UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
THE ADMINISTRATOR

MEMORANDUM

DATE: September 30, 2008

TO: Alexis Strauss
Director, Water Division, Region 9

FROM: Linda Boornazian
Director, Water Permits Division
Office of Wastewater Management

SUBJECT: National Pollutant Discharge Elimination System (NPDES) Program Review Summary for Region 9.

EPA's Office of Wastewater Management, Water Permits Division is pleased to provide you with the findings of the National Pollutant Discharge Elimination System (NPDES) Program Review Summary conducted for EPA Region 9.

The enclosed report summarizes the discussions held during the EPA Office of Water NPDES Program Review, as well as the Permit Quality Review (PQR), conducted in preparation for the Program Review. These reviews cover topics across the NPDES program as they apply specifically to Region 9. We have included proposed action items for the Region and the States, based on discussions conducted during the Office of Water NPDES Program Review of Region 9 and the findings of the Permit Quality Reviews. These reviews also help EPA Headquarters (HQ) promote national consistency and identify areas where guidance and support is necessary.

The report includes a list of proposed Action Items to serve as the basis for ongoing discussions between Region 9 and your authorized States, as well as between Region 9 and EPA HQ. In order to facilitate these discussions, EPA HQ divided the proposed Action Items into three categories to identify the priority that should be placed on each Item:

- Category One - Most Significant: Proposed Action Items will address a current deficiency or noncompliance with a federal regulation.
- Category Two - Recommended: Proposed Action Items will address a current deficiency with EPA guidance or policy.

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- Category Three - Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the State's or Region's NPDES permit program.

The Category One and Category Two proposed Action Items should be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under EPA's Strategic Plan Water quality Goals and/or may serve as a roadmap for modifications to Region 9 program management strategies. The proposed Action Items and categories are included as an Annex to this letter. A complete description of the proposed Action Items is included in Section 4 of the report.

We believe the NPDES Program Review helped us to better understand the Region 9 NPDES program and identify strengths and opportunities for improvement for EPA HQ, Region 9 and its States.

If you have any questions regarding this effort, please call me at (202) 564-9545 or Sharmin Syed of my staff at (202) 564-3052.

Annex: Proposed Action Items with Categories

- **Pretreatment and Biosolids:** Region 9 should work with Nevada to develop, and implement a pretreatment program.

- **Nutrient Management Plan (NMP):** California RWQCBs regulates CAFO facilities with a State general permit with general waste discharge requirements (WDR). NMPs submitted as part of WDRs should be public noticed; comments should be addressed in the permit prior to reissuance.

- **Permit Issuance:**
  - Region 9 should continue to work with the Navajo EPA and the Pacific Islands Offices to ensure that the 5-year schedule for permit issuance is maintained. (Category 1)
  - Region 9 should issue expired and environmentally significant permits, designating them as priority permits. (Category 1)
  - Region 9 should continue to work with Nevada to reduce the number of state-issued backlogged permits. (Category 2)
  - Region 9 should work with its States, Tribes and Territories to identify and resolve barriers to permit issuance. (Category 2)

- **Withdrawal Petitions:** Region 9 should respond to petitioners to resolve withdrawal petitions in California and Nevada. (Category 1)

- **Compliance Schedules:**
  - All California Regional Boards whose permits were reviewed by HQ need to develop more consistent, quantifiable rationale/assessment for when to include a compliance schedule and more clear criteria for determining the length of the schedule and milestones. (Category 1)
  - Justification for the compliance schedule should be provided before permit issuance; rationale/assessment needs to be clearly documented in the fact sheets. (Category 1)

- **Core Permit Quality Review**

  Nevada:
  - Establish standard procedures for conducting reasonable potential analyses (RPA). Such procedures should include definitions of what pollutants are evaluated for reasonable potential, the triggers for finding reasonable potential, what receiving water and effluent characterization data is required for conducting RPAs, and the frequency that discharges will be evaluated for reasonable potential. RPAs should then be documented in fact sheets to provide the discharger and third parties a complete understanding of the process.
    - Region 9 has indicated that the Region and State have identified this as an action item. Originally, it was scheduled to be completed by September 2006, and then it was re-scheduled for 2007. However, it still remains as an action item to be completed. (Category 1)
  - Discontinue the use of temporary permits and/or such permitting processes that do not fully comply with requirements of the NPDES program. (Category 1)
  - Address antibacksliding for all reissued permits. (Category 1)
  - Include maximum daily, average weekly, and/or average monthly limitations for all pollutants as required by NPDES regulations and the approach described in the Technical Support Document. (Category 1)
  - If mass-based effluent limitations are used, these limits should be calculated based on the treatment system's design flow for POTWs and a reasonable measure of actual production for non-POTWs. (Category 1)
  - Permit fact sheets should describe the handling/regulation of stormwater that originates on industrial sites (i.e, whether it is covered under the individual permit or under a separate general permit).
    - MS4 permits should more completely address the program areas covered in the Municipal Stormwater Program Evaluation Guidance. Such permits should also include more specific and measurable performance targets. (Category 2)
  - Establish fixed numeric effluent limitations, instead of "moving" limits derived from equations, for the hardness dependent metals to provide permittees specific targets for wastewater treatment design and operation and to enable more efficient compliance determinations. (Category 3)

California:

<u>Regional Board 2 (San Francisco)</u>
- Follow the established SIP procedures for the development of interim permit limits. (Category 1)
- Clarify the evaluation and implementation procedures with respect to the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets. (Category 2)

<u>Regional Board 4 (Los Angeles)</u>
- Except where "impracticable" express all permits limits for continuous discharges as average weekly and average monthly discharge limitations for POTWs and maximum daily and average monthly limitations for non-POTWs. Where Basin Plans establish only average requirements, both weekly average (for municipals) or daily maximum

(for industrials) limits should be established based on statistical calculations. (Category 1)

- Develop a more consistent, quantifiable rationale/assessment for when to include a compliance schedule and establish specific criteria for determining the length of the schedule and milestones. This rationale/assessment should be clearly documented in the fact sheets. (Category 1)
- Clarify the evaluation and implementation procedures with respect the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets. (Category 2)

Regional Board 5 (Central Valley)

- Except where "impracticable" express all permits limits for continuous discharges as average weekly and average monthly discharge limitations for POTWs and maximum daily and average monthly limitations for non-POTWs. Where Basin Plans establish only average requirements, both weekly average (for municipals) or daily maximum (for industrials) limits should be established based on statistical calculations. (Category 1)
- Develop a more consistent, quantifiable rationale/assessment for when to include a compliance schedule and establish specific criteria for determining the length of the schedule and milestones. This rationale/assessment should be clearly documented in the fact sheets. (Category 1)
- Develop calculated "fixed" limits for hardness-dependent metals and ammonia instead of past practice of expressing limits as formulas. (Category 2)
- Clarify the evaluation and implementation procedures with respect to the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets. (Category 2)
- Implement "new" permit template to ensure all required permit "fact sheet" elements are documented in the administrative record. (Category 3)

- **Antidegradation**
  - **Nevada:** Nevada should revise its antidegradation policy to include protection for all waters with regard to antidegradation, as specified in 40 CFR 131.12. (Category 1)
  - **California:** Antidegradation implementation procedures (including procedures for determining waterbody categorys) for California need to be developed to ensure that antidegradation is properly and consistently addressed by the permit writers, and the antidegradation reviews need to be clearly documented in the fact sheets. (Category 1)
- **Mercury Methods in Permits**
  - States, Tribes and Territories in Region 9 should implement policies and procedures to evaluate which methods are appropriate for application data and for monitoring during the permit term. Fact sheets should better document decisions and rationales behind limits used in the permit. (Category 1)
  - Region 9 should work with NDEP permitting staff to see if laboratories in Nevada have been certified for either of the low detection limit mercury methods 245.7 or 1631. (Category 2)

- **Impaired Waters & TMDLs in Permits**
  - Permit documentation should describe the 303(d) status of receiving waters, even if receiving waters are not 303(d) impaired. (Category 2)
  - Until TMDLs are completed for 303(d) listed waters, permits should include limitations and/or conditions to prevent further deterioration of receiving waters, and if necessary, require monitoring to characterize discharges for the impairing pollutants. (Category 2)
  - Mixing zones should not be approved for impairing pollutants in 303(d) listed waters. (Category 2)
  - When TMDLs have been completed for a water body, if waste load allocations have not been established for a discharger, permit documentation should, at the least, explain that the TMDL did not establish a waste load allocation for the point source. (Category 2)
  - When trading is allowed among dischargers to implement waste load allocations, permits should include receiving water monitoring requirements to identify and prevent "hotspots" within receiving waters. For example, NV0020133 (City of Las Vegas) and NV0021261 (Clark County Wastewater Reclamation District) include trading provisions, which will assure attainment of the TMDL but may result in a permittee discharging more than its individual WLA. (Category 2)

- **Use of *E.coli* and Enterococcus Pathogen Standards**
  - Nevada should continue and complete its update of waterbody-specific water quality standards for pathogens. (Category 2)

- **Mixing Zones**
  - Nevada DEP should prepare to implement a mixing zone policy that will be protective of aquatic life in low flow settings (e.g., Lake Mead). (Category 2)

- **316 (a) and (b)**
  - Region 9 State permits and fact sheets should more explicitly address and document the basis for any Section 316(a) thermal variances.
  - Region 9 States should reevaluate any 316(a) variances and 316(b) requirements at each permit renewal (including the use of mixing zones) and document the basis in the permit fact sheet. Prior determinations should also be documented in the fact sheet and reflected in the current permit, as appropriate.
  - Region 9 State permits should develop section 316(b) cooling water intake structure requirements for existing facilities on a BPJ basis, and the basis should be documented in the permit fact sheet.

- **Combined Sewer Overflows (CSOs)**
  - Region 9 should require implementation of post construction compliance monitoring of the CSO controls. (Category 1)
  - California should work towards reissuing its expired CSO permits. (Category 1)

- **Sanitary Sewer Overflows (SSOs) & Peak Flows**
  - Permits should continue to require reporting of SSO events, including date, time, duration, volume, receiving water, and mitigation steps taken. (Category 1)
  - During permit reissuance for facilities with wet weather peak flows, systems should be reviewed for consistency with the December 2005 draft policy or bypass regulations. (Category 1)
  - Drinking water facilities should be notified of overflow events. (Category 2)

- **Stormwater**
  - Nevada MS4 permits should more completely address the program areas and should include more specific permit language including measurable performance targets consistent with the regulations. A good source of information is the Municipal Stormwater Program Evaluation Guidance. Common program areas that include measurable performance targets are public education (how much/how often), construction (what size sites are inspected/how often), municipal maintenance (frequency of street sweeping and catch basin cleaning), and illicit discharges (how often are field screening activities conducted). (Category 1)
  - Individual NPDES permits, or accompanying permit documentation, for industrial facilities should describe stormwater originating on the site of the facility and whether it is addressed by the individual permit or whether the discharger is required to seek coverage under and adhere to the requirements of a general stormwater permit. (Category 2)
  - California should work towards issuing its construction general permit; a draft reissued permit was public noticed in March 2007. (Category 1)
  - California should work towards issuing its industrial general permit; a draft reissued permit was public noticed in February 2005. (Category 1)
  - Only 53% of California's Phase I MS4 permits are current. In Arizona, MS4 permits have not been issued. The Region should work towards improving its States' MS4 programs and issuance rates. (Category 1)

- **Concentrated Animal Feeding Operations**

  Arizona
  - The ADEQ should begin to focus on those remaining facilities (90%) covered under their new requirements that need to get Nutrient Management Plans in place. (Category 1)

  California
  - All NPDES permits must include the provision that the permit will remain effective until the operation is properly closed and there is no remaining potential for a discharge of manure, litter or associated process wastewater that was generated while the operation was a CAFO. (Category 1)

  Nevada
  - All NPDES permits must require no discharge from large CAFOs except under certain conditions. The state needs to determine if the discharges describe in the permits for the area of the Amargosa River, in particular and, any other area in

general, are in compliance with the no discharge regulation. (Category 1)

- Nevada has 12 CAFOs. Three are currently covered by an NPDES permit. The nine additional CAFOs will need NPDES permits to ensure full CAFO coverage in Nevada. (Category 2)
- The permit fact sheet indicates the phosphorus hazard class was analyzed using the Phosphorus Index (PI) for New Mexico. As a result of the site-specific nature of the PI and the fact sheet further reads the Nevada PI was to be completed in 2006, the draft permit should be revised to use the PI for the state of Nevada. (Category 2)
- In the fact sheet there are no calculations on how the nitrogen application rate was determined but just a reference that the nitrogen application rates are based on the agronomic rate using nutrient recommendations from NRCS Conservation Practice Standard code 590. A review of the Nevada 590 found that it does not contain any nutrient recommendations. Either the permit or the fact sheet or both must contain the method used to determine the nutrient application rates. Otherwise, the public and EPA would not be able to check the validity of the calculated application rates. (Category 3)

- **Whole Effluent Toxicity**
  - **Permit Documentation:** Fact sheets need to better document the basis for WET requirements in permits. A key component of this documentation should be a summary of results for all WET tests conducted during the previous permit term, or an explanation of why no WET testing was conducted. In addition, the fact sheet should include a clear explanation detailing for permit issuance:
    (1) how EPA-approved water quality standards for chronic and acute toxicity are expressed in order to evaluate reasonable potential for WET, in accordance with 40 CFR 122.44(d)(1)(i) (Category 2);
    (2) how the level of chronic and/or acute toxicity in the discharge was characterized, in terms of effluent variability and species sensitivity, in order to evaluate the reasonable potential for the discharge to exceed water quality standards, in accordance with 40 CFR 122.44(d)(1)(ii) (e.g., reference State reasonable potential procedure, etc.) (Category 2);
    (3) why specific chronic and/or acute toxicity test methods and species are being chosen for measuring WET in the discharge, or why no WET testing is being required (e.g., reference EPA's 40 CFR 136 methods, State implementation policy/guidance regarding WET monitoring, 3-species screening, etc.) (Category 2);
    (4) how chronic and/or acute WQBELs were calculated in order to meet approved water quality standards for toxicity, in accordance with CWA section 301(b)(1)(C) and 40 CFR 122.44(d)(1)(iii)-(v) (Category 1);
    (5) if there was no reasonable potential, toxicity triggers for accelerated testing and/or TRE (Category 3).
  - **WET Methods and Monitoring:**
    - State requirements for WET conditions in permits must be consistent with EPA's current WET methods at 40 CFR 136 and NPDES regulations authorizing the use of chronic West Coast WET methods for discharges to the

Pacific Ocean (e.g., CFR 122.41(j)(4), 40 CFR 122.44(d)(1), 40 CFR 122.21(j)(5)(viii)). Deviations from promulgated WET test methods must be approved by EPA before such modifications are incorporated into NPDES permits. (Category 1)

- Some EPA Region 9 States and EPA Region 9 need to increase the frequency of WET monitoring requirements in permits. This is to ensure that the type and amount of WET data are adequate to assess effluent variability and species sensitivity in WET reasonable potential evaluations, following 40 CFR 122.44(d)(1)(ii). (Category 2)

- **WET Limits:** State permits should use numeric, rather than narrative, WQBELs for chronic WET. State approaches for developing chronic and acute WET limits need to achieve water quality standards, in accordance with CWA section 301(b)(1)(C) and NPDES regulations governing reasonable potential determinations for toxicity at 40 CFR 122.44(d)(1). (Category 1)
- California should establish numeric chronic WET limits in permits. In this context, we find it important to note that the numeric WET values for triggering accelerated testing/TREs in LA City, CA0056227 (see "Chronic Toxicity Limitation and Requirements" on page 38 of the waste discharge requirements) are of an appropriate magnitude and duration for establishing numeric WQBELs for chronic toxicity in a discharge. A California Statewide policy on chronic and acute WET implementation should specify the following elements critical for successful implementation of WET in NPDES permits:
  (1) numerical effluent limits, if reasonable potential for WET is demonstrated (Category 1);
  (2) protective numerical benchmarks for triggering immediate accelerated monitoring when elevated levels of toxicity are reported (Category 2); and
  (3) toxicity reduction evaluation/toxicity identification conditions which direct permittees to identify and correct the cause of toxicity when elevated levels of toxicity are repeatedly reported. (Category 2)

  This approach is consistent with regulations governing reasonable potential for toxicity objectives for WET at 40 CFR 122.44(d)(1); Section 4 of California's State Implementation Policy (SWRCB, 2005); EPA's national guidance for water quality-based permitting in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991); and regional EPA guidance for implementing WET in *Regions 9 and 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs* (Denton and Narvaez, 1996) and *EPA Region 9 and 10 Toxicity Training Tool* (September 2007).

REGIONAL NPDES PROGRAM REVIEW

EPA REGION 9

September 30, 2008

Water Permits Division
U.S. Environmental Protection Agency
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Washington, D.C. 20460

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1.0 INTRODUCTION

This report presents findings of an EPA Office of Water Regional National Pollutant Discharge Elimination System (NPDES) Program review (Regional Review) and Permit Quality Review (PQR) conducted for EPA Region 9 in June 2007.

On a rotating basis, the Office of Wastewater Management, Water Permits Division (WPD) at EPA Headquarters reviews Regional NPDES programs. Topics discussed during the review vary by Region, based on the needs an interest of the Region. EPA Headquarters (HQ) reviews topics such as permit backlog, Priority Permits, Action Items, and watershed-based permits prior to the review. A large component of each review is the PQR which assesses whether a State adequately implements the requirements of the NPDES Program as reflected in the permit and other supporting documents (e.g., fact sheet, calculations). In this report, an entire section is devoted to the results of that PQR.

Through this Regional review mechanism, EPA HQ promotes national consistency, identifies successes in implementation of the NPDES program, as well as opportunities for improvement in the development of NPDES permits. The findings of the review may be used by EPA HQ to identify areas for training or guidance, and by Region 9 to help identify or assist States in determining any needed action items to improve their NPDES programs.

EPA Region 9 has oversight responsibility for four states: Arizona, California, Hawaii and Nevada. It is responsible for NPDES permitting and direct implementation in the Pacific Islands - Guam, American Samoa, Commonwealth of the Northern Mariana Islands and for tribal lands throughout Arizona, California and Nevada, as well as Navajo Nation tribal lands in Utah, Colorado, and New Mexico.

The Permit Quality Reviews were performed during the third and fourth quarters of 2007. WPD staff collected NPDES program information and permits from Regional and State staff, and a detailed PQR was performed for Nevada in May 2007, and California in July and August 2007. WPD staff and managers traveled to Region 9 for the formal Office of Water (OW) Water Regional Program Review on June 26-27, 2007.

This report is organized as follows:

- Section 2 – Region 9 Regional Review Overview
- Section 3 – Permit Quality Review Summaries
- Section 4 – Summary of Findings and Proposed Actions

2.0 REGION 9 REGIONAL REVIEW OVERVIEW

Regional Water Program Reviews assist in assessing the consistency and effectiveness of the Regional and State programs. The reviews may also include an analysis of the entire permitting workflow, progress on action items, progress on memorandum of understanding (MOU) commitments or other legal arrangements, and progress on Government Performance and Results Act (GPRA)/Program Assessment Rating Tool (PART) measures.

The NPDES Regional Program Review explored several NPDES program accomplishments and issues, which are discussed briefly below.

2.1 SELECT ACCOMPLISHMENTS

Based on the work conducted in preparation for the Regional Program Review, Region 9 deserves specific recognition for accomplishing the following:

- A reduction in the number of major expired permits;
- Water Quality Trading Program: Region has nine permits with trading provisions, exceeding its FY07 goal of seven permits.

2.2 301(h) WAIVERS

The Clean Water Act (CWA) allows for a case-by case review of treatment requirements for eligible Publicly Owned Treatment Works (POTW) applicants that meet environmentally stringent criteria in Section 301(h). These facilities could receive a modified NPDES permit waiving the secondary treatment requirements for discharges into marine waters for technology based standards.

In Region 9, there are nine POTW 301(h) waivers. Several of these facilities are operating under NPDES permits expired more than 10 years. During the review, Region 9 provided a status report for the following 301(h) waiver recipients.

<u>City and County of Honouliuli (CCH):</u>
Two CCH wastewater treatment plants are currently operating under NPDES permits with 301(h) waivers. Both permits have expired: the Honouliuli permit expired June 1996, and the Sand Island permit expired November 2004.

In March 2007, Region 9 issued a tentative decision denying the CCH's application for a renewed 301(h) waiver for the Honouliuli wastewater treatment plant. Region 9's review of the effluent and receiving water monitoring data for this facility revealed that the discharge is not meeting water quality standards for bacteria, pesticides (chlordane and dieldrin), or whole effluent toxicity.

In December 2007, Region 9 issued a tentative decision to deny CCH's application for a renewed 301(h) waiver from secondary treatment at the Sand Island WWTP in Oahu, Hawaii.

Morro Bay/Cayucos Wastewater Treatment Plant (MBCSD), California:
This plant is currently operating with a 301(h) waiver under an NPDES permit that expired March 1, 2004. On May 29, 2007, the Cities of Morro Bay and Cayucos voted to upgrade the WWTP to tertiary treatment, beyond the full secondary treatment standard. The work will be completed no later than March 14, 2014, at which time a 301(h) waiver will no longer be applicable. In the interim, Region 9 and the Central Coast Regional Water Board have proposed to reissue the joint 301(h) permit for the facility, based on Region 9's tentative decision that the discharge meets the 301(h) criteria. Endangered Species Act (ESA) concerns were raised by U.S. Fish and Wildlife Service (USFWS) staff regarding the potential effect of the treatment plant discharge on the brown pelican and southern sea otter, but were resolved in the informal consultation process. With the recent decision to upgrade the treatment plant, the Region anticipates that the 301(h) waiver process will be complete this year.

City of San Diego:
This facility is currently operating under a 301(h) waiver granted under the Ocean Pollution Reduction Act (OPRA), which required the city to meet all standards of the 301(h) waiver plus additional reductions in removal of total suspended solids (TSS) and biochemical oxygen demand (BOD). The city applied for and was granted a 301(h) waiver under the provisions of OPRA in November 1995. The waiver was renewed in 2002 and will expire on June 15, 2008. In December 2007, the city submitted an application to renew its 301(h) waiver. The Region is currently reviewing the city's application.

Territories:
Region 9 is currently reviewing applications for renewal of the 301(h) waivers for Tafuna and Utelei in American Samoa and Northern District and Agana, on the island of Guam. The Guam facilities are currently part of major enforcement action against the utility to upgrade its drinking water and wastewater infrastructure. The planned expansion of the military presence in Guam may present an opportunity to upgrade one of the wastewater treatment plants.

2.3 WET WEATHER

2.3.1 Combined Sewer Overflows (CSOs)

There are two Region 9 communities with CSOs: San Francisco and Sacramento, California. A detailed review of the CSO program was completed as part of the PQR, and is discussed further in Section 3.2.7 of this report.

2.3.2 Sanitary Sewer Overflows (SSOs)

Region 9 has not yet had comprehensive discussions with its States about how to ensure that SSOs are being reported and how drinking water facilities should be notified of impacts on source water from SSOs or unanticipated bypasses or upsets. Hawaii, Nevada and Arizona

require reporting of SSOs; however, like California, these States do not require that drinking water facilities be informed of an overflow event. A detailed review of the SSO program was completed as part of the PQR, and it is discussed further in Section 3.2.8 of this report.

2.3.3 Stormwater Program

In California, the most recent construction general permit was issued in 1999 and expired in 2004. The State public noticed a draft reissued permit in March 2007, and is working to address comments on that permit. The permit includes many "new" concepts for construction general permits, so it is reasonable to expect that the State will take more time to issue the permit. It is expected that this new permit will advance accepted control practices for construction activities. The State public noticed a revised construction general permit in March 2008.

The most recent California industrial general permit was issued in 1997 and expired in 2002. The State public noticed a draft reissued permit in February 2005 and is working to address comments on that permit.

Both the industrial and construction general permits were delayed as a result of California convening a panel of stormwater experts to assess the appropriateness of including numeric effluent limits in stormwater permits. The “Blue Ribbon Panel” made several conclusions regarding the incorporation of numeric limits in stormwater permits. Region 9 noted that the Los Angeles Regional Water Quality Control Board (RWQCB) has proposed Municipal Action Levels for the Ventura MS4 Permit. At the time of the review, 53% of California’s Phase I MS4 permits were current. Region 9 stated that it has been difficult to reissue the Los Angeles and Ventura MS4 permits because RWQCB 4 is proposing that MS4 permits also contain numeric limits for Maximum Extent Practicable (MEP), setting a precedent in California.

In Hawaii and Nevada, all stormwater permits have been issued and are current. Nevada uses an online application process for construction Notices of Intent (NOIs).

In Arizona, MS4 permits have not been issued. The municipalities are negotiating the content of the MS4 permits. The Arizona Department of Environmental Quality (ADEQ) has agreed to these discussions with the expectation that it will result in permits that will not be appealed. In addition, Arizona is drafting a permit for the City of Phoenix that would be used by ADEQ as a template for its other municipalities.

A detailed review of the Stormwater program was completed as part of the PQR, and is discussed further in Section 3.2.9 of this report.

2.4 PRETREAMENT

Arizona, California, and Hawaii have approved pretreatment programs. Nevada, on the other hand, has stated that it is not interested in adopting this program. In 2007, Region 9 issued enforcement orders against several pretreatment industrial users in Nevada. Although the State protested the Region’s actions, it has not changed its position.

In the Region 9 Water Division, Pretreatment and Biosolids programs are managed by the Clean Water Act Compliance Office, where four staff members implement both the programmatic and compliance/enforcement aspects of these programs. Region 9 places a high priority on these programs and fills in the gaps where states have elected to reduce staffing for pretreatment and biosolids. In both programs, Region 9 emphasizes outreach and training to the regulated community, promotes innovative technologies and programs, recognizes outstanding municipal programs, thoroughly evaluates compliance, maintains a field presence through inspections and enforces as needed.

Regional staff is actively participating with OWM in developing performance measures for the pretreatment program. The Region helped develop a conceptual model for evaluating the effectiveness of municipal pretreatment programs. This effort supports EPA's goal of managing all programs more closely for environmental results, and responds to an Inspector General (IG) audit finding. The Region is currently participating in pilot tests to further develop and validate the model.

2.5 BIOSOLIDS

Arizona is authorized to administer EPA's biosolids program. The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection establishes conditions in permits issued to wastewater treatment plants, land appliers, and composters. The Hawaii State Department of Health establishes biosolids conditions in NPDES permits and tracks compliance through its wastewater branch. Hawaii plans to seek biosolids authorization in the future. In California, the level of biosolids regulation varies from Regional Board to Regional Board, with some Regional Boards issuing individual Waste Discharge Requirements to land appliers and/or to POTWs, and some Boards placing land application sites under the State's General Biosolids Order. Composting, which accounts for about 1/4 of California biosolids, is regulated by the California Integrated Waste Management Board and their Local Enforcement Agencies. About 17% of California's biosolids are used or disposed in Arizona.

Region 9 annually conducts between 15 and 20 biosolids inspections at POTWs, compost operations, and land application sites. The Region also reviews 350 annual reports submitted by biosolids generators, treaters, land appliers, and surface disposal site operators, for compliance. The Region's Biosolids program staff is in close communication with the pretreatment staff to ensure follow-up at any POTWs where biosolids standards are exceeded.

Region 9 has issued administrative orders and penalty orders against POTWs and land application operations. The most recent order was against the Guam Waterworks Authority for land applying biosolids without the proper monitoring.

2.6 NUTRIENT MANAGEMENT PROGRAM & NEW REGULATIONS

In California, the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) regulate water quality for both ground and surface waters. California State regulations for protection of water quality from confined animal facilities[1] (CAFs) are contained in Title 27 of the California Code of Regulations. Each RWQCB develops the program it will use to regulate CAFs. Facilities that are CAFOs under federal law and discharge to surface water must be regulated with NPDES permits.

California has approximately 1,450 Concentrated Animal Feeding Operations (CAFOs), primarily in the dairy sector, of which 180 are CAFOs (< 10%) covered by an NPDES permit. Region 9 estimates that approximately 200 CAFOs discharge in California.

California uses three different approaches to regulate dairies. The first approach is non-regulatory: a facility that voluntarily complies with state and federal regulations for general waste discharge requirements (WDR). The second approach is a waiver of WDRs that outlines conditions the facility must meet. The third approach requires the issuance of WDRs or NPDES permits, which usually require monitoring and reporting of data to demonstrate compliance.

In May 2007, RWQCB 5 (Central Valley Region) adopted a WDR that applies to all dairies in the Central Valley regardless of size, age or ownership. Implementation of the WDR is in stages, and deliverables (mostly reports) are to be submitted over the 5-year life of the permit. The WDR requires the submittal of an NMP but not public review and comment. In September 2007, RWQCB 8 (Santa Ana Region) adopted a General Waste Discharge Requirement for CAFOs located in the Santa Ana Region.

Region 9 highlighted the California Dairy Quality Assurance Program (CDQAP) as an example of a successful partnership between dairy producers, government agencies and academia. This is a voluntary program that provides education, resources, and funding for the certification of dairy producers. The program offers a six-hour Environmental Stewardship short course covering various environmental laws and what they mean for dairies. Once a producer has completed the course, they are then eligible for certification. Each certified producer develops a plan for environmental compliance specific to their dairy. The plans cover topics such as drainage, plumbing, proper manure storage, and emergency plans. An independent third-party evaluator reviews the plan and evaluates the operation to ensure that it is in compliance with federal, state and local environmental laws. If adjustments are needed, the producer can schedule repairs and a second evaluation. Approximatley 200 dairies are certified under the CDQAP. RWQCB5, in particular, relies heavily on the CDQAP for outreach to producers.

Arizona has 120 CAFOs, with three covered by an NPDES permit. However, the vast majority of the 120 CAFOs in Arizona do not require NPDES permits and are not required to develop

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[1] A CAF is defined in California regulations as "any place where cattle, calves, sheep, swine, horses, mules, goats, fowl, or other domestic animals are corralled, penned, tethered, or otherwise enclosed or held and where feeding is by means other than grazing."

NMPs. Region 9 estimates that a total of four CAFOs in Arizona will require NPDES permits. There are two CAFOs in Hawaii, both of which are permitted. Nevada has 12 CAFOs, with three currently covered by an NPDES permit; nine additional CAFOs will need NPDES permits.

More detailed review information for CAFOs are provided in Section 3.2.10 of this report.

2.7 PERMIT ISSUANCE STATUS

The following permit issuance data for States, Tribes and Territories in Region 9 were current as of March 31, 2007, which was the most recent data available at the time of the Regional Review.

	Total Facilities*	Current Permits	% Current
American Samoa (EPA)	7	4	57%
Arizona	347	306	88%
Arizona (EPA)	10	7	70%
California	2,215	1,756	79%
California (EPA)	8	7	88%
Guam (EPA)	19	4	21%
Hawaii	189	175	93%
Hawaii (EPA)	2	0	0%
Northern Mariana Islands (EPA)	3	1	33%
Navajo Nations (EPA)	30	15	50%
Nevada	88	68	77%
EPA Issued	79	38	48%
State Issued	2,839	2,305	81%
Region Total	2,918	2,343	80%

*Total facilities include major and minor facilities covered by individual and non-stormwater general permits.

The Regional averages for current major, minor, and general permits current increased from 72% in September 2004 to 80% in March 2007. The percentage of current state-issued permits was lowest in Nevada (77%) and highest in Hawaii (93%). The percentage of current permits issued by Region 9 was 48%.

The Region has worked with the Navajo EPA and Pacific Islands Offices in an effort to reduce their backlogged permits. A 5-year schedule for permit issuance has been developed as a result of this collaboration.

In March 2007, there were four major facility permits and one minor facility permit that have been expired more than 10 years. Three of these permits are more than 16 years expired. Three of these permits are 301(h) waivers, for which the Region is currently reviewing applications; one is subject to 316(b) regulations. This number is an increase from September 2004, when the Region had just three permits expired more than 10 years.

State	Permit Number	Facility Name	Permit Expiration Date	Permit Issued Date
Major Facility Permits Expired Greater Than 10 Years				
CA	CA0003751	Pacific Gas & Electric Company Diablo Canyon Nuclear Power Plant	7/1/1995	5/11/1990
GU	GU0020087	Public Utility Agency of Guam Agana 301(h)	6/30/1991	6/30/1986
GU	GU0020141	Public Utility Agency of Guam North District 301(h)	6/30/1991	6/30/1986
HI	HI0020877	Honolulu, City & County – Honouliuli 301(h)	6/5/1996	5/3/1991
Minor Facility Permits Expired Greater Than 10 Years*				
Navajo Nation	NN0028584	Consolidation Coal Company	10/31/1991	10/31/1986

* Permit was issued March 8, 2008.

2.8 PRIORITY PERMITS

Priority permits are permits that have been expired for more than two years and are of high environmental significance, based on established criteria. The following information was identified regarding priority permits:

- In FY07, Region 9 identified 55 priority permits for issuance between FY07 and FY09, out of a universe of 142 candidate permits. 18 permits were selected for issuance in FY07;
- The percentage of priority permits issued in Region 9 increased from 47% in FY06 to 100%, as of June 12, 2007.

2.9 WATERSHED-BASED PERMITS

There is one watershed based permit in Region 9, issued by the San Francisco Bay RWQCB, for the control of mercury from POTWs discharging to the San Francisco Bay.

2.10 WITHDRAWAL PETITIONS

There are two outstanding withdrawal petitions in Region 9:

- Filed by the Natural Resources Defense Council in 2000 alleging inadequacies in the Los Angeles Regional Water Quality Control Board (RWQCB 4).
- Filed by the Western Mining Action Project in 2006, alleging that Nevada's Administrative Procedures Act limited public participation in the issuance of air and water permits.

2.11 COMPLIANCE SCHEDULES

Per a settlement agreement reached with Baykeeper, Humboldt Baykeeper, Ecological Rights Foundation, and Communities for a Better Environment, EPA reviewed NPDES permits issued by California Regional Boards 2, 4 and 5, focusing on provisions providing for schedules of compliance to achieve water quality-based effluent limitations.

In the settlement agreement, EPA agreed to provide a written report setting forth the results of our review, and to make that report available to the State Board and Regional Boards. A copy of that report is attached as Appendix A. The report suggests that improvements are needed to strengthen compliance schedules in California permits.

Further discussions about compliance schedules are included in Section 3.1 of this report.

3.0 PERMIT QUALITY REVIEW

Background/Approach

Permit Quality Reviews (PQRs) are an evaluation of a selected set of NPDES permits against NPDES program regulations and requirements to determine whether the permits are being developed in a manner consistent with applicable program requirements and water quality standards.

EPA's PQR consists of two components, a core review and a topic specific review. The core review focuses on core permit quality and includes a review of the permit application, limits, monitoring requirement development, special conditions, standard conditions, correspondence and other documentation, and administrative process conducted, as well as other factors. Core reviews are scheduled so that the findings will support the Regional Water Program Reviews, which are conducted every three to four years.

The topic-specific reviews target components or types of permits. The scope of a topic-specific review is determined in consultation with States on a case-by-case basis. Region 9 topic-specific reviews focused on the following areas: mercury methods/limits; discharges to impaired waters; TMDL implementation; use of *E.coli* and enterococcus requirements; antidegradation and use of mixing zones; implementation of section 316(a) and (b); stormwater permitting; implementation of CAFO requirements; implementation of long term control plans (LTCPs) for CSOs; SSOs; implementation of whole effluent toxicity (WET); and pretreatment.

EPA has conducted NPDES PQRs since the mid-1980s, and has revisited the review process periodically to promote permit quality and ensure a reasonable degree of national consistency with regard to core program requirements. Such reviews also serve to ensure that NPDES permits keep pace with developments in the NPDES program. Information developed during PQRs informs broader Regional Water Program Reviews being conducted by HQ.

Objectives and Scope for the Region 9 PQR

The Region 9 PQR consisted of the following: a comprehensive core permit review in California and Nevada to provide an overall review of a sample of NPDES permits, and a topic specific review of a sample of permits from States, Tribes and Territories to assess specific areas of concern. Information gleaned from the Region 9 PQR will help guide discussions regarding making the process more efficient. The results of the PQR will also serve as a mechanism to provide information on the integrity of the NPDES Permit Program and to promote national consistency, in accordance with EPA's Permitting for Environmental Results (PER) initiative. Recommended action items are identified in Section 4 of this report.

3.1 CORE PERMIT REVIEWS

The core permit review process involves evaluating select permits and supporting materials against basic NPDES program criteria, assessing these materials using basic PQR tools, and

talking with permit writers regarding technical questions related to the permit development process. The following tools were primarily used for review, and are attached in Appendix B and C, respectively: 1) Central Tenets of Permitting (developed during the 2000/2001 PQR) and 2) Checklist for Municipal and Industrial Permits (developed during the 2000/2001 PQR). In addition, discussions with Region 9 and State staff addressed a range of topics including program status, permitting processes, relative responsibilities, organization, and staffing.

The majority of the eight Nevada permits were randomly chosen from a list of permits issued after December 31, 2004 to ensure a review of recently issued permits. The remaining permits were selected based on discussions with the States and Region 9, with an effort to include primarily major facilities, with an equal distribution of industrial and municipal permits. The twelve permits from California selected for the core review were chosen at random as part of the settlement agreement, regarding use of schedules of compliance in NPDES permits, reached with Baykeeper, Humboldt Baykeeper, Ecological Rights Foundation, and Communities for a Better Environment.

3.1.1 Nevada

Background

The Nevada core review consisted of a review of selected permits and fact sheets, followed by a site visit to the Nevada Division of Environmental Protection (NDEP) to discuss the permits with State staff, and review administrative records as appropriate. The information in this report includes observations noted by the review team, based on their discussions with NDEP staff on the site visit, as well as the permits reviewed.

The central office of the NDEP is in Carson City, with a field office maintained in Las Vegas. All NPDES permits are issued from the central office, including general permits. NDEP currently administers approximately 89 individual, non-stormwater NPDES permits, including 11 major permits. NDEP has also issued three MS4 permits; all other stormwater discharges are covered by general permits or within individual NPDES permits.

<u>Permitting process:</u>
NDEP is currently using and further developing a database to track permits, which includes application receipt dates, public notice periods, and adoption dates. Notice letters are sent to dischargers at three months and one month prior to the permit application deadline. Permit applications are distributed by the Permits Supervisor to appropriate staff, which includes five permit writers. Priority is given to new permits, followed by permit modifications and renewals. NDEP permit writers are also responsible for approximately 250 “groundwater permits,” which must also be reissued at five year intervals.

NDEP is working to standardize a permit template, as well as a policy for conducting reasonable potential analyses. Two general permits – one for pump and treat systems and one for construction dewatering activity – may be developed by NDEP. In the past, NDEP has issued “temporary permits” for some de minimis discharges, bypassing certain administrative requirements such as application and public notice requirements. General NPDES permits for

construction dewatering and pump and treat systems will regulate many discharges previously addressed by these "temporary permits."

Nevada Core Review Findings

The core review examined eight Nevada NPDES permits. Most issues identified focused on a lack of clear documentation. HQ findings include the following:

- In general, Nevada's permit documentation was complete for permits reviewed. Fact sheets provided discussions of effluent and ambient data characterization, descriptions of facility processes, and limit derivation discussions; however, some documentation and rationale in fact sheets, particularly with regard to reasonable potential analyses, were not provided. In one case, a permit was prepared and issued without a complete application.
- The permits reviewed were issued prior to Nevada DEP's development of standard procedures for conducting reasonable potential analyses. In some cases, permit writers make comparisons between criteria and effluent characteristics; in others, decisions on whether to include limits are based on reasonable potential analyses from previous facts sheets; or the decision making process is not clear.
- Two permits reviewed relied in part on reasonable potential analyses conducted in 2001. The purpose of effluent characterization is to perform a reasonable potential analysis, and EPA guidance indicates that the permitting authority must make this determination at each permit reissuance.
- Two fact sheets reviewed stated that the permittees, "in coordination with the other dischargers, have conducted aquatic life studies demonstrating [that] has hardness concentrations of 800 mg/L, provides a protective effect beyond the protective effect associated with 400 mg/L of hardness, and that it is appropriate to use the concentration of 800 mg/L in calculating hardness-based water quality criteria, and there is no reasonable potential." Although establishing site-specific water quality criteria for permitting purposes is a reasonable practice, especially for atypical receiving water chemistries, such a blanket conclusion about all metals with hardness-dependent criteria is a very strong conclusion that should be supported further in permit documentation.
- Region 9 and NDEP are currently working on reasonable potential procedures that provide clearer guidance for permit writers in establishing water quality-based effluent limitations.
- In the past, NDEP has issued "temporary permits" for certain de minimis discharges, such as discharges of uncontaminated groundwater from pump and treat systems. However, PQR reviewers noted that the discharge from one major permittee had previously been authorized with a "temporary permit." NDEP indicates that issuance of such permits, which do not adhere to all NPDES administrative requirements (e.g., application and public notice requirements), has been discontinued and that two general permits may be developed (one for pump-and-treat systems and one for uncontaminated ground water) that will assist with cases where there is a need to issue a permit for a de minimis and imminent discharge.
- Effluent limitations for hardness-dependent metals are established as formulas instead of fixed numbers, meaning that a discharger must calculate the limit based on receiving water hardness at each monitoring event. Such limits do not establish tangible objectives for treatment plant operation: i.e., operators and engineers do not have specific objectives

for operation and design; and such "moving" limitations cannot be input to PCS and ICIS and make compliance evaluation difficult. EPA strongly recommends that this practice be discontinued.

- All permits did not provide discussions/rationale to evaluate if new limits are more or less stringent than previous limits. A backsliding analysis and discussion should be included in all fact sheets.
- Water quality based effluent limits commonly reflect applicable water quality criteria expressed as end-of-pipe limits; i.e., acute criteria are established as end-of-pipe "maximum daily" limits, and chronic criteria are established as end-of-pipe "30-day average" limits. The direct expression of criteria as end-of-pipe limitations does not account for effluent variability and infrequent monitoring, and therefore, may not assure that water quality criteria will be maintained. When there is only a single water quality criterion for a pollutant, NDEP typically applies that criterion as a single effluent limitation. This practice is inconsistent with NPDES regulations, which require average weekly and average monthly discharge limitations for POTWs and maximum daily and average monthly limitations for non-POTWs.
- NDEP permits typically require analytical methods established in 40 CFR 136 or methods established in the OSW Manual SW-846; whereas, NPDES regulations require use of analytical procedures approved by EPA under 40 CFR 136. NDEP permitting staff indicated that the SW-846 methods were intended for analysis of biosolids; however current permit language does not clarify this intent.
- Permits for POTWs are inconsistent and/or unclear about whether stormwater from regulated facilities is covered by an individual NPDES permit or whether coverage is required under a general permit. A provision of one permit stated that the "Permittee is authorized to discharge treated sanitary wastewater, stormwater, and facility dewatering water;" however, permit documents do not explain what stormwater discharges are authorized by the permit, and what specific limitations and conditions may be imposed on those discharges. Supporting documents do not indicate whether stormwater discharges from regulated POTWs are addressed by the individual NPDES permit or not.
- One permit reviewed, which authorizes discharge from a groundwater pump-and-treat system, included mass-based effluent limitations that were inappropriately calculated based on the treatment system's design flow instead of a reasonable measure of actual production, as required by EPA regulations for non-POTWs. When discharges occur infrequently and intermittently at this facility, and the actual rate of discharge is well below the design treatment capacity, mass-based limitations based on treatment capacity are actually authorizing large discharges (in terms of mass) of certain pollutants. This finding of mass-based limits based on design flow, not an actual measure of production, was observed in only one permit that was reviewed.
- The MS4 permit reviewed for the PQR process incompletely addressed elements from EPA's Municipal Stormwater Program Evaluation Guide and is vague regarding specific milestones and deadlines. The permit should include more specific language that includes measurable performance targets and it should address program areas such as public education (how much, how often), construction (what size sites are inspected, how often are they inspected), municipal maintenance (how often are streets swept, how often are catch basins cleaned), and illicit discharges (how often are field screening activities conducted).

Findings on Application of Antidegradation: Two permits reviewed for the core review process for major dischargers in Las Vegas (NV0020133 and NV0021261) state only that an antidegradation review is conducted through criteria known as Requirements to Maintain Higher Quality (RMHQ), which were reviewed and applied to the permits, and that "none of the discharges can reasonably be expected to exceed any RMHQ criterion." One of these permits authorized an additional discharge of 40 million gallons a day to Las Vegas Wash.

The State's antidegradation policy appears to be presented in Title 40 of the Nevada Revised Statutes at NRS 445A.565 (Protection of Surface Waters of Higher Quality; Treatment of and Control over Discharges Constituting New or Increased Sources of Pollution). This statement of policy appears to address only "high quality" waters, a conclusion confirmed by section XII of the fact sheets, which states that antidegradation review is conducted through RMHQ.

3.1.2 California

Background

Administration of the NPDES program in California is divided between the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs), whose boundaries are based on watersheds. SWRCB establishes policies and regulations to protect and restore water quality, coordinates with and supports RWQCB efforts, and reviews RWQCB actions.

RWQCBs monitor and enforce state and federal plans, policies, and regulations for each region, including developing water quality control plans, setting standards, and issuing Orders containing waste discharge requirements (WDRs). These Orders/WDRs for discharges to surface waters also serve as NPDES permits. Monitoring and reporting requirements are contained in separately-issued Monitoring and Reporting Plans, which serve as the monitoring and reporting portions of NPDES permits.

While SWRCB has issued a few NPDES permits, the vast majority of NPDES permits are issued by RWQCBs. Each RWQCB sets its own policies and procedures and operates largely as an independent entity. For this PQR, permits issued by three RWQCBs were reviewed: RWQCB 2 (San Francisco Bay), RWQCB 4 (Los Angeles), and RQWCB 5 (Central Valley).

The California core review consisted of advanced review of selected permits and fact sheets followed by a site visit to the offices of the three RWQCBs to discuss the permits with state staff and to review the administrative records as appropriate. The findings include general observations noted by the review team, based on their discussions with state staff on the field visits, as well as specific findings related to the permits reviewed.

<u>Regional Board 2 (San Francisco Bay)</u>

Regional Board 2 is located in Oakland and encompasses all San Francisco Bay segments extending to the mouth of the Sacramento–San Joaquin Delta. The NPDES Permits Division

consists of three sections, two devoted to permits and case management (follow through on permits, tracking required studies or reports, and reviewing submissions) and one devoted to enforcement. The sections operate under the supervision of a Section Leader, and include: NPDES 1 (covering Contra Costa and Alameda), NPDES 2 (covering Santa Clara, San Mateo, Marin, Napa, Solano, Sonoma, San Francisco Counties), and the Enforcement, Pretreatment, and General Permits Section.

The division is staffed with a little over 16 full time employees, including managers and administrative support. The two sections that administer the NPDES permitting program have six permit writers who devote 40 to 60% of their time to permit writing; a little over one full time employee is allocated to general permits; three full time employees are allocated to enforcement; plus a division chief, three section leaders, and administrative support staff. This staff is currently supplemented with contractor permit writing support. Stormwater permits and TMDLs are handled by other divisions or sections.

Regional Board 2 is responsible for administering approximately 80 individual permits, as well as some 220 facilities operating under general permits. The standard annual workload for permit writers was three permits per year, but with recent pressure for permit issuance from EPA, the standard has increased to about four permits per year. This has resulted in reduced effort on other tasks, such as responding to permittees.

Permitting Process:
The Board does not normally send letters to existing facilities as a reminder to apply for permit renewal. Permits have standard language requiring reapplication 180 days before expiration of the permit, and permittees are expected to know and comply with this provision. Permit writers/case managers are assigned 13 to 15 cases. They are responsible for making sure applications come in, reviewing applications, and sending letters to permittees requesting additional information.

Ideally, a permit writer sees permit development through the entire process. However, the way permits expire is not evenly spread over the five year period, and "bubbles" occur in certain years. When this occurs, permits are reassigned to permit writers with lighter case loads. The Board also tries to group permits geographically to address watershed issues.

The staff has a mix of experience levels. About three staff members have less than one year of experience in NPDES permitting; four have more than one year; only one has more than five years of experience. The Staff receive standard training in an NPDES permit writers training course.

Currently, the Board staff is receiving substantial contractor support -- about 40 to 50% of production is handled by a contractor. In these cases, when an application comes in, there is a conference call with contractor to go over the application and permit development. Contractor staff has no contact with permittees, and the Board reviews limits that contractors develop.

Reasonable potential analysis and water quality-based effluent limit calculations are based on the State Implementation Plan (SIP). A spreadsheet has been developed to implement the procedures in the SIP.

The Board highlighted one completed TMDL in the region in particular. This TMDL (for mercury in San Francisco Bay) is currently being implemented in permits through a watershed-wide permit.

Regional Board 2 Findings

The core review examined six Regional Board 2 permits: four POTWs and two industrial permits. The permit and fact sheet were adequately documented. However, reviewers observed some inconsistencies in implementing water quality-based effluent limits, particularly when the permittee could not immediately comply with the calculated limit.

Findings identified during the review are described below:

- **Inconsistent Analysis of Interim Limits.** Section 2.2 of the SIP requires interim limitations when the permit contains a compliance schedule for the permit. While the fact sheet and permit reflected interim limitations in the permit, as prescribed by the SIP, the analysis for establishing these interim limits were not consistent. The Regional Board applies a statistical test to determine if interim limits should be based on the existing treatment plant performance or the previous permit limit.

  In the case of Tesoro Refining, the analysis favored a less stringent limitation (i.e., between plant performance and previous limit). Specifically, the fact sheet noted it was not possible to establish performance-based limits because there were too many non-detects (permit reviewers were not able to determine how many non-detects are required before BPJ is used). However, the final order states that "Board staff statistically analyzed the discharger's effluent data from January 2001 and July 2004. Based on this analysis, the Board determines that the assertion of infeasibility is substantiated for Cyanide (60d., p.25 of the Final Order for Tesoro Refining)." This analysis resulted in an interim limit based on the previous limit of 25 ug/L.

  In the case for selenium for Tesoro Refining, the statistical procedure indicated it was infeasible to comply with the interim limit, so the previous permit limit of 50 ug/L was used instead of the performance-based limit. The Order noted that selenium data did not fit a normal distribution, and that a meaningful statistical analysis was not possible to assess existing treatment plant performance. However, there were 160 records for Selenium showing a maximum value of 38 ug/L and only 11 of the 160 records exceeded 20 ug/L. Thus, the rationale appeared inconsistent because a statistically-based approach was used to determine infeasibility while rejecting statistics for establishing the interim limitation based on the same data set.

- **Antibacksliding/Antidegradation**. Based on results of the HQ review, antibacksliding and antidegradation policies may need to be clarified to permit writers. However, it was not possible to determine inconsistencies pertaining to antibacksliding were systemic.

- **Bypass Provisions.** Some POTW permits, issued before EPA published the draft Peak Flows Policy on December 22, 2005, contain language that allows the bypass of portions of the treatment system during periods of peak wet weather flow (for example, "blending" of biologically treated waste water with wastewater that has been diverted around biological treatment systems during the wet season). When permits with such language are reissued, permit language allowing blending should be reviewed for consistency with the draft December 22, 2005 policy.

Regional Board 4 (Los Angeles)

Regional Board 4 (Los Angeles Region) is located in Los Angeles and encompasses all the coastal watersheds of Los Angeles and Ventura Counties, along with portions of Kern and Santa Barbara Counties. The Watershed Regulatory Section, which administers the NPDES permitting program, has three permitting units—the municipal permitting, industrial permitting, and general permit units, each of which operate under the supervision of a Unit Chief. The municipal permitting unit currently has four permit writers, the industrial permitting has two permit writers (although additional permit writers are being hired), and the general permitting unit has four permit writers. In addition, the Board employs one specialist who handles contaminated sediment issues and biology/impingement-entrainment issues and helps with the permit monitoring program. Staff is supplemented with contractor permit writing support. Stormwater permits and TMDLs are handled by other sections. Regional Board 4 is responsible for administering approximately 45 major and 120 minor individual permits, as well as 400 facilities operating under general permits.

Permitting Process:
The Board does not normally send letters to existing facilities as a reminder to apply for permit renewal; they are expected to know to reapply 180 days before expiration. However, if an application is late, the Board will generally contact the facility.

Existing facilities are typically assigned to a staff member designated to handle all matters associated with that facility. When the permit application, also known as the Report of Waste Discharge (RWD), is received and logged, it is sent to the Section Chief, and then the Unit Chief, who assigns it to the permit writer. The California Integrated Water Quality System (CIWQS) database system is used to track applications.

The permit writer is responsible for reviewing application details and determining if the RWD is complete, information is representative, and additional information is needed. The permit writer has three days to review the application and write to the permittee requesting additional information, if necessary. Once all necessary application information is gathered, the permit writer writes to EPA saying the application is complete and attaches a copy of the permit application with the letter. A letter is also sent to the applicant, notifying them about their complete application.

When the application is complete, the permit writing process is initiated. The SWRCB developed a template (MS Word document) roughly two years ago, which the permit writers follow in drafting the permit. One template is used for inland discharges and one for ocean discharges. Much of the template (for POTWs in particular) came out of litigation on several permits on the Los Angeles River; the template incorporates language from the litigation comments, the SWRCB, and the State Attorney General.

For water quality-based limits, the permit writers review the last five years of data and run reasonable potential analysis using SIP procedures to determine whether a reasonable potential exists based on a three-tiered approach. If reasonable potential exists, water quality-based limits are established based on California Toxic Rule (CTR) criteria or, in the absence of CTR criteria, drinking water standards or secondary health standards. For implementing the Ocean Plan, water quality-based limits are developed using a software tool developed by the SWRCB. For inland waters, an Excel spreadsheet was developed in-house to implement the SIP procedure.

When the draft permit and fact sheet are complete, the permit is public noticed. A copy of the public notice package is sent to the facility to post in a public place or to publish notice. The Regional Board also publishes public notices, giving notice of the draft permit and upcoming Board meeting where the permit will be considered for issuance. For major facilities, the public notice package is sent to the facility 60 days before the Board meeting; for minors, 45 days before the Board meeting. Copies of the public notice package are also sent to EPA, State and local agencies, and other interested parties simultaneous with the public notice

The Board meeting is the final step in the issuance process. An agenda package is assembled for each permit, and includes the fact sheet, draft permit, a cost summary detailing why requirements are needed, and costs to the facility to comply with the requirements. Issues or concerns are raised at the Board meeting; if permitting staff cannot address or resolve the issue at the meeting, the item will be continued. Permitting staff must address the issue and return to the Board at a later meeting. Permitting staff generally have an opportunity to address substantive comments before the meeting. If changes are made requiring the permit to be public noticed again, it may be rescheduled for a later Board meeting. Response to comments are generally prepared before the meeting; staff report and response to comments are included as part of the Board agenda. After the meeting, permits are finalized and mailed within five days. All interested parties are notified of permit adoption at the Board meeting, and a hard copy of the permit is sent to the permittee; any other interested parties receive an email notification with an electronic copy of the signed permit.

Regional Board 4 Findings

The core review examined three Regional Board 4 permits. Overall, few potential significant issues were identified. Documentation was complete and fact sheets were very detailed, with well documented permit decisions and calculations. Reasonable potential procedures were generally well documented. Monitoring and Reporting Programs were detailed and extensive, with requirements beyond those of most States. Permit files also appeared to be well maintained.

Potential issues identified by HQ focused on areas lacking of clear implementation procedures. Examples of potential issues include the following:

- **Selection of Limits.** In two of the three permits reviewed, limits based on Basin Plan requirements were expressed only as monthly average limits (i.e., no daily maximum or weekly average limits). This practice is inconsistent with NPDES regulations, which require average weekly and average monthly discharge limitations for POTWs, and maximum daily and average monthly limitations for non-POTWs. Where Basin Plans establish only average requirements, both monthly average and weekly average (for municipals), or daily maximum (for industrials), limits should be established based on statistical calculations.

- **Compliance Schedules.** Fact sheets contained little justification as to why compliance schedules were necessary and appropriate. The justification provided did not appear to indicate that the inclusion of compliance schedules was based on a regulatory threshold of "cannot achieve compliance", but rather on a threshold of "may not be able to achieve consistent compliance" (i.e., if there was any possibility of exceeding the final limits, even if only occasionally, a compliance schedule was included). No documentation was provided of the rationale for setting the length of the compliance schedule.

  In several cases, it appeared that the permittee was already achieving compliance with final limits at or soon after permit issuance; thus, the inclusion of and the length of compliance schedules in particular were not warranted. Interim limits and quarterly progress report requirements were included in permits, but no concrete milestones for progress in achieving compliance were included. In some cases, it was unclear how the permittee was supposed to achieve compliance (i.e., whether additional treatment, a Pollutant Minimization Plan, or site-specific criteria would be used to achieve compliance).

- **Antidegradation.** Where permits allowed increases in flow or mass loading, no discussion was provided in the fact sheets to document that an antidegradation review had been performed or the procedures followed for such review, other than a general reference to the State's antidegradation policy.

Regional Board 5 (Central Valley)

Regional Board 5 (Central Valley Region) is located in Sacramento/Rancho Cordova, with branch offices operating independently in Redding and Fresno. Each office issues NPDES permits for its subregion. The Central Valley Region is California's largest region, encompassing 60,000 square miles or about 40% of the State's total area.

The Sacramento/Rancho Cordova office has two permit writing units, each headed by a Unit Chief. Each unit has four permit writers. The Fresno office has recently lost some staff and currently only has one or two permit writers under a senior permit writer. The Redding office has two senior permit writers who oversee four permit writers. Permit writers are supplemented

by contractors. Regional Board 5 is responsible for administering approximately 110 industrial and 170 municipal individual permits, as well as 60 facilities operating under general permits.

Permitting Process:
Permits drafted by the three offices are tracked using a spreadsheet. Permits are drafted in the order of expiration date unless there is a high priority permit with specific issues.

Once the permit has been assigned to a permit writer, the permit writer is responsible for the permit through the entire issuance process. However, due to staff turnover and the loss of several experienced permit writers, the Board reported that this workflow was modified so less experienced staff worked closely with senior permit writers in drafting NPDES permits.

Permit writers are responsible for developing technology-based limits and performing reasonable potential analysis for water quality-based limits. Several different spreadsheets are used for these purposes, and a template is used to draft the fact sheet and permit.

Senior permit writers present draft permits at Board meetings where permits are considered for approval and issuance. Permits can be challenged during the Board review and approval process. The Region reported that third-party comments have increased over time and responses to these comments consume a substantial amount of staff time.

Regional Board 5 Findings

The core review examined three Regional Board 5 permits, all within the Sacramento/Rancho Cordova sub-region. The following issues were identified:

- **Administration.** Instead of fact sheets, administrative records for the permits contained "Information Sheets." Information Sheets contained detailed descriptions of facility activities, wastes discharged, and the basis for determining water quality based effluent limits (WQBELs), but they did not contain all required elements of a fact sheet in accordance with 40 CFR 124.8 and 124.56. For example, references to all of the applicable statutory or regulatory provisions were not included, nor were descriptions of procedures for reaching a final decision (including procedures for public comments and hearing requests). Based on discussions with Regional Board staff, it appears that this issue has largely been addressed in more recent permits through adoption of a document template system.

- **Selection of Limits**. Limits based on Basin Plan requirements were expressed only as monthly average limits (i.e., no daily maximum or weekly average limits). This practice is inconsistent with NPDES regulations, which require average weekly and average monthly discharge limitations for POTWs, and maximum daily and average monthly limitations for non-POTWs. Basin Plans establish only average requirements, although both monthly average and weekly average (for municipals) or daily maximum (for industrials) limits should be established based on statistical calculations.

Also, at the time these permits were issued, effluent limitations for hardness-dependent metals and for ammonia were established as formulas instead of fixed numbers, meaning that a discharger must calculate limits based on receiving water hardness (or, in the case of ammonia, temperature and pH) at each monitoring event. Such limits do not establish tangible objectives for treatment plant operation: i.e., operators and engineers do not have specific objectives for operation and design; and "moving" limitations cannot be input to PCS and ICIS, making compliance evaluation difficult. Based on discussions with Regional Board staff, it appears that the Regional Board has moved away from this approach and now issues effluent limitations for hardness-dependent metals and ammonia as fixed numerical limits.

For a municipal permit, technology-based limits on BOD and TSS were relaxed compared to the prior permit on two grounds:

1. 30 mg/L limits on BOD and TSS can be relaxed for facilities that provide treatment equivalent to secondary treatment utilizing stabilization ponds as the principal method of treatment. The Regional Board indicated the facility was meeting secondary treatment standards prior to 1999.
2. 40 CFR 122.44(l)(1) provides for exemptions from secondary treatment standards when the "circumstances on which the previous permit was based have materially and substantially changed…." The facility noted that the "clarigester" (presumably a clarifier) had broken down and the city had not been able to find replacement parts for its repair. The Regional Board agreed and established limits for BOD at 45/65/90 ug/L (monthly average/weekly average/daily maximum) and for TSS at 70/110/140 ug/L (monthly average/weekly average/daily maximum).

- **Compliance Schedules.** The information sheets (i.e., fact sheets) contained little justification as to why compliance schedules were necessary and appropriate. The only justification was if the maximum effluent concentration exceeded the final limit, a compliance schedule was included. Since this decision was based on a single data point, it did not demonstrate that the compliance schedule was based on a regulatory threshold of "cannot achieve compliance"; there was no information to indicate whether the maximum effluent concentration represented an isolated incident or an outlier, or whether it was representative of routine treatment plant operation.

  No documentation or rationale was provided for the length of the compliance schedule; in fact, permittees were not required to submit justification for the compliance schedules until <u>after</u> permit issuance. While interim limits and quarterly progress reporting requirements were included in the permits, no concrete milestones for progress in achieving compliance were included. The Regional Board needs to develop a more consistent, quantifiable rationale/assessment for when to include a schedule and more clear criteria for determining the length of the schedule and milestones. This rationale/assessment also needs to be clearly documented in the fact sheets; justification for the compliance schedule should be provided before permit issuance, rather than after.

- **Antidegradation.** Permits that allowed increases in flow or mass loading, did not provide discussion in the information sheets to document that an antidegradation review had been performed or the procedures followed for such review. The information sheets merely contained a statement that the permitted discharge was consistent with the State's antidegradation policy, but did not include any analysis to support this assertion.

- **Wet-Weather Pathogen Limits/Bypass Provisions.** One permit (CA0079316) provided alternative water-quality based effluent limits for total coliform during wet weather periods when flows were greater than 3.5 MGD. The basis for these alternative limits and how water quality standards are met is unclear. In conjunction with wet weather alternative limits, the permit recognizes that advanced treatment units will be bypassed during periods of high flow. The permit recognizes that tertiary treatment (gravity sand filters) will be provided when discharge flow is 3.5 MGD or less in order to meet coliform limits. However, when flow is greater than 3.5 MGD and temperature is less than 60 degrees, the permit recognizes that flow will bypass gravity filters and flow directly to the chlorine contact chambers, with final discharge during such periods of high flow being a combination of secondary and tertiary treatment.

3.2 TOPIC-SPECIFIC REVIEW

Similar to the selection process from the core review, the majority of the permits were chosen randomly for the topic specific reviews from a list of permits issued after December 31, 2004 to ensure a review of recently issued permits. The remaining permits were selected based on discussions with the States and Region 9, with an effort to include facilities appropriate for each of the topics.

3.2.1 Mercury Methods

NPDES regulations require the use of analytical test methods approved under 40 CFR 136. For mercury, there are three methods commonly used in the NPDES program that EPA has approved under Part 136: Method 245.1, Method 245.2, and Method 1631E. Methods 245.1 and 245.2 were approved by EPA in 1974 and can achieve measurement of mercury down to 200 ng/L. Method 1631 Revision E was approved in 2002. Method 1631E has a quantitation level of 0.5 ng/L, 400 times more sensitive than Methods 245.1 and 245.2. The sensitivity of Methods 245.1 and 245.2 are well above the water quality criteria now adopted in most states for the protection of aquatic life and human health. In contrast, Method 1631E, with a quantitation level of 0.5 ng/L, does support the measurement of mercury at these low levels. In addition to Methods 245.1, 245.2, and 1631E listed above, EPA approved Method 245.7 as well as modified versions of other EPA-approved methods on March 12, 2007. Method 245.7 has a quantitation level of 5.0 ng/L, making it 40 times more sensitive than Methods 245.1 and 245.2.

The use of a specific method is not required; however, low level permit limits, set in accordance with many state mercury WQS, indicate the need to determine the most appropriate analytical method to provide representative information for development of permit requirements.

This portion of the review assessed analytical methods and/or detection limits specified for monitoring requirements in permits following promulgation of the more sensitive EPA Method 1631E, and whether permits provide consideration of the quantitation levels (minimum levels) for 40 CFR 136 methods. EPA recently developed guidance on the implementation of this methodology.

EPA examined two permits for each Region 9 state, tribe, and territory to determine whether justification for limits, monitoring conditions, and appropriate analytical methods are provided in the permit or fact sheet.

Mercury Methods Findings

Arizona: Two permits identified as containing mercury limits in PCS were reviewed. Permit AZ0025429 listed a monthly average limit and a daily maximum in the fact sheet. A specific method was not explicitly listed in the permit or fact sheet, but the monthly average limit was lower than the detection level achievable with Method 245. Mercury limits were also listed as part of the biosolids monitoring requirements.

The second permit (AZ0024716) listed limits consistent with Method 245. 40 CFR 136 was referenced, but a specific method was not listed.

California: Permit CA0109991 listed mercury limits in the fact sheet of <0.002 ug/L as the minimum and the average, and 0.18 ug/L as the maximum. No specific methods were listed for this permit. However, the limits listed in the fact sheet are below the detection limit 0.2 ug/L for Method 245. The permit was revised in April of 2005 after Method 1631E was promulgated.

Permit CA0108073 listed an instantaneous maximum for mercury of 4.4 ug/L. The analytical method listed in the permit for mercury was ICPMS Method with a minimum level of 0.5 ug/L. In the fact sheet, concentrations were listed for several sample dates, ranging from 0.1 ug/L to 1.0 ug/L over a four year period.

Hawaii: Two permits were reviewed for Hawaii. Permit HI0020109 listed "not detected" for both the maximum concentration and the average concentration in the fact sheet. A specific method was not listed. The second permit (HI0020303) was identified as having mercury limits in PCS, but did not provide any limits in the permit or fact sheet for discharges. Mercury limits were provided for sludge.

Nevada: Nevada permit language regarding mercury detection limits require methods using a low-level detection limit, if there is a State certified laboratory that is approved for the method; however, it was not clear from discussions with NDEP permitting staff if laboratories in Nevada had been certified for either of the low detection limit mercury methods 245.7 or 1631E. Specific mercury methods were not specified in NPDES permits reviewed for Nevada.

Two permits were reviewed. Permit NV0020061, listed in PCS as having mercury limits, listed mercury as a biosolids component but not part of the discharge limits. The second permit (NV0023345) listed dissolved mercury in the fact sheet with a monthly average limit (0.012

ug/L) and a daily max limit (2.0 ug/L). A specific method was not listed, but there was justification for the mercury limits in the fact sheet citing Standard for Toxic Materials Applicable to Designated Waters, NAC 445A.144 as the basis.

Navajo Nation: Navajo Tribal Utility Authority Tuba City (NN0020290) and NTUA Window Rock (NN0021555) listed mercury as part of the biosolids requirements and not for discharges in the permits and fact sheets. There were no limits or methods associated with mercury in either permit.

3.2.2. Impaired Waters

Background and Scope

Section 303(d) of the Clean Water Act requires states to identify and establish a priority ranking for impaired waterbodies –waters that are not attaining water quality standards despite implementation of technology based requirements. For these priority waters, the states must establish TMDLs for pollutants causing impairments.

The focus of the impaired waters review was to verify that permits acknowledge the 303(d) status of receiving waters and to verify that impairing pollutants are being addressed in NPDES permits before TMDLs are completed. The focus of this review was whether and how each State considers any impairment of a receiving water body.

Impaired Waters Findings

California: The permit reviewed (CA0037770) was reissued by the San Francisco RWQCB for the Mountain View Sanitary District (MVSD) Waste Water Treatment Plant (WWTP) and its collection system.

The Fact Sheet states that Suisan Bay is on the approved list of 303(d) impaired waterbodies. The description of the receiving waters includes a constructed marsh (Moorhen Marsh), a natural marsh (McNabney Marsh), and Peyton Slough. Suisan Bay is impaired by 11 parameters, including: chlordane, DDT, diazinon, dieldrin, dioxin compounds, furan compounds, PCBs, dioxin-like PCBs, mercury, nickel, and selenium. The Fact Sheet specifies that the SIP requires final effluent limits for all 303(d)-listed pollutants to be based on TMDLs and associated WLAs, and indicates that the Board plans to adopt TMDLs in Suisan Bay in the next 10 years. TMDLs will establish WLAs and final limits for this discharge will be based on these WLAs.

The Fact Sheet indicates there are four pollutants with reasonable potential: copper, mercury, cyanide, and dioxin-TEQ. A fifth pollutant, bis(2-ethylehexyl) phthalate, appears in the permit but is not listed or discussed in the associated text.

The two pollutants that have reasonable potential and are impairing pollutants are mercury and dioxin-TEQ. The mercury WQBEL was developed based on the most stringent applicable water quality criterion, accounting for the existing background concentration (which the state reported as below the applicable water quality criterion). Based on the State's analysis, the final limit was

more stringent than the applicable water quality criterion concentration. There were no mass-based limits for mercury, or data or analysis of whether the facility had any compliance issues with the prior permit limit.

A WQBEL limit for Dioxin-TEQ was derived in the fact sheet. The fact sheet indicated that this WQBEL was to be considered a "point of reference", becoming effective 10 years from the effective date of the order (12/01/2016). The meaning of "point of reference" is undefined, other than that it is not to be considered a final limit. No interim limits are included due to a lack of data on which to derive a "performance based effluent limit" and no prior limit exists. Twice annual monitoring for dioxin is required. When appropriate, NPDES permits may include a schedule of compliance leading to compliance with CWA and regulations as soon as possible, but no later than the applicable statutory deadline under the CWA. Compliance schedules that are longer than one year in duration must set forth interim requirements and dates for their achievement. Any compliance schedule contained in an NPDES permit must be an enforceable sequence of actions or operations leading to compliance with a WBEL as required by the definition of schedule of compliance in section 502(17) of the CWA. The fact sheet does not address the issue that arises from the Board's determination that there is insufficient data and the requirements regarding compliance schedules.

The permit also, under Special Studies, requires the permittee to annually submit a 303(d) Status Report annually to the Board that updates and documents the facility's participation efforts towards the development of the TMDL.

Hawaii: The Hawaii permit reviewed was for the Hawaiian Electric Company (Waiau Generating Station) (HI0000604).

The facility is a steam-electric power generating facility that discharges metal cleaning wastes and stormwater to the estuarine waters of the East Loch area of Pearl Harbor. The State's 303(d) list includes the Blasidell Park area of Pearl Harbor (approximately 0.5 miles from the point of discharge) as impaired by total nitrogen and phosphorous, chlorophyll a, and turbidity. The 303(d) list also includes all of Pearl Harbor and nearshore waters between Keehi Lagoon and Oneula Beach as impaired by nutrients, turbidity, suspended solids, and PCBs.
The Hawaii Department of Health website (http://www.hawaii.gov/health/environmental/env-planning/wqm/wqm.html) indicates that TMDLs are in progress for the Pearl Harbor watershed but does not indicate that TMDLs have been completed for these impaired waters.

Neither the permit nor its documentation addresses the 303(d) status of the receiving waters or whether the facility contributes to the impairments. The permit does grant a sizable zone of mixing (ZOM) within the northern portion of the East Loch for assimilation of discharges from the power plant. Within the ZOM, applicable water quality criteria for temperature and turbidity may be exceeded. The Fact Sheet does not reconcile a ZOM for turbidity with the fact that the Blaisdell Park area is 303(d) impaired by turbidity. 303(d) impaired status for turbidity means that water quality standards for turbidity are currently not being met; and if the ZOM and the Blaisdell Park area overlap, then water quality criteria for turbidity will not be attained within or outside of the ZOM.

For discharges of once-through cooling water the permit includes effluent limitations for turbidity; and it includes limitations for suspended solids in discharges of low volume wastes.

Nevada: The Nevada permit reviewed was for the City of Las Vegas (NV0021261). The current 303(d) list for Nevada identifies the receiving stream, a 5.12 mile segment of Las Vegas Wash between Telephone Line Road and Lake Mead, as impaired by iron and selenium and indicates that a majority of the iron is in particulate form and is associated with sediment. Total suspended solids (TSS) was removed as an impairing pollutant by the 2004 303(d) list as erosion control structures and wetlands constructed in the receiving water resulted in improved levels of TSS.

TMDLs addressing iron and selenium have not been developed for the Las Vegas Wash, and the subject permit (NV0021261) does not establish specific effluent limitations for iron or selenium. Permit documentation states that the receiving stream is 303(d) listed due to impairment by TSS (not selenium) and iron, and that elevated levels of TSS and iron in the Wash are attributed to erosion caused by high velocity stream flows, steep gradients, and unconsolidated soils. Permit documentation points out that "erosion control structures have been installed in the affected area, and additional structures are planned, along with streambank protection, re-vegetation, and other control measures."

NDEP (5/25/07, conversation with EPA) cites the following language of its 208 Plan to explain that, before TMDLs are developed for impaired waters, NDEP typically establishes the applicable WQ standard for an impairing pollutant as an end-of-pipe limitation.

> *Any discharge which improves existing water quality and has permitted discharge limits as strict or stricter than the water quality standards can be considered in compliance with an established TMDL.*

3.2.3 TMDLs

Background and Scope

A TMDL is a calculation of the maximum quantity of a given pollutant that may be added to a waterbody from all sources without exceeding the applicable water quality standard for that pollutant. States must establish TMDLs for all impairing pollutants – those pollutants that prevent waters from attaining water quality standards after implementation of applicable technology based requirements. Where a TMDL has been established for a waterbody, effluent limits should be consistent with the assumptions and requirements of any waste load allocation for the discharge and approved by EPA.

The focus of the TMDL review has been to verify that final TMDL requirements applicable to point sources are being implemented in NPDES permits.

TMDLs Findings

Arizona: The Arizona permit reviewed was for Page Springs Fish Hatchery (AZ0021245). This permit was issued on February 22, 2006. At that time the current 303(d) list for Arizona included the receiving stream for discharges from this facility (Oak Creek, in the Verde River

Basin) as impaired by *E.coli* bacteria at Slide Rock State Park. The Arizona Department of Environmental Quality (AZDEQ) indicates (at http://www.azdeq.gov/environ/water/assessment/status.html) that TMDLs have been completed for Oak Creek for nitrogen and phosphorous in 1987 and 1999, and that TMDLs also have been completed for all of Oak Creek for fecal coliform and *E.coli* bacteria in 1999. AZDEQ identifies Oak Creek as a "unique water," which is defined as a Tier 3 water, pursuant to AZDEQ antidegradation policy. Examples of Tier 3 waters, as specified by 40 CFR 131.12, are waters of National and State parks and wildlife refuges, and waters of exceptional recreational or ecological significance.

Copies of TMDLs were not obtained for this review.

The permit includes mass-based effluent limitations for nitrogen and phosphorous, which, according to permit documentation, reflect waste load allocations (WLAs) established by the more recent TMDL (1999) for these pollutants.

Although TMDLs have been completed for *E.coli* and fecal coliform bacteria for all of Oak Creek, the permit does not include effluent limitations or monitoring requirements for bacteria. Permit documentation does not address the completed TMDLs for *E.coli* and fecal coliform bacteria, even to discuss regulated discharges as a potential source (or not) of bacterial contaminants.

California: The permit reviewed (CA0056227) had three TMDLs completed for trash, nitrogen, and metals, and a fourth for coliform, scheduled for completion by March 2006. The trash TMDL was adopted in February 2002. The TMDL was not completed in time to meet the federal consent decree so EPA promulgated a trash TMDL, which was superseded by the Board's LA River Trash TMDL, and subsequently contested. As a result, a Basin Plan Amendment was prepared to be incorporated into the TMDL, but a hearing was not held.

The Nitrogen TMDL was completed and approved in November 2003 and went into effect in March 2004. The fact sheet included limits for nitrate (7.2 mg/L), nitrite (0.9 mg/L), nitrate + nitrite (7.2 mg/L and the interim limit of 8.0 mg/L), and total ammonia (1.4 mg/L). The interim limit for nitrate + nitrite was applicable until September 2007, when the more stringent limit applied.

The *LA River Metals TMDL* went into effect in 2006, with waste load allocations for copper, cadmium, lead, and zinc. There was no reasonable potential for cadmium or zinc, but effluent limitations for all metals were prescribed. The fact sheet included WLAs calculation, with numeric limits consistent with the WLAs and provisions of the TMDL. The WLAs are expressed as WQBELs to be consistent with the requirements of the TMDL. Limits were included for monthly average and daily maximum for all listed metals in the fact sheet. The concentration limits will not be in effect until 2011 according to the LA River Metals TMDL, but they were included. Cadmium had a monthly average of 2.7 lbs/d (4.1 ug/L) and daily maximum of 5.5 lbs/d (8.2 ug/L), copper listed 15 lbs/d (23 ug/L) and 23 lbs/d (34 ug/L), lead was 4.9 lbs/d (7.3 ug/L) monthly average and 12 lbs/d (18 ug/L) daily max, zinc listed 129 lbs/d (193 ug/L) and 171 lbs/d (257 ug/L).

Nevada: The Nevada permits reviewed were Clark County Wastewater Reclamation District (NV0021261), and the City of Las Vegas (NV0020133).

The 2004 303(d) list for Nevada identified the receiving stream for both of these permits as a 5.12 mile segment of Las Vegas Wash between Telephone Line Road and Lake Mead. The current 303(d) list includes the receiving stream as impaired by iron and selenium; however, TMDLs addressing these pollutants have not yet been developed for the Las Vegas Wash.

Permit documentation describes existing TMDLs for ammonia and phosphorous, which define WLAs applicable to the authorized discharges. In 1987, NDEP established WQ standards for chlorophyll a and un-ionized ammonia for Las Vegas Bay (immediately downstream, where Las Vegas Wash empties into Lake Mead). Because WQ standards for chlorophyll a and un-ionized ammonia were not being met, TMDLs for total P and total ammonia were developed and approved in 1994 for the lower portion of the Las Vegas Wash.

In 2003, NDEP clarified that the TMDLs for ammonia and phosphorous were developed in response to non-attainment of water quality standards which are "Requirements to Maintain Existing Higher Quality" (RMHQ) and not "beneficial use standards." NDEP clearly distinguishes between the EPA-Approved 2004 303(d) List of Impaired Water Bodies and its own List of Waterbodies with Exceedances of RMHQs.

Although Las Vegas Bay is no longer identified on NDEP's List of Waterbodies with Exceedances of RMHQs for chlorophyll a and un-ionized ammonia, the WLAs established by the TMDLS for ammonia and phosphorous are implemented in both permits (NV0021261 and NV0020133). The permits establish the following individual and total WLAs, with a permittee being in compliance if it does not exceed its individual WLA (IWLA), or if the sum of WLAs (∑WLA) is not exceeded. To implement the TMDLs, the permits allow trading between the City of Las Vegas (NV0020133), Clark County Wastewater Reclamation District (NV0021261), and the City of Henderson – the major point source dischargers to Las Vegas Wash.

Constituent	IWLA (lbs/day)			∑WLA (lbs/day)
	City of Las Vegas	Clark County	Henderson	
Total Phosphorous (as P)	123	173	38	334 [1]
Total Ammonia (as N)	358	502	110	970 [2]

[1] This WLA only applies March 1 – October 31; no limit applies during the rest of the year.
[2] This WLA only applies April 1 – September 30; no limit applies during the rest of the year.

Both permits also include the following provisions regarding implementation of TMDLs for phosphorous and ammonia.

- *Annual Reallocation of IWLA*: On an annual basis, the Permittee may modify the IWLA by either transferring or receiving waste loads from another discharger. This reallocation is effective upon submittal of a notification signed by all three dischargers. The annual reallocation shall be submitted by May 31st, if applicable. The notification of reallocation

includes flow, waste load discharges, and treatment plant removal efficiency in tabular and graphical format. The reallocation of IWLAs is considered a minor modification to the permit as long as the ∑WLA is not modified.

- *Temporary Trading of IWLA*: The Permittee may temporarily trade IWLA upon submittal of a notification signed by all three dischargers describing the amount of IWLA transferred, the length of time the transfer is effective and the basis for the transfer. The basis for the transfer includes the last monthly flow and waste load discharged for each discharger. The waste load transfer is effective on the date of the submittal. The transfer is binding on the parties and cannot be revoked without notification signed by all three dischargers. The transferred IWLA reverts back to the original Permittee at the end of the time specified in the notification.

The trading provisions of these two permits appear to allow operational flexibility for significant dischargers to the Las Vegas Wash and to be generally consistent with EPA's Water Quality Trading Policy (January 13, 2003). Permits could require receiving water monitoring to assure that nutrient "hotspots" are not created along the Las Vegas Wash if/when a permittee discharges more than its IWLA due to a trading agreement.

3.2.4 Use of *E.coli* and Enterococcus Pathogen Standards

Background and Scope

In its 1986 *Ambient Water Quality Criteria for Bacteria* document, EPA determined that *Escherichia coli* (*E.coli)* and enterococcus are the most reliable indicators of bacteria in surface waters and recommended that these two indicators serve as the basis for bacterial WQS. *E.coli* is recommended as an indicator for fresh waters, and enterococcus is recommended as an indicator for fresh waters and marine waters.

The EPA-recommended recreational WQS for *E.coli* is based on two criteria: 1) a geometric mean of 126 organisms/100 mL based on several samples collected during dry weather conditions or 2) a single sample maximum based on designated use (e.g., 235 organisms/100 mL for designated beach) (EPA 1986). The EPA-recommended recreational WQS for enterococci is based on two criteria: 1) a geometric mean of 33 organisms/100 mL (fresh water) or 35 organisms/100 mL (marine waters); and 2) a single sample maximum based on designated use. EPA published approved test methods for *E.coli* and enterococci in wastewater on March 26, 2007 (72 FR 14220). These methods are added to 40 CFR Part 136.

Three permits were reviewed to assess implementation of *E.coli* standards. One, issued by AZDEQ (AZ0025291), was based on state WQS. The second, issued by Region 9 (AZ0020290) was based on (then pending) Navajo Nation Surface Water Quality Standards (NNSWQS) pursuant to BPJ. One California permit was reviewed, issued by the Colorado River Basin RWQCB for Valley Sanitary District (VSD) Wastewater Treatment Plant (WWTP), based on the RWQCB Basin Plan Water Quality Control Plan.

The State of Arizona has adopted WQS for *E.coli* based on the most current federal criteria. Arizona WQS, adopted in March 2002, provide that "the following water quality standards for

E.coli, expressed in colony forming units per 100 milliliters of water (cfu/100mL) shall not be exceeded":

E.coli	FBC (full body contact)	PBC (partial body contact)
Geometric Mean (4-sample minimum)	126 (cfu/100mL)	126 (cfu/100mL)
Single sample maximum	235 (cfu/100mL)	576 (cfu/100mL)

At the time Permit AZ0020290 was drafted, the final Navajo Nation Surface Water Quality Standards (NNSWQS) included criteria for fecal coliform bacteria that appear generally based on 1976 federal pathogen criteria. The Navajo Nation Resources Committee passed revised NNSWQS in July 2004. These revised standards establish *E.coli* standards consistent with current federal criteria. The relevant NNWQS establish the following water quality criteria for bacteria.

NNWQS—Human Health and Agricultural Standards

	Domestic Water Supply	Primary Human Contact	Secondary Human Contact
E. coli (single sample maximum)	235 cfu/100 mL	235 cfu/100 mL	576 cfu/100 mL
E. coli (geometric mean)	126 cfu/100 mL	126 cfu/100 mL	126 cfu/100 mL

Source: July 2004 NNWQS Table 205A.1

Nevada has *E.coli* standards for at least one waterbody (the State adopts WQS on a water-body specific basis). The State is in the process of replacing criteria for waters that have fecal coliform standards with *E.coli* criteria as revisions are made on a basin-by-basin basis.

The Colorado River Basin RWQCB has partially adopted water quality standards for *E.coli* based on the most current federal criteria as of May 2002. The Colorado River Basin Plan provides that water quality standards for bacteria, expressed in colony forming units per 100 milliliters of water (cfu/100mL) shall not exceed standards based on the geometric mean of a minimum of five samples or any single sample maximum.

Use of *E.coli* and Enterococcus Pathogen Standards Findings

Arizona: Permit AZ0025291 includes limits for *E.coli* that appear consistent with the applicable State WQS (the receiving water is designated for partial body contact), which are consistent with the 1986 Ambient Water Quality Criteria for Bacteria: a monthly average of 125 cfu calculated as geometric mean (based on a minimum of four samples) and a daily maximum of 576 cfu. The fact sheet indicates that the previous permit included a limit for fecal coliform bacteria based on the State's 1996 standards. The fecal limit was removed from the State's 2003 standards and an *E.coli* standard was added.

California: The permit reviewed included *E.coli* limits consistent with the RWQCB Basin Plan. The *E.coli* limit is based on the logarithmic mean of the Most Probable Number (MPN) of 126 colonies per 100 ml, based on a minimum of five samples during any calendar month and a

single sample maximum of 400 MPN per 100 ml. The permit monitoring requirements specified a minimum of twice weekly monitoring and specified analytical methods in APHA Standard Methods for the Examination of Water and Wastewater, 18th (1992), 19th (1995), and 20th (1998) Editions, Methods 9221.F or 9223.

Nevada: Nevada permit documentation does not make it clear why some permits have limits for *E.coli* and other permits have limits for fecal coliform. This appears to occur because the State adopts water quality standards on a water-body specific basis. The State is in the process of replacing waters that have fecal coliform criteria with *E.coli* criteria as revisions are made basin-by-basin.

Navajo Nation: Permit AZ0020290 was written by EPA Region 9 for Navajo Nation Tribal Authority. The permit available for review, which seems to be a draft permit, establishes the following effluent limitations for fecal coliform bacteria.

Monthly Average Limitation	Daily Maximum Limitation
126 cfu/100 mLs [1]	576 cfu/100 mLs

[1] Calculated as a geometric mean of all samples collected during the calendar month

Effluent limitations for fecal coliform bacteria established by the permit are inconsistent with limitations described in the fact sheet. The fact sheet describes effluent limitations for fecal coliform that reflect NNWQS for secondary human contact [200 cfu (geometric mean)/400 cfu (single sample maximum)]. The draft permit reviewed was developed while the Navajo Nation was establishing new WQS. In February 2005, the permit was modified and replaced with *E.coli* WQS established by Arizona for partial body contact recreation.

3.2.5 Mixing Zones

Background and Scope

Mixing zones are limited areas or volumes of water where initial dilution of a discharge occurs, and where numeric water quality criteria can be exceeded, so long as specific conditions, such as acutely toxic to aquatic life or posing a significant human health risk are prevented. EPA's primary guidance for mixing zone implementation is contained in two documents—the *Water Quality Standards Handbook* and *Technical Support Document for Water Quality-Based Toxics Control*. EPA recommends that states have a definitive statement in their water quality standards on whether or not mixing zones are allowed; where mixing zone provisions are not part of State standards, states should describe procedures for defining mixing zones. EPA guidance to the States includes recommendations regarding mixing zone location, size, and shape; outfall design; in-zone quality; prevention of lethality to passing organisms; human health protection; and where mixing zones are not appropriate.

State mixing zone provisions have been examined in background materials, considered in permits, and discussed with State staff in cases were there were questions or potential issues. Permits from California and Nevada were reviewed.

Mixing Zones Findings

California: For inland waters, California generally assumes no dilution or mixing is available when determining reasonable potential or when calculating WQBELs. If a facility specifically requests a mixing zone, the State requires the discharger to provide the data and information necessary to establish the mixing zone in accordance with procedures established in the SIP. Specifically, the SIP includes the following provisions:

- With the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a RWQCB basin plan, the RWQCB may grant mixing zones and dilution credits to dischargers in accordance with the provisions of this section. To the extent permitted by applicable law, mixing zones may be considered for TMDL-derived effluent limitations. Effluent limitations based on a TMDL shall meet the mixing zone conditions specified in Section 1.4.2.2.A

- The applicable priority pollutant criteria and objectives are to be met throughout a waterbody, except within any mixing zone granted by a RWQCB. The allowance of mixing zones is discretionary and determined on a discharge-by-discharge basis. A RWQCB may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the RWQCB.

Nevada: NDEP indicated to EPA that few (maybe only one) mixing zones are authorized in the State, as many receiving waters are effluent dominated and/or ephemeral in nature. Permits reviewed in the core review process did not authorize mixing zones. NDEP anticipates requests for mixing zones, however, from the major dischargers in Las Vegas that currently discharge to Las Vegas Wash. According to fact sheets reviewed for the core review process, dischargers will likely seek to move outfall locations to the lower portion of Las Vegas Wash and to Lake Mead, and will be seeking mixing zones at these outfall locations.

Nevada Administrative Code (NAC) 445A.295 – NAC 445A.302 require that mixing zones (1) do not endanger human health or safety, (2) assure protection and propagation of balanced, indigenous populations of aquatic life, and (3) will not cause violation of water quality standards "at any point, designated by the Director." Design of mixing zones must ensure that a zone of passage is maintained; and acutely toxic conditions cannot be present within a mixing zone.

3.2.6 316 (a) & (b): Thermal Discharge & Cooling Water Intake Structure Requirements

Background and Scope

Section 316(a) of the Clean Water Act authorizes thermal discharge variances. Section 316(b) requires facilities that employ cooling water intake structures (CWISs) to minimize adverse environmental impacts associated with the withdrawal of cooling water. The primary goal of the review was to identify if and how the permitting authorities incorporate section 316 provisions

into permit requirements. For section 316(a), this involved a review of any variances from WQS for temperature. The section 316(b) review determined how requirements for cooling water intake structures were being implemented in permits for Phase II facilities (large electric generators) and one BPJ facility in Arizona.[2, 3]

The universe of potential NPDES permits for review was determined using EPA's Permit Compliance System (PCS) database. A query of PCS produced a list of 67 NPDES permits in Region 9 under SIC codes 4911 and 4931. Both are steam electric generator categories, which are industry sectors that typically use large volumes of cooling water and are often subject to both 316(a) and (b). EPA selected seven permits from States and Territories in the Region (one facility in Arizona, two in California, two in Hawaii, two in Guam, one in Navajo Nation/New Mexico). Region 9 provided copies of the permit, fact sheet and associated record materials (as available).

316 (a) & (b) Findings

The section 316(a) and (b) findings are presented below. Overall, the permits containing 316(a) thermal variances did not contain documentation supporting the variances. With respect to 316(b) requirements, the permits reviewed showed a range of thoroughness in implementing 316(b). Some included a compliance schedule to meet the Phase II regulation, which is currently suspended, but others did not address CWIS requirements at all.

Arizona:
316(a): The Arizona facility (West Phoenix, AZ0023159) employs cooling towers and has minimal discharge. There were no permit limits for temperature.

316(b): The Arizona permit did not discuss 316(b) conditions and the permit does not state whether the facility uses surface water for cooling.

California:
316(a): Both California permits (South Bay, CA0001368 and Potrero, CA0005657) require additional studies and analysis to be performed during the permit cycle to justify current thermal limitations. Only South Bay has a 316(a) variance, which is being reevaluated with new studies during the permit term.

316(b): The permits for the California facilities required adherence to the schedule for submitting materials and selection of a compliance alternative under the Phase II rule. However, there was no mention of current permit conditions based on best professional judgment (BPJ) for the current permit cycle.

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[2] Although the section 316(b) Phase II rule has been suspended by EPA due to the Second Circuit Court's decision (Riverkeeper v. EPA, 475 F3d 83 (2d Cir. 2007)), permitting authorities should continue to include 316(b) permit conditions based on best professional judgment (BPJ).
[3] Based on discussions with Regional staff, it was determined that there are no facilities subject to 316(b) Phase I (new facilities) or Phase III (new offshore oil and gas extraction facilities) in the region.

Guam:
316(a): The Guam facilities (Cabras, GU0020001 and Tanguisson, GU0000027) requested renewals of thermal mixing zones. The mixing zones were clearly delineated in the permits, but the documentation supporting the variance was not discussed or provided for review.

316(b): The Guam permits did not include Phase II requirements or discuss BPJ-based permit conditions. The permits did require a 316(b) demonstration study, however, to document the effects of the CWISs and to support a determination as to whether the best technology available (BTA) is being employed at these facilities. The format and content of the studies were similar to the elements of the Phase II Comprehensive Demonstration Study.

Hawaii:
316(a): For both Hawaii facilities (Kahe, HI0000019 and Waiau, HI0000604), renewals of thermal mixing zones were requested by the permittees and granted in the permits. The mixing zones were clearly delineated. Thermal monitoring at the edge of the mixing zone had been required in previous permits and was continued in the current permits. In addition, studies on the effects of the thermal discharges were required; however, no further documentation supporting the variances was discussed or provided for review.

316(b): The permits for the Hawaii facilities required adherence to the schedule for submitting materials and selection of a compliance alternative under the Phase II rule. However, there was no mention of permit conditions based on best professional judgment (BPJ) for the current permit cycle.

Navajo Nation:
316(a): For the draft Navajo Nation permit (Four Corners, NN0000019), there was a temperature limit on discharges from the cooling pond to the river, but no limits on the temperature of the facility's discharge into the cooling pond.

316(b): The draft Navajo Nation permit did not discuss 316(b) permit conditions.

3.2.7 Combined Sewer Overflows (CSOs)

Background and Scope

Combined sewer systems are most common in older north eastern urban areas. A Combined Sewer System (CSS) is a wastewater collection system owned by a state or municipality (as defined by the Clean Water Act) that conveys sanitary, domestic, commercial, and industrial wastewater and stormwater through a single-pipe system to a Publicly-Owned Treatment Works (POTW).

A Combined Sewer Overflow (CSO) is the discharge from a CSS of untreated wastewater at a point prior to the POTW. Overflow points are incorporated into such systems to prevent extreme, wet weather stormwater flows from overwhelming a treatment plant.

CSOs are point sources subject to NPDES permit requirements including both technology–based and water quality–based requirements of the CWA. CSOs are not subject to secondary treatment requirements applicable to POTWs.

Amendment of the Clean Water Act in 2001 added section 402 (q), which requires all discharge permits to conform to EPA's policy regarding CSOs. This policy requires municipalities with combined sewers to implement nine minimum controls to reduce CSOs and their impacts on receiving water quality. In addition, CSO permittees must develop Long Term Control Plans (LTCPs) or any other CSO control measure as per 1994 CSO control Policy for controlling CSOs to a level that will meet State water quality standards.

Regional Status of LTCP and Water Safe for Swimming (SS) Measure

There are two communities in Region 9 with CSOs, San Francisco and Sacramento, both in California. San Francisco has two separate CSO permits covering different portions of the city, with a total of 36 outfalls in San Francisco; Sacramento has one permit with six outfalls. Planning for CSO control in San Francisco began in the early 1970s, and as a result of these early efforts, San Francisco was not required to develop a (new) long-term control plan (LTCP) to comply with the CSO policy. Sacramento was required to develop a LTCP, which was approved in 1996 and is being implemented.

Both communities have implemented the nine minimum controls of the CSO policy. CSO discharges have decreased in volume and frequency for both San Francisco and Sacramento since controls were implemented. The reductions for San Francisco have ranged from 80 to 90% compared with the 1970s, prior to implementation of the program. The City has huge underground rectangular tanks or tunnels that ring the City like a moat. During rainstorms, these tanks prevent untreated shoreline discharges.

Sacramento had only one CSO discharge from 1997 to 2004; the near elimination of CSO discharges in Sacramento is a result of increases in system storage capacity in the mid-1990s. There were 10 CSO discharges during the three-year period prior to 1997.

Region 9 reviews CSO permits for consistency with policy as permits are reissued. Sacramento's permit expired in December 2006; one San Francisco permit expired in May 2007 and the second will expire in September 2008. The State is preparing draft permits to replace the Sacramento permit and the San Francisco permit which expired in May 2007.

3.2.8 Sanitary Sewer Overflows (SSOs)

Background and Scope

Discharges that occur from collection systems designed to carry only sewage to a treatment plant are called sanitary sewer overflows (SSOs). SSOs that reach waters of the United States are point source discharges, and, like other point source discharges from municipal sanitary sewer systems, are prohibited unless authorized by an NPDES permit.

SSOs Findings

Region 9 has not yet had comprehensive discussions with all of its States about how to ensure that SSOs are being reported and how drinking water facilities should be notified of impacts on source water from SSOs or unanticipated bypasses or upsets.

In 2006, California adopted a comprehensive State-wide program to reduce SSOs. The comprehensive program clarifies that SSO discharges and other SSOs that create a nuisance are prohibited, must be reported, and that municipalities are to have a program to improve the performance of their collection system.

Information collected for the 2004 Report to Congress indicates that Hawaii has required SSO reporting to the Hawaii Department of Health for a number of years. In general, Hawaii does not use surface waters for drinking water supplies, so notification would not be an issue. Nevada requires reporting of SSOs, and the several Arizona POTW permits that were reviewed incorporate the NPDES standard permit conditions (which require SSO reporting) by reference.

3.2.9 Stormwater

Background and Scope

As part of this PQR EPA staff reviewed a several stormwater permits and certain aspects regarding program implementation in California, Arizona, and Nevada.

Stormwater Findings

California: Some of the California MS4 permits are not being reissued on time. The State is working with its dischargers to include provisions to improve water quality. Region 9 is working with the State to make further improvements, especially with respect to the development of measurable enforceable requirements for low impact development, even if this results in some delay in reissuance. California is providing a number of very good pilots and demonstrations (permits and MS4 programs) for the rest of the nation.

Nevada: Nevada DEP has issued three MS4 permits; all other stormwater discharges are covered by a general permit or addressed within an individual permit. In the review process, one MS4 permit was reviewed (NVS000001, City of Reno, Sparks & Washoe County). The fact sheet provided general information regarding municipal stormwater permitting and the three entities covered under the permit, but does not describe permit requirements or rationale. MS4 permit requirements are largely taken from Phase I and Phase II regulations. Comparison of permit requirements with MS4 program elements, as addressed in EPA's Municipal Stormwater Program Evaluation Guide (http://www.epa.gov/npdes/pubs/ms4guide_withappendixa.pdf) shows that one requirement, public involvement, is missing from the permit. Another, post-construction, is minimally addressed in Part 4.6.1.2 (requires a description of development practices and land use planning techniques). Other requirements are vague in terms of specific milestones or deadlines; for example, Part 4.9.1.4 requires permittees to include in their SWMP "a description of procedures for identifying priorities for inspecting sites and enforcing control

measures." Such language does not sufficiently address questions regarding construction inspection, such as what types of sites should be inspected; a minimum size; and how often should inspections occur.

Arizona: The Arizona program was not evaluated due to current expiration status of MS4 permits. The State has 8 expired MS4 permits, 7 for the cities and 1 for Arizona Department of Transportation (ADOT). Arizona has been working on renewing these permits for a number of years, including issuing an early draft permit for the city of Phoenix in December 2006. The City of Phoenix did not like the numerous requirements of the permit as well as the move toward measurable outcomes. The cities subsequently banded together in opposition to increased requirements associated with reissuance of their stormwater permits. ADEQ management has met with the cities a multitude of times to try to come to agreement on the requirements of the permit and plan to move forward in FY08 and FY09. ADEQ has also drafted a permit for ADOT, but ADOT has indicated the permit is too expensive to implement and has elevated their concerns to the Director and as such the permit is on hold.

The Region 9 stormwater coordinator has indicated that one of the most important things HQ could do for the program is to provide the necessary follow-up on the Green Infrastructure memo in the following two areas:

- Models need to be improved to incorporate green infrastructure practices; and,
- Guidance needs to be developed on how to retrofit green infrastructure practices into highly urbanized areas.

3.2.10 Concentrated Animal Feeding Operations

Background and Scope

EPA examined NPDES Concentrated Animal Feeding Operation (CAFO) programs and selected permits in Arizona, California, Hawaii, and Nevada to assess their conformance with the 2003 NPDES CAFO regulations.

Arizona: Based upon the information provided to HQ by Region 9, it is estimated that there are 120 CAFOs in Arizona; however, only four require a permit and at the time of the review, three have NPDES permit coverage. The State agency with the responsibility for the administration of the CAFO program is the Arizona Department of Environmental Quality (ADEQ).

Prior to State NPDES authorization, Arizona issued two agricultural general permits related to CAFOs adopted under the Arizona Administrative Code; the agricultural general permit for nitrogen fertilizers and the agricultural general permit for CAFOs. These general permits are enforceable under the Aquifer Protection Program authorized under the Arizona Revised Statues and apply to discharges to groundwater as well as surface water. EPA has coordinated closely with ADEQ to ensure that the general NPDES permit for CAFOs meets or exceeds all State general permit requirements.

ADEQ revised the AZPDES program rules to conform to the 2003 federal regulations for CAFOs. The rule became effective on February 2, 2004.

ADEQ has partnered with the Arizona Department of Agriculture and the USDA Natural Resources Conservation Service in developing and providing a compliance assistance program to dairy producers in Arizona.

California: Based on information provided by Region 9, there are 1,450 CAFOs in California, primarily in the dairy sector, with 180 covered by an NPDES permit. The SWRCB and nine RWQCBs regulate the discharge of wastes into State waters pursuant to the Porter-Cologne Water Quality Control Act (California Water Code Division 7). These numbers are based on the state's definition of CAFOs (i.e., all sizes) and not the federal definition.

California adopts the federal NPDES regulation by reference, and also has Waste Discharge Requirements (WDR) Permit regulations which are more stringent (California Water Code).

To discharge to surface waters in California, owners and operators of animal feeding operations must apply to the appropriate RWQCB for coverage under the applicable CAFO general NPDES permit. Other NPDES permits for stormwater runoff discharges may be required prior to construction of CAFOs or issued to owners and operators of existing CAFOs who wish coverage. California is considering the use of a State-wide NPDES general permit. CAFO operators may be required to obtain either an individual Waste Discharge Requirements (WDR) Permit or WDR general order in accordance with minimum statewide standards prescribed in the California Water Code regulations (Title 27 § 22560 et seq. (1998)) from the local RWQCB. The permit applies to any facility that discharges or proposes to discharge wastes that may affect surface or ground water or that are released in a diffuse manner.

The Santa Ana RWQCB already covers most of its 168 dairy operations under a combined NPDES/WDR general permit. The general permit used in Santa Ana prescribes waste discharge requirements for dairy facilities, preparation of Engineered Waste Management Plans and permits the discharge of storm flows from facilities during chronic, cumulative, and catastrophic storm events and/or rainfall that totals more than the 25 year, 24-hour storm event. The Santa Ana RWQCB regulates all dairies under a general WDR, about 70 dairies under individual WDRs, about 175 dairies under a general industrial stormwater permit, and an unknown number under conditional waivers.

Most San Francisco Bay RWQCB dairies are regulated under conditional waivers. The North Coast, Central Coast, Los Angeles, and San Diego RWQCBs regulate all their dairies under individual WDRs. The Lahontan RWQCB requires all dairies with more than 500 head that are within one half mile of the Mojave River to be covered under a WDR. Forty cattle feedlots and one dairy in the Colorado River Basin RWQCB are regulated under a general WDR/NPDES permit.

With the exception of the Central Valley RWQCB, California has no specific existing regulatory requirements for manure management plans, beyond applicable NPDES requirements, but may require nitrogen management as part of a general permit (e.g., Arizona). However, in accordance with California Water Code of Regulations Title 14 § 17823.1 (1998), manure management practices must prevent the creation of excessive vectors such as domestic flies,

mosquitoes, cockroaches, rodents, or other adverse public health/nuisance conditions. Alternatively, frequent manure removal, such as transporting manure off site, due to limited available crop land, for composting purposes or as feed to methane digesters (e.g., Chino basin), may be used provided such operations do not result in the creation of adverse public health/nuisance conditions.

Waste and Nutrient Management Plans are required for dairies in the Central Valley if the Central Valley RWQCB determines, based on the facility's submittal of a report of waste discharge, that the facility qualifies for coverage under its waste discharge requirements general order issued May 2007. The Waste Management Plan (WMP) predominately focuses on the production area and includes an operation and maintenance plan, certification that all information is accurate and true, and documentation of no cross-connections. The WMP provides sufficient storage on the property to maintain and utilize stored manure in an agronomic system. The Nutrient Management Plan (NMP) predominately focuses on the land application area and includes a dairy facility assessment (e.g., land application area, storage capacity and inputs, sampling and analysis, nutrient budget for crops, record keeping, etc.) and technical standards of which portions require certification by a Certified Nutrient Management Specialist. The NMP is to target application of nutrients to achieve a ratio of applied nitrogen to removed nitrogen within 1.4 to 1.65. The California Dairy Quality Assurance Program provides compliance assistance to dairy producers to meet the requirements of the general order. The NRCS also provided over $10 million of EQIP funds to assist producers in preparing comprehensive nutrient management plans.

Hawaii: State oversight of CAFO issues is complaint-driven. Responsibility for animal waste management is divided between two branches of the Department of Health (DOH). The Clean Water Branch issues individual NPDES permits for CAFOs, while the Wastewater Branch reviews plans and specifications for AFOs and conducts complaint-based inspections.

Hawaii is authorized to administer the NPDES permit program. Based upon the information provided to HQ by Region 9, there are two CAFOs in Hawaii. Currently the two CAFOs in Hawaii have individual NPDES permits.

Nevada: NPDES permits in Nevada are required for CAFOs that exceed a 1,000 animal unit (AU) capacity during the previous 12 months for a total of 30 days or more. Nevada law defines an AU in terms of slaughter or feeder cattle. However, equivalent AUs for other species are established and are the same as set forth in the CAFO regulations prior to the 2003 revisions.

Nevada administers its NPDES program. The lead regulatory agency regarding AFOs in Nevada is the Division of Environmental Protection (NDEP). The Bureau of Water Pollution Control (BWPC) is responsible for issuing NPDES permits. Based upon information provided to HQ by Region 9, it is estimated that there are 12 CAFOs in Nevada, with only three having individual NPDES permits.

NDEP is working with the Nevada Division of Agriculture, the Natural Resources Conservation Service, and the 12 largest State dairies to analyze animal waste storage options in the event of a 25-year, 24 hour storm event. This analysis will be included in the dairy permit applications.

CAFO Permits Findings

Arizona: ADEQ proposed a CAFO general permit on February 13, 2004 and, upon conclusion of the public participation process, issued a CAFO NPDES general permit (AZG2004-002) on April 16, 2004.

A review of the NPDES general permit AZG2004-002 found that it met all of the requirements of the regulations published in the *Federal Register* on February 12, 2003. In particular, with regard to the nutrient management plan (NMP) requirement, the permittee must implement an NMP which has been prepared and approved by a certified nutrient management planning specialist and meets the requirements delineated in that section of the general permit. That section includes the December 31, 2006, compliance date for the development and implementation of the NMP and what the minimum content of the plan should be: the nine minimum requirements found at 40 CFR 122.42(e)(1)(i-ix). The exception is mortality management which is found in a Part III.C.6.of the permit.

ADEQ estimates that 120 facilities will be covered under the new regulatory requirements. Fewer than 10% of these facilities presently have nutrient management plans in place.

California: Permit CA0050601 was reviewed, issued to the Gallo Cattle Company by the Central Coast RWQCB. The permit was found to meet all of the requirements of the regulations for CAFOs issued in the final rule published in the Federal Register on February 12, 2003, with the exception of the requirement found at 40 CFR 122.23(h)(2). This is the requirement to retain permit coverage until the operation is properly closed. The permit exceeds the requirements of the NPDES permit program in that it requires groundwater protection. The permit also requires monitoring programs that go beyond the requirements of the NPDES program: crop/irrigation land monitoring, groundwater monitoring, and receiving water monitoring.

Hawaii: The two individual NPDES CAFO permits were not made available for review.

Nevada: A review of NPDES draft permit NV0023027, to be issued to Rockview Farms' Ponderosa Dairies 1, 2, and 3, indicates that the permit meets or exceeds the requirements published in the Federal Register on February 12, 2003. The requirements are exceeded in that the permit requires groundwater monitoring. Furthermore, the permit includes two tables, Table I.3.d. and Table I.3.e., that outline the crop rotation for each field, and the nitrogen application rate for each field, respectively.

Despite the general findings discussed above, the following comments delineate some areas of concern:

- The permit authorizes the discharge to groundwaters of the State via irrigation and the Amargosa River via stormwater overflow. This condition gives the appearance that a discharge is applicable when the regulations clearly indicate that there shall be no discharge except under certain climatic conditions. (Page 1).
- Provisions addressing closure activities do not include the requirement to maintain permit coverage until the operation is properly closed and there is no remaining potential for a

discharge of manure, litter or associated process wastewater that was generated while the operation was a CAFO. (Page 10).

- The fact sheet indicates the phosphorus hazard class was analyzed using the Phosphorus Index (PI) for New Mexico. As a result of the site-specific nature of the PI and the fact sheet further reads the Nevada PI was to be completed in 2006, the draft permit should be revised to use the PI for the State of Nevada. (Page 2 of the fact sheet).
- In the fact sheet there are no calculations on how the nitrogen application rate was determined but just a reference that the nitrogen application rates are based on the agronomic rate using nutrient recommendations from NRCS Conservation Practice Standard code 590. A review of the Nevada 590 code found that it does not contain any nutrient recommendations. Either the permit or the fact sheet or both must contain the method used to determine the nutrient application rates. Otherwise, the public and EPA would not be able to check the validity of the calculated application rates. (Page 4 of the fact sheet).

3.2.11 Whole Effluent Toxicity

For this PQR, EPA reviewed the whole effluent toxicity (WET) provisions in nine NPDES permits issued by EPA Region 9 States: two Arizona permits, three California permits, two Nevada permits, and two Hawaii permits; and three permits issued by EPA Region 9: one California Tribal permit, one American Samoa permit, and one Guam permit.

The general findings for Region 9 States, Tribal and Territory permits are as follows:

<u>Permit Documentation</u>:
Arizona, Hawaii, Nevada, EPA Region 9 Territory, and some California fact sheets need to better document the basis for chronic and/or acute WET requirements in permits, including a summary of results for all WET tests conducted during the previous permit term, or an explanation of why no WET testing was conducted, and a clear explanation detailing:

- how EPA-approved water quality standards for chronic and acute toxicity are expressed by the permitting authority in order to evaluate reasonable potential for WET, in accordance with 40 CFR 122.44(d)(1)(i);
- how the level of chronic and/or acute toxicity in the discharge was characterized, in terms of effluent variability and species sensitivity, in order to evaluate the reasonable potential for the discharge to exceed water quality standards, in accordance with 40 CFR 122.44(d)(1)(ii) (e.g., reference State reasonable potential procedure, etc.);
- why specific chronic and/or acute toxicity test methods and species are being chosen for measuring WET in the discharge, or why no WET testing is being required (e.g., reference EPA's 40 CFR 136 methods, State implementation policy/guidance regarding WET monitoring, 3-species screening, etc.);
- how chronic and/or acute WQBELs were calculated in order to meet approved water quality standards for toxicity, in accordance with CWA section 301(b)(1)(C) and 40 CFR 122.44(d)(1)(iii)-(v);
- if there was no reasonable potential, what are the toxicity triggers for accelerated testing and/or Toxicity Reduction Evaluation (TRE).

Many NPDES permittees in Region 9 are discharging to receiving waters providing little or no dilution of the effluent. Following 40 CFR 122.44(d)(1) and the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991), EPA views reported WET values greater than 1.0 TUc or 0.3 TUa for a discharge without a dilution allowance/mixing zone as evidence of reasonable potential and therefore a WQBEL (either WET limit or a chemical limit when chemical causing toxicity is identified) are required.

Several permits for States and EPA Region 9 Territories contained documentation of high levels for toxics such as chlorine (e.g., 1 mg/L), ammonia (no nitrification), metals, etc., in the discharge. Elevated levels of toxic pollutants in a discharge can signal the need for additional monitoring and WQBELs for WET. The permitting authority needs to fully document the rational for reasonable potential decisions in the permit fact sheet and how these decisions are consistent with approved water quality standards and 40 CFR 122.44(d)(1).

<u>WET Methods and Monitoring:</u>
Generally, the California and Hawaii permits reviewed by EPA contained routine WET monitoring and accelerated monitoring requirements and proper numerical Toxicity Identification Evaluation (TIE) and/or TRE triggers adequate to monitor if the discharge is impacting water quality standards.

Arizona, Nevada, and EPA Region 9 Territory permits include less than an annual monitoring for WET, which might not be sufficient to determine if water quality standards for toxicity are being met by the discharge. Fact sheets need to better explain how reasonable potential for WET is evaluated at facilities with limited WET monitoring data, or facilities which discharge infrequently and for short durations. EPA recognizes that these discharge scenarios can sometimes result in WET permit conditions which are different from those facilities which discharge continuously. Also, logistics (e.g., shipping samples for WET testing from the South Pacific to a Hawaii or California contract laboratory) can pose obstacles to fully implementing EPA's WET program in some permits. As previously described, Arizona, Nevada, and EPA Region 9 Territory fact sheets need to better document the rational for WET requirements, or the lack of such requirements, in permits to ensure WQBELs meet water quality standards, in accordance with CWA 301(b)(1)(C).

Some permits (e.g. Arizona, California, and Nevada) allow effluent samples to be treated with zeolite, or chlorine to be removed, prior to WET testing, such that the monitored NPDES effluent is not representative of the effluent discharged to the receiving water. Generally, deviations from EPA's NPDES test methods must be approved by EPA (40 CFR 136).

EPA's current WET methods need to be referenced and used in reissued permits. Some EPA Region 9 States (e.g., some California policies and plans, Nevada) and Territories need to revise their water quality standards and associated implementation procedures for WET so these documents are consistent with EPA's current WET method at 40 CFR 136 and NPDES regulations authorizing use of chronic West Coast WET methods for discharges to the Pacific Ocean (e.g., CFR 122.41(j)(4), 40 CFR 122.44(d)(1), 40 CFR 122.21(j)(5)(viii)).

WET Limits and Accelerated Testing/TRE Triggers:
In general, California permits would greatly benefit from a Statewide policy on chronic and acute WET implementation in NPDES permits. Also, California's narrative chronic WET limit derived from the narrative water quality standard for chronic toxicity is difficult to interpret for compliance purposes.

Other:
Region 9 States and Territories would benefit from NPDES WET training.

In Hawaii, "Alternate Testing (Acute Toxicity Testing)" provisions including chronic limits "expressed" as acute limits should be deleted from permits/fact sheets (see Chevron, HI0021296), as EPA's chronic WET methods used in Hawaii are well established.

Nevada:
Numerical WQBELs for WET must meet water quality standards, in accordance with CWA section 301(b)(1)(C), and follow NPDES regulations governing WET at 40 CFR 122.44(d)(1). NAC 445A.121.4 states that waters must be free from substances toxic to aquatic life. To this end, NAC 445A.110 defines a "toxic" substance as any pollutant causing an organism or its offspring to die [an acute effect] or suffer physiological malfunction, including reproductive malfunction [chronic effects]. NAC 445.073 further identifies "acute toxicity" as the concentration lethal to 50% of the test organisms within 96 hours (i.e., LC50), in a toxicity test; generally, this level of acute toxicity is measured using a point estimate model in EPA's required test methods manuals at 40 CFR 136, in combination with EPA's recommended CMC for acute toxicity which is set as a 1-hour average of 0.3 TUa=100/LC50 to the most sensitive of at least three test species (see TSD, Sections 2.3.3 and 2.3.4).
Region 9 provided an explanation of the guidance they have been providing to the states for implementing WET testing, initiated by the Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs (Denton and Narvaez, May 31, 1996). Annex 1 provides more information about the guidance provided by Region 9 and 10.

4.0 SUMMARY OF FINDINGS AND RECOMMENDED ACTION ITEMS

The NPDES Regional Water Program and Permit Quality Review identified areas where the Region and its States, Tribes and Territories were doing well, and recommended areas where improvement is needed. This section provides a summary of the main findings of the review and provides proposed Action Items to improve Region 9 NPDES permit programs. This list of proposed Action Items will serve as the basis for discussions between Region 9 and their authorized States, Tribes and Territories, as well as between Region 9 and HQ. These discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion. After these discussions take place, a final recommended Action Items list will be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals and/or may serve as a roadmap for modifications to Region 9 program management.

It should be noted that the NPDES Program Review for Region 9 took place in June 2007 and significant steps for improvement in deficient areas may have already occurred.

4.1 NPDES REGIONAL PROGRAM REVIEW

4.1.1 Pretreatment and Biosolids

Region 9 places a high priority on its pretreatment and biosolids programs and provides technical support to Region 9 states that have elected to reduce staffing for pretreatment and biosolids. Arizona, California, and Hawaii have approved pretreatment programs. In 2007, Region 9 issued enforcement orders against several Nevada pretreatment facilities.
The following recommendations should be considered by Region 9:

- Region 9 should work with Nevada to develop, and implement a pretreatment program.

4.1.2 Nutrient Management Program (NMP)

California RWQCBs regulates CAFO facilities with a State general permit with general waste discharge requirements (WDR). When issuing the WDR, RWQCB 5, Central Valley Region, requires submittal of an NMP but not public review and comment. The following recommendations should be considered for CAFO permits issuance in RWQCB5:

- NMPs submitted as part of WDRs should be public noticed; comments should be addressed in the permit prior to reissuance.

4.1.3 Permit Issuance

The percentage of permits current at the time of review in Region 9 States was lowest in Nevada (77%) and highest in Hawaii (93%). The percentage of permits issued by Region 9 as the permitting authority that were current was 48%. The Region has worked with the Navajo EPA and Pacific Islands Offices in an effort to reduce their backlogged permits. A 5-year schedule for permit issuance has been developed as a result of this collaboration. The following

recommendations should be considered for permits issuance in the Region:

- Region 9 should continue to work with the Navajo EPA and the Pacific Islands Offices to ensure that the 5-year permit issuance schedule is maintained.
- Region 9 should continue to work with Nevada to reduce the number of state-issued backlogged permits.

In Region 9, there were four major facility permits and one minor facility permit that have been expired more than 10 years, as of March 2007.

- Region 9 should issue expired and environmentally significant permits, designating them as priority permits.
- Region 9 should work with its States, Tribes and Territories to identify and resolve barriers to permit issuance.

4.1.4 Withdrawal Petitions

There are two outstanding withdrawal petitions in Region 9. One was filed by the Natural Resources Defense Council in 2000 alleging inadequacies in the Los Angeles Regional Water Quality Control Board (RWQCB 4). The second was filed by the Western Mining Action Project in 2006, alleging that Nevada's Administrative Procedures Act limited public participation in the issuance of air and water permits. In May 2007 the governor signed a law that repealed the state's earlier law so the public participation issue has been addressed.

- Region 9 should respond to petitioners to resolve these withdrawal petitions.

4.1.5 Compliance Schedules

Compliance schedules were reviewed specifically for a settlement agreement with Baykeeper, Humboldt Baykeeper, Ecological Rights Foundation, and Communities for a Better Environment. Fact sheets contained little justification as to why compliance schedules were necessary and appropriate, and the justification provided did not indicate that the inclusion of compliance schedules was based on a regulatory threshold. More information regarding the settlement agreement is available in Appendix A. Proposed Action Items to improve quality of NPDES permits with respect to compliance schedules include the following:

- All Regional Boards reviewed by HQ need to develop more consistent, quantifiable rationale/assessment for when to include a compliance schedule and more clear criteria for determining the length of the schedule and milestones.
- Rationale/assessment needs to be clearly documented in the fact sheets; justification for the compliance schedule should be provided before permit issuance.

4.2 PERMIT QUALITY REVIEW

4.2.1 Core Permit Quality Review

Permits in two Region 9 States (California and Nevada) were reviewed for the core Permit Quality Review (PQR). In general, the core PQR showed that both California and Nevada would benefit from better documentation of rationales supporting permit conditions to develop strong,

effective permits. Both States should work toward clearly documenting all reasonable potential, antibacksliding/antidegradation, and water quality impairment analyses, as well as the basis for all permit limitations and monitoring requirements in fact sheets. Such documentation can include standard language on how the various NPDES requirements are fulfilled in each respective State; as well some discussion of how each requirement was addressed for each permit.

Nevada:
In general, the core review showed that NPDES permits issued by the Nevada Division of Environmental Protection would benefit from establishment of standard permitting procedures and more complete documentation of NDEP's rationale for establishing permit limits and conditions. Proposed Action Items to improve quality of NPDES permits in Nevada include the following:

- Consistently implement standard procedures for conducting reasonable potential analyses (RPA). Fact sheets should describe how the recently developed RPA procedures have been applied to give the discharger and the public a complete understanding of how the RPA procedure was applied for the specific permit. The fact sheet should include a description of the pollutants that were evaluated for reasonable potential, how each trigger was evaluated, and the receiving water and effluent characterization data that was considered.
    - Region 9 has indicated that Region and State initially identified development of RPA procedures as an action item. Originally, it was scheduled to be completed by September 2006, and then it was re-scheduled for 2007. Nevada DEP has now developed a RPA procedure. The proposed action item is now to demonstrate the adequacy of the RPA procedure through consistent application in actual permits.
- Discontinue the use of temporary permits and/or such permitting processes that do not fully comply with requirements of the NPDES program.
- Establish fixed numeric effluent limitations, instead of "moving" limits derived from equations, for the hardness dependent metals to provide permittees specific targets for wastewater treatment design and operation and to enable more efficient compliance determinations.
- Address antibacksliding for all reissued permits.
- Include maximum daily, average weekly, and/or average monthly limitations for all pollutants as required by NPDES regulations and the approach described in the Technical Support Document.
- If mass-based effluent limitations are used, these limits should be calculated based on the treatment system's design flow for POTWs and a reasonable measure of actual production for non-POTWs.
- Permit fact sheets should describe the handling/regulation of stormwater that originates on industrial sites (i.e, whether it is covered under the individual permit or under a separate general permit).
    - MS4 permits should more completely address the program areas covered in the Municipal Stormwater Program Evaluation Guidance. Such permits should also include more specific and measurable performance targets.

California:
In general, the core review showed that NPDES permits issued by the California Regional Water Quality Control Boards (RWQCBs) would benefit from the establishment of standard permitting procedures for specific program areas including establishment of compliance schedules and implementation of State antibacksliding regulations and antidegradation policy. The following recommendations should be considered for permits issued by California RWQCBs:

Regional Board 2 (San Francisco)

- Follow the established SIP procedures for the development of interim permit limits.
- Clarify the evaluation and implementation procedures with respect to the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets.

Regional Board 4 (Los Angeles)

- Except where "impracticable" express all permits limits for continuous discharges as average weekly and average monthly discharge limitations for POTWs and maximum daily and average monthly limitations for non-POTWs. Where Basin Plans establish only average requirements, both weekly average (for municipals) or daily maximum (for industrials) limits should be established based on statistical calculations.
- Develop a more consistent, quantifiable rationale/assessment for when to include a compliance schedule and establish specific criteria for determining the length of the schedule and milestones. This rationale/assessment should be clearly documented in the fact sheets.
- Clarify the evaluation and implementation procedures with respect to the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets.

Regional Board 5 (Central Valley)

- Continue to implement "new" permit template to ensure all required permit "fact sheet" elements are documented in the administrative record.
- Except where "impracticable" express all permits limits for continuous discharges as average weekly and average monthly discharge limitations for POTWs and maximum daily and average monthly limitations for non-POTWs. Where Basin Plans establish only average requirements, both weekly average (for municipals) or daily maximum (for industrials) limits should be established based on statistical calculations.
- Continue practice of developing calculated "fixed" limits for hardness-dependent metals and ammonia instead of past practice of expressing limits as formulas.
- Develop a more consistent, quantifiable rationale/assessment for when to include a compliance schedule and establish specific criteria for determining the length of the schedule and milestones. This rationale/assessment should be clearly documented in the fact sheets.
- Clarify the evaluation and implementation procedures with respect to the antibacksliding and antidegradation reviews to ensure permit writers understand the requirements and document their findings in permit fact sheets.

4.2.2 Antidegradation

The following are general findings and proposed action items with respect to antidegradation implementation in Nevada and California.

Nevada:
Nevada's policy does not track EPA antidegradation requirements as expressed in 40 CFR 131.12, which require states to adopt antidegradation policies and identify implementation methods to provide three levels of water quality protection. Nevada's antidegradation policy addresses only high quality waters; EPA antidegradation policies are meant to provide protection for all waters, including a baseline level of protection in addition to protection for high quality and exceptional resource waters.

- Nevada should revise its antidegradation policy to include protection for all waters with regard to antidegradation, as specified in 40 CFR 131.12.

California:
The Fact Sheets and Permits contained only a statement that the permitted discharges were consistent with the State's antidegradation policy, but did not include any analysis to support this assertion.

- Antidegradation implementation procedures (including procedures for determining waterbody tiers) for California need to be developed to ensure that antidegradation is properly and consistently addressed by the permit writers, and the antidegradation reviews need to be clearly documented in the fact sheets.

4.2.3 Mercury Methods in Permits

Permits with mercury limitations reviewed in Region 9 did not specify detection limits nor did they specify appropriate testing methods corresponding to the detection limits. In addition, the justification for certain detection limits were not clear in the fact sheet. Region 9 should work with States, Tribes and Territories to ensure they are requiring appropriate methods for monitoring requirements.

- States, Tribes and Territories in Region 9 should implement policies and procedures to evaluate which methods are appropriate for application data and for monitoring during the permit term. Fact sheets should better document decisions and rationales behind limits used in the permit.
- Region 9 should work with NDEP permitting staff to see if laboratories in Nevada had been certified for either of the low detection limit mercury methods 245.7 or 1631.

4.2.4 Impaired Waters & TMDLs in Permits

Permits reviewed for impaired waters and TMDLs did not consistently contain documentation or rationale for limits for impairing pollutants. Proposed Action Items to improve implementation of impaired waters include the following:

- Permit documentation should describe the 303(d) status of receiving waters, even if receiving waters are not 303(d) impaired.

- Until TMDLs are completed for 303(d) listed waters, permits should include limitations and/or conditions to prevent further deterioration of receiving waters, and if necessary, require monitoring to characterize discharges for the impairing pollutants.
- Mixing zones should not be approved for impairing pollutants in 303(d) listed waters.

Proposed Action Items to improve implementation of TMDLs include the following:
- When TMDLs have been completed for a water body, if waste load allocations have not been established for a discharger, permit documentation should, at the least, explain that the TMDL did not establish a waste load allocation for the point source.
- When trading is allowed among dischargers to implement waste load allocations, permits should include receiving water monitoring requirements to identify and prevent "hotspots" within receiving waters. For example, NV0020133 (City of Las Vegas) and NV0021261 (Clark County Wastewater Reclamation District) include trading provisions, which will assure attainment of the TMDL but may result a permittee discharging more than its individual WLA.

4.2.5 Use of *E.coli* and Enterococcus Pathogen Standards

States in Region 9 are beginning to implement *E.coli* limits in permits. Proposed Action Items to improve implementation of *E.coli* limits in permits include the following:
- Nevada should continue and complete its update of waterbody-specific water quality standards for pathogens.

4.2.6 Mixing Zones

EPA recommends that states have a definitive statement in their water quality standards on whether or not mixing zones are allowed; and where mixing zone provisions are not part of State standards, states should describe procedures for defining mixing zones. EPA's guidance to the states includes recommendations regarding mixing zone location, size, and shape; outfall design; in-zone quality; prevention of lethality to passing organisms; human health protection; and where mixing zones are not appropriate. Proposed Action Items to resolve mixing zone issues include the following:

In Nevada, three large dischargers to Las Vegas Wash have indicated that mixing zones will be requested, along with new outfall locations, at the expiration of their current permit terms, with new outfall locations will be in Lower Las Vegas Wash and/or in Lake Mead.
- NDEP should prepare to implement a mixing zone policy that will be protective of aquatic life in low flow settings (e.g., Lake Mead).

No potential action items were identified for mixing zones in California.

4.2.7 316 (a) & (b)

Decisions regarding thermal discharge variances authorized under CWA section 316(a) were not well documented in Region 9 State NPDES permits. Region 9 should implement the following Action Items to improve implementation of section 316(a) and (b) requirements in permits:

- Region 9 State permits and fact sheets should more explicitly address and document the basis for any Section 316(a) thermal variances.
- Region 9 States should reevaluate any 316(a) variances and 316(b) requirements at each permit renewal (including the use of mixing zones) and document the basis in the permit fact sheet. Prior determinations should also be documented in the fact sheet and reflected in the current permit, as appropriate.
- Region 9 State permits should develop section 316(b) cooling water intake structure requirements for existing facilities on a BPJ basis, and the basis should be documented in the permit fact sheet.

4.2.8 Combined Sewer Overflows (CSOs)

There are two communities in Region 9, San Francisco and Sacramento, with CSOs. San Francisco has two CSO permits with a total of 36 outfalls; Sacramento has one permit with six outfalls. As a result of early planning for CSO control, San Francisco was not required to develop a new LTCP. Sacramento was required to develop a LTCP, which was approved in 1996 and is being implemented. The following recommendations should be considered:

- Region 9 should continue to require implementation of post construction compliance monitoring of the CSO controls.
- California should work towards reissuing its expired CSO permits.

4.2.9 Sanitary Sewer Overflows (SSOs)

Region 9 has not yet had comprehensive discussions with all of its States about how to ensure that SSOs are being reported and how drinking water facilities should be notified of impacts on source water from SSOs or unanticipated bypasses or upsets.

Proposed Action Items to improve SSO implementation in Region 9 include the following:

- Permits should continue to require reporting of SSO events, including date, time, duration, volume, receiving water, and mitigation steps taken.
- Drinking water facilities should be notified of overflow events.
- During permit reissuance for facilities with wet weather peak flows, systems should be reviewed for consistency with the December 2005 draft policy.

4.2.10 Stormwater

Some of the California MS4 permits are not being reissued on time, because the state is working with its dischargers to include provisions to improve water quality. One MS4 permit was reviewed in Nevada. The Arizona program was not evaluated; however, Arizona is working on renewing the 8 expired MS4 permits and addressing the concerns of the permittees. Proposed Action Items for improving permits are as follows:

- Nevada MS4 permits should more completely address the program areas covered in the Municipal Stormwater Program Evaluation Guidance and should include more specific permit language including measurable performance targets. Common program areas that include measurable performance targets are public education (how much/how often), construction (what size sites are inspected/how often), municipal maintenance (frequency of

street sweeping and catch basin cleaning), and illicit discharges (how often are field screening activities conducted).

- Individual NPDES permits, or accompanying permit documentation, for industrial facilities should describe stormwater originating on the site of the facility and whether it is addressed by the individual permit or whether the discharger is required to seek coverage under and adhere to the requirements of a general stormwater permit.
- California should work towards issuing its construction general permit; a draft reissued permit was public noticed in March 2007.
- California should work towards issuing its industrial general permit; a draft reissued permit was public noticed in February 2005.
- Only 53% of California's Phase I MS4 permits are current. In Arizona, MS4 permits have not been issued. The Region should work towards improving its States' MS4 programs and issuance rates.

4.2.11 Concentrated Animal Feeding Operations

The following are general findings and proposed action items with respect to implementation of CAFO permits in Region 9:

Arizona
ADEQ issued a CAFO NPDES general permit (AZG2004-002) on April 16, 2004, requiring that permittees implement a nutrient management plan by December 31, 2006. ADEQ estimates that 120 facilities will be covered under the new regulatory requirements.

- The ADEQ should begin to focus on those remaining facilities (90%) covered under their new requirements that need to get Nutrient Management Plans in place.

California
The SWRCB and nine RWQCBs regulate the discharge of animal wastes into state waters, California uses three approaches to regulate dairies, the first one is voluntary compliance with state and federal regulations, the second is a waiver of WDRs that outlines conditions the facility must meet, and the third requires the issuance of WDRs or NPDES permits (either as a general permit or as individual permit). The permit reviewed meets or exceeds the federal regulations with one exception, it doesn't include requirements to retain permit coverage until the operation is properly closed.

- All NPDES permits must include the provision that the permit will remain effective until the operation is properly closed and there is no remaining potential for a discharge of manure, litter or associated process wastewater that was generated while the operation was a CAFO.

Nevada
NPDES permits in Nevada are required for CAFOs that exceed a 1,000 animal unit capacity during the previous 12 months for a total of 30 days or more.

- Nevada has 12 CAFOs. Three are currently covered by an NPDES permit. The nine additional CAFOs will need NPDES permits to ensure full CAFO coverage in Nevada.

The permit reviewed for the PQR meets or exceeds the CAFO requirements; however, there are

some areas of concern with the permit:

- All NPDES permits must require no discharge from large 5CAFOs except under certain conditions. The state needs to determine if the discharges describe in the permits for the area of the Amargosa River, in particular and, any other area in general, are in compliance with the no discharge regulation.
- The fact sheet indicates the phosphorus hazard class was analyzed using the Phosphorus Index (PI) for New Mexico. As a result of the site-specific nature of the PI and the fact sheet further reads the Nevada PI was to be completed in 2006, the draft permit should be revised to use the PI for the state of Nevada.
- In the fact sheet there are no calculations on how the nitrogen application rate was determined but just a reference that the nitrogen application rates are based on the agronomic rate using nutrient recommendations from NRCS Conservation Practice Standard code 590. A review of the Nevada 590 found that it does not contain any nutrient recommendations. Either the permit or the fact sheet or both must contain the method used to determine the nutrient application rates. Otherwise, the public and EPA would not be able to check the validity of the calculated application rates.

4.2.12 Whole Effluent Toxicity

In general, the rational for WET permit provisions needs to be better documented in fact sheets. Absent this documentation, the structure of WET monitoring requirements and WQBELs in some of the reviewed permits do not appear to ensure that limits comply with approved water quality standards. Many of the WET implementation issues described above could be addressed through additional permit review and oversight by EPA Region 9, WET training, and the development of detailed WET implementation policies by some Region 9 States (e.g., California, Nevada).

Proposed Action Items for Region 9 as they work with the States, Tribes and Territories for improving WET implementation in NPDES permits, include the following:

- **Permit Documentation:** Fact sheets need to better document the basis for WET requirements in permits. A key component of this documentation should be a summary of results for all WET tests conducted during the previous permit term, or an explanation of why no WET testing was conducted. In addition, the fact sheet should include a clear explanation detailing for permit issuance:

  (1) how EPA-approved water quality standards for chronic and acute toxicity are expressed in order to evaluate reasonable potential for WET, in accordance with 40 CFR 122.44(d)(1)(i);

  (2) how the level of chronic and/or acute toxicity in the discharge was characterized, in terms of effluent variability and species sensitivity, in order to evaluate the reasonable potential for the discharge to exceed water quality standards, in accordance with 40 CFR 122.44(d)(1)(ii) (e.g., reference State reasonable potential procedure, etc.);

  (3) why specific chronic and/or acute toxicity test methods and species are being chosen for measuring WET in the discharge, or why no WET testing is being required (e.g., reference EPA's 40 CFR 136 methods, State implementation policy/guidance regarding WET monitoring, 3-species screening, etc.);

(4) how chronic and/or acute WQBELs were calculated in order to meet approved water quality standards for toxicity, in accordance with CWA section 301(b)(1)(C) and 40 CFR 122.44(d)(1)(iii)-(v);
(5) if there was no reasonable potential, toxicity triggers for accelerated testing and/or TRE.

- **WET Methods and Monitoring:** State requirements for WET conditions in permits must be consistent with EPA's current WET methods at 40 CFR 136 and NPDES regulations authorizing the use of chronic West Coast WET methods for discharges to the Pacific Ocean (e.g., CFR 122.41(j)(4), 40 CFR 122.44(d)(1), 40 CFR 122.21(j)(5)(viii)). Deviations from promulgated WET test methods must be approved by EPA before such modifications are incorporated into NPDES permits. Some EPA Region 9 States and EPA Region 9 need to increase the frequency of WET monitoring requirements in permits to ensure that the type and amount of WET data are adequate to assess effluent variability and species sensitivity in WET reasonable potential evaluations, following 40 CFR 122.44(d)(1)(ii).
- **WET Limits:** State permits should use numeric, rather than narrative, WQBELs for chronic WET. State approaches for developing chronic and acute WET limits need to achieve water quality standards, in accordance with CWA section 301(b)(1)(C) and NPDES regulations governing reasonable potential determinations for toxicity at 40 CFR 122.44(d)(1).
- California should establish numeric chronic WET limits in permits. In this context, we find it important to note that the numeric WET values for triggering accelerated testing/TREs in LA City, CA0056227 (see "Chronic Toxicity Limitation and Requirements" on page 38 of the waste discharge requirements) are of an appropriate magnitude and duration for establishing numeric WQBELs for chronic toxicity in a discharge. A California Statewide policy on chronic and acute WET implementation should specify the following elements critical to successful implementation of WET in NPDES permits:

  (1) numerical effluent limits, if reasonable potential for WET is demonstrated;
  (2) protective numerical benchmarks for triggering immediate accelerated monitoring when elevated levels of toxicity are reported; and
  (3) toxicity reduction evaluation/toxicity identification conditions which direct permittees to identify and correct the cause of toxicity when elevated levels of toxicity are repeatedly reported.

  This approach is consistent with regulations governing reasonable potential for toxicity objectives for WET at 40 CFR 122.44(d)(1); Section 4 of California's State Implementation Policy (SWRCB, 2005); EPA's national guidance for water quality-based permitting in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991); and regional EPA guidance for implementing WET in *Regions 9 and 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs* (Denton and Narvaez, 1996) and *EPA Region 9 and 10 Toxicity Training Tool* (September 2007).

Annex 1: Whole Effluent Toxicity Guidance Provided by Region 9 and 10

This section includes a detailed description of Region 9's guidance provided to their States and Regions in the implementation of WET limits and monitoring.

As described in Section 2.6.1 of EPA Region 9 and 10's 2007 toxicity training tool (Denton, Miller and Stuber, 2007), when the critical IWC for acute toxicity is set at a percent effluent value greater than 100% effluent, calculated WQBELs for acute WET based on 0.3 TUa = 100/LC50 can range from 0.999 TUa down to 0.3 TUa (TSD Section 5.4.1). For these discharge situations, EPA Regions 9 and 10 continue to recommend hypothesis testing (Denton and Narvaez 1996). This is because the point estimate techniques used to evaluate compliance with EPA's recommended acute toxicity criterion of 0.3 TUa, i.e., "no acute toxicity", cannot be used until the discharge-specific critical percent effluent concentration (LC50) is able to be set at or below 100% effluent. Rather, for these discharge situations, the acute WET permit limit should be "Pass" for any one test result. The determination of Pass or Fail from a single-effluent-concentration (paired) acute toxicity test is determined using a one-tailed hypothesis test called a t-test. The objective of a Pass or Fail test is to determine if survival in the single treatment (100% effluent) is significantly different from survival in the control (0% effluent). Following Section 11.3 in the current acute test method manuals, the t statistic for the single-effluent-concentration acute toxicity test is calculated and compared with the critical t set at the 5% level of significance. If the calculated t does not exceed the critical t, then the mean responses for the single treatment and control are declared "not statistically different" and the permittee reports "Pass" on the DMR form. If the calculated t does exceed the critical t, then the mean responses for the single treatment and control are declared "statistically different" and the permittee reports "Fail" on the DMR form. The permit should require additional toxicity testing and, ultimately, a TRE, when acute WET permit limits or triggers are reported as "Fail"

In one Nevada permit, the WQBELs for acute toxicity were: The effluent shall be deemed acutely toxic when there is a statistically significant difference at the 95% confidence interval between the survival of test organisms in the control (0% effluent) and the survival of test organisms in 100% effluent, at the following limits: (1) the survival of test organisms in 100% effluent is less than 90% in 6 of 11 consecutive samples; or (2) the survival of test organisms in 100% effluent is less than 70% in any 2 of 11 consecutive samples.

This permit limit cannot be fully implemented in a manner which meets NAC water quality standards requirements for acute toxicity. Consistent with NAC 445A.073, the first portion of this limit specifies hypothesis testing for determining a statistically significant difference between means, at the 5% level, for each individual acute toxicity test. Using hypothesis testing, a result will either be statistically significant (i.e., the effluent is toxic=fail), or not statistically significant (i.e., the effluent is not toxic=pass). On its own, this portion of the limit achieves the requirement for acute toxicity established in the NAC. However, additional permit language modifies this outcome such that even when a test result is found toxic using the specified hypothesis test, it will be deemed "not toxic" unless <90% survival in the 100% effluent treatment is directly observed (i.e., counted) in at least 6 of 11 consecutive samples, or <70% survival in the 100% effluent treatment is directly observed (i.e., counted) in at least 2 of 11 consecutive samples.

EPA finds that these percent survival limits to not meet NAC water quality standards requirements for acute toxicity, and do not achieve EPA's recommended approach for setting WQBELs for acute toxicity described in the Technical Support Document for Water Quality-based Toxics Control (USEPA, 1991), the final Regions 9 and 10 Guidance for Implementing WET Testing Programs (Denton and Narvaez, 1996), and EPA Region 9 and 10 Toxicity Training Tool (Denton, Miller and Stuber, 2007). This is because these limits: (1) authorize multiple acutely toxic events in violation of the NAC which requires waters to be free from substances acutely toxic to aquatic life, and (2) do not achieve the outcome of EPA's recommended CMC for acute toxicity which is set as a 1-hour average of 0.3 TUa to the most sensitive of at least three test species (see TSD, Sections 2.3.3 and 2.3.4)

Consequently, Nevada must pursue acute and chronic WET implementation procedures for expressing permit limits which are consistent with and will ensure compliance with NAC requirements, in accordance with CWA 301(b)(1)(C) and 40 CFR 122.44(d)(1), and achieve the outcome of EPA's national guidance which recommends that permitting authorities establish toxicity effluent limits using: the acute toxicity CMC of 0.3 TUa, the chronic toxicity CCC of 1.0 TUc, and the statistical procedures for calculating WQBELs described in Box 5-2 and Tables 5-1 and 5-2 of the TSD. Additional information for implementing these requirements end-of-pipe, as occurs in low flow situations, are found in EPA Region 9 and 10's 1996 and 2007 regional guidance and training documents.

LIST OF ATTACHED APPENDICES:

APPENDIX A: CALIFORNIA COMPLIANCE SCHEDULE SUMMARY

APPENDIX B: CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

APPENDIX C: CORE REVIEW CHECKLISTS

APPENDIX A – CALIFORNIA COMPLIANCE SCHEDULE SUMMARY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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Ms. Tracy Egoscue, Executive Officer
Regional Water Quality Control Board
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Los Angeles, CA 90013

Ms. Pamela C. Creedon, Executive Officer
Regional Water Quality Control Board
Central Valley Region, Sacramento Office
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

Dear Ms. Rice, Egoscue, Creedon, and Mr. Wolfe:

To satisfy a commitment we made in a settlement agreement with Baykeeper, Humboldt Baykeeper, Ecological Rights Foundation, and Communities for a Better Environment, the Environmental Protection Agency reviewed twelve randomly chosen National Pollutant Discharge Elimination System (NPDES) permits issued by Regional Boards 2, 4 and 5, focusing solely on provisions in those permits regarding schedules of compliance to achieve water quality-based effluent limitations.

In the settlement agreement, EPA agreed to provide a written report setting forth the results of its review, and to make that report available to the plaintiffs, State Board, all Regional Boards, and any other interested persons upon request. A copy of that report is attached to this letter.

We recommend changes to strengthen compliance schedules included in California NPDES permits issued by the Regional Boards. Specifically, permits, and/or the

administrative records for the permits, need to include explanations why compliance schedules are "appropriate" and how they provide for achieving compliance with the permits' final effluent limitations "as soon as possible," as required by EPA regulations at 40 CFR § 122.47. We are encouraged that the State Board has made significant progress in standardizing the State's approach to issuing compliance schedules in NDPES permits in drafting a Statewide compliance schedule-authorizing policy that may be released for public comment in the near future. Additionally, we appreciate the State Board's oversight efforts in this area and look forward to the benefits such oversight is likely to bring. Through these and similar efforts by the State and Regional Boards, which EPA will make every effort to support, we are confident that the use of compliance schedules and the inclusion of appropriate supporting material in future California NPDES permits and fact sheets can be fully consistent with the requirements of the Clean Water Act and EPA's regulations.

We look forward to working with you on these matters. If you have any questions regarding this report, please call me at (415) 972-3572 or Doug Eberhardt at (415) 972-3420, or refer legal staff to Suzette Leith at (415) 972-3884.

Sincerely yours,

Alexis Strauss 31 Oct. 2007
Director, Water Division

cc:
M. Lauffer, SWRCB
Executive Officers, RWQCB 1, 3, 6-9
Christopher Sproul, Environmental Advocates

Enclosure: California Permit Quality Review for Compliance Schedules

California Permit Quality Review Report on Compliance Schedules

October 31, 2007

U.S. Environmental Protection Agency
Region IX

in cooperation with Office of Water

CALIFORNIA PERMIT QUALITY REVIEW REPORT ON COMPLIANCE SCHEDULES

October 31, 2007

I. Introduction

Pursuant to the terms of a settlement agreement, dated June 7, 2007, between EPA and Baykeeper, Humboldt Baykeeper, Ecological Rights Foundation, and Communities for a Better Environment (collectively referred to as "Plaintiffs"), EPA reviewed a random selection of twelve (12) permits issued by Regional Board 2, Regional Board 4 and Regional Board 5 in the State of California. These permits were all issued between 2004 and February 28, 2007, and each included at least one compliance schedule. The random selection of these permits occurred on July 16, 2007, before interested parties (including a representative of the Plaintiffs). EPA reviewed each of these permits and addressed in writing the five issues specified in the settlement agreement. The results of this review are set forth below.

A. Settlement Agreement

According to the terms of the settlement agreement, EPA agreed to "address in writing the following issues as to each compliance schedule in each permit" as part of a permit review:

(a) whether the permit and/or administrative record justifies the compliance schedule "as appropriate" as required by 40 C.F.R. §122.47(a);

(b) whether the permit and/or administrative record justifies whether the compliance schedule requires compliance with the final water quality-based effluent limitation as soon as possible, as required by 40 C.F.R. § 122.47(a)(1);

(c) whether, as part of the compliance schedule, the permit contains enforceable interim requirements and dates for their achievement as required by 40 C.F.R. § 122.47(a)(3) and section 502(17) of the CWA, 33 U.S.C. § 1362(17);

(d) whether the permit contains an appropriate final effluent limitation as required by section 301(b)(1)(C) of the CWA, 33 U.S.C. § 1311(b)(1)(C), and 40 C.F.R. §§ 122.2 (definition of "schedule of compliance"), 122.44(d)(1)(vii); and

(e) whether the compliance schedule inappropriately includes time solely to develop a Total Maximum Daily Load, site specific objective/criterion, and/or a Use Attainability Analysis and therefore is not consistent with sections 301(b)(1)(C) and 502(17) of the CWA, 33 U.S.C. §§ 1311(b)(1)(C) and 1362(17) and 40 C.F.R. §§ 122.2 (definition of "schedule of compliance") and 122.47.

Additionally, EPA agreed to prepare a written report setting forth the results of the permit review and to make such report available by September 30, 2007 to the Plaintiffs, the State Board, all Regional Boards and any other interested persons upon request. Plaintiffs subsequently agreed to an extension of this deadline until October 31, 2007.

B. Permits Reviewed

- **EPA reviewed 6 permits and each of their compliance schedules in Regional Board 2** (San Francisco Bay Region): City of Petaluma; City of American Canyon; Rodeo Sanitary District; US Navy Naval Support Activity Treasure Island; Rhodia-Martinez Plant; Tesoro Refining & Marketing Company, Golden Eagle Refinery.
- **EPA reviewed 3 permits and each of their compliance schedules in Regional Board 4** (Los Angeles Region): Los Angeles County Sanitation Districts, Pomona WWWRP; Los Angeles County Sanitation Districts, San Jose Creek WWRP; Metropolitan Water District of Southern California, Rio Hondo Power Plant.
- **EPA reviewed 3 permits and each of their compliance schedules in Regional Board 5** (Central Valley Region): City of Live Oak; Olivehurst PUD; Placer County Facility Services, Placer County SMD No 1.

II. Results of the California Permit Review

Pursuant to the settlement agreement, EPA reviewed each of the compliance schedules in each of the twelve randomly selected permits and addressed the five issues identified in subsections (a) to (e) below. The twelve permits contained a total of 59 individual parameter-specific compliance schedules, covering 23 different pollutants.[1] EPA's permit review was further informed by the relevant provisions of the Clean Water Act, EPA regulations, and the Memorandum from the Director of the Office of Wastewater Management (OWM) to the Director of EPA Region 9's Water Division, dated May 10, 2007, attached to this document.

(a) Permit and/or administrative record justifies the compliance schedule "as appropriate" as required by 40 C.F.R. § 122.47(a).

None of the twelve permits reviewed, or their supporting administrative records, adequately explained why any of the compliance schedules in those permits was "appropriate." Absent an adequate discussion of the "appropriateness" of the compliance

[1] Some of the permits issued by Regional Board 2 included in the permit findings a determination that there was reasonable potential for the discharge of dioxin TEQ to cause or contribute to an excursion above the water quality standard, but did not include either a final or interim effluent limit for this parameter. Accordingly, it appears that the discharger in each of these cases was given a de facto compliance schedule without an applicable interim or final water quality-based effluent limit. These de facto compliance schedules are reflected in the total number of parameter specific compliance schedules identified in this paragraph.

schedules in light of the factors identified in Paragraphs 6, 7 and 8 of the May 10, 2007 memorandum, or any other potentially relevant factors, EPA is unable to conclude that any of the reviewed compliance schedules was "appropriate" at the time of issuance.

As best as EPA could determine, many of the compliance schedules were granted based solely on an analysis of effluent data showing past performance above the limits calculated for the new permit. While EPA agrees that past performance can be a relevant factor in determining whether a compliance schedule is "appropriate," it is not necessarily the only relevant factor. Without an analysis of other relevant factors, e.g., whether there is a need for modifications to treatment facilities, operations, or other measures to meet the new WQBEL, EPA does not have an adequate basis in these permit records to conclude that such compliance schedules are "appropriate."

For some of the permits, EPA's analysis of the administrative records indicated that a compliance schedule was not "appropriate," even though there may have been some past exceedences of the WQBELs calculated for the new permit. In those permits, the record contained information indicating that the facility had already implemented controls sufficient to achieve the new or revised WQBEL, as well as effluent data indicating that, at the time of permit issuance, the permittee was able to discharge at or below the final limits calculated for the new permit. Compliance schedules are intended to provide a discharger the time it needs to take the necessary steps to construct additional treatment systems or implement other changes so that it can meet a new or more stringent WQBEL. When such steps have already occurred such that the discharger at the time of permit issuance is able to meet the new or revised WQBEL, a compliance schedule is not appropriate.

(b) Permit and/or administrative record justifies whether the compliance schedule requires compliance with the final water quality-based effluent limitation "as soon as possible," as required by 40 CFR § 122.47(a)(1).

None of the twelve permits and/or administrative records reviewed contained a specific finding that their compliance schedules required compliance with the final WQBEL "as soon as possible." Nor did any of them contain an adequate justification for the specific length of the compliance schedule. As best as EPA could determine, in all but one of the twelve permits, the compliance schedules were set at the maximum length permitted under the applicable compliance schedule authorizing provision, without documentation in the permit and/or administrative record demonstrating that this length of time was "as soon as possible." Without such documentation, EPA was unable to determine for these permits whether the schedules chosen were "as soon as possible," or whether the maximum length available under the State's authorizing provision was simply applied as a default. Although one permit included a compliance schedule of two years duration that was shorter than the maximum allowed by the authorizing provision, EPA was unable to determine whether this was "as soon as possible" given the absence of a supporting justification in the permit and/or administrative record.

Additionally, as discussed above, some of the permit records contained effluent data indicating that, at the time of permit issuance, the permittee was able to discharge at or below the final limits calculated for the new permit. In each of those cases, a compliance schedule was neither "appropriate" (as discussed above) nor established to provide for compliance with the final effluent limitation "as soon as possible."

(c) As part of the compliance schedule, the permit contains enforceable interim requirements and dates for their achievement as required by 40 CFR 122.47(a)(3) and section 502(17) of the CWA, 33 USC § 1362(17).

The CWA and its implementing regulations define a compliance schedule as an "enforceable sequence of actions or operations leading to compliance with an effluent limitation…." EPA regulations at 40 CFR § 122.47(b)(3) require any compliance schedule longer than a year to "set forth interim requirements and the dates for their achievement." The regulation includes a note giving examples of interim requirements such as (a) submit a construction grant application, (b) let a construction contract, (c) commence construction, or (d) complete construction of required facilities.

Most of the compliance schedules reviewed included interim steps of some type. For example, nearly all of the compliance schedules included requirements for annual or semi-annual reports, and most of the permits included other tasks such as the performance of studies and/or the development and implementation of Pollution Minimization Plans (PMPs). In addition, most of the permits contained enforceable interim numeric effluent limitations effective during the compliance schedule's term. Interim numeric limits, while highly desirable, were often established in these permits at a level currently being achieved by the discharger at time of permit issuance. EPA was unable to conclude that the mere inclusion of such interim limits in these permits, without more explanation in the record than provided here, would lead to compliance with the final WQBEL. Similarly, while the inclusion of PMPs in a compliance schedule is appropriate and desirable, the inclusion of PMPs by itself does not necessarily lead to the achievement of final limits. For example, the PMPs in some of the permits reviewed appeared to contemplate simply the continued implementation of generic pollutant minimization or pretreatment measures that had been specified in prior permits, without any accompanying demonstration that there was a sequence of actions intended to achieve compliance with the WQBEL in the new permit. Moreover, the stated goal of the Pollutant Minimization Plans in certain permits was merely to "reduce" loadings of pollutants; it was unclear whether such plans, when implemented, would likely attain the WQBEL.

Among the permits reviewed, a frequent practice was to require the permittee to conduct studies designed to evaluate the sources of the pollutants, develop a source control plan or treatment measures necessary to achieve the WQBELs, and (in some permits) implement the measures developed in the plan. At one end of the spectrum, some compliance schedules reviewed by EPA had a clear sequence of steps with the final step being compliance with a final WQBEL, had specific enforceable dates for each step, and included implementation of the measures identified in the studies as one or more of the interim steps. At the other end of the spectrum, some of the permits appeared to

contain only the continued implementation of generic pollutant minimization measures carried over from the prior permit, in addition to numeric interim limits, with no explanation of how these measures would lead to compliance with the final WQBEL. Some permits included a clear sequence of steps, but did not include dates for the steps. Others required development of a plan to achieve the WQBELs, but did not include a step requiring implementation of the plan. Whether the interim requirements include construction, treatment process, operating process, or pollution prevention milestones, or simply relate to the development and implementation of a plan, the permit findings or fact sheet should demonstrate that such steps constitute an enforceable "sequence" of actions "leading to compliance" with the final WQBEL. The permits and administrative records reviewed generally did not contain such a demonstration; hence, EPA was unable to determine whether the interim steps would lead to compliance with the final WQBEL, as required by EPA's regulations and section 501(17) of the CWA.

(d) Permit contains an appropriate final effluent limitation as required by section 301(b)(1)(C) of the CWA.

EPA reviewed all twelve permits to determine whether the compliance schedule contained final water quality based effluent limits for the parameters covered in the compliance schedule. [2]

Of the 59 compliance schedules reviewed, 40 included numeric final water quality based effluent limitations in the enforceable permit provisions and thus satisfied this element. One compliance schedule included a non-numeric final effluent limitation in the enforceable permit provisions; this compliance schedule is discussed below in the last paragraph of this section.

In 18 of the 59 compliance schedules, there was no final effluent limitation included in the associated enforceable permit provisions.

In five of the Regional Board 2 permits, there was at least one compliance schedule that did not include a specific final effluent limitation. Instead, for these compliance schedules, there was a statement in the permit findings that the final effluent limitation would be the wasteload allocation to be derived in an upcoming TMDL or in a site-specific objective (SSO). For the reasons set forth in EPA's October 23, 2006, letter to the California State Water Resources Control Board referenced in the attached May 10, 2007 Memorandum, EPA does not consider this to be an appropriate expression of a final effluent limitation. This issue did not arise in any of the Regional Board 4 or 5 permits.

One Regional Board 2 permit included a final limit dependent on the adoption of a TMDL. It also anticipated the possibility that the TMDL would not be completed prior to the end of the compliance schedule and identified an alternative final WQBEL. It defined the final WQBEL as either "the wasteload allocation to be derived in an

[2] EPA did not analyze whether any specific numeric limit "derives from and complies with all applicable water quality standards" per 40 CFR § 122.44(d)(1)(vii)(A) because this is beyond the scope of this compliance schedule review.

upcoming TMDL, or no net loading." The permit said that "no net loading" required that the discharge of pollutants must be offset. Although "no net loading" may in certain circumstances be an appropriate final WQBEL, this compliance schedule inappropriately appeared to include time solely for development of the TMDL before requiring the permittee to comply with interim steps leading to compliance with the "no net loading" alternative limit, as discussed in (e) below. Moreover, neither the permit nor the administrative record explained how the compliance schedule would achieve compliance with the alternative limit "as soon as possible."

(e) The compliance schedule inappropriately includes time solely to develop a TMDL, site specific objective (criterion), or use attainability analysis.

A compliance schedule based solely on time needed to develop a TMDL, site specific criterion, or a use attainability analysis is not appropriate. None of the three permits reviewed from Regional Board 5 referenced any TMDL, SSO, or UAA in connection with the length of their compliance schedules. Among the Regional Board 4 permits, two, similarly, did not reference any TMDL, SSO or UAA in connection with the compliance schedule provisions. However, the third Regional Board 4 permit gave the permittee the option of conducting studies leading to development of an SSO. Because this permit did not contain specific actions or tasks leading to compliance with the WQBEL, it was difficult to tell whether this permit included time solely to allow for SSO development.

Each of the six permits from Regional Board 2 contained at least one compliance schedule that relied on the time needed for development of TMDLs or SSOs in allowing permittees time to comply with the final WQBELs. These fell into three categories:

For some of the compliance schedules, the final effluent limitation was expressed as the wasteload allocation to be derived from an upcoming TMDL or SSO, and no rationale was given for the length of the compliance schedule. Given the absence of other explanations for the schedules' length in the permit or administrative record, it appeared that these compliance schedules were included to allow time solely to develop the TMDL or SSO.

The second category involved compliance schedules accompanied by the specific statement, "For pollutants where there are planned TMDLs or SSOs, and final WQBELs may be affected by those TMDLs and SSOs, maximum timeframes may be appropriate due to the uncertain length of time it takes to develop the TMDL/SSO." This language suggests that the compliance schedule inappropriately included time solely to develop a TMDL or SSO.

Finally, some of the Regional Board 2 permits reviewed contained final WQBELs (either numeric limitations, or, in the permit described at the end of (d), above, "no net loading"), but contained compliance schedules that provided an initial period of time solely to allow for development of a TMDL or SSO. These permits did not require the permittee to develop and implement a plan to comply with the final WQBEL unless the

TMDL or SSO was not developed by a date certain. As stated above, it is not appropriate for a compliance schedule to include time solely for the development of a TMDL or SSO.

Attachment: Memorandum from the Director of the Office of Wastewater Management (OWM) to the Director of EPA Region 9's Water Division, May 10, 2007

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 10 2007

OFFICE OF WATER

MEMORANDUM

SUBJECT: Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits

FROM: James A. Hanlon, Director
Office of Wastewater Management

TO: Alexis Strauss, Director
Water Division
EPA Region 9

Recently, in discussions with Region 9, questions have been raised concerning the use of compliance schedules in National Pollutant Discharge Elimination System (NPDES) permits consistent with the Clean Water Act (CWA) and its implementing regulations at 40 C.F.R. § 122.47. The use of compliance schedules in NPDES permits is also the subject of ongoing litigation in California. The purpose of this memo is to provide a framework for the review of permits consistent with the CWA and its implementing regulations.

When may a permitting authority include a compliance schedule in a permit for the purpose of achieving a water quality-based effluent limitation?

In *In The Matter of Star-Kist Caribe, Inc.*, 3 E.A.D. 172, 175, 177 (1990), the EPA Administrator interpreted section 301(b)(1)(C) of the CWA to mean that 1) after July 1, 1977, permits must require immediate compliance with (*i.e.*, may not contain compliance schedules for) effluent limitations based on water quality standards adopted before July 1, 1977, and 2) compliance schedules are allowed for effluent limitations based on standards adopted after that date only if the State has clearly indicated in its water quality standards or implementing regulations that it intends to allow them.

<u>What principles are applicable to assessing whether a compliance schedule for achieving a water quality-based effluent limitation is consistent with the CWA and its implementing regulations?</u>

1. "When appropriate," NPDES permits may include "a schedule of compliance leading to compliance with CWA and regulations . . . as soon as possible, but not later than the applicable statutory deadline under the CWA." 40 C.F.R. § 122.47(a)(1). Compliance schedules that are longer than one year in duration must set forth interim requirements and dates for their achievement. 40 C.F.R. § 122.47(a)(3).

2. Any compliance schedule contained in an NPDES permit must be an "enforceable sequence of actions or operations leading to compliance with a [water quality-based] effluent limitation ["WQBEL"]" as required by the definition of "schedule of compliance" in section 502(17) of the CWA. *See also* 40 C.F.R. § 122.2 (definition of schedule of compliance).

3. Any compliance schedule contained in an NPDES permit must include an enforceable final effluent limitation and a date for its achievement that is within the timeframe allowed by the applicable state or federal law provision authorizing compliance schedules as required by CWA sections 301(b)(1)(C); 502(17); the Administrator's decision in *Star-Kist Caribe, Inc.* 3 E.A.D. 172, 175, 177-178 (1990); and EPA regulations at 40 C.F.R. §§ 122.2, 122.44(d) and 122.44(d)(1)(vii)(A).

4. Any compliance schedule that extends past the expiration date of a permit must include the final effluent limitations in the permit in order to ensure enforceability of the compliance schedule as required by CWA section 502(17) and 40 C.F.R. § 122.2 (definition of schedule of compliance).

5. In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the compliance schedule "will lead[ ] to compliance with an effluent limitation . . . " "to meet water quality standards" by the end of the compliance schedule as required by sections 301(b)(1)(C) and 502(17) of the CWA. *See also* 40 C.F.R. §§ 122.2, 122.44(d)(1)(vii)(A).

6. In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record and described in the fact sheet (40 C.F.R. § 124.8), that a compliance schedule is "appropriate" and that compliance with the final WQBEL is required "as soon as possible." *See* 40 C.F.R. §§ 122.47(a), 122.47(a)(1).

7. In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the discharger cannot immediately comply with the WQBEL upon the effective date of the permit. 40 C.F.R. §§ 122.47, 122.47(a)(1).

8. Factors relevant to whether a compliance schedule in a specific permit is "appropriate" under 40 C.F.R. § 122.47(a) include: how much time the discharger has already had to meet the WQBEL(s) under prior permits; the extent to which the discharger has made good faith efforts to comply with the WQBELs and other requirements in its prior permit(s); whether there is any need for modifications to treatment facilities, operations or measures to meet the WQBELs and if so, how long would it take to implement the modifications to treatment, operations or other measures; or whether the discharger would be expected to use the same treatment facilities, operations or other measures to meet the WQBEL as it would have used to meet the WQBEL in its prior permit.

9. Factors relevant to a conclusion that a particular compliance schedule requires compliance with the WQBEL "as soon as possible," as required by 40 C.F.R. § 122.47(a)(1) include: consideration of the steps needed to modify or install treatment facilities, operations or other measures and the time those steps would take. The permitting authority should not simply presume that a compliance schedule be based on the maximum time period allowed by a State's authorizing provision.

10. A compliance schedule based solely on time needed to develop a Total Maximum Daily Load is not appropriate, consistent with EPA's letter of October 23, 2006, to Celeste Cantu, Executive Director of the California State Water Resources Control Board, in which EPA disapproved a provision of the Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries for California.

11. A compliance schedule based solely on time needed to develop a Use Attainability Analysis is also not appropriate, consistent with EPA's letter of February 20, 2007, to Doyle Childers, Director Missouri Department of Natural Resources, nor is a compliance schedule based solely on time needed to develop a site specific criterion, for the same reasons as set forth in the October 23, 2006, (referenced in Paragraph 10) and February 20, 2007 letters.

If you have any questions, please contact me at (202) 564-0748 or have your staff contact Linda Boornazian at (202) 564-0221.

APPENDIX B – CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

APPENDIX B – CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

I. Permit Administration	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
The Clean Water Act (CWA) and NPDES regulations require that no point source may discharge pollutants to Waters of United States without explicit authorization provided by an NPDES permit. Complete applications must be submitted at least 180 days prior to discharge or expiration. Addtionally, NPDES permit terms may not exceed 5 years. NPDES permits must clearly state the permit term and may not be modified to extend the permit term beyond 5 years. The NPDES regulations also require "fact sheets" for all major facilities, general permits, and other permits that may be subject to widespread public interest or raise major issues. Fact sheets MUST contain all of the elements prescribed at 40CFR124.8 AND 40CFR124.56.	- Any facility that fails to submit a complete permit application at least 180 days prior to discharge or expiration -Any permit that does not clearly identify the permitted facility and describe the authorized discharge location(s) -Any permit with term > 5 years -Any permit modification that extends the permit term beyond 5 years - Any permit (for a major facility, general permit, et al.) that is not accompanied by a fact sheet developed in accordance with the requirements of 40CFR124.8 and 40CFR124.56.

II. Technology-Based Effluent Limits	
Municipal Dischargers - Publicly Owned Treatment Works (POTWs)	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
CWA requires POTWs to meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent removal). Permits issued to POTWs, therefore, MUST contain limits for ALL of these parameters (or authorized alternatives) in accordance with the Secondary Treatment Regulations at 40 CFR Part 133.	-Any permit that does not contain specific numerical limits for BOD (or authorized alternative; e.g., CBOD), TSS, pH, and percent removal. - Any permit that contains limits less stringent than those prescribed by the Secondary Treatment Regulation at 40 CFR Part 133, unless authorized by the exceptions noted in this regulation. Any permit that applies these exceptions must clearly document the basis. - Any permit that contains a compliance schedule that extends a statutory deadline for meeting secondary treatment requirements.

Non-Municipal Dischargers	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
The CWA requires permits issued to non-municipal dischargers to require compliance with a level of treatment performance equivalent to "Best Available Technology Economically Achievable (BAT)" or "Best Conventional Pollutant Control Technology (BCT) by July 1, 1989, for existing sources, and consistent with "New Source Performance Standards (NSPS)" for new sources. Where effluent limitations guidelines (ELG) have been developed for a category of dischargers, the technology-based effluent limits MUST be based on the application of these guidelines. In addition, if pollutants are discharged at treatable levels, and ELGs are not available, or for pollutants that were not considered during the development of an applicable ELG, the permit must include requirements at least as stringent as BAT/BCT. The performance level equivalent to BAT/BCT MUST be developed on a case-by-case basis using the permit writer's best professional judgement in accordance with the criteria outlined at 40CFR125.3(d).	- Any permit that does not include a specific numerical limit (or other requirement) for any pollutant parameter that is part of an ELG applicable to a discharger. - Any permit that misapplies or miscalculates an applicable limit required by an ELG (*e.g., improper categorization, improper new source/existing source determination, inappropriate production or flow data used to calculate limits, failure to adjust limits to account for unregulated wastestreams such as non-contact cooling water or storm water*). - Any permit that does not contain a limit at least as stringent as required by 40CFR125.3(c)(2) where effluent limitations guidelines are inapplicable (*e.g., where a pollutant is discharged at treatable levels, but there is no applicable ELG, or the applicable ELG did not consider the pollutant of concern*). - Any permit that contains a compliance schedule that extends a statutory deadline for meeting a technology-based effluent limit.

III. Water Quality-Based Effluent Limits	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**

III. Water Quality-Based Effluent Limits

CWA requires every State to develop water quality standards to protect receiving water, including designated uses, water quality criteria, and an antidegradation policy. The NPDES regulations at 40 CFR 122.44(d), require 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. States will likely have unique implementation policies for determining the need for and calculating water quality-based effluent limits; however, there are certain tenets that may not be waived by these State procedures. These include:

- Where valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored.
- Where calculations indicate reasonable potential, a specific numeric limit MUST be included in the permit. Additional "studies" or data collection efforts may not be substituted for enforceable permit limits where "reasonable potential" has been determined.
- Where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though data may be sparse or absent), a limit MUST be included in the permit (e.g., a new POTW plans to chlorinate its effluent and instream chlorine toxicity is anticipated).
- Where a technology-based is limit is required (due to an ELG or BPJ) AND the limit is not protective of water quality standards, a WQBEL MUST be developed and included in the permit regardless of whether data indicate reasonable potential (i.e., a technology-based limit cannot authorize a discharge that would result in a violation of water quality standards).
- Where the permit authorizes the discharge of a pollutant that results in a new or increased load to the receiving water, the State must ensure that the new or increased load complies with the antidegradation provisions of the State's water quality standards.
- The final calculated limit placed in the permit MUST be protective of water quality standards, and MAY NOT be adjusted to account for "treatability" or analytical method detection levels.

- Any permit where the State fails to use all valid, reliable, and representative effluent or instream background data in reasonable potential and limits calculations.
- Any permit where the State fails to include a final enforceable limit in a permit where the discharge of a pollutant will cause, have reasonable potential to cause, or contribute to an exceedance of a State water quality standard.
- Any permit that fails to incorporate WLAs from an approved TMDL, or that contains a limit that is not consistent with the WLA prescribed in an approved TMDL
- Any permit that contains technology-based limits that are not protective of water quality standards
- Any permit that modifies a properly developed WQBEL to account for the ability of treatment to achieve the WQBEL or the availability of an analytical procedure to measure the presence of the pollutant
- Any permit that authorizes new or increased loading of a pollutant that is not in compliance with the State's antidegradation policy
- Any permit that contains a limit less stringent than a limit in the previous permit, unless specifically authorized under the antibacksliding provisions of the CWA
- Any permit that allows a variance of a State water quality standard, unless the variance has been approved by the EPA Region.
- Any permit that allows a new or increased loading of a pollutant to a receiving water that has not been evaluated for and shown to be in compliance with the antidegradation provisions of the State's water quality standards regulations.
- Any permit that includes a compliance schedule for meeting a WQBEL, unless the State standards specifically allow for compliance schedules, and the standard was established or modified after July 1, 1977.

IV. Monitoring and Reporting Conditions	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
The CWA and NPDES regulations require permitted facilities to monitor the quality of their discharge and report data to the permitting authority. Each State will have unique policies and procedures to establish appropriate frequencies, procedures, and locations for monitoring; however, there are certain tenets that may not be waived by these procedures.	- Any permit that does not require at least annual monitoring for all pollutants limited in the NPDES permit, unless the permittee has applied for and been granted a specific monitoring waiver by the permitting authority, and this specific waiver is included as a condition of the permit. - Any permit that does not require monitoring to be performed at the location where limits are calculated and applied (i.e., the monitoring location cannot be at a location that includes flows that were not accounted for in limits development; e.g., cooling water, storm water). - Any permit that does not require that the results of all monitoring of permitted discharges conducted using approved methods, be submitted to the permitting authority.

V. Special Conditions	
Municipal Dischargers - Publicly Owned Treatment Works (POTWs)	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
In general, special conditions will be established based on the unique characteristics of the permitted facility. The appropriateness of these conditions, therefore, must be assessed on a case-by-case basis. However, there are certain elements of special conditions that may be the basis of an objection.	- Pretreatment: Any permit for a POTW required to implement a pretreatment program that does not contain specific pretreatment conditions. [State/Regional-specific language] - Municipal Sewage Sludge/Biosolids: Any permit that does not contain conditions addressing the facility's use/disposal of biosolids consistent with Federal requirements. [State/Regional-specific language] - Combined Sewer Overflows (CSO): Any permit for a facility authorized to discharge from CSOs, that does not comply with the State's CSO control policy and, at a minimum contain requirements for: ▸ Requiring compliance with all of the "Nine Minimum Controls" ▸ Requiring development and implementation of a "Long Term Control Plan" - Sanitary Sewer Overflows (SSO): Any permit that authorizes the discharge of untreated effluent from SSOs under any circumstances.
Municipal and Non-Municipal Dischargers	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**

V. Special Conditions	
In general, special conditions will be established based on the unique characteristics of the permitted facility. The appropriateness of these conditions, therefore, must be assessed on a case-by-case basis. However, there are certain elements of special conditions that may be the basis of an objection.	- Any permit that contains a compliance schedule that extends a CWA deadline or otherwise modifies or postpones CWA or NPDES requirements unless specifically provided for in the statute or regulations. - Any permit that uses special studies or management plans to replace or modify limits or conditions that are required by the CWA or NPDES regulations, unless specifically provided for in the CWA or NPDES regulations (*e.g., permit requires a monitoring program in lieu of establishing a permit limit where available data indicate reasonable potential*).

VI. Standard Conditions	
CWA/NPDES Requirements	**Conditions Subject to Disapproval**
The NPDES regulations at 40 CFR 122.41 and 122.42 require that certain "standard condtions" be placed in all NPDES permits. The regulations allow States to omit or modify these standard conditions ONLY where the omission or modification results in more stringent requirements. For example, the standard condition that allows "bypass" under certain circumstances or the standard condition that allows "upset" to be used as an affirmative defense, may be omitted because the result of the omission is a more stringent permit requirement.	- Any permit that does not contain ALL of the standard conditions of 40 CFR 122.41 (unless the omission results in a more stringent condition). - Any permit that modifies the language of the standard conditions (unless the modification results in language that is more stringent than the 122.41 requirement). - Any permit for an existing non-municipal discharger that does not include the notification requirement of 40 CFR 122.42(a) - Any permit for a POTW that does not include the notification requirement of 40 CFR 122.42(b) - Any permit for a Municipal Separate Storm Sewer System (MS4) that does not include the annual reporting requirement of 40 CFR 122.42(c)

APPENDIX C – CORE REVIEW CHECKLISTS

APPENDIX C – CORE REVIEW CHECKLISTS

NPDES Permit Quality Review Checklist - For Non-Municipals

Pre-Review Information

		Response	Comment
1.	NPDES Permit number of facility		
2.	Name of facility:		
3.	Permit Reviewer (Last Name)		
4.	Date of review (MM/DD/YYYY)		
5.	Is the draft permit complete ? (Y/N)		
6.	Is the fact sheet complete ? (Y/N)		
7.	Did the State provide all appropriate supporting information (e.g., permit application, supporting documentation) ? (Y/N)		
8.	Reviewer obtained PCS/DMR data for last 3 years (Y/N)		
9.	Reviewer examined previous permit, application, and fact sheet (Y/N/NA)		
10.	Reviewer examined all pertinent file information (Y/N)		
11.	Reviewer notified other Regional offices of reissuance (Y/N)		

Facility Information

		Response	Comment
12.	Are all outfalls (including non-process and storm water) at the facility properly identified and authorized in the permit? (Y/N)		
13.	Does the record contain a description of the wastewater treatment process and discharge point? (Y/N)		
14.	Does the record describe the physical location of the facility? (Y/N)		
15.	Does the record provide a description of the receiving water body(s) to which the facility discharges? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
16.	Does the permit term exceed 5 years? (Y/N)		
17.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
18.	Does the permit contain appropriate issuance and expiration dates and authorized signatures ? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
19.	Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? (Y/N)		
20.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21.	If yes, does the record discuss whether "antibacksliding" provisions were met? (Y/N)		

Technology-Based Effluent Limits (Effluent Guidelines and BPJ)

		Response	Comment
22.	Is the facility subject to a national effluent limitations guideline (ELG) ? (Y/N)		
22a.	If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source ? (Y/N/NA)		
22b.	If no, does the record indicate that limits were developed based on Best Professional Judgement (BPJ) for all pollutants discharged at treatable concentrations? (Y/N/NA)		
23.	For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?		
24.	Does the record adequately document the calculations used to develop both ELG and/or BPJ technology-based effluent limits ? (Y/N)		
25.	For all limits that are based on production or flow, does the record indicate that the calculations are based on a "reasonable measure of ACTUAL production" for the facility (not design)? (Y/N/NA)		
26.	Does the permit contain "tiered" limits that reflect projected increases in production or flow? (Y/N)		
26a.	If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained? (Y/N/NA)		
27.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
28.	Are all technology-based limits expressed in terms of both maximum daily and monthly average limits ? (Y/N)		
29.	Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ? (Y/N)		

Water Quality-Based Effluent Limits

		Response	Comment
30.	Does the record indicate that the receiving water is impaired (i.e., that the receiving water is listed on the State's 303(d) list)? (Y/N)		
30a.	If yes, does the record indicate that a TMDL has been COMPLETED for the receiving water? (Y/N/NA)		
30b.	If yes, does the record indicate that any WQBELs were derived from a completed TMDL? (Y/N/NA)		
31.	Does the record describe (list) the designated uses of the water body to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
32.	Does the record provide effluent characteristics for each outfall? (Y/N)		
33.	Does the record document that a "reasonable potential" evaluation was performed? (Y/N)		
33a.	If yes, does the record indicate that the"reasonable potential" evaluation was performed in accordance with the State's approved procedures? (Y/N/NA)		
34.	Does the record describe the basis for allowing or disallowing in-stream dilution or a mixing zone? (Y/N)		
35.	Does the record present WLA calculation procedures for all pollutants that were found to have "reasonable potential"? (Y/N/NA)		
36.	Does the record indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)? (Y/N/NA)		
37.	Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined? (Y/N/NA)		
38.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
39.	For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
40.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? (Y/N)		
41.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
41a.	If yes, does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
42.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
42a.	If no, does the record indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? (Y/N)		
43.	Does the permit identify the physical location where monitoring is to be performed for each outfall? (Y/N)		
44.	Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices ? (Y/N)		

Special Conditions

		Response	Comment
45.	Does the permit require development and implementation of a Best Management Practices (BMP) plan or site specific BMPs? (Y/N)		
46.	If yes, does the permit adequately incorporate and require compliance with the BMPs? (Y/N/NA)		
47.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadllines and requirements ? (Y/N/NA)		
48.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		

Standard Conditions

		Response	Comment
49.	Does the **permit** contain all 40 CFR 122.41 standard conditions? (Y/N)		

List of Standard Conditions – 40 CFR 122.41

- Duty to comply
- Duty to reapply
- Need to halt or reduce activity not a defense
- Duty to mitigate
- Proper O & M
- Permit actions
- Property rights
- Duty to provide information
- Inspections and entry
- Monitoring and records
- Signatory requirement
- Reporting requirements

Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24 hour reporting
Other non-compliance

- Bypass
- Upset

50.	Does the permit contain the additional standard condition for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]? (Y/N)		

NPDES Permit Quality Review Checklist - For POTWs

Pre-Review Information

		Response	Comment
1.	NPDES Permit number of facility		
2.	Name of facility:		
3.	Permit Reviewer (Last Name)		
4.	Date of review (MM/DD/YYYY)		
5.	Is the draft permit complete ? (Y/N)		
6.	Is the fact sheet complete ? (Y/N)		
7.	Did the State provide all appropriate supporting information (e.g., permit application, supporting documentation) ? (Y/N)		
8.	Reviewer obtained PCS/DMR data for last 3 years (Y/N)		
9.	Reviewer examined previous permit, application, and fact sheet (Y/N/NA)		
10.	Reviewer examined all pertinent file information (Y/N)		
11.	Reviewer notified other Regional offices of reissuance (Y/N)		

Facility Information

		Response	Comment
12.	Are all outfalls (including combined sewer overflow points) from the POTW treatment facility properly identified and authorized in the permit? (Y/N)		
13.	Does the record or permit contain a description of the wastewater treatment process and discharge point? (Y/N)		
14.	Does the record or permit describe the physical location of the facility? (Y/N)		
15.	Does the record or permit provide a description of the receiving water body(s) to which the facility discharges? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
16.	Does the permit term exceed 5 years? (Y/N)		
17.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
18.	Does the permit contain appropriate issuance, effective, and expiration dates and authorized signatures ? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
19.	Does the record describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? (Y/N)		
20.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21.	If yes, does the record discuss whether "antibacksliding" provisions were met? (Y/N)		

Technology-Based Effluent Limits (POTWs)

		Response	Comment
22.	Does the permit contain numeric limits for ALL of the following: BOD (or an alternative; e.g., CBOD, COD, TOC), TSS, pH, and percent removal? (Y/N)		
23.	Are percent removal requirements for BOD (or BOD alternative) and TSS included, and are they consistent with secondary treatment requirements (generally 85%; or modified in accordance with 40 CFR Part 133 allowances)? (Y/N)		
24.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
25.	Are permit limits for BOD and TSS expressed in terms of both 30-day (monthly) average and 7-day (weekly) average limits ? (Y/N)		
26.	Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day (monthly) average and 45 mg/l BOD5 and TSS for a 7-day (weekly) average)? (Y/N)		
26a.	If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations? (Y/N/NA)		

Water Quality-Based Effluent Limits

		Response	Comment
27.	Does the record indicate that the receiving water is impaired (i.e., that the receiving water is listed on the State's 303(d) list)? (Y/N)		
27a.	If yes, does the record indicate that a TMDL has been COMPLETED for the receiving water? (Y/N/NA)		
27b.	If yes, does the record indicate that any WQBELs were derived from a completed TMDL? (Y/N/NA)		
27.	Does the record describe (list) the designated uses of the water body to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
28.	Does the record provide effluent characteristics for each outfall? (Y/N)		
29.	Does the record document that a "reasonable potential" evaluation was performed? (Y/N)		

29a.	If yes, does the record indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures ? (Y/N/NA)		
30.	Does the record describe the basis for allowing or disallowing in-stream dilution or a mixing zone? (Y/N)		
31.	Does the record present WLA calculation procedures for all pollutants that were found to have "reasonable potential"? (Y/N/NA)		
32.	Does the record indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)? (Y/N/NA)		
33.	Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined? (Y/N/NA)		
34.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
35.	For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
36.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? (Y/N)		
37.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
37a.	If yes, does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
38.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
38a.	If no, does the record indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? (Y/N)		
39.	Does the permit identify the physical location where monitoring is to be performed for each outfall? (Y/N)		
40.	Does the permit require <u>influent monitoring</u> for BOD (or alternative) and TSS? (Y/N)		
41.	Does the permit require testing for Whole Effluent Toxicity? (Y/N)		

Special Conditions

		Response	Comment
42.	Does the permit include appropriate pretreatment program requirements? (Y/N/NA)		
43.	Does the permit include appropriate biosolids use/disposal requirements? (Y/N/NA)		
44.	Does the permit include appropriate storm water program requirements? (Y/N/NA)		
45.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadllines and requirements ? (Y/N/NA)		
46.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		
47.	Does the permit allow discharges from Combined Sewer Overflows (CSOs) ? (Y/N)		
47a.	If yes, does the permit require implementation of the "Nine Minimum Controls" ? (Y/N/NA)		
47b.	If yes, does the permit require development and implementation of a "long-term control plan"? (Y/N/NA)		
47c.	If yes, does the permit require monitoring and reporting for CSO events? (Y/N)		
48.	Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs)]? (Y/N)		

Standard Conditions

		Response	Comment
49.	Does the **permit** contain all 40 CFR 122.41 standard conditions? (Y/N)		
	List of Standard Conditions – 40 CFR 122.41 • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O & M • Permit actions • Property rights • Duty to provide information • Inspections and entry • Monitoring and records • Signatory requirement • Reporting requirements Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24 hour reporting Other non-compliance • Bypass • Upset		
50.	Does the permit contain the additional standard condition for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]? (Y/N)		