. As such, the proposed ACL would fall within the scoring recommended.

### 5.3 OTHER FACTORS

#### E. OTHER FACTORS

If the RWQCB believes that the amount determined using Steps A through D is inappropriate, the amount may be adjusted. Examples of circumstances warranting an adjustment under this step are:

- (a) The discharger publicized the violation and the subsequent enforcement actions in a way that encourages others to violate water quality laws and regulations.
- (b) The threat to human health or the environment was so egregious that the preceding factors did not, in the opinion of the RWQCB, adequately address this violation.
- (c) The discharger has provided, or RWQCB staff has identified other pertinent information not previously considered that indicates a higher or lower amount is justified.
- (d) A consideration of issues of environmental justice indicates that the amount would have a disproportionate impact on a particular socioeconomic group.

If such an adjustment is made, the reasons for the extent and direction of the adjustment must be noted in the administrative record.

*SWRCB Enforcement Policy*

The Cities have expressed both through agency and press relations and through their actions, a full appreciation for the magnitude and concern for the discharge. They have invested over \$700,000 in discharge response, environmental clean-up, and other even-related actions. The Cities are moving forward with the accelerated process of installing a parallel sewer main and lining the existing main, well ahead of its capacity demand or its scheduled replacement life. These actions are being taken, not because there is a knowledge that the line is presently subject to other areas of corrosion, but rather because the Cities are now painfully aware that there is a potential that the line is subject to other areas of corrosion and there remains no reasonable way to inspect the line without full excavation and breaching the very polyethylene liner intended to protect the pipe from corrosive soil conditions. As a result, this commitment to the present course of action is being made as insurance against the potential for future ruptures with the available information at hand today.

It is important for the Board to give full consideration as to whether the present failure could have reasonably been prevented or responded to in a manner that would have been better executed or resulted in less environmental effect. It is especially important to consider whether any ACL should be levied against the Cities given the discharge facts, the logic for not assessing any liability for the initial 2000 Oceanside discharge where the **“break in the force main was not reasonably foreseeable due to its relatively recent installation”**, and the premise expressed by the State Board policy **“that enforcement actions throughout the State shall be consistent, predictable, and fair.”** The Cities would suggest that an assessment is not warranted under these circumstances; and if there remains disagreement, that the assessment should not exceed the actual damages to beneficial uses as calculated and modified by conduct criteria.

## 5.4 ECONOMIC SAVINGS

### F. ECONOMIC BENEFIT

Economic benefit is any savings or monetary gain derived from the acts that constitute the violation. In cases when the violation occurred through no fault of the discharger and it was demonstrated that the discharger exercised due care, there may be no economic benefit. In cases where the violation occurred because the discharger postponed improvements to a treatment system, failed to implement adequate control measures (such as Best Management Practices (BMPs)) or did not take other measures needed to prevent the violations, economic benefit should be estimated as follows:

- (a) Determine those actions required by an enforcement order or an approved facility plan, or that were necessary in the exercise of reasonable care, to prevent the violation. Needed actions may have been capital improvements to the discharger's treatment system, implementation of adequate BMPs or the introduction of procedures to improve management of the treatment system.
- (b) Determine when and/or how often these actions should have been taken as specified in the order or approved facility plan, or as necessary to exercise reasonable care, in order to prevent the violation.
- (c) Estimate the type and cost of these actions. There are two types of costs that should be considered, delayed costs and avoided costs. Delayed costs include expenditures that should have been made sooner (e.g. for capital improvements such as plant upgrades and collection system improvements, training, development of procedures and practices, etc) but that the discharger is still obligated to perform. Avoided costs include expenditures for equipment or services that the discharger should have incurred to avoid the incident of non-compliance, but that are no longer required. Avoided costs also include ongoing costs such as needed additional staffing from the time determined under step "b" to the present, treatment or disposal costs for waste that cannot be cleaned up, and the cost of effective erosion control measures that were not implemented as required.
- (d) Calculate the present value of the economic benefit. The economic benefit is equal to the present value of the avoided costs plus the "interest" on the delayed costs. This calculation reflects the fact that the discharger has had the use of the money that should have been used to avoid the instance of non-compliance. This calculation should be done using the USEPA's BEN computer program (the most recent version is accessible at <http://www.swrcb.ca.gov>) unless the SWRCB or RWQCB determines, or the discharger demonstrates to the satisfaction of the SWRCB or RWQCB, that, based on case-specific factors, an alternate method is more appropriate for a particular situation.
- (e) **Determine whether the discharger has gained any other economic benefits. These may include income from continuing in production when equipment used to treat discharges should have been shut down for repair or replacement.**
- (f) The RWQCBs should not adjust the economic benefit for expenditures by the discharger to abate the effects of the discharge.

The economic benefit shall be added to the adjusted base amount calculated from the previous steps unless the RWQCB determines that it is not appropriate. The ACLC or ACL Order shall include a finding that supports the determination.

*SWRCB Enforcement Policy*

***At this time, the Regional Board does not have information to determine the specific amount of economic benefit or savings of avoiding the cost of needed measures to prevent and reduce the sewage discharge.***

***Staff Report No. R9-2007-0099***

The failure of the Buena Vista Force Main was a catastrophic and unforeseeable failure of a capital facility of the Cities. It was not an older pipe where deferred replacement was a factor in its failure. In fact, it was half its programmed service life of a conservative 50 years. When it was installed, it was constructed with state of the art materials and encased for additional protection against corrosive soils. There has been no economic benefit afforded the Cities in relation to the discharge event.

## **5.5 OTHER MATTERS AS JUSTICE MAY REQUIRE**

### **G. STAFF COSTS**

Staff costs may be one of the "other factors that justice may require", and should be estimated when setting an ACL. Staff should estimate the cost that investigation of the violation and preparation of the enforcement action(s) has imposed on government agencies. This can include all activities of a progressive enforcement response that results in the ACL. Staff costs should be added to the amount calculated from the previous steps.

***SWRCB Enforcement Policy***

***To date, the Regional Board has spent an estimated 140 hours to investigate and consider action regarding this matter. At an average rate of \$125 per hour, the staff costs at this time are no less than \$17,500.***

***Staff Report No. R9-2007-0099***

The Cities are not opposed to reimbursement of Board staff time as may be reasonably calculated and documented as legitimate expenses incurred in response to this discharge event that are above and beyond the normal duties and functions of Board staff.

## 5.6 ABILITY TO PAY AND ABILITY TO CONTINUE IN BUSINESS

### H. ABILITY TO PAY AND ABILITY TO CONTINUE IN BUSINESS

The procedure in Steps A through G gives an amount that is appropriate to the extent and severity of the violation, economic benefit and the conduct of the discharger. This amount may be reduced or increased based on the discharger's ability to pay.

The ability of a discharger to pay an ACL is limited by its revenues and assets. In most cases, it is in the public interest for the discharger to continue in business and bring operations into compliance. If there is strong evidence that an ACL would result in widespread hardship to the service population or undue hardship to the discharger, it may be reduced on the grounds of ability to pay. The RWQCBs may also consider increasing an ACL to assure that the enforcement action would have a similar deterrent effect for a business or public agency that has a greater ability to pay.

Normally, an ACL should not seriously jeopardize the discharger's ability to continue in business or operation. The discharger has the burden of proof of demonstrating lack of ability to pay and must provide the information needed to support this position. This adjustment can be used to reduce the ACL to an amount that the discharger can reasonably pay and still bring operations into compliance. The downward adjustment for ability to pay should be made only in cases where the discharger is cooperative and has the ability and the intention to bring operations into compliance within a reasonable amount of time. If the violation occurred as a result of deliberate or malicious conduct, or there is reason to believe that the discharger can not or will not bring operations into compliance, the ACL must not be adjusted for ability to pay.

The RWQCBs may also consider increasing the ACL because of ability to pay. For example, if the RWQCB determines that the proposed amount is unlikely to have an appropriate deterrent effect on an uncooperative discharger with a greater ability to pay, the amount should be increased to the level that the Board determines is necessary to assure future compliance.

*SWRCB Enforcement Policy*

***At this time, the Regional Board does not have information that the Dischargers are unable to pay the proposed administrative civil liability or any information on how payment of the proposed administrative civil liability would affect the ability to provide required services.***

***Staff Report No. R9-2007-0099***

The Cities are municipal agencies mandated to provide sewer services within their service districts. As a result, an assessment of an ACL will not affect the Cities ability to continue in business. The ACL, however, will affect the base operating cost of the system and will affect prioritization and initiation schedules for capital improvement projects, sewer rate structures, and lastly maintenance and operations. Neither Vista nor Carlsbad operates their wastewater collection systems in a for-profit manner. As such, any payments made out must ultimately be recaptured by rate increases or deferral of expenditures.

As a result, the Cities are opposed to expending funds on non-supported penalties. The Cities also support the premise that if public funds must be expended, it is best to expend these funds locally where the paying public may best benefit from the expenditures.

## 6.0 RECOMMENDED ASSESSMENT OF CIVIL LIABILITY

The Cities have reviewed State Board Policy, pertinent sections of the California Water Code, and past actions of the San Diego Regional Water Quality Control Board and do not believe that an ACL is warranted for the discharge of sewage associated with the rupture of the 24-inch ductile iron pipe Buena Vista Force Main. This position is largely based on the fact that the rupture of the line was unforeseeable; the Cities exercised due care and were not negligent in their original selection of materials for the pipe, maintenance of the pipe, or response to the discharge. The San Diego Board has previously defended the position that accidental releases barring negligent response are not a cause for assessment without history of negligence on the part of the Dischargers. We believe this case is perfectly consistent with this past precedent.

Notwithstanding the Cities' firm belief that the discharge does not warrant an assessment, it would be erroneous to ignore the fact that the Board may disagree. In such a case, we would argue that any assessment should be based on documented facts and supporting evidence. The assessment should be based on a reasoned and fair application of existing policy and guidance and should carefully weigh past actions to ensure fair treatment, as is the stated policy of the State Board.

In this light, we would argue that an assessment should not exceed that calculated in this document. Specifically, we would request that the proposed assessment be set at a value of the Beneficial Use Liability as the Base Value adjusted by the Discharger Conduct Factors. Based on this analysis, the calculated assessment would be as follows and as consistent with the State Board guidance for calculation of the liability:

<b>ACL</b>	<b>+</b>	<b>Cost Recovery</b>	<b>=</b>	<b>Total Liability</b>
<b>\$26,257</b>	<b>+</b>	<b>\$17,500</b>	<b>=</b>	<b>\$43,757</b>

### I. STATUTORY MAXIMUM AND MINIMUM LIMITS

The ACL must be checked against the statutory maximum and minimum limits to ensure that it is in compliance with the appropriate section of law. The maximum amount for an ACL issued under California Water Code section 13385 is \$10,000 for each day in which a violation occurs plus \$10 per gallon for amounts discharged but not cleaned up in excess of 1,000 gallons. The statutory maximum amounts for ACLs issued under California Water Code sections 13261, 13350, and 13399.33 are summarized in Table IV-1.

California Water Code section 13385, which applies to discharges regulated pursuant to the CWA, was amended effective January 1, 2000, to state that "At a minimum, liability shall be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation". Therefore, for such violations occurring on or after January 1, 2000, the minimum amount for an ACL is the economic benefit. For violations subject to mandatory minimum penalties pursuant to California Water Code section 13385 (h) and (i), the Regional Board may choose in its discretion to assess civil liability in addition to the mandatory penalty. In such cases, the total recovered amount must be no less than the mandatory penalty amount or the economic benefit, whichever is greater.

It is the policy of the SWRCB that all ACLs that are not Mandatory Minimum Penalties should be assessed at a level that at a minimum recovers the economic benefit.

*SWRCB Enforcement Policy*

The recommended rejection of an ACL or the alternative proposed ACL do not violate the statutory maximum or minimum limits established for violations under Section 13350 of the California Water Code. Nor would an assessment of an ACL in the amount of the alternative liability assessment identified above.

## 7.0 REFERENCES

- Appendix A of the ANSI/AWWA C105/A21.5 Standard "Polyethylene Encasement for Ductile-Iron Pipe Systems."
- Coastal Environments. 2000. Buena Vista Lagoon Land Management Plan Elements. Lagoon Bathymetry, Water Quality, Biological Analysis, and Soils Analysis. Prepared for Buena Vista Lagoon Foundation.
- Everest International Consultants. 2004. Buena Vista Lagoon Restoration Feasibility Study – Final Report June 2004. Prepared for Buena Vista Lagoon Foundation, California Coastal Conservancy, U.S. Fish & Wildlife Service
- RWQCB. 1994. Water Quality Control Plan for the San Diego Basin (9). California Regional Water Quality Control Board, San Diego Region.
- RWQCB. 1996. Draft 303(d) List. California Regional Water Quality Control Board, San Diego Region.
- RWQCB. 1998. Fact Sheets in Support of Draft Section 303(d) List of Impaired Waters. California Regional Water Quality Control Board, San Diego Region.
- RWQCB. 2007. Investigative Order No. R0-2007-0060, Discharge of Untreated Sewage Into Buena Vista Lagoon, Within the City of Carlsbad, San Diego County. NCRU:01-0743.02 & 01-0764.02:ebecker. (April 6, 2007)
- Standard Specifications for Public Works Construction (Greenbook) 1982 edition.
- Tinney, R. 1990. The Oil Drilling Prohibitions as the Channel Islands and Pr. Reyes – Farallon Islands National Marine Sanctuaries: Some Costs and Benefits. Center for Environmental Education, Washington D.C.