

Bill Jennings  
California Sportfishing Protection Alliance  
3536 Rainier Avenue  
Stockton, CA 95204  
Tel: 209-464-5067  
Fax: 209-464-1028  
E-mail: [deltakeep@aol.com](mailto:deltakeep@aol.com)

Mike Jackson  
Law Office of Mike Jackson  
P.O. Box 207  
429 W. Main Street  
Quincy, CA 95971  
Tel: 530-283-1007  
Fax: 530-283-0712  
E-mail: [mjatty@sbcglobal.net](mailto:mjatty@sbcglobal.net)

Andrew Packard  
Law Office of Andrew Packard  
319 Pleasant Street  
Petaluma, CA 94952  
Tel: 707-763-7227  
Fax: 707-763-9227  
E-mail: [andrew@packardlawoffices.com](mailto:andrew@packardlawoffices.com)

For Petitioner California Sportfishing Protection Alliance

**BEFORE THE STATE WATER RESOURCES CONTROL BOARD**

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**In the Matter of Waste Discharge Requirements For )  
City of Sunnyvale Wastewater Treatment Plant; )  
California Regional Water Quality Control Board – ) **PETITION FOR REVIEW**  
San Francisco Bay Region Order No. R2-2009-0061; )  
NPDES No. CA0037621 )  
\_\_\_\_\_ )**

**PETITION FOR REVIEW**

Pursuant to Section 13320 of California Water Code and Section 2050 of Title 23 of the California Code of Regulations (CCR), California Sportfishing Protection Alliance (“CSPA” or “petitioner”) petitions the State Water Resources Control Board (State Board) to review and vacate the final decision of the California Regional Water Quality Control Board for the San Francisco Bay Region (“Regional Board”) in adopting Waste Discharge Requirements (NPDES No. CA0037621) for City of Sunnyvale Wastewater Treatment Plant, on 12 August 2009. See

Order No. R2-2009-0061. The issues raised in this petition were raised in timely written comments.

**1. NAME AND ADDRESS OF THE PETITIONERS:**

California Sportfishing Protection Alliance  
3536 Rainier Avenue  
Stockton, California 95204  
Attention: Bill Jennings, Executive Director

**2. THE SPECIFIC ACTION OR INACTION OF THE REGIONAL BOARD WHICH THE STATE BOARD IS REQUESTED TO REVIEW AND A COPY OF ANY ORDER OR RESOLUTION OF THE REGIONAL BOARD WHICH IS REFERRED TO IN THE PETITION:**

Petitioner seeks review of Order No. R2-2009-0061, Waste Discharge Requirements (NPDES No. CA0037621) for the City of Sunnyvale Wastewater Treatment Plant. A copy of the adopted Order is attached as Attachment No. 1.

**3. THE DATE ON WHICH THE REGIONAL BOARD ACTED OR REFUSED TO ACT OR ON WHICH THE REGIONAL BOARD WAS REQUESTED TO ACT:**

12 August 2009

**4. A FULL AND COMPLETE STATEMENT OF THE REASONS THE ACTION OR FAILURE TO ACT WAS INAPPROPRIATE OR IMPROPER:**

CSPA submitted a detailed comment letter on 8 June 2009. That letter and the following comments set forth in detail the reasons and points and authorities why CSPA believes the Order fails to comport with statutory and regulatory requirements. The specific reasons the adopted Orders are improper are:

Wastewater treatment processes at the City of Sunnyvale Wastewater Treatment Plant include grinding and grit removal, primary sedimentation, secondary treatment through the use of oxidation ponds, fixed-film reactor nitrification, dissolved air flotation, dual media filtration, chlorine disinfection, and dechlorination. In addition to a surface water discharge, recycled water is distributed throughout the northern portion of Sunnyvale. The treatment system is capable of producing a tertiary quality of effluent that complies with the California Code of Regulation requirements in Title 22 for reclaimed water. The Permit however allows for bypass of the full level of treatment when discharging to surface waters, stating that the receiving water is only lightly used for contact recreational uses. Under the Permit, the recreational users of

downstream waters are not afforded the same level of protection as the citizens of Sunnyvale who may come in contact with the treated wastewater.

- A. The Permit fails to contain an Effluent Limitation for total coliform organisms that is protective of the contact recreational beneficial use of the receiving stream contrary to Federal Regulation 40 CFR 122.44 and CWC 13377. The Permit allows for the Bypass of parts of the disinfection treatment processes contrary to Federal Regulation 122.41 (m)(1) resulting in a less restrictive bacteria discharge standard. The Permit “backslides” by removing a daily maximum Effluent Limitation for bacteria.**

Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Contact recreation is a beneficial use of the receiving stream. The Permit fails to include an Effluent Limitation for total coliform organisms necessary to protect the contact recreational beneficial use. The California Water Code (CWC), Section 13377 states in part that: “...the state board or the regional boards shall...issue waste discharge requirements... which apply and ensure compliance with ...water quality control plans, or for the protection of beneficial uses...” The Permit ignores the Basin Plan’s total coliform organism objective for wastewater discharges (Table 4-2) contrary to CWC 13377.

The Permit contains an Effluent Limitation for Enterococcus Bacteria of 35 colonies/100 ml as a 30-day mean for discharges to surface waters. The limitation is based on Basin Plan Table 3-2 for coastal recreational waters, which is based on US EPA’s water quality criteria. The Permit fails to recognize that US EPA’s water quality criteria for bacteria were established for the protection of beaches and were not intended to regulate wastewater discharges. The California Department of Public Health’s (CDPH) California Code of Regulations (CCR) Title 22 contains total coliform organism limitations of 2.2 MPN/100 ml as a seven day median to protect public health in recreational impoundments. Unlike US EPA’s bacteria criteria, the Title 22 coliform organism is applicable to domestic wastewater discharges. DPH has developed reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 ml as a 7-day median. Title 22 is not directly applicable to surface waters; however, it is appropriate to apply DPH’s science used to develop the reclamation criteria because the surface water is used for contact recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. Title 22 specifies the level necessary to protect the public health during recreational activities, regardless of whether in a “recreational impoundment” or surface water. This standard

for total coliform organisms has also been included in the Basin Plan Table 4-2 as a water quality objective: Effluent Limitations for Conventional Pollutants. The Permit fails to recognize the science behind DPH's Title 22 for protecting contact recreational use and ignores the Basin Plan water quality objective for total coliform organisms. It must be noted that Footnote No. d of Basin Plan Table 4-2 states that fecal coliform organisms may be used to replace total coliform organisms; however the replacement with *Enterococcus* is not designated as acceptable.

The wastewater treatment plant has the capability to meet the Basin Plan's objective for total coliform objectives. The Permit Fact Sheet contains the following discussion: "Recycled Water Production. The Plant may enter into two different treatment modes – slough discharge wastewater treatment and recycled water production. During periods of recycled water production in high recycled water demand seasons (typically 12–16 hours a day), the DAFT polymer dose, chlorine dose, and chlorine contact time are adjusted to meet Title 22 requirements (recycled water effluent turbidity needs to be below 2 NTU versus 10 NTU for slough discharge). The portion of the effluent that is diverted to the recycled water pump station is partially dechlorinated using sodium bisulfite. During recycled water production, there is no discharge to Moffett Channel." Failure to utilize the capability of the wastewater treatment plant, allowing a reduced effluent quality when discharging to surface waters, constitutes a bypass of treatment processes contrary to Federal Regulation 40 CFR 122.41 (m)(1).

US EPA's ambient criteria for bacteria also contain a single sample maximum criteria; such was included in the previous NPDES permit for this facility. The Permit however states that: "The single sample maximum effluent limit for *Enterococcus* is not retained. As stated under Section C.2.f above, the removal of this limit complies with antibacksliding requirement and is not expected to cause degradation of water quality because the Discharger will maintain its treatment at current levels and the 5-day geometric mean limit will hold the Discharger to its current performance."

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions.

These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);

(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or

(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or

modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) Limitations. In no event may a permit with respect to which paragraph (1)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

The Permit does not contain any discussion or defense for removal of the daily maximum Effluent Limitation for Enterococcus Bacteria. The Permit must be revised to include Effluent Limitations for total coliform organisms as required by 40 CFR 122.44 and the Basin Plan Table 4.2 and to be equivalently protective of the public's health as CCR Title 22.

**B. The Permit fails to include an Effluent Limitation for turbidity that is protective of the contact recreational beneficial use of the receiving stream contrary to Federal Regulation 40 CFR 122.44 and CWC 13377.**

Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Contact recreation is a beneficial use of the receiving stream. The Permit fails to include an Effluent Limitation for turbidity necessary to protect the contact recreational beneficial use. The California Water Code (CWC), Section 13377 states in part that: "...the state board or the regional boards shall...issue waste discharge requirements... which apply and ensure compliance with ...water quality control plans, or for the protection of beneficial uses..."

The Permit states that: "Recycled Water Production. The Plant may enter into two different treatment modes – slough discharge wastewater treatment and recycled water production. During periods of recycled water production in high recycled water demand seasons (typically 12–16 hours a day), the DAFT polymer dose, chlorine dose, and chlorine contact time are adjusted to meet Title 22 requirements (recycled water effluent turbidity needs to be below 2 NTU versus 10 NTU for slough discharge)."

The California Department of Public Health (DPH) has developed reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, school yards, and other areas of similar public access, wastewater be adequately disinfected, oxidized,

coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 ml as a 7-day median. Title 22 is not directly applicable to surface waters; however, it is appropriate to apply DHS's reclamation criteria because the surface water is used for contact recreational purposes. As stated in the above comment coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. In addition to coliform testing, turbidity is a second indicator of the effectiveness of the treatment process and assures compliance with the required level of treatment. The tertiary treatment process, or equivalent, is also capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. The Permit includes an Effluent Limitation of 10 NTUs as an instantaneous maximum but does not contain a daily average concentration of 2 NTUs.

The wastewater treatment plant has the capability to meet the Basin Plan's objective for turbidity. The Permit Fact Sheet contains the following discussion: "Recycled Water Production. The Plant may enter into two different treatment modes – slough discharge wastewater treatment and recycled water production. During periods of recycled water production in high recycled water demand seasons (typically 12–16 hours a day), the DAFT polymer dose, chlorine dose, and chlorine contact time are adjusted to meet Title 22 requirements (recycled water effluent turbidity needs to be below 2 NTU versus 10 NTU for slough discharge). The portion of the effluent that is diverted to the recycled water pump station is partially dechlorinated using sodium bisulfite. During recycled water production, there is no discharge to Moffett Channel." Failure to utilize the capability of the wastewater treatment plant, allowing a reduced effluent quality when discharging to surface waters, constitutes a bypass of treatment processes contrary to Federal Regulation 40 CFR 122.41 (m)(1).

Note: The application of the full tertiary treatment processes results in the ability to achieve lower levels for BOD and TSS than the level of treatment currently prescribed in the Permit. The Permit states in Finding No. (h) that the established 20 mg/l for TSS is unacceptably high and requires the Discharger prepare a report detailing why the lower level of 10 mg/l cannot be achieved. Application of the full treatment process, as is required for "recycled" water, will reduce the TSS as the turbidities are decreased. The Regional Board staff should review the Discharger Self Monitoring reports for TSS concentrations when the "reclaimed" water system is fully operational and processes are not being bypassed.



**C. The Permit fails to contain an Effluent Limitation for total chlorine residual that is protective of the aquatic life beneficial uses of the receiving stream contrary to Federal Regulation 40 CFR 122.44.**

The Permit contains an Effluent Limitation for total chlorine, as an instantaneous maximum, of 0.0 mg/l. Permit Table 6, Footnote No. 3, states that:

“This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of Standard Methods for the Examination of Water and Wastewater. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine, and sulfur dioxide dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff will conclude that these false positive chlorine residual exceedances are not violations of the effluent limitation.”

Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. The Permit recognizes this fact in Finding No. G, which states that:

“NPDES regulations at 40 CFR 122.44(d)(1)(i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. **Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a),** supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion (WQC), such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).” (Emphasis added)

US EPA has established water quality criteria for the protection of fresh water aquatic life for chlorine of 19 ug/l as a 1-hour average and 11 ug/l as a 4-day average. The use of chlorine at the wastewater treatment plant for disinfection establishes reasonable potential for this toxic pollutant to be discharged to surface waters. The Basin Plan establishes a water quality objective as Effluent Limitations for chlorine in Table 4-2. The Basin Plan only establishes an objective of 0.0 mg/l, which is not tied to a detection limit. Regional Board staff could have reviewed Standard Methods and determined whether their means of regulating chlorine would be as restrictive as the Ambient Criteria, but did not do so. Wastewater dischargers and the associated laboratories in California routinely meet a detection limit of 0.01 mg/l for chlorine, although

consultants debate this topic. The number of significant figures in the Permit limitation for chlorine is not adequate to conclude that a proper detection must be met when achieving a zero residual for chlorine. There is no legal or technical defense for establishing an Effluent Limitation based on a laboratory detection level. The Permit must be modified to utilize US EPA's ambient criteria for the protection of freshwater aquatic life for chlorine in developing the Effluent Limitation.

**D. The Permit does not contain a final Effluent Limitation for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP)*.**

The Sunnyvale wastewater discharge has been shown to be chronically toxic. This is evidenced by the following discussion found on page F-8: "Compliance with Chronic Toxicity Trigger. The chronic toxicity trigger of 2.0 chronic toxicity units (TUc) as a single-sample maximum was exceeded on 20 occasions (out of 97 samples), and the trigger of 1.0 TUc as a three-sample median was exceeded on 44 occasions out of 92 3-sample median values during the previous permit term (November 2003-March 2009). This Order imposes additional requirements for the Discharger to reduce chronic toxicity." Clearly the discharge presents a reasonable potential to cause toxicity within the receiving stream thereby degrading the aquatic life beneficial use.

On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. The SIP, Section 4, Toxicity Control Provisions, Water Quality-Based Toxicity Control, states that: "A chronic toxicity effluent limitation is required in permits for all dischargers that will cause, have a reasonable potential to cause, or contribute to chronic toxicity in receiving waters." The SIP is a state Policy and CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy.

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard,

including state narrative criteria for water quality. There has been no argument that domestic sewage contains toxic substances and presents a reasonable potential to cause toxicity if not properly treated and discharged. The Water Quality Control Plan (Basin Plan) contains a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The Permit requires the Discharger to conduct an investigation of the possible sources of toxicity. However, this language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Permit.

Permit is quite simply wrong; by failing to include effluent limitations prohibiting chronic toxicity the Permit does not "...implement the SIP". Accordingly, the Permit must be revised to prohibit chronic toxicity (mortality and adverse sublethal impacts to aquatic life, (sublethal toxic impacts are clearly defined in EPA's toxicity guidance manuals)) in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i) and the Basin Plan and the SIP.

**E. The Permit does not contain a protective Effluent Limitation for ammonia in violation of Federal Regulations 40 CFR 122.44 and California Water Code Section 13377.**

The Permit Fact Sheet contains the following discussion of toxicity caused by the discharge:

"During this period, the Discharger used a three-sample median "trigger" of 1.25 TUC based on IC50 or EC50 to initiate the TIE process. Based on this criterion, the Discharger conducted or attempted to conduct several TIE studies in February 2004, March 2005, May 2005, June 2006, February 2008, and December 2008. The February 2004 and June 2006 Phase I TIE study found that the toxicity was not persistent; therefore, additional efforts were discontinued; the March 2005 and May 2005 attempts failed due to lack of effluent samples. The February 2008 TIE study suggested that the observed toxicity was caused by a contaminant that is not amenable to removal by centrifugation or C18SPE or alternatively that there are polar organic compounds present in concentrations high enough to cause toxicity. **The last TIE study suggested the possibility that ammonia may cause or contribute to the toxicity. The Discharger took no measures to reduce the toxicity.**" (Emphasis added)

Clearly the discharge has a reasonable potential to exceed the Basin Plan water quality objective for toxicity. The Permit is for a domestic wastewater treatment plant. Domestic wastewater treatment plants, by their nature, receive ammonia in concentrations ranging from 30 mg/l to 60 mg/l and present a reasonable potential to exceed the Basin Plan narrative toxicity water quality objective. Ammonia is toxic to aquatic life in fairly low concentrations. Federal Regulations, 40

CFR 122.44(d), requires that limits must be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. US EPA has interpreted 40 CFR 122.44(d) in Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program (Factsheets and Outreach Materials, 08/16/2002) that although States will likely have unique implementation policies there are certain tenets that may not be waived by State procedures. These tenets include that "where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though the data may be sparse or absent) a limit MUST be included in the permit." Ammonia need not be physically measured in a laboratory for domestic wastewater since its presence has been well established. The presence of ammonia in domestic wastewater alone warrants an Effluent Limitation in accordance with 40 CFR 122.44 (d) and US EPA's interpretation of that regulation.

Nitrification, the treatment process used to convert ammonia to nitrate, is technically and economically available as evidenced by the large number of wastewater treatment plants that have been required to nitrify by the Regional Board. BPTC is required by the State and Regional Board's Antidegradation Policy (resolution 68-16), which has also been incorporated into the Basin Plan. Failure to operate a wastewater treatment plant in a nitrification mode allows ammonia concentrations to pass through the system. The nitrification process can be a fairly unstable treatment process; even POTWs that employ nitrification should be limited for ammonia to ensure the system is properly operated.

The Basin Plan contains Receiving Water WQOs for un-ionized ammonia of 0.025 mg/L as an annual median and 0.4 mg/L as a maximum for Lower San Francisco Bay. In determining whether ammonia concentrations present a reasonable potential to exceed water quality standards the Regional Water Board staff translated total ammonia concentrations into un-ionized ammonia concentrations (as nitrogen) to compare with the Basin Plan Receiving Water un-ionized ammonia objectives based on the following equations [Ambient Water Quality Criteria for Ammonia (saltwater) – 1989, USEPA Publication 440/5-88-004, USEPA, 1989; 1999 Update of Ambient Water Quality Criteria for Ammonia, USEPA Publication No. 822-R-99-014, US EPA, 1999]. In those calculations however the Regional Board staff concluded that the salinity levels represented freshwater but failed to use the freshwater equations from the ambient criteria. In any case a reasonable potential has been established by chronic toxicity testing and the results of the TRE and by the fact that domestic wastewater contains ammonia in toxic concentrations.

Once a reasonable potential has been established Effluent Limitations must be developed in accordance with 40 CFR 122.44. The Permit contains Effluent Limitations for ammonia of 2.0 mg/l (N)(as a monthly average) and 5.0 mg/l (N)(as a daily maximum) for the period from June through September and 18.0 mg/l (N)(as a monthly average) and 26.0 mg/l (N)(as a daily maximum) for the period from October through May.

The ammonia Effluent Limitations for the period from October through May are based on the performance and capability of the wastewater treatment plant; not water quality based effluent Limitations. These performance based Effluent Limitations are not protective of water quality or the aquatic life beneficial uses of the receiving stream. The California Water Code (CWC), Section 13377 states in part that: "...the state board or the regional boards shall...issue waste discharge requirements...which apply and ensure compliance with ...water quality control plans, or for the protection of beneficial uses..." Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. The Permit does not contain Effluent Limitations for ammonia that are protective of the aquatic life beneficial use of the receiving stream for the period from October through May.

Notes:

Ammonia is a form of nitrogen, a biostimulatory substance. Failure to adequately regulate ammonia concentrations during the winter months also threatens to violate the Receiving water Limitation for Nutrients which requires that waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

San Francisco Bay south of the Dumbarton Bridge is a unique water body, with a limited capacity to assimilate wastewater. Due to limited circulation, wastewater discharges to this area may take several months to reach the ocean. In addition, the unique wetlands and ambient conditions of South San Francisco Bay sometimes result in natural dissolved oxygen levels that are lower than the Basin Plan's receiving water limit of a minimum of 5.0 mg/L. Ammonia is an oxygen demanding substance, which can contribute to reductions in receiving water dissolved oxygen concentrations.

**F. Effluent Limitations for dichlorobromomethane, 4,4-DDE, dieldrin, heptachlor epoxide, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene which are contained in the existing permit have been removed from the Permit contrary to the Antibacksliding requirements of the Clean Water Act and Federal Regulations, 40 CFR 122.44 (I)(1).**

The effluent limits for dichlorobromomethane, 4,4-DDE, dieldrin, heptachlor epoxide, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene are not retained in this Order because monitoring data during the past five years do not exhibit reasonable potential for these pollutants.

Under the Clean Water Act (CWA), point source dischargers are required to obtain federal discharge (NPDES) permits and to comply with water quality based effluent limits (WQBELs) in NPDES permits sufficient to make progress toward the achievement of water quality standards or goals. The antibacksliding and antidegradation rules clearly spell out the interest of Congress

in achieving the CWA's goal of continued progress toward eliminating all pollutant discharges. Congress clearly chose an overriding environmental interest in clean water through discharge reduction, imposition of technological controls, and adoption of a rule against relaxation of limitations once they are established.

Upon permit reissuance, modification, or renewal, a discharger may seek a relaxation of permit limitations. However, according to the CWA, relaxation of a WQBEL is permissible only if the requirements of the antibacksliding rule are met. The antibacksliding regulations prohibit EPA from reissuing NPDES permits containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. These regulations also prohibit, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) to incorporate the effluent guidelines promulgated under CWA §304(b), which would result in limits less stringent than those in the previous BPJ-based permit. Congress statutorily ratified the general prohibition against backsliding by enacting §§402(o) and 303(d)(4) under the 1987 Amendments to the CWA. The amendments preserve present pollution control levels achieved by dischargers by prohibiting the adoption of less stringent effluent limitations than those already contained in their discharge permits, except in certain narrowly defined circumstances.

When attempting to backslide from WQBELs under either the antidegradation rule or an exception to the antibacksliding rule, relaxed permit limits must not result in a violation of applicable water quality standards. The general prohibition against backsliding found in §402(o)(1) of the Act contains several exceptions. Specifically, under §402(o)(2), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if: (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section; (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy [(e.g., Acts of God)]; (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit, and has properly operated and maintained the facilities, but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Even if a discharger can meet either the requirements of the antidegradation rule under §303(d)(4) or one of the statutory exceptions listed in §402(o)(2), there are still limitations as to how far a permit may be allowed to backslide. Section 402(o)(3) acts as a floor to restrict the extent to which BPJ and water quality-based permit limitations may be relaxed under the antibacksliding rule. Under this subsection, even if EPA allows a permit to backslide from its previous permit requirements, EPA may never allow the reissued permit to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving waters to violate the applicable state water quality standard adopted under the authority of §303.49.

Federal regulations 40 CFR 122.44 (l)(1) have been adopted to implement the antibacksliding requirements of the CWA:

(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under Sec. 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions--A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if:

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);

(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or

(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) Limitations. In no event may a permit with respect to which paragraph (1)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

None of the exceptions have been met to justify removal of the Effluent Limitations for dichlorobromomethane, 4,4-DDE, dieldrin, heptachlor epoxide, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene.

- Material and substantial alterations or additions to the permitted facility have not occurred after permit issuance, which justify the application of a less stringent effluent limitation;
- Information is not available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or (2) The Administrator has not determined that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);
- A less stringent effluent limitation is not necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;



- The permittee has not received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
- The permittee has not installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations.

**G. The Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board’s Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.**

CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. The State Board has adopted the Antidegradation Policy (Resolution 68-16), which the Regional Board has incorporated into its Basin Plan. The Regional Board is required by the CWC to comply with the Antidegradation Policy.

Section 101(a) of the Clean Water Act (CWA), the basis for the antidegradation policy, states that the objective of the Act is to “restore and maintain the chemical, biological and physical integrity of the nation’s waters.” Section 303(d)(4) of the CWA carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations (40 CFR § 131.12(a)) describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures.

California’s antidegradation policy is composed of both the federal antidegradation policy and the State Board’s Resolution 68-16 (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) (“Order 86-17”); Memorandum from Chief Counsel William Attwater, SWRCB to Regional Board Executive Officers, “federal Antidegradation Policy,” pp. 2, 18 (Oct. 7, 1987) (“State Antidegradation Guidance”). As a state policy, with inclusion in the Water Quality Control Plan (Basin Plan), the antidegradation policy is binding on all of the Regional Boards (Water Quality Order 86-17, pp. 17-18).

Implementation of the state’s antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 (“APU 90-004”) and USEPA Region IX, “Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12” (3 June 1987) (“Region IX Guidance”), as well as Water Quality Order 86-17.

Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section 404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is adequate to protect and maintain existing beneficial uses. A BPTC technology analysis must be done on an individual constituent basis; while tertiary treatment may provide BPTC for pathogens, dissolved metals may simply pass through.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. While the Permit identifies the constituents that are included on the 303(d) list as impairing receiving waters, it fails to discuss how and to what degree the identified beneficial uses will be additionally impacted by the discharge. Nor does the Permit analyze the incremental and cumulative impact of increased loading of non-impairing pollutants on beneficial uses. In fact, there is almost no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

The antidegradation analysis in the Permit is simply deficient: Page F-11 “**Antidegradation Policy**. 40 CFR 131.12 requires that the state WQS include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by

reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.” The brief discussion of antidegradation requirements, in the Findings and Fact Sheet, consist only of skeletal, unsupported, undocumented conclusory statements totally lacking in factual analysis. The Permit fails to properly implement the Basin Plan’s Antidegradation Policy.

**5. THE MANNER IN WHICH THE PETITIONERS ARE AGGRIEVED.**

CSPA is a non-profit, environmental organization that has a direct interest in reducing pollution to the waters of California. CSPA’s members benefit directly from the waters in the form of recreational hiking, photography, fishing, swimming, hunting, bird watching, boating and scientific investigation. Additionally, these waters are an important resource for recreational and commercial fisheries. California’s waterways also provide significant wildlife values important to the mission and purpose of the Petitioners. This wildlife value includes critical nesting and feeding grounds for resident water birds, essential habitat for endangered species and other plants and animals, nursery areas for fish and shellfish and their aquatic food organisms, and numerous city and county parks and open space areas. CSPA’s members reside in communities whose economic prosperity depends, in part, upon the quality of water. CSPA has actively promoted the protection of fisheries and water quality throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore declining aquatic resources. CSPA member’s health, interests and pocketbooks are directly harmed by the failure of the Regional Board to develop an effective and legally defensible program addressing discharges to waters of the state and nation.

**6. THE SPECIFIC ACTION BY THE STATE OR REGIONAL BOARD WHICH PETITIONER REQUESTS.**

Petitioners seek an Order by the State Board to:

- A. Vacate Order No. R2-2009-0061 (NPDES No. CA0037621) and remand to the Regional Board with instructions prepare and circulate a new tentative order that comports with regulatory requirements.
- B. Alternatively; prepare, circulate and issue a new order that is protective of identified beneficial uses and comports with regulatory requirements.

**7. A STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION.**

CSPA's arguments and points of authority are adequately detailed in the above comments and our 8 June 2009 comment letter. Should the State Board have additional questions regarding the issues raised in this petition, CSPA will provide additional briefing on any such questions. The petitioners believe that an evidentiary hearing before the State Board will not be necessary to resolve the issues raised in this petition. However, CSPA welcomes the opportunity to present oral argument and respond to any questions the State Board may have regarding this petition.

**8. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND TO THE DISCHARGERS, IF NOT THE PETITIONER.**

A true and correct copy of this petition, without attachment, was sent electronically and by First Class Mail to Mr. Bruce Wolfe, Executive Officer, San Francisco Bay Regional Board 1515 Clay Street, Suite 1400, Oakland CA 94612. A true and correct copy of this petition, without attachment, was sent to the Discharger in care of: Lorrie Gervin, Environmental Division Manager, City of Sunnyvale, P.O. Box 3703, Sunnyvale, CA 94088.

**9. A STATEMENT THAT THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED, OR AN EXPLANATION OF WHY THE PETITIONER COULD NOT RAISE THOSE OBJECTIONS BEFORE THE REGIONAL BOARD.**

CSPA presented the issues addressed in this petition to the Regional Board in an 8 June 2009 comment letter that was accepted into the record.

If you have any questions regarding this petition, please contact Bill Jennings at (209) 464-5067, Michael Jackson at (530) 283-1007 or Andrew Packard at (707) 763-7227.

Dated: 11 September 2009

Respectfully submitted,



Bill Jennings, Executive Director  
California Sportfishing Protection Alliance

Attachment No. 1: Order No. R2-2009-0061