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

MEMORANDUM

DATE: January 13, 2011

TO: Michael Bussell
Director, Office of Water and Watersheds, Region 10

FROM: Deborah G. Nagle
Acting Director, Water Permits Division
Office of Wastewater Management

SUBJECT: 2009 Regional National Pollutant Discharge Elimination System (NPDES) Program Review for Region 10

EPA's Office of Wastewater Management, Water Permits Division is pleased to provide you with the findings of the 2009 Regional National Pollutant Discharge Elimination System (NPDES) Program Review conducted for EPA Region 10.

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 10. 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 10, 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 10 and your authorized States, as well as between Region 10 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 respect to EPA guidance or policy.

- 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 10 program management strategies. 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 10 NPDES program and identify strengths and opportunities for improvement for EPA HQ, Region 10 and its States.

Thank you for your cooperation and for the help of your staff in conducting the reviews, and in the development of the report and its findings. 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.

2009 REGIONAL NPDES PROGRAM REVIEW
EPA REGION 10

January 13, 2011

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TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents findings of an U.S. Environmental Protection Agency (EPA) Office of Water (OW) Regional National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) conducted for EPA Region 10 and Washington in September and October of 2008, and in Oregon between May and October of 2008.

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, according to the needs and interest of the Region. EPA Headquarters reviews topics such as permit backlog, Priority Permits, Action Items, and watershed-based permits before 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 permits and other supporting documents (e.g., fact sheets, calculations). In this report, an entire section is devoted to the results of that PQR.

Through the review mechanism, EPA Headquarters promotes national consistency, identifies successes in implementation of the NPDES program and notes opportunities for improvement in developing NPDES permits. EPA Headquarters can use the findings of the review to identify areas for training or guidance, and Region 10 can use them to help identify or assist states in determining any needed action items to improve their NPDES programs.

EPA Region 10 oversees the NPDES Program for Oregon, Washington, and portions of Alaska, and it implements the NPDES program in Idaho. Washington is not authorized to administer the NPDES program for federal facilities, and neither Oregon nor Washington is authorized to administer the Biosolids program.

The PQRs were performed primarily during the fourth quarter of FY2008 and the first quarter of FY2009. WPD staff collected NPDES program information and permits from Regional and state staff, and a detailed PQR was performed for Washington and EPA Region 10 (Alaska and Idaho) in September and October of 2008. The Oregon on-site visit was conducted during the week of May 13, 2008. WPD staff and managers traveled to Region 10 for the formal OW Regional Program Review in April 2009.

This report is organized as follows:

- Section 2—Region 10 Regional Review Overview
- Section 3—Permit Quality Review Summaries
- Section 4—Summary of Findings and Proposed Actions

2.0 REGION 10 REGIONAL REVIEW OVERVIEW

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

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

2.1 Select Accomplishments

On the basis of the work conducted in preparation for the Regional Program Review, Region 10 deserves specific recognition for accomplishing the following:

- Region 10 is one of the first EPA Regions to achieve 100 percent on the SS-1 performance measure: Number and percent of CSO permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance.
- Regional staff members have provided whole effluent toxicity (WET) training to the states with support from EPA Region 9 WET expert staff.

2.2 Permit Issuance Status

The following permit issuance data for Region 10 were current as of September 30, 2008—the most recent data available during the Regional review.

Nontribal individual and non-stormwater general permits (end of year FY2008)

State	No. of facilities	No. expired	No. current	% current
AK	2,127	420	1,707	80.3%
ID	398	218	180	45.2%
OR	2,127	460	1,667	78.4%
WA	1,839	113	1,726	93.9%
All	**6,491**	**1,211**	**5,280**	**81.3%**

Tribal individual and non-stormwater general permits (end of year FY2008)

State	No. of facilities	No. expired	No. current	% current
AK	3	3	0	0.0%
ID	7	4	3	42.9%
OR	6	4	2	33.3%
WA	40	28	12	30.0%
All	**56**	**39**	**17**	**30.4%**

The national average for nontribal permits for FY2008 was 90 percent current, and the national average for tribal permits was 85 percent current. Region 10 has developed a work plan targeted at improving its permit reissuance backlog and expects that transferring responsibility for permits to Alaska following program authorization will better enable the Region to improve its permit issuance rates. The workload plan for 2009 calls for the NPDES Permits Unit to address 10 individual tribal facilities, plus an estimated 30 tribal facilities that will be covered under the hatchery general permit. The Region also expects that reissuance of the long-expired CAFO general permit will contribute to backlog reduction.

About 50 major facilities with permits expired more than 10 years exist nationwide; one-fifth of those facilities are in Region 10. Approximately 340 minor permits have expired more than 10 years ago nationwide; almost half of those are in Region 10. With respect to those permits in general, the Region staff members said that they have noticed some cleanup that needs to be done (e.g., permits that might need to be terminated after confirmation with the permittee). The Region also noted that many facilities could be covered under upcoming general permits.

Permits expired more than 10 years

State	No. of majors	No. of minors	Total
AK	0	64	64
ID	0	33	33
OR	7	3	10
WA	3	58	61
Total	**10**	**158**	**168**

2.3 Priority Permits

In 2008 Region 10 met the goal for issuing EPA-issued priority permits, but it did not meet the goal for issuance of state-issued priority permits. Overall, the number of permits Region 10 states identified as priority permits for FY2008 was low, given the permit universes. In particular, Oregon's commitment was low in light of its permit issuance backlog.

State	FY2008 priority permits	Total issued in FY2008	% Permits Finalized in FY2008	FY2009 priority permits	Permits expired > 2 years (as of 9/30/08)
State-issued priority permits					
AK	N/A	N/A	N/A	5	N/A
ID	N/A	N/A	N/A	N/A	N/A
OR	1	1	100.0%	3	70
WA	5	3	60.0%	6	21
ALL	**6**	**4**	**66.7%**	**14**	**91**
EPA-issued priority permits					
AK	5	5	100.0%	0	103
ID	18	18	100.0%	2	80
OR	1	1	100.0%	0	4
WA	1	2	200.0%	17	64
ALL	**25**	**26**	**104.0%**	**19**	**251**

2.4 Wet Weather

2.4.1 Stormwater

Region 10 has increased the amount of staff time dedicated to stormwater permitting. The Region has a goal of completing first-round issuances of municipal separate storm sewer system (MS4) permits by the end of 2010. The Regional staff members have been increasing their compliance assistance activities (e.g., conducting workshops) related to stormwater permits. Region 10 is seeking assistance from EPA Headquarters in developing a process for Regions to meet the impaired waters and total maximum daily load (TMDL) requirements of the multisector general permit (MSGP). Oversight of Oregon and Washington stormwater programs has been a lower priority for the Region because of its permitting workload.

2.4.2 Sanitary Sewer Overflows (SSOs)

Oregon regulations provide boilerplate language for SSOs and bypasses that prohibits most SSO discharges but appears to authorize SSO discharges where the permittee shows there are no feasible alternatives to the overflow. The Region has raised concerns with Oregon regarding the issue, but the state has not made changes to conform to the federal bypass provision at Title 40 of the *Code of Federal Regulations* (CFR) 122.41(m). At the time of the Regional Review, Region 10 was in the process of objecting to seven permits in Oregon regarding such language. Along with CSO discharges, SSO discharges are a priority for EPA oversight in Oregon.

2.4.3 Construction Stormwater

Region 10 continues to be concerned with the impact of using chemical polymers, such as Chitosan, to remove sediment from construction discharges on endangered salmon and bull trout. Region 10 would like to see EPA formally adopt specifications for the proper use of such products and suggests the approach used by the Washington Department of Ecology (ECY). Region 10 has provided suggested language for use in the 2011 Construction General Permit (CGP) related to the use of treatment chemicals for sediment removal, which have been incorporated into the draft permit.

2.5 Concentrated Animal Feeding Operations (CAFOs)

Region 10 is developing a CAFO general permit in Idaho. An EPA employee in EPA's Idaho operations office is writing the permit, but he is not a member of the Region's regular permit-writing staff. The Region expects more facilities than it originally anticipated to be covered by the permit. At the time of the Regional Review, Region 10 expected to propose the permit in June 2009 and, following a 60-day comment period, issue a final permit in September or October 2009. The general permit was sent for public notice on November 16, 2009. The public comment period ended on January 19, 2010. As a result of the issues raised in the draft general permit, EPA Headquarters requested that Region 10 delay the issuance of the general permit until the *NPDES CAFO Permit Writers' Guidance Manual* is finalized. That manual is scheduled to be completed by the end of 2010.

2.6 Alaska Program Authorization

Alaska received approval to implement the NPDES program on October 31, 2008. Alaska will take responsibility for different parts of the program over a 3-year transition period. The oil and gas and mining industries were more concerned about state authorization than other industries; those will be the last permits to transition to state responsibility. Permits in Denali National Park, tribal permits, and facilities more than 3 miles offshore will remain the responsibility of EPA Region 10. The Region plans to review each permit Alaska writes for at least the first year. Region 10 is concerned about the capacity for permitting in the state. At the time of the Regional Review, Alaska had yet to publish a draft permit for public notice.

2.7 Endangered Species Act and National Historic Properties Act Consultations

EPA is required to consult with the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (National Oceanic and Atmospheric Administration [NOAA] Fisheries) (collectively *the Services*) when issuing permits that could affect species listed as threatened or endangered under the Endangered Species Act (ESA). Region 10 reported ongoing difficulty in completing the required consultations, particularly with issuance of the CGP and MSGP. According to Region 10, the Services expect formal biological evaluations, which are difficult to develop for stormwater because of a lack of data. The Region reported challenges working with the NOAA field office with respect to both the above-mentioned general permits and expressed concern that the field office seems unfamiliar with the process that had been agreed on by EPA and NOAA regarding stormwater general permits. The Region noted that MS4 permits that have been issued have not involved any species on the Endangered Species list.

Region 10 has been unable to resolve the historic properties issues within the CGP and foresees additional problems for applications under MSGP. The State Historic Preservation Offices have been sending non-concurrence letters to both CGP and MSGP applicants.

2.8 Puget Sound

As one of the largest estuaries in the United States, the health of Puget Sound is both a local and regional priority, and permitting in the Puget Sound watershed is a priority for EPA Region 10's Permits Unit. According to the Region 10 NPDES Permits Unit Workload Plan for 2009, Region 10 will focus on federal and tribal facilities in the sound. The Region plans to issue five Department of Defense facility permits, three tribal municipal facility permits, and the hatchery general permit, which will cover approximately 21 federal and tribal facilities in the Puget Sound watershed. The stormwater team will also focus on issuing MS4 permits throughout the sound in 2009.

3.0 PERMIT QUALITY REVIEW

PQRs are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations.

EPA's Region 10 PQR consisted of two components—a core review and a topic-specific review. The core review focused on core permit quality and included a review of the permit application, limits, monitoring requirements, special conditions, standard conditions, correspondence, documentation, and administrative process, as well as other factors.

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 10 topic-specific reviews focused on the following areas: mercury methods/limits; discharges to impaired waters; TMDL implementation; use of *Escherichia coli* and enterococcus standards; antidegradation and use of mixing zones; implementation of CWA section 316(a) and (b); stormwater permitting; implementation of Long-Term Control Plans (LTCPs) for combined sewer overflows (CSOs); SSOs; implementation of CAFO requirements; implementation of WET; and pretreatment.

EPA has conducted NPDES PQRs since the mid-1980s and has revisited the review process periodically since then in an effort to promote permit quality to 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 serves to inform broader Regional Reviews being conducted by EPA Headquarters.

The Region 10 PQR consisted of the following: a comprehensive core permit review in Oregon, Washington and EPA Region 10 (Alaska and Idaho) to provide an overall review of a sample of NPDES permits, and a topic-specific review of a sample of permits from all four Region 10 states to assess specific areas of concern. Information gleaned from the Region 10 PQR will help guide discussions on permitting process efficiency improvements. The results of the PQR also will 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 initiative. Recommended action items are identified in Section 4 of this report.

Details of the Region 10 PQR process and review results are provided below.

3.1 Core Permit Reviews

EPA conducted comprehensive core reviews with on-site visits in Oregon, Washington, and EPA Region 10. The review team consisted of EPA Headquarters, Regional, and contractor personnel.

The core permit review process involves evaluating selected permits and support materials using basic NPDES program criteria. Reviewers complete the core review by examining selected permits and supporting documentation, assessing those 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 Appendices A and B, respectively: (1) Central Tenets of Permitting (developed during the 2000/2001 PQR); and (2) Core Review Checklists (developed during the 2000/2001 PQR and revised in 2008). Material reviewed as part of the Region 10 core review include NPDES permits, state water quality standards (WQS) (including mixing zone provisions, bacteria standards, mercury standards and methods, and reasonable potential [RP] procedures), and various state permitting policy and guidance documents. In addition, discussions with Region 10 and state staff members addressed a range of topics including program status, the permitting process, relative responsibilities, organization, and staffing.

The majority of the permits were chosen randomly from a list of permits issued after January 1, 2004, to ensure a review of recently issued permits. The remaining permits were selected on the basis of discussions with state and Region 10 staff, with an effort to primarily include major facilities, with an equal distribution of industrial and municipal permits. For the core review, a total of 24 permits were reviewed—4 permits each from Alaska and Idaho, 8 permits from Oregon, and 10 permits from Washington.

3.1.1 Oregon

During the week of May 13, 2008, a PQR was conducted at the Oregon Department of Environmental Quality (ODEQ) headquarters in Portland and the Northwest and Eastern regional offices. In addition to the Headquarters office, each of the three regions (the Northwest Region, the Western Region, and the Eastern Region), have several offices. There are four regional offices in the Northwest Region, five in the Western Region, and five in the Eastern Region.

ODEQ headquarters staff is responsible for Phase I and Phase II MS4 permits, general permits, the development of policy, and assistance with technical questions. Pretreatment activities are centralized at ODEQ headquarters.

Personnel in the regional offices write individual NPDES permits. Permit writer duties vary among regional offices. In some offices, such as the Northwest Region, permit writers also conduct compliance and inspection activities and all other activities associated with an assigned facility. In other offices, permit writers are involved only with writing and issuing the NPDES permits.

ODEQ is in the process of standardizing its program implementation processes. It is issuing new policy and guidance documents called Implementation Management Directives (IMDs). ODEQ also conducts permit writer workshops every 6 months. That is part of the standardization process, but it is also necessary because of permit writer turnover.

The Blue Ribbon Committee, which was formed to improve wastewater permitting, recommended that ODEQ increase their staff. However, ODEQ stated that because department costs such as rent and energy have been higher than expected, it is refraining from hiring to meet the budget.

Universe of NPDES Permits: The backlog of individual NPDES permits at the time of the review was approximately 43 percent. Oregon has 75 major and 308 minor facilities. Three additional

CSO systems are in Portland, Astoria, and Corvallis. ODEQ reported several expired general permits. General permits are issued by headquarters personnel, while the processing of the Notice of Intent (NOI) for facilities requesting coverage under the general permit is done through the regional offices, although some cases occur where headquarters manages the NOIs. Regional offices are delineated by county lines. The state is moving toward a watershed approach to permitting.

The state's NPDES permitting backlog percentage is increasing. This is in part because the use of compliance schedules has been stayed due to litigation, and ODEQ has been working with EPA on standard condition language concerning overflows and bypasses.

Data Systems: ODEQ uses two data systems, the Source Information System (SIS) and Discharge Monitoring System (DMS).

- SIS contains facility information, but no effluent limits.
- SIS feeds the DMS used for EPA's Permit Compliance System (PCS)—contains monitoring results and limit information.
- Dischargers submit two hard copies of their monitoring reports—one to the Regional office and one to Headquarters. Headquarters staff enters information and data into DMS.
- DMS flags exceedances.
- Inspection dates are tracked in SIS. There are fields for comments and whether facilities passed inspection.

Permit Templates: For NPDES permits for municipal facilities, ODEQ uses a Microsoft Word Wizard template for the permit and fact sheet. The template is macro driven. The template is available statewide on the ODEQ intranet permit writer's corner. Permit writers are notified when template changes occur. The permit writer's corner also contains spreadsheets and tools for water quality issues such as RP analysis, temperature, and the like.

Permit Issuance Process: The ODEQ regional offices have internal tracking files and send application reminders and forms to dischargers. The regional office receives the permit application forms, which are logged in and checked for completeness. In most cases, permit coordinators in the regional offices send out the reminders and check the application forms for administrative completeness. The permit application forms then go to the individual permit writers and are checked for technical completeness. Once a draft permit is developed, an advance copy is sent to the discharger for a 14-day review. Public notice is then given for the permit, comments are addressed, and the permit is then issued. If the permit is known to be contentious, a public hearing can be held. EPA Region 10 is sent a copy of the draft permit during the comment period for major facilities.

Permit Development: In drafting NPDES permits, permit writers generally rely on the previous permit. Discussions with ODEQ staff indicated that technology-based effluent limitations developed on a case-by-case basis based on the best professional judgment (BPJ) of the permit writer are not developed very often.

The system for determining water quality-based effluent limitations (WQBELs) is more standardized. ODEQ has developed an RP IMD. Priority pollutant and discharge monitoring

report (DMR) data are used in the RP analysis (RPA). The RPA spreadsheet in the permit writer's corner on the ODEQ intranet can be used for both municipal and nonmunicipal facilities.

A mixing zone IMD was issued in December 2007 and became effective in July 2008. Environmental mapping is being used in mixing zone analyses. One requirement states that no greater than 25 percent of the 7Q10 (7-day, 10-year low flow) of the receiving water can be used in establishing a mixing zone. For smaller dischargers, ODEQ field labs will conduct a mixing zone analysis as schedules and budgets allow. Ambient data are collected and eventually go into EPA's Storage and Retrieval Data Warehouse (STORET).

In determining monitoring requirements, ODEQ has developed a monitoring matrix that is also available on the permit writer's corner. However, this matrix is only applicable to municipal facilities and is not to be used for nonmunicipal facilities.

Permitting activities for major dischargers are given public notice in local papers such as the *Oregonian*, the main newspaper in Oregon. Outreach is beginning for those communities not served by the *Oregonian*.

Once public notice is given, and the permit is issued as final, Oregon law allows for a reconsideration process. If ODEQ initiates the reconsideration of the permit, a new permit can be issued. According to the regulation, ODEQ has 20 days after issuance of the permit to decide to reconsider or not. An outside party has no more than 60 days to initiate the reconsideration process. During the reconsideration process, all requirements in the new NPDES permit are in effect. If a permit is reconsidered, the permit is reissued, whether or not any changes are made. If the reissued permit is not modified, the public notice process does not take place. If the reissued permit is modified, the normal public notification occurs. In certain circumstances, public meetings are held. Once the reconsideration process has been completed, the permit can be appealed and litigated.

Areas of Current ODEQ Interest and Activity: There are several areas where ODEQ is either amending or modifying activities. For mercury, ODEQ staff members stated that analytical laboratories in Oregon prefer to use method 1631E. ODEQ is in the process of implementing new guidance for using the more precise methods.

Discussions with ODEQ staff indicate that *E. coli* is used for pathogen control for freshwater discharges while fecal coliform is used for marine and estuarine discharges (regulations indicate that a fairly stringent fecal coliform standard applies to estuarine shellfish waters). ODEQ is adding entercocci to the fecal coliform standard for marine and estuarine discharges.

ODEQ does not have a formal method for tracking TMDL implementation. ODEQ is in the process of trying to coordinate the sharing of ambient data and other information among the TMDL group, permit writers, and the standards group. Guidance is being developed and incorporated into the RP IMD for how to permit discharges into impaired waters before a TMDL being developed for the pollutant of concern. In addition, policy is being developed for the use of mixing zones in water quality-limited receiving waters.

An antidegradation IMD is available but needs to be revised to maintain consistent formatting with other IMDs.

ODEQ is in the process of addressing the following areas:

- Compliance schedule litigation
- WQS for temperature
- SSO language (overflow language contained in the standard conditions)
- Bypass language contained in NPDES permits

Oregon Findings

ODEQ is making progress on the Blue Ribbon Commission recommendations. The more recent NPDES permits and fact sheets that were reviewed are improved in comparison to older permits, and results of the ODEQ standardization processes are evident. Progress is being made toward a watershed approach to NPDES permitting.

As a result of the PQR, certain issues were identified. Those issues are discussed below.

Compliance Schedules: There is an ongoing lawsuit challenging EPA's approval of ODEQ's compliance schedule rulemaking. EPA Region 10 has identified issues that also were found during the PQR, specifically that compliance schedules include indeterminate time frames and no final effluent limitations.

Bypass: The bypass definition found in many ODEQ NPDES permits contains a broader definition than contained in 40 CFR Part 122. During the PQR site visit, it was stated that EPA Region 10 and ODEQ were close to resolving this issue.

Monitoring: Language in the monitoring section of the permit (Schedule B in ODEQ NPDES permits) seemingly allows a modification to the permit without public comment. That language is inconsistent with 40 CFR 122.62. A modification of monitoring requirements that reduces monitoring frequency constitutes a major modification of the permit and requires public notice.

Standard Conditions: An overflow allowance provision in the standard conditions (Schedule F in ODEQ NPDES permits) poses some concerns regarding consistency with federal requirements. ODEQ is requesting EPA guidance on legal and policy implications. EPA Region 10 and EPA Headquarters legal staff will review the language and provide a written opinion. A legal opinion will also be provided concerning the design storm provision for municipal dischargers.

Coordination with Other States: ODEQ needs to ensure that discharges to waterbodies shared with other states comply with the requirements found in 40 CFR 124.10(c)(ii).

Permit Documentation: In reviewing specific permits, certain documentation issues were identified. For example, in some cases, the RPA results could not be found in the administrative files. In other cases, a more complete discussion of RP, or of why a permit issued in 2005 appears to be based on a much earlier (1997) application, should be included in the fact sheet. Finally, in numerous permits, technology-based effluent limitations were simply carried forward from the previous permits with no discussion or explanation in the fact sheets. In the case of nonmunicipal facilities, that can be especially problematic if the facility is subject to an effluent limitation guideline.

3.1.2 Washington

The Washington ECY administers the NPDES program in Washington. ECY has four regional offices (Northwest, Southwest, Central, and Eastern) and two field offices (Bellingham and Vancouver). In addition, ECY has an Industrial Section, which is part of the state's solid waste program and develops industrial NPDES permits (those permits are for the state's largest dischargers, e.g., pulp and paper, oil refining, and aluminum smelting). The Industrial Section conducts multi-media activities and issues air operating and hazardous waste permits in addition to NPDES permits. Approximately 95 percent of the water quality program is administered via the four regional offices. The state also has an Energy Facility Site Evaluation Council that addresses certain aspects of energy facility operation, including the development of some NPDES permits.

Summary data from the state's Water Quality Permit Life Cycle System (WPLCS) indicate that ECY issues NPDES permits to a total of 6,650 facilities. In addition to 325 municipal permits and 464 industrial permits, ECY has general permits that address aquatic pesticides, boatyards, CAFOs, fresh fruit packing, sand and gravel, stormwater, fish hatching and rearing, and water treatment plants. General permits are mostly issued by headquarters; however, permits that require regional expertise are issued by regional offices (e.g., Fish – Northwest; Fruit Packer – Central). Headquarters works on those general permits in an advisory role. Individual permits are typically developed and issued by the relevant regional office. The section head in each regional office signs off on the permits issued there. The Industrial Section develops all aspects of industrial permits, including conducting monitoring and enforcement activities. Each regional office includes a compliance office.

The ECY Water Quality Program uses the WPLCS database to manage permit information and to track compliance. ECY batch uploads data to PCS and the Integrated Compliance Information System (ICIS). PCS reflects 90 percent of ECY data; complex and innovative permits pose some data entry challenges. ECY is in the process of upgrading its data management system, including workflow, to a more comprehensive system (named the Permitting and Reporting Information System, or PARIS).

Permitting assignments can vary by region. The Southwest and Northwest regions are large offices. In those offices, separate units address municipal and industrial permits. The smaller offices have a technical/permit unit and watershed/TMDL unit. Overall, the permitting program is organized geographically so that the permit managers can become familiar with local water quality issues and specific facilities. Permits are generally assigned on the basis of familiarity, expertise, and workload.

The state's individual permit backlog at the time of the review was about 25 percent and is decreasing. ECY is working to reduce the backlog to 10 percent. Some regions have met the 10 percent target. For example, the Northwest region has no backlog for major permits, and a 13 percent backlog for minor permits. One major permit in the Industrial Section is backlogged for more than 10 years; however, the smelter at the facility closed, and an enforcement action is ongoing.

ECY is on schedule with regard to issuing priority permits. ECY has recently focused only on priority permits as a separate task and believes such targeting must be considered within the objectives and resources of the overall permitting program.

ECY has developed numerous high-quality permitting tools to support permit development and implementation. The tools include permit and fact sheet templates, various spreadsheets (including criteria spreadsheets and limit calculation spreadsheets), and tools addressing ammonia, temperature, dissolved oxygen (DO) (model), and dilution (RIVPLUME). In addition, the state has developed an extensive permit writer's manual that describes when and how to use the tools (available on the ECY website). Typically, the permit writer/manager uses the tools to develop the permit. In some cases, additional tools and support are used in the permit development process.

ECY headquarters has designated a senior person to perform statewide permit Quality Assurance/Quality Control. In addition, regional workgroups discuss permitting issues, and a policy group at headquarters creates permit templates. Headquarters also provides advisory resources to permit writers.

ECY sends a reminder to each facility one year in advance of permit renewal. The permit coordinator logs materials received (and any contacts) and checks signatures, and such. In many cases, the application can go directly to the permit manager. Correspondence from industrial facilities generally goes to the permit manager. When an application is complete, ECY sends a letter back to the facility. The permit manager then drafts the permit and fact sheet.

The permit writer develops technology-based limits and water-quality based limits if the latter are more stringent. If the permitting situation is more complex, the permit writer can obtain support from the Environmental Assessment Program. ECY establishes schedule goals in its performance plan, although those can change because of external factors. In general, it takes 7 months to complete the permit development process. ECY uses a work plan to monitor progress.

ECY will use available water quality data from the closest monitoring stations, and permits might require monitoring to obtain needed data. From time to time, the state has had initiatives to collect specific types of water quality data. For example, about 10 years ago, the state collected a lot of metals data. ECY is interested in temperature data. Washington State has sediment criteria in its state regulations (for the Puget Sound). The state is working to develop an RP process for sediment.

The Environmental Assessment Program develops TMDLs and does water quality modeling. Some of those staff members are in the regional offices. Permit managers coordinate with the Environmental Assessment staff and regional TMDL leads to determine if a TMDL (i.e., wasteload allocation [WLA]) is applicable to a permit and to implement any such TMDL. In small regions, awareness regarding TMDLs is high. ECY has not assessed how well this permitting-TMDL coordination works.

In regard to effluent monitoring, ECY has developed a matrix of requirements for municipal permits. No matrix has been developed for industrial facilities because the requirements vary too much. The state's permit writer's manual also provides monitoring guidance. Special conditions

are included in the permit templates. Permit managers are directed to use the most recent permit and fact sheet templates to ensure that the most up-to-date conditions are included in each new permit.

Once a permit and a fact sheet are drafted, the drafts are provided to the permittee for a fact check. That is an informal process that can take from 2 weeks to 30 days. Any feedback goes into the permit file and can result in a change to the permit or fact sheet. Then the public and Region 10 (for major permits) have an opportunity to review the permit. The Region has 30 days for general comments and 90 days for detailed comments (per a 1989 memorandum of agreement). ECY posts the draft permit and fact sheet on its website and accepts comments via mail or e-mail. Notice of each permit in local newspapers is required for all permits. ECY's response to comment is generally attached to the fact sheet (the fact sheet can be modified if relevant information changes). Public hearings are held for all general permits. Public hearings for individual permits are based on the degree of public interest, which is determined on a case-by-case basis; such hearings do not occur frequently. Permit appeals are heard by the Pollution Control Hearings Board. All recent stormwater general permits have been appealed. The number of appeals of individual permits fluctuates. More industrial permits are appealed than municipal permits. Usually environmental groups seek to appeal those permits. The administrative record for each permit is kept in the regional offices.

State WQS are in 173-201A WAC.

Washington Core Review Findings

The core review was based on an examining 13 Washington NPDES permits (6 from the Northwest office, 4 from the Southwest office, one from the Central office, and 2 from the Eastern office). Overall, permit quality appears to be good. Significant findings regarding the permits are discussed below.

High-Quality Permits and Fact Sheets: In general, ECY has very good fact sheets and permits. The fact sheets are robust and do a good job of documenting the basis for the permits and permitting decisions. In addition, the permits reviewed appear to be generally consistent with core NPDES tenets. The quality of the fact sheets and permits appear, in part, to be a function of the state's good set of permitting tools, including templates, spreadsheets, policies, and permit writer's manual.

Backlog: At the time of the review, ECY's backlog was approximately 25 percent for both major permits and minor permits. ECY is working to reduce the backlog to 10 percent, and some regions have met the 10 percent target.

Documentation of Permit Basis: ECY fact sheet templates are well-constructed; however, certain aspects could be strengthened. First, the fact sheets reviewed do not include a clear discussion of which pollutants were evaluated and why. Such a discussion documents that all appropriate pollutants were considered and evaluated where appropriate. Second, the fact sheets reviewed included boilerplate language regarding antidegradation. Although this was not identified as an issue in the permits reviewed, ECY should be clear regarding when antidegradation provisions apply and what is required to meet those requirements (and permit documentation should address these requirements as applicable). ECY has developed a detailed antidegradation procedure

which is not reflected in the reviewed permits. Third, there is not a standard heading for antibacksliding in the fact sheets. As a result, it was not always clear whether a change in permit limits triggered antibacksliding provisions and whether such requirements were met. Finally, the fact sheets do not typically document receiving water quality (i.e., whether receiving waters are impaired).

File Documentation: Although permit file documentation is generally good, in some cases, items expected to be in the permit files were not identified in the relevant files (e.g., permit applications, fact sheets). In addition, the calculations for limits are not always in the permit files. It appears that actual calculations are often kept in digital format and are not routinely referenced in the permit file. When calculations are included in the fact sheet, they generally do not include the calculations in the original spreadsheets. Note that the Bellevue/Northwest office maintains hard copy and digital files.

Issue Raised by ECY for EPA consideration: ECY staff indicated that a senior EPA modeling expert is retiring and expressed concern regarding continued modeling support for Visual Plume software. ECY desires continued support. The only known alternative is Cormix, which is expensive and presents some operating system issues.

3.1.3 EPA Region 10 (Permits for Alaska and Idaho)

EPA Region 10 administers the NPDES program in Idaho and, up until October 31, 2008, the Region administered the entire NPDES program in Alaska. The Region also administers NPDES permits on tribal lands in Oregon and Washington and at federal facilities in Washington. The information below generally reflects permitting activities before Alaska authorization.

EPA Region 10 administers approximately 435 individual NPDES permits, including approximately 87 major permits and 348 minor permits. Region 10 administers approximately 352 individual permits in Alaska and Idaho. Idaho is not authorized to administer the NPDES program. Alaska became authorized to administer the NPDES program on October 31, 2008 (that authorization will proceed in four phases).[1] An additional estimated 2,411dischargers are covered by eight general NPDES permits. Alaska general permits address placer mining, seafood processing, oil and gas exploration, log transfer facilities, and small sewage treatment plants. Idaho general permits address CAFOs, aquaculture, and groundwater remediation.

Region 10's NPDES Permits Unit has a staff of approximately 20 people, including 10 or 11 permit writers. In addition, the Region has a separate Office of Compliance. Permit writers develop permits and fulfill other responsibilities. The Environmental Assessment program develops TMDLs and can provide support in developing permit limits. Permit assignments are specified in a Permits Unit Plan (3-year plan). Difficult permits are assigned to more senior staff or those with relevant expertise. Routine permits are assigned to less experienced staff. Most

[1] Phase I (Upon program approval, October 31, 2008) – Domestic discharges; Timber (including log transfer general permit). Phase II (No later than one year from program approval) – Federal Facilities; Storm Water; Pretreatment; Miscellaneous Non-Domestic. Phase III (No later than 2 years from program approval) – Mining (including 3 general permits). Phase IV (No later than 3 years from program approval) – Oil and Gas (including 3 general permits); All remaining facilities.

permit writers work on permit issues for all states in the Region. Some have specialized knowledge and can provide support or oversight.

Region 10 has used ICIS for a few years to manage permitting data. The Region also has developed numerous permitting tools, including permit and fact sheet templates for Alaska and Idaho, and spreadsheets for calculating limits.

The Region is supportive of the Priority Permits initiative because it provides deadlines that help force action on permits under development. That can help external processes, such as those required by the ESA, move forward. However, the Region indicated that it would like greater flexibility in designating those permits designated as Priority Permits.

Region 10 uses effluent data from ICIS and PCS, as well as from the U.S. Geological Survey in developing permits, and typically asks facilities to provide available data. In addition, many permits require that facilities collect ambient data. Idaho has a beneficial use river program that is a source of water quality data and, although the data are not publicly available, when the Region requests such data, they are normally provided. The Region also requires ambient data for permits with limits based on 301(h).

According to the 2006–2008 NPDES Permits Unit Plan, Region 10 identified 605 backlogged facilities in the Region (including expired permits and facilities that have never been issued a permit but require one) as of September 30, 2005. That is 21 percent of the total facilities under Region 10's permitting authority. Meeting the national backlog goal is an expressed goal in Region 10's Unit Plan. However, Region 10 faces several challenges in meeting that goal, including allocating resources for Alaska delegation, new source permitting (i.e., National Environmental Policy Act [NEPA] compliance), and often complex consultation with tribes and the FWS and NOAA Fisheries regarding NPDES permits.

Region 10 states are not authorized to implement the Biosolids program. As a result, in Region 10 the Biosolids program is self-implementing, with reports submitted to the Region 10 biosolids lead. Previously, the Region put some biosolids requirements in permits. Washington State uses solid waste permit requirements. Alaska and Idaho report to the Region 10 biosolids lead.

Region 10's NPDES Unit is conducting an organizational assessment to determine whether the unit could be structured to operate more efficiently.

Permitting Process: Region 10 generally sends a reminder to dischargers regarding permit renewals. Once a permit application is received, the clerk records the application, and the permit writer reviews it for completeness. If it is complete, a response is drafted and sent to the discharger. Permits are assigned on the basis of the Permits Unit Plan. A work plan with a timeline is developed for each permit. For a general permit, the NOI is routed to the permit writer, who is responsible for administering the general permit. That permit writer processes the NOI, issues a letter of coverage, and completes the applicable ICIS coding sheet. Stormwater NOIs are tracked through the national NOI database.

Each permit writer performs a technical review of the application, develops a work plan with a timeline for each permit, and develops permit conditions including discharge limits. If limit development is complex, the permit writer can obtain technical support through various tools and

staff. If a permit is affected by a TMDL, the permit writer coordinates with the TMDL group; that is usually done early in the permit development process. No specific list or database of TMDLs is maintained for use by permit writers, and implementation of TMDLs is not tracked separately. The permit writer also typically determines whether the receiving water is on the state's §303(d) list.

Region 10 uses applicable guidance and policy in determining monitoring requirements to be specified in each permit. Such guidance is applied on a case-by-case basis, and national EPA guidance can be used where applicable to reduce monitoring requirements.

The permit and fact sheet templates developed by Region 10 include boilerplate language and standard conditions, as well as a range of potential permit conditions that may be relevant for a discharge permit, including best management practices (BMPs), narrative conditions, operation and maintenance (O&M) plan requirements, pretreatment requirements, quality plan requirements, and the like.

NPDES permits issued by Region 10 for Alaska and Idaho must receive CWA section 401 certification from the respective states. Preliminary or draft certification is provided by the state 30 days before a permit is published for public comment. Alaska and Idaho are required to provide public notice of their draft certifications. A review period of 30 days is provided, followed by final certification. Certification includes developing compliance schedules and mixing zones because those are based on state requirements. Typically, Region 10 develops draft requirements and provides them to the state for review. Idaho has developed a mixing zone technical procedure manual. However, implementing the certification process can delay the permit issuance process (certification presents a resource issue for the states).

Region 10 may provide for pre-public review by the FWS, NOAA Fisheries, and the facility. Region 10 then publishes all draft permits and fact sheets in the relevant state and provides the opportunity for public comment. Significant comments are addressed; comments and responses are posted on the Region's website and maintained in the files. Hearings are not commonly held for individual industrial permits, they are more common for municipal facilities and new sources, and hearings are always held for general permits. Final permits are published with final certifications. Typically, a couple of permits are subject to appeal each year (e.g., oil and gas, mining). The final record for Region 10 permits is maintained in the Region's files.

Region 10 conducts tribal consultation regarding decisions that affect tribal members or lands. Such consultation is government-to-government interaction.

Region 10 also is responsible for fulfilling ESA requirements. Under the ESA, when taking federal action (including issuing permits), federal agencies must consult with the FWS or NOAA Fisheries to ensure that such action is not likely to jeopardize the continued existence of a listed species, or result in destruction or adverse modification of a critical habitat of a species.

Region 10 also must comply with NEPA requirements when issuing an NPDES permit to a new source. In such situations, the permit issuance schedule is dependent on the schedule for completing the NEPA process, which can be several years.

EPA Region 10 Core Review Findings

The core review was based on examination of four Alaska and four Idaho permits, including supporting documentation. In general, the permits were well constructed and include detailed fact sheets. It should also be acknowledged that Region 10 is addressing numerous complex facilities, is proactive in collecting ambient data, and developed and uses the Permits Unit Plan as a valuable management tool. In addition, Alaska authorization has imposed a considerable resource demand on Region 10. Despite those positive actions, certain issues were identified during the core review; they are discussed below.

Permit Backlog: As noted above, according to the Permits Unit Plan, 21 percent of Region 10 permits and pending applications are not current (as of September 30, 2005), which exceeds the national goal of 10 percent. That reflects approximately 605 facilities, of which 485 have permits that are current. Of the 605 facilities, 255 are in Alaska, 303 are in Idaho, 4 are in Oregon, and 70 are in Washington. Of those facilities, 69 are major permits. Discussions during the site visit indicated that several factors contribute to the backlog, including the significant amount of resources needed to support Alaska program authorization, the time and schedule demands associated with new source permitting (i.e., NEPA compliance), the time and effort required to conduct meaningful consultation with tribes and the Services regarding NPDES permits, and some technical issues (e.g., nutrient impairment in Idaho and the lack of relevant WQS). Region 10 anticipates that certain general permits will help alleviate the backlog. The NPDES Permits Unit Plan projects a backlog of 155 as of the end of the 2008 calendar year.

Permit Documentation: Region 10's fact sheets are very good; however, some areas could be strengthened. The fact sheets do not routinely identify the §303(d) status of the receiving water or whether the receiving water is subject to a final TMDL for a pollutant of concern. In addition, the Region 10 fact sheets do not include a clear discussion of which pollutants were evaluated and why. Such a discussion documents that all pollutants were considered and evaluated where appropriate. Also, the fact sheets tend to use standard language to address antidegradation and do not always address (i.e., no standard heading) antibacksliding where a limit is removed or increases. As a result, it was not always clear when antidegradation provisions applied and what was required to meet those requirements, and whether a change in permit limits triggered antibacksliding provisions and whether such requirements were met. Finally, although the Region 10 permits require the collection of ambient data, the fact sheets do not clearly explain whether and how ambient data is used.

File Documentation: In some instances, actual permit limit calculations are not identified nor referenced in the file. Discussions with Region 10 staff indicate that often the files are kept in digital format. Also, for some permits, certain items are not identified in the permit files (e.g., permit application).

Permit Terms: Some permits have terms that are longer than 5 years (several exceeded the 5-year term by only one day).

3.2 Topic-Specific Reviews

3.2.1 Mercury Methods

EPA's regulations require that measurements included on NPDES permit applications and on reports required to be submitted under the permit generally be made using analytical methods approved by EPA under 40 CFR Part 136. See 40 CFR 122.21(g)(7), 122.41(j), 136.1, 136.3, and 136.6. Four analytical methods for mercury in wastewater have been approved for use under 40 CFR Part 136: Method 245.1, Method 245.2, Method 245.7, and Method 1631E. Methods 245.1 and 245.2, approved by EPA in 1974, can achieve measurement of mercury to 200 ng/L. Method 245.7, approved March 12, 2007, has a quantitation level of 5.0 ng/L. EPA also approved Method 1631 Revision E in 2002, with a quantitation level of 0.5 ng/L. The sensitivity of Methods 245.1 and 245.2 are well above most state mercury water quality criteria adopted for the protection of aquatic life and human health, which generally fall in the range of 1 to 50 ng/L. In contrast, Methods 245.7 and 1631E do support the measurement of mercury at such low levels.

An August 23, 2007, memorandum from James A. Hanlon to the Regional EPA Water Division Directors clarifies and explains that, in light of existing regulatory requirements for NPDES permits, only the most sensitive methods, such as Methods 1631E and 245.7, are appropriate in most instances for use in deciding whether to set a permit limitation for mercury and for sampling and analysis of mercury pursuant to the monitoring requirements within a permit. See *Analytical Methods for Mercury in National Pollutant Discharge Elimination System (NPDES) Permits*, which is available at http://www.epa.gov/npdes/pubs/mercurymemo_analyticalmethods.pdf.

This portion of the review looked at the analytical methods or quantitation levels specified for monitoring requirements in permits following promulgation of the more sensitive methods and whether permits provide consideration of method quantitation levels for analytical methods approved by EPA under 40 CFR Part 136.

EPA examined two permits in each Region 10 state to determine whether justification for the limits, monitoring conditions, and appropriate analytical methods are provided in the permit or fact sheet.

Oregon regulations require compliance with 40 CFR Part 136 methods (340-041-0061). Oregon also has developed a Mercury TMDL for the Willamette Basin (2006). Municipal and industrial wastewater sources were identified as a very small source of mercury.

ECY staff members indicated that they have recently added an appendix to all permits that provides for the use of Method 1631E. In addition, the state conducted a special project (not using NPDES permits) involving winter and summer sampling for mercury. Although voluntary compliance resulted in a 50 percent rate of response, the mercury sampling indicated that municipal facilities were below water quality criteria and that industrial facilities were quite varied, with some having high levels of mercury.

Region 10 permits must meet 40 CFR Part 136.

General Mercury Methods Findings

Of the eight permits reviewed, five include limits for mercury, and two of the three that do not include mercury limits required monitoring for mercury. Of the seven permits that require monitoring for mercury, six require the use of methods approved in 40 CFR Part 136, and one requires the use of Method 1631E. By state, the Alaska permits specify methods in 40 CFR Part 136, and one permit specifies that the permittee must use analytical methods that can achieve a minimum level that is less than the effluent limitation, if possible. The fact sheet for the second permit identifies Method 1631E as well as a method detection limit and a minimum level. The Idaho permits specify methods in 40 CFR Part 136, and one fact sheet identifies EPA analytical method 1631B as the method that meets the permit requirements. Only one Oregon permit requires monitoring for mercury (neither Oregon permit included mercury limits) and that permit requires that mercury monitoring comply with Method 1631E. Finally, the Washington permits specify the use of methods in 40 CFR Part 136.

Alaska

Two Alaska permits identified in PCS as containing mercury limits were reviewed. The permits were issued after the publication of Method 1631E, (March 7, 2007—before the promulgation of Method 245.7). Permit AK0038652, Teck Cominco includes a total mercury limit based on the relevant new source performance standards (NSPS). The permit requires the use of methods approved in 40 CFR Part 136, and it specifies that the permittee must use analytical methods that can achieve a minimum level that is less than the effluent limitation, if possible. The fact sheet indicates that method detection limits are below effluent limits, and that the requested method detection limit (0.005 µg/L) is lower than the maximum daily limit in the current permit (0.2 µg/L). The requested method detection limit is consistent with Method 1631.

Teck Cominco Alaska lists effluent limits of 0.02 µg/L (maximum daily limit) and 0.01µg/L (average monthly limit, or AML) for Outfall 001 to Middle Fork Red Dog Creek. Those limits were determined by comparing the technology-based effluent limitations for 40 CFR Part 440 Subpart J with the water quality based limitations. The water quality based limitations are based on Alaska's WQS in 18 AAC 70.020. There is no mention of an effluent limit for Outfall 002, which is for the discharge of domestic waste from a construction camp.

The second permit, AK0050571, Coeur Alaska Inc., includes mercury limits of 0.02 ug/L (maximum daily limit) and 0.01 µg/L (AML) for Outfall 001 to Sherman Creek, and 0.1 µg/L (maximum daily limit) and 0.05 µg/L (AML) for Outfall 2 to East Fork Slate Creek. The permit also requires sediment monitoring for mercury and specifies methods (SW-846, 7471), and specifies the use of methods in 40 CFR Part 136 or other approved methods. The fact sheet identifies Method 1631 for use and lists a method detection limit and a minimum level (but indicates that any approved method in 40 CFR Part 136 can be used). The limits for each outfall are well within the limits set forth by Method 1631E and Method 245.7.

The Coeur Alaska fact sheet also mentions the NSPS for mercury in mine drainage and mill discharges of 2 µg/L (maximum daily limit) and 1 µg/L (AML) established in 40 CFR Part 440. The WQBELs proposed for mercury are based on Alaska's WQS for the mercury, and using the statistical methodology presented in the *Technical Support Document for Water Quality-based*

Toxics Control.[2] Because the WQBELs for mercury are more stringent than the NSPS, they are used in the permit for Outfalls 001 and 002.

Idaho

Two Idaho permits identified in PCS as containing mercury limits were reviewed. The Helca Mining Company permit (ID0000175) was modified after promulgation of Method 1631E (permit signed February 28, 2005). The permit includes limits for total mercury (e.g., 0.022 µg/L monthly average), as well as a compliance schedule (required compliance with mercury limits by September 13, 2008). The permit requires that mercury monitoring comply with 40 CFR Part 136 unless an alternative method is approved, but it does not list specific methods. The fact sheet does not discuss analytical methods for mercury.

The second permit, Meridian Beartrack Company (ID0027022), was issued after Method 1631E was promulgated (signed October 31, 2003). The permit included limits for mercury and required that monitoring comply with 40 CFR Part 136 unless an alternative method is approved, but it does not list a specific method for monitoring mercury. The fact sheet identifies and explains the basis for the mercury limits. It also identifies EPA analytical Method 1631B as the method that meets the permit requirements.

Oregon

Two Oregon permits identified in PCS as addressing mercury were reviewed. Both permits were issued after promulgation of Method 1631E (signed July 14, 2006). The Georgia Pacific Toledo LLC (OR0001341) permit does not include mercury limits and does not require monitoring for mercury, but it does require monitoring for total metals. This permit requires that monitoring comply with 40 CFR Part 136, unless an alternative method is approved. The fact sheet for this permit indicates that the receiving water quality is well below the state water quality criteria for mercury.

The second permit, Blue Heron Paper Company, (OR0000566), does not include mercury limits. The permit does require monitoring for mercury (total and methylmercury) and requires that mercury monitoring comply with Method 1631E. The fact sheet for this permit indicates that mercury is a pollutant of concern, but those data do not indicate that mercury had an RP to cause or contribute to an exceedance of the state WQS.

Washington

Two Washington permits were selected from PCS because it appeared that they address mercury. Both permits were issued after promulgation of Method 1631E (signed September 27, 2007, and December 30, 2003, respectively). The permit for the Buckhorn Mountain Mine (WA0052434) includes limits for total recoverable mercury and requires that monitoring comply with the latest revision of 40 CFR Part 136. The fact sheet explains the basis for the mercury limits but does not discuss analytical methods for mercury. ECY has recently added to its permit template a list of conventional, nonconventional, and priority pollutants with required test methods and detection levels. The list includes Method 1631E for mercury.

[2] EPA, 505/2-90-001, March, 1991.

The second permit, Army Defense (WA0021954) does not include limits for mercury but does require monitoring for mercury. The permit requires that monitoring comply with 40 CFR Part 136, unless an alternative method was approved. The fact sheet does not discuss mercury limits or analytical methods.

3.2.2 Impaired Waters

Section 303(d) of the CWA requires states to identify and establish a priority ranking for waters not attaining WQS despite implementation of technology-based requirements (impaired waters). For those priority waters, the states must establish TMDLs for pollutants causing impairments. The focus of the impaired waters review was to verify that permits and fact sheets acknowledge the §303(d) status of receiving waters and to verify that impairing pollutants are being addressed in NPDES permits before TMDLs are completed. With regard to the findings below, note that in some cases a facility might discharge to a water segment that is impaired but may not discharge a pollutant of concern. Additionally, it is possible that such an impairment was considered but that documentation was not included in the fact sheet.

For impaired waters, EPA examined eight permits, one from Alaska, two each from Idaho and Oregon, and three from Washington. The focus of the inquiry was to assess whether and how each state considers any impairment of the receiving waterbody.

The Oregon mixing zone regulations do not expressly address impaired waters. However, the state's antidegradation regulations include the following provision that addresses water quality limited waters, "Water Quality Limited Waters Policy: Water quality limited waters may not be further degraded except in accordance with section (9)(a)(B), (C) and (D) of this rule." As previously noted, ODEQ is developing guidance to be incorporated into the RP IMD for how to permit discharges into impaired waters before a TMDL being developed for the pollutant of concern. In addition, a policy is being developed for the use of mixing zones in water quality limited receiving waters.

In Washington, if a facility is not causing water quality impairment, the discharge is allowed until a TMDL is developed. Washington's antidegradation policy provides in part that no degradation is allowed that would interfere with, or become injurious to, existing or designated uses.

Region 10 typically applies limits at the outfall when a discharge is to an impaired waterbody.

Alaska's mixing zone regulations provide in part that mixing zones must maintain and protect designated and existing uses and not impair the biological integrity of the waterbody. Alaska's and Idaho's antidegradation regulations provide in part that existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. Idaho considers background water chemical concentration and the biological conditions in the receiving water in assessing mixing zones.

Alaska

The Municipality of Anchorage Wastewater Treatment Plant (WWTP) (AK0022551) serves the entire Anchorage area. The outfall discharges to the saline estuarine waters of the Knik Arm of

Cook Inlet, 804 feet from shore off Point Woronzof. The major rivers and streams contributing fresh water to Knik Arm are the Matanuska River, Knik River, Eagle River, Ship Creek, and Chester Creek. Alaska's Final *2006 Integrated Water Quality Monitoring and Assessment Report*[3] does not identify the Knik Arm of Cook Inlet as impaired. The permit, issued on June 30, 2000, makes no reference to any discharge to an impaired waterbody.

Idaho

Idaho's Potlatch Corporation (ID0001163) discharges to the Snake River at the head of Lower Granite Pool, just below the confluence of the Clearwater River. The facility's discharges are just upstream from the Idaho/Washington border and have the potential to affect the water quality in both states. The Snake River is included on Idaho's §303(d) list for temperature. Because Potlatch's discharge is immediately upstream from Washington, the fact sheet indicates that Washington State standards are considered to ensure that downstream states' WQS are not violated by the discharge. The fact sheet indicates that both Idaho and Washington temperature criteria were evaluated, and the more stringent criteria were applied to ensure that the standards were met at the border. The permit proposes seasonal temperature limitations and includes a compliance schedule to allow the company time to determine and implement adequate controls to meet the effluent limitations.

The second Idaho permit evaluated was Preston (ID0020214), which discharges to Worm Creek, a tributary of the Cub River. Worm Creek is in the Bear River Basin. The creek flows southward approximately 15 miles into the Cub River in Cache County, Utah. Idaho added Worm Creek to the list of impaired waterbodies for nutrients, and a TMDL addressing TSS and phosphorus for the Idaho Bear River Basin was approved by EPA in June 2006, after the permit was issued. The fact sheet includes a discussion regarding nutrients of concern (ammonia and phosphorus). EPA will implement the relevant WLA for the facility in future permits. Several streams in the Bear River Basin enter Utah from Idaho and, thus, must comply with any TMDLs established by Utah. The recommended pollutant limits in the reviewed permit and fact sheet match or exceed Utah criteria for those streams that exist in Utah and cross into Idaho.

Oregon

Oregon's city of Seaside WWTP (OR0020401) discharges to the Necanicum River as it enters the Necanicum River Estuary. The permit was issued on August 27, 2002, and expired December 31, 2006 (a more current permit was not available at the time of the review). Tidal influences are observed in the Necanicum River through most of Seaside (the outfall is 1 mile from the Pacific Ocean). The Necanicum River was placed on the Oregon §303(d) list in 2002 for temperature and *E. coli*. In 2003 a TMDL for temperature was approved for the North Coast Basin, which includes the Necanicum River subbasin. The TMDL states that dischargers to estuarine waters are not given WLAs under this TMDL. Stream temperatures in the vicinity of the outfall are mostly influenced by the Pacific Ocean, which tidally pushes cool seawater into the estuary twice each day mixing with the river. In the mixing zone/dilution study completed in 2003, predicted temperatures at the edge of the mixing zone were well below 18 degrees Celsius (ºC) (the 7-day maximum level based on the stream's use as a corridor for salmon and trout rearing and migration). The permit reviewed included effluent limitations for *E. coli*, with the permit

[3] ADEC, December 29, 2006.

limits based on an *E. coli* standard approved in January 1996. This permit was reissued January 8, 2007.

Oregon's city of the Dalles (OR0020885) operates a wastewater treatment facility that discharges to the Middle Columbia River at river mile 189.5. The Columbia River has been listed on Oregon's §303(d) list as water quality limited for PCBs from river mile 142 to the Dalles Dam. In addition, Oregon and Washington included the entire Columbia River on their §303(d) lists for total dissolved gas (TDG), and most of the Columbia River on their lists for temperature.[4] The Columbia River also exceeds the WQS of the Colville Confederated Tribes for temperature and TDG. ODEQ does not believe that the city is a significant contributor of PCBs, but to verify that assumption, PCB testing was required during the last permit renewal. Four tests resulted in non-detects at the required detection limit. On December 5, 2005, ODEQ issued a permit action letter eliminating the monitoring requirement for PCBs. No requirement for PCB monitoring is in the reviewed permit.

The fact sheet states that since the last permit was issued, the Department of Environmental Quality has adopted a new temperature standard. For the Columbia River, however, the temperature criterion remains at 68 degrees Fahrenheit (°F (20 [°C]). In addition, for streams that are listed on Oregon's §303(d) list, before the completion of a temperature TMDL or other cumulative effects analysis, the rule states that no single NPDES point source that discharges into a temperature water quality limited water may cause the temperature of the waterbody to increase more than 0.3 degree °C (0.5 °F) above the applicable criteria after mixing with either 25 percent of the stream flow, or the temperature mixing zone, whichever is more restrictive. The existing permit for this facility requires collection of effluent temperature data for the first time, and those new data were used to determine the RP for a significant increase in temperature resulting from the discharge.

Washington

Washington's Yakima Sewage Treatment Plant (WA0024023) discharges to the Yakima River at River Mile 110.1. The permit was issued June 2, 2006, and expires June 30, 2011. The fact sheet indicates that the Lower Yakima River (segments downstream of the Yakima facility) is listed as water quality-impaired for DO on the current §303(d) list. ECY used the Streeter-Phelps model as a screening tool to evaluate the need for WQBELs for the previous draft permit. However, it was not able to determine RP for the Yakima Sewage Treatment Plant effluent to cause or contribute to the DO impairment due to multiple point and nonpoint sources that also contribute to the DO problem in the area. The state had already identified the need for a DO TMDL to determine point source WLA and nonpoint load allocations before the issuance of the permit. The permit includes technology-based effluent limits in the permit that ECY believes will prohibit the facility from further impairment of the Yakima River.

The second Washington permit reviewed was for the city of Vancouver WWTP (WA0024350), which discharges to the Columbia River. The permit reviewed was a draft copy, and the date of issuance and expiration were unavailable at the time of review. The facility discharges to the Columbia River, river mile 105, which has a special temperature standard of 20 °C. Washington,

[4] Idaho, Oregon, and Washington and EPA are working in coordination with the Columbia Basin tribes to develop TMDLs for Temperature and Total Dissolved Gas (TDG) on the Columbia and Snake rivers.

Oregon, and Idaho have listed most of the Columbia and Snake rivers as impaired for temperature and total dissolved gases (TDG) on their state §303(d) lists. Washington State included on its 2004 §303(d) list the segment of the Columbia adjacent to Vancouver as impaired for temperature. Because of the multijurisdictional nature of the impairment, Washington is working with Oregon, Idaho, EPA, and Columbia Basin Indian Tribes to develop TMDLs for temperature and TDG on the Columbia and Snake rivers. It will likely be several years before final WLAs are available. The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical conditions (when the receiving water is at the temperature criterion –20 ºC). The maximum daily temperature reported on the permit application was 27 ºC. The predicted resultant temperature at the boundary of the chronic mixing zone is 20.2 ºC (39:1 mixing zone ratio) and the incremental rise is 0.18 ºC. The permit requires the permittee to determine if there are any cost-effective alternatives to discharging the thermal loading to the river.

The third Washington permit reviewed was for the city of Shelton WWTP (WA0023345), which discharges to the Hammersley Inlet, off Eagle Point, in South Puget Sound. The permit was issued March 14, 2008, and expires March 13, 2013. The fact sheet states that existing records were reviewed and it was determined that ambient water quality is mostly better than the designated classification criteria. The one exception is fecal coliform, which has caused both Hammersley Inlet and Oakland Bay to be listed on the §303(d) list of impaired and threatened waterbodies. Hammersley Inlet is listed on the §303(d) list for samples taken near the mouth of Gosnell Creek. Oakland Bay is listed for samples taken at various locations for fecal coliform, and has been listed in the past for DO and temperature. Investigations to determine the sources of the contamination state that discharges from the wastewater plant were not contributing to the problem. However, it is believed that overflows from the collection system are an occasional contributing source of contamination to the inner harbor area of Oakland Bay. Discharge limitations are included in the reviewed permit for the following parameters: biological oxygen demand (BOD), total suspended solids (TSS), fecal coliform bacteria, pH, and total residual chlorine.

3.2.3 Total Maximum Daily Loads (TMDLs)

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 its applicable WQS. States must establish TMDLs for all impairing pollutants—those pollutants that prevent waters from attaining WQS after implementing applicable technology-based requirements. Where a TMDL has been established for a waterbody, WQBELs should be consistent with the assumptions and requirements of any WLA 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. For the TMDL review, EPA examined seven permits, one from Alaska, and two each from Idaho, Oregon, and Washington.

Alaska

The city of Unalaska WWTP (AK0043451) discharges to the south Unalaska Bay. The permit for the facility was issued on December 15, 2003, and expired on February 1, 2009. Two TMDLs

have been issued for the South Unalaska Bay. The first, a TMDL for BOD_5 in the Waters of South Unalaska Bay, became effective on February 12, 1995, and includes a WLA for the Unalaska WWTP. The second, a TMDL for settleable solid residues in the waters of South Unalaska Bay, became effective on February 12, 1995; however, that TMDL is not applicable to the Unalaska WWTP. Unalaska discharges primary treated effluent into south Unalaska Bay, which also receives seafood processing wastewater discharges. On the basis of the BOD_5 TMDL, Unalaska has a WLA for BOD_5 of 2,343 lbs/day. To meet that load limit, Region 10 and Alaska Department of Environmental Conservation had given the permittee a limit on the concentration of BOD_5 and flow that can be discharged.

Idaho

The city of Preston WWTP (ID0020214) discharges to Worm Creek. Worm Creek is in the Bear River Basin and is a tributary of the Cub River (in Utah). A TMDL was approved by EPA for the Bear River Basin/Malad River subbasin in June 2006. However, the TMDL was issued and approved in June 2006, after the permit was issued on May 31, 2005. The portion of the TMDL that is applicable to Worm Creek includes WLAs for total phosphorus and total suspended solids (TSS). The fact sheet acknowledges the TMDL under development and indicates that after finalization and approval of the TMDL, EPA will implement the relevant WLA in future permits. For TSS, the fact sheet also indicates that the facility is subject to secondary treatment standards and that these limits, which are generally consistent with Idaho WQS, will be sufficient for the permit.

The second Idaho permit reviewed for TMDL implementation was for the McCain Foods USA facility (ID0000612), which discharges to the Snake River. The permit reviewed was issued on June 9, 2006, and expires June 30, 2011.The segment of the Snake River to which the McCain facility discharges (which is also known as Milner Lake) has been listed under §303(d) for DO, nutrients, and sediment. Two TMDLs were written that address water quality problems on this reach of the Snake River. A TMDL for total phosphorus was approved in 1997 and implemented in the previous permit. In June 2000, EPA approved the Lake Walcott TMDL, which includes a more stringent WLA for total phosphorus for this source. The WLA for the McCain facility is 399 lb/day for total phosphorus. The reviewed permit contains an average monthly limit of 399 lb/day total phosphorus, consistent with the WLA. The maximum daily limit for total phosphorus was calculated on the basis of the WLA and the effluent variability.

Oregon

The city of Seaside WWTP (OR0020401) discharges to the Necanicum River. The permit was issued on January 8, 2007, and expires December 31, 2011. In 2003 a TMDL for temperature was approved for the North Coast Basin, which includes the Necanicum River subbasin. Dischargers to estuarine waters were not given WLAs under this TMDL. Because stream temperatures in the vicinity of this outfall are mostly influenced by the Pacific Ocean, which tidally pushes cool seawater into the estuary twice each day, mixing with the river, the TMDL did not establish a WLA for the Seaside facility. A mixing zone/dilution study completed in 2003 indicates that the facility has little measurable impact on the river temperature and that temperatures at the edge of the mixing zone would remain well below 18 ºC, which is protective of salmon and trout rearing and migration. In addition, effluent temperature monitoring is required in the permit.

The second Oregon permit reviewed for TMDL implementation was for the H.J. Heinz Company L.P. (OR0002402), which discharges to the Snake River at mile 371. This permit was issued on July 18, 2005 and expired on June 30, 2010. A TMDL was submitted to EPA in July 2003 and approved by EPA in 2004. The TMDL includes WLAs for temperature (thermal heat load), phosphorus, and TSS. The WLAs for Heinz for total phosphorus, TSS, and temperature are 83 kg/day, 4200 lb/day (monthly average), and 2,557 million BTUs per day, respectively. The proposed permit reflects the applicable WLAs in the TMDL document. The permit includes the allocation of 2,557 million BTU as an interim limitation, as well as a footnote that the limitation may be revised upward or downward, if necessary, following the facility planning process (which was acknowledged in the TMDL). Neither the permit nor the fact sheet includes specific details about when a permit limit may be revised. The permit also includes an interim total phosphorus limit of 83 kg/day and includes a similar footnote. The limits are interim because at the time the TMDL was developed, there were insufficient data to precisely quantify the relevant loads from the Heinz facility.

Washington

The city of Snoqualmie WWTP (WA0022403) discharges to the Snoqualmie River from October through June each year. During the summer months (July to September), the facility produces Class A reclaimed water that is distributed to Snoqualmie Ridge for irrigation. The permit reviewed was issued June 18, 2008, and expires on June 18, 2013. ECY released in 1994 the *Snoqualmie River Total Maximum Daily Load Study*[5] and concluded that the river did not meet WQS for ammonia-nitrogen, fecal coliform, and BOD. The TMDL established WLAs for summertime (August through October) discharges from the Snoqualmie WWTP. The permit imposes technology-based and seasonal TMDL-based limits on BOD, TSS, fecal coliform bacteria, and pH. The permit also includes seasonal TMDL-based limits on total ammonia (as NH_3-N), along with specific requirements related to reclaimed water production.

The second Washington permit reviewed for TMDL implementation was for the city of Chewelah WWTP (WA0023604), which discharges to the Colville River. This permit was issued April 4, 2006, and expires April 30, 2011. A TMDL for DO was developed in 2003. The permit included limitations for BOD, temperature, pH, DO, chlorine, ammonia, and fecal coliform. The final limits for the treatment plant are based on information received in the application, information contained in the approved facility plan, the *Colville River Water Quality Study*,[6] and the *Colville River Dissolved Oxygen Total Maximum Daily Load Report*.[7] The permit limits have been divided into two seasons, rather than three as in the previous permit, to simplify the documentation. The BOD limits in the summer low-flow season will be set at the more restrictive numbers listed in the 1997 *Colville River Dissolved Oxygen TMDL*.

3.2.4 Use of *E. coli* and Enterococcus Bacteria Standard

In its 1986 *Ambient Water Quality Criteria for Bacteria* document, EPA determined that *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

[5] Publication No. 94-71, J. Joy, May 1994.
[6] Washington Department of Ecology 1997.
[7] Washington Department of Ecology 2003.

indicator criterion for fresh waters, and enterococci is recommended as an indicator criterion 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).[8] The EPA-recommended recreational WQS for enterococci also 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), which were added to 40 CFR Part 136.

At the time of this review, Alaska was not an NPDES-authorized state, and Alaska permits were subject to state 401 certification. Alaska's WQS include standards for fecal coliform based on designated use but not *E. coli* or enterococcus (18 AAC 70.020). The fecal coliform requirements in the Alaska WQS address fresh water and marine water uses. Those standards appear to be as stringent as EPA's fecal coliform criteria (1976). For example, for secondary recreation marine waters, the standards provide that "[i]n a 30-day period, the geometric mean of samples may not exceed 200 FC/100 m[L], and not more than 10% of the samples may exceed 400 FC/100 m[L]." The federal fecal coliform criteria apply those same levels to primary contact recreation. Alaska is subject to 40 CFR 131.41, bacteriological criteria for those states not complying with §303(i)(1)(A). As a result, NPDES permits that address discharges to coastal recreational waters (including waters used for swimming, bathing, surfing, and similar activities, including Great Lakes waters) should reflect the criteria in 40 CFR 131.41 unless the state has equal or more stringent requirements.

Idaho is not a NPDES-authorized state and, thus, Idaho permits are developed by EPA Region 10 and are subject to state 401 certification. Idaho's WQS include standards for *E. coli* for waters designated for recreational use (IDAPA 58.01.02, sec. 251 – IAC 2008). The state's *E. coli* standards appear to be consistent with federal criteria.

Oregon's WQS include standards for *E. coli* applicable to freshwater and estuarine waters (other than shellfish) that appears to be consistent with federal criteria (i.e., 30-day log mean of 126 *E. coli* organisms per 100 mL based on five samples; no single sample to exceed 406 *E. coli* organisms per 100 mL) (340-041-0009). ODEQ is adding an enterococci standard for marine and estuary discharges. The state also has more stringent criteria for marine and estuarine shellfish growing waters. Oregon is subject to 40 CFR 131.41, bacteriological criteria for those states not complying with §303(i)(1)(A).

Washington's WQS include standards for fecal coliform in freshwater and marine water shellfish harvesting waters (WAC 173-201A-200 and 210). These standards appear to be as stringent as EPA's fecal coliform criteria (1976). ECY implements the Beaches Environmental Assessment and Coastal Health (BEACH) program, which monitors beaches for enterococcus levels. The program uses recommended thresholds to issue advisories and warnings and to close beaches on the basis of beach water quality. The state beach thresholds track the federal enterococci criteria

[8] *Ambient Water Quality Criteria for Bacteria – 1986*, 440/5-84-002, U.S. EPA, January 1986.

for designated beach (single sample 104/100 mL) and light use full body contact (276/100 mL). The thresholds also incorporate fecal coliform levels that are consistent with the 1976 federal criteria. Washington is not subject to 40 CFR 131.41 bacteriological criteria for those states not complying with §303(i)(1)(A).

Select permits were reviewed to assess implementation of *E. coli* standards, some of which were issued by EPA Region 10.

E. coli and Enterococcus Bacteria Standards Findings

All the permits reviewed include pathogen limits that reflect state WQS. Idaho and Oregon have *E. coli* standards, while Alaska and Washington have fecal coliform standards. Alaska and Oregon are subject to 40 CFR 131.41, and Washington has its own beach water quality monitoring program to address recreational waters.

Two permits from Alaska were reviewed, and both are consistent with state pathogen standards. Both permits reviewed, city of Kenai (AK0021377) and Anchorage (Eagle River) (AK0022543), include fecal coliform limits that are consistent with state WQS. Additionally, the Kenai permit includes monitoring requirements for enterococcus.

Two Idaho permits were reviewed. The first was for Preston (ID0020214). The second was for South Fork Coeur D'Alene RSD (ID0021300). Both permits include limits for *E. coli* that appear to meet the state WQS (based on secondary contact). The fact sheets explain the basis for the *E. coli* limits.

One Oregon permit was reviewed for the city of the Dalles (OR0020885). The Dalles permit includes limits for *E. coli* that were consistent with the state WQS. The permit authorized any of four methods from *Standard Methods for the Examination of Water and Wastewater*- (Greenberg, 1995),[9] or other approved methods.

Two Washington permits were reviewed. The first was for the city of Port Angeles WWTP (WA0023973), and the second was for the Seattle City Light/Diablo Dam WWTP (WA0029858). The Port Angeles permit includes fecal coliform limits that are consistent with the state's WQS. Similarly, the Seattle City Light WWTP permit includes limits for fecal coliform that are more stringent than the state's WQS. The respective fact sheets explain the basis for the fecal coliform limits.

3.2.5 Antidegradation and Mixing Zones

Alaska's antidegradation regulations, which are at 18 AAC 70.015, include three tiers and generally reflect federal criteria (tier 2 also references short-term variances, zones of deposit, and mixing zones). Idaho's antidegradation regulations, which are at IDAPA 58.01.02 section 05, include three tiers and reflect the federal criteria. Oregon's antidegradation regulations are at OAR 340-041-0004, and those regulations differ in structure, but not necessarily content, from the federal antidegradation provisions. Washington's antidegradation regulations are at WAC 173-201A-300 to 410. Those regulations appear to be similar to federal criteria and specifically

[9] A. Greenberg, Editor, Published by APHA, AWWA, WEF, September 1995.

address several key concepts pertaining to implementation (e.g., define measureable change in water quality).

With regard to mixing zones, Alaska's mixing zone regulations are at 18 AAC 70.240. Alaska's mixing zone regulations specify in part that mixing zones must be as small as practicable and place general limits on the size of mixing zones in streams, rivers, and flowing fresh water. The regulations also allow for the use of actual flow data or low-flow conditions in applying the mixing zone. Alaska has a modeler that provides expert support for mixing zone analyses. In addition, some larger facilities develop their own mixing zone analyses and provide them to the Region and state. Idaho's mixing zone regulations are at IDAPA 58-01-02-060-01. Idaho DEQ has developed a draft *Mixing Zone Technical Procedures Manual* that has been published for public comment. Idaho's regulations include a mixing zone provision for outstanding natural resource waters (060-02). Oregon's mixing zone regulations are at OAR 340-041-0053. The regulations provide in part that "[t]he limits of the mixing zone must be described in the wastewater discharge permit." The regulations also provide that such mixing zones will be as small as feasible according to specified factors. Finally, Washington's mixing zone regulations are at WAC 173-201A-400. Washington also addressed mixing zones in detail in the state's permit writers' guidance. Region 10 typically develops draft mixing zone requirements for Oregon and Alaska and provides them to the states for review. State certification then includes the finalization of mixing zones, because those are based on state requirements.

Findings on Application of Antidegradation and Mixing Zones

The implementation of antidegradation policy was reviewed as part of the core review. Consideration of antidegradation was not always documented in the fact sheets, and, in those cases where it was addressed, boilerplate or standard language was often used. In the Oregon permits, additional antidegradation discussions should be in NPDES permit fact sheets. In Washington, the fact sheets reviewed typically include boilerplate language regarding antidegradation. Similarly, Region 10 permits often use standard language to address antidegradation. ECY has developed a detailed antidegradation procedure. Ideally, fact sheets would indicate when antidegradation provisions apply and, if applicable, how a permit meets those requirements; permit documentation should support that discussion as needed.

With regard to mixing zones, the most significant observation again has to do with documentation. Fact sheets for Region 10, Oregon and Washington typically provide basic information regarding whether and how mixing zones were used in developing WQBELs. The permits rely on the relevant state mixing zone regulations, however, the fact sheets tend to include limited information regarding the state mixing zone policy and the nature of and basis for a mixing zone in each permit.

3.2.6 Thermal Variances & Cooling Water Intake Structures (CWA §316(a) & (b))

Clean Water Act Section 316(a) addresses thermal variances from effluent limitations and §316(b) addresses impacts from cooling water intake structures. The goal of this permit review was to identify how the permitting authority incorporated §316 provisions into permit requirements.

The universe of potential NPDES permits for review was determined using EPA's PCS database and the lists of facilities developed during the rulemaking for the §316(b) Phase II and Phase III rules. EPA selected 11 permits in consultation with Region 10 (2 in Alaska, 4 in Idaho, 2in Oregon, and 3 in Washington).

As a result of litigation, on July 9, 2007 (72 FR 37107), EPA suspended the bulk of the Phase II §316(b) regulation and announced that, pending further rulemaking (ongoing), permit requirements for cooling water intake structures at Phase II facilities should be established on a case-by-case, BPJ basis [see 40 CFR 125.90(b)]. In addition, facilities with cooling water intake structures not subject to a national regulation under §316(b) (e.g., manufacturing facilities) must also include permit requirements on a case-by-case, BPJ basis [40 CFR 401.14 and 125.90(b)].

Alaska

Two facilities from Alaska were reviewed: Healy Generating Station (AK0022942) and Chena Power Plant (AK0053333). The permit provided for Healy Generating Station was a draft permit.

§316(a): The permit for Healy Generating Station proposes a thermal mixing zone to meet temperature limits. The permit for Chena grants a §316(a) variance on the basis of an evaluation of fish habitat and populations. The permit also contains temperature limits that vary by season, as well as downstream monitoring.

§316(b): The permit for Healy Generating Station does not have BPJ §316(b) permit requirements and states that no specific §316(b) requirements will be developed until the Phase II rule is revised. In the interim, the permit requires compliance with state fish habitat permit requirements. The permit materials for Chena do not discuss §316(b) requirements.

Idaho

No relevant permits for Idaho were reviewed; some requested permits were not provided by the Region for review.

Oregon

Two facilities from Oregon were reviewed; Georgia Pacific West (OR0001341) and Northwest Aluminum (OR0001708).

§316(a): The Georgia Pacific West permit uses a mixing zone to meet temperature limits. The permit for Northwest Aluminum lacks a temperature limit.

§316(b): Permits for both facilities indicate that they use cooling water intake structures, but §316(b) permit conditions are missing.

Washington

Three facilities from Washington were reviewed: Kettle Falls Generating Station (WA0045217), Longview Fibre Paper and Packaging (WA0000078), and Noveon Kalama (WA0000281). Kettle Falls uses closed-cycle cooling that is supplied by municipal sources; its NPDES permit contains requirements for only process wastewater (including cooling tower blowdown).

§316(a): The permits for Kettle Falls and Noveon contain temperature limits and use a mixing zone to meet thermal limits. The Longview permit, however, does not contain temperature limits and notes that a TMDL for temperature is under development in the vicinity of the facility.

§316(b): Permits for Longview and Noveon indicate that the facilities use cooling water intake structures withdrawing from surface water, but §316(b) permit conditions are missing.

3.2.7 Stormwater

The NPDES program requires stormwater discharges from certain MS4s, industrial activities, and construction sites to be permitted. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities.

This section provides an overview of stormwater permitting activities in Region 10 primarily on the basis of information provided by Region 10 and a review of several draft permits. For stormwater, EPA Region 10 is the permitting authority in Alaska, Idaho, Indian lands in all states in the Region, and federal facilities in Washington.

	Alaska	Idaho	Oregon	Washington
Industrial General Permits	EPA MSGP	EPA MSGP	3	3
Not Issued	0	0	0	0
Expired	0	0	0	0
Industrial Permittees	263	262	1,112	1,604
Constr. General Permits	CGP	CGP	1	1
Not Issued	0	0	0	0
Expired	0	0	0	0
Constr. Permittees	1,533	880	2,130	2,762
MS4 Permits Total	5	18	22	4
MS4 Permittees Total	8	11	33	500
Phase 1 MS4 Permits	2	1	7	1
Not Issued	0	0	0	0
Expired	2	1	0	0
Phase II MS4 Permits	3	17	15	2 **
Not Issued	0	9	0	0
Expired	0	0	0	0
Phase II MS4 Permittees	5	21	18	80

** EPA will also be issuing one or more Phase II MS4 permits in Washington for federal facilities and tribes.

Construction Permits

EPA Region 10 authorizes stormwater discharges from construction sites under the CGP. Both Washington and Oregon have CGPs that expire in late 2010. Those permits were not reviewed as part of this regional review.

Washington is to be commended for its advanced construction program, which includes a number of exceptional features and a wide variety of guidance available for site operators to

improve compliance. For example, Washington requires each site one acre or larger to perform weekly sampling of its discharges to monitor turbidity and pH levels and compare those against benchmark values. Operators are required to notify the state when turbidity levels exceed a set benchmark. Also, Washington has developed procedures for the approval of active treatment systems to ensure that operators know and certify to proper procedures for the use of chemical flocculent to treat construction site waste. Each site proposing to use the materials must submit a request and obtain approval to use them. In addition, Washington requires sites to have certified inspectors to perform on-site inspections.

Oregon provides an option for operators that discharge to impaired waters or waters with TMDLs to either perform effluent monitoring and compare results with a benchmark or implement additional BMPs to provide additional controls. Where operators are unable to get discharge pollutant levels below benchmarks, they must implement the additional BMPs.

EPA Region 10 has anecdotal information suggesting that misuse of active treatment chemicals, such as chitosan, can be toxic to fish and other aquatic species and has been reluctant to approve the use of such materials for dischargers in Idaho and Alaska. The Region is looking to EPA Headquarters for guidance on how this material should be used and whether the Region should implement special procedures to handle such materials. This is a significant issue in Idaho because the Idaho Transportation Department is requesting Regional approval to use such a process for a large interstate construction project nearing commencement of activities. Region 10 has provided EPA Headquarters' WPD with permit language related to the use of treatment chemicals for use in the draft 2011 CGP. That language has been incorporated into the draft permit.

Industrial Permits

EPA Region 10 authorizes stormwater discharges from industrial facilities under the MSGP. As of December 1, 2008, only Alaskan Indian country lands had been authorized for coverage under the 2008 MSGP, although issuance of the permit in these areas is imminent because the 401 and Coastal Zone Management Act (CZMA) certifications have now been completed. At the time of the review, EPA Headquarters planned to public notice issuance of the permit for these areas in December 2008. Both Washington and Oregon have current and effective industrial general permits.

Of note, Washington reissued its industrial stormwater general permit for less than one year to provide additional time for the state to work with an external advisory committee to develop a new general permit. The subject permit expired in April 2009, but was the current permit at the time of the review. This (and previous) Washington industrial general permit is unique in that the state identifies each existing discharger covered under the permit that discharges to impaired waters and waters with TMDLs and established specific monitoring requirements on the basis of those determinations. The data are used to ensure that the facility is not contributing to the impairment.

Also, Oregon has issued a second general permit for industrial stormwater that is applicable to discharges to the Columbia Slough. The key difference between the basic industrial general permit and the watershed-based permit is the applicability of more stringent benchmark values for Columbia Slough. Both permits require all permittees to monitor discharges quarterly for the

life of the permit until four consecutive samples meet the benchmark, at which point further monitoring is waived.

Municipal Stormwater

Region 10: Region 10 issues MS4 permits for Idaho and Alaska. As shown in the Region 10 stormwater permitting table above, that includes two Phase I permits in Alaska and one Phase I permit in Idaho. All three permits are expired and have been so for at least 3 years. The Region is not actively working on reissuing these permits, instead focusing on issuing the remaining Phase II MS4 permits in Idaho.

Region 10 opted to issue individual permits to the Phase II MS4s in Idaho and Alaska and federal facilities and tribes in Washington. At the time of the review, the Region had issued four Phase II MS4 permits, given public notice for 15 additional Phase II MS4 permits, and was working on response to comments and endangered species issues for the permits.

EPA Headquarters reviewed several draft Phase II MS4 permits to be issued by the Region and has the following comments, specific to the Caldwell, Idaho, draft permit but similar to the other seven small MS4 permits that were recently given public notice:

- Public Education: The permit does not specifically identify—or require the permittee to identify—a focused set of target audiences based on water quality priorities, nor does it include an evaluation component to specifically evaluate the effects on targeted audiences.
- Public Involvement/Participation, Illicit Discharge Detection and Elimination (IDDE), and Construction: Permit provisions are specific, quantifiable, and enforceable.
- Post Construction: The permit does not specify an objective, performance standard, design standard or outcome, and it is unlikely that any existing standards will work. As a result, it is insufficient to direct permittees to *adopt an ordinance* without specifying the expectation or standard. Also, the permit should include more in the way of quantifiable requirements regarding inspection frequencies and maintenance agreements. Further, the permit highlights retention facilities when other controls are preferable. Finally, the permit does not include a tracking system for controls, nor does it include public and private stormwater control measures (SCMs).
- Pollution Prevention and Good Housekeeping: For the next permit term, the scope of requirements should be more comprehensive. For examples, see Chapter 6, Pollution Prevention/Good Housekeeping, in EPA's MS4 Permit Improvement Guide, at http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf.
- Monitoring: Requiring single grab samples four times a year will not provide data that can be interpreted and used to estimate pollutant loadings. The rationale for addressing the *largest flow outfalls* is not clear. The Quality Assurance Project Plan (QAPP) procedures are acceptable; however, it is of limited use to finely tune that aspect of the study when the data are not going to be useful.
- Reporting: The permit lacks a discrete set of quantifiable variables that are reported.

Washington: Washington has one of the largest stormwater permitting staffs of any state in the country and has done a very good job developing permits and procedures to minimize the impacts of stormwater on water quality.

Washington issues three MS4 permits: one general permit for Phase I MS4s and two general permits for Phase II MS4s (one for Western and one for Eastern Washington). Those permits are all current and effective through 2012. The Phase II permits establish detailed requirements applicable to each MS4 and include specific timeframes for when MS4s are expected to develop and implement the different aspects of the permits. An important feature of the Washington MS4 permits are the annual report requirements, which require permittees to clearly identify the status of development and implementation of activities required in the permit. That approach provides the state with a relatively easy way to gauge overall MS4 compliance with permit conditions. Each of the permits contains detailed appendices on minimum technical requirements for stormwater management at new development and redevelopment sites. The permits also include appendices that include additional requirements as necessary to address any applicable TMDL WLAs within the MS4 areas.

Oregon: Oregon issues individual permits to both its Phase I MS4s and Phase II MS4s. At the time of the review, all the permits were current and effective, with the Phase I permits to expire in 2009 and the Phase II permits to expire in 2012. Oregon was in the process of developing a draft Phase I MS4 permit template for use in its reissuance of the Phase I permits at the time of the review. EPA Headquarters reviewed Oregon's draft Phase I MS4 permit template as part of this review; one concern identified with this permit template is that the lack of specificity in many places makes it unenforceable. The permit template specifies that permittees must only "reduce pollutants to the maximum extent practicable." The text does not include the additional two required provisions, i.e., protect water quality and to satisfy the appropriate water quality provisions of the CWA.

3.2.8 Combined Sewer Overflows (CSOs)

- EPA's OW, Office of Enforcement Compliance Assurance (OECA) and EPA Regions worked together to revise the FY2007 Water Safe for Swimming (SS) Government Performance and Results Act measure for FY2008. The FY2008 measure incorporates a revised baseline to account for 59 CSO communities that are not required to develop LTCPs. The resulting measure also ensures that reporting is consistent across all EPA Regions. OW and OECA have provided guidelines describing the various elements of the new SS measure for a better understanding of the measure itself. The revised SS measure is as follows:
- Number and national percent, using a constant denominator, of CSO permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires one of the following:
    - Implementation of a LTCP which will result in compliance with the technology and water quality-based requirements of the CWA
    - Implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy

- Completion of separation after the baseline date

In EPA Region 10, Idaho does not have any CSOs.

Region 10 Water Safe for Swimming (SS) Measure

As of August 2008, Region 10 had a total of 15 CSO permits (1 in Alaska, 3 in Oregon, and 11 in Washington), with a total of 288 outfalls. In FY2005 and FY2006, 14 of the 15 permits (93 percent) included a CSO control implementation schedule either in the permit or in an enforcement order. In FY2007, 100 percent of the CSO permits included enforceable CSO controls. Region 10's water safe for swimming compliance rate is always much higher than the national average. Region 10 deserves kudos for being the one of the first EPA Regions to fully achieve the SS measure. In addition, the Region has supported Washington's CSO program, which is a very mature program and is one of the best-organized CSO programs in the nation.

The major requirements of the Washington State regulation WAC 173-245 include the submission of plans and reports for the construction and operation of CSO reduction facilities. Some important regulation details are as follows:

- Submission of a CSO Reduction Plan for approval by January 1, 1988.
- Requirements of the CSO Reduction Plan include
  - Subsequent submission and approval of facility plans for major CSO Reduction Projects.
  - Annual CSO Reports that include details of the past year's frequency of discharge and volume at each CSO site, explain previous years' CSO reduction accomplishments, and list projects planned for the next year.
  - A CSO Reduction Plan Amendment, submitted with the application for permit renewal, that includes an assessment of the effectiveness of the CSO reduction plan to date, a reevaluation of the CSO sites' project priority ranking, and a list of projects to be accomplished in the next five years, based upon priorities and estimated revenues.
  - Incorporation of the CSO schedule into an administrative order or the applicable NPDES permit. At present, all compliance schedules have been put in the NPDES permit.

CSO LTCP Review

EPA Headquarters reviewed two CSO Control Plans in Region 10.

City and Borough of Juneau, Alaska CSO LTCP: The community decided on sewer separation as a solution to its CSO issues in the 1980s, long before the 1994 CSO Control Policy, and before development of the LTCP. As a result, the submitted LTCP does not address any of the typical things, per the CSO Control Policy, that helps a community to make decisions about how to proceed with CSO control, nor does it provide much useful information on the community's CSO issues. The LTCP appears as it was written to fulfill the requirement of developing a LTCP for separation.

The LTCP is very representative of LTCPs from communities that choose sewer separation as their CSO control option. Many CSO communities that choose sewer separation do not address

multiple requirements of the LTCP when they develop their plans. For example, most of these communities do not address the receiving water at all – perhaps because they believe that if they eliminate CSOs through sewer separation, they will have fulfilled applicable requirements, and there is no point in analyzing the receiving water because CSOs will no longer be impacting the receiving water. By separating sewers, communities may shift CSO issues to stormwater issues. Other LTCP requirements that these communities may not address include hydraulic analysis of the system, rainfall, and post-construction monitoring of the water body, which may help them to determine the impact of sewer separation.

King County, Washington – 2008 Combined Sewer Overflow Plan Update: King County's revised *Combined Sewer Overflow Control Program* was somewhat different than the other CSO control plans or LTCPs. The revised program is not really a LTCP, which summarizes existing data on the program and uses these data for CSO control planning, but rather a required update to a well-established CSO program. In this case, the update summarizes activities that have been going on for multiple years and sets out a schedule for future activities, but it does not provide much discussion of program-related decisions on CSO control. The county's water quality monitoring activities have a watershed focus and, therefore, are not focused on tracking water quality improvements explicitly due to CSO mitigation. However, as the document states, CSOs are an important, but small, part of the overall water quality problems in the receiving waters, and a long-term plan is in place to control them, which may be sufficient. Based on a review of this document, with the perspective that the program is already quite advanced, it provides a good overview of a number of relevant programs used to comply with the CSO Control Policy requirements. However, it is difficult to determine whether the County has a complete CSO control document because this is the latest CSO control document in a very lengthy process. The major issue is whether this document meets Region 10's expectations for the required CSO Plan update, which may be different from the expectations for a LTCP from a less experienced program.

3.2.9 Sanitary Sewer Overflows (SSOs) & Peak Flows

SSOs

A critical step in controlling wet weather discharges from municipal wastewater sources is to ensure reporting of overflows to the NPDES authority. EPA believes that currently, most CSOs and bypasses at treatment plants are being adequately reported. However, information obtained in developing the 2004 Report to Congress on the Impacts and Control of CSOs and SSOs indicates that some NPDES authorities need to improve permittee reporting of SSOs.

Sewage overflows and bypasses at sewage treatment plants may endanger human health. Appropriate third party notification can reduce health risks associated with these releases.

Permits can establish a process for requiring the permittee or the NPDES authority to notify specified third parties of overflows that may endanger health due to a likelihood of human exposure, or to notify third parties of unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure.

In April 2005, EPA's WPD distributed a draft fact sheet describing NPDES permit requirements for SSOs. The draft fact sheet is available at http://www.epa.gov/npdes/pubs/sso_fact_sheet_model_permit_cond.pdf. The draft fact sheet addresses how NPDES permits should be clarified to ensure SSOs and unanticipated bypasses and upsets are reported, along with other issues.

Peak Flows at Treatment Facilities

During heavy wet weather events, most municipal sewer collection systems and treatment facilities receive increased flows that can cause sewage overflows and backups in the collection system and create operational challenges at the plant. To maximize treatment of flows at the plant, minimize overflows of raw sewage in the collection system, and avoid plant damage and operating problems, during wet weather, many POTWs route the portion of flow exceeding the capacity of the secondary units around the units.

Discharges from POTWs must meet effluent limitations based on the secondary treatment regulations (which establish 7-day and 30-day limits for TSS, BOD and pH) and more stringent WQBELs. In addition, the NPDES regulations establish standard permit conditions that apply to all NPDES permits. One standard condition that is important to peak wet weather diversions is the bypass provision at 40 CFR 122.41(m).

EPA addressed peak wet weather bypasses at POTWs that serve combined sewers in the CSO Control Policy. On December 22, 2005, EPA proposed a policy for implementing requirements for wet weather discharges at POTWs served by sanitary sewers. The December 2005 draft policy specifies that the bypass provision would apply to wet-weather diversions at POTWs serving separate sanitary sewer collection systems under all circumstances. Under the draft policy, NPDES authorities would be able to approve—in the NPDES permit—wet-weather diversions around secondary treatment based on a demonstration that, among other things, there are *no feasible alternatives* to the anticipated bypass.

SSO and Peak Flow Findings

All Region 10 states require municipal permittees to report SSOs, including SSOs that do not discharge to waters of the United States, to the permit authority. However, it appears that municipal satellite collection systems are not required to report SSOs from their systems. Region 10 continues to investigate the issue.

Municipal permits in Idaho and Alaska require that permittees notify drinking water facilities after an SSO event. Municipal permits in Washington require notification of SSOs to the Health Department in shellfish areas. Municipal permits in Oregon and Washington do not require that notification of a SSO be provided to drinking water facilities, although Washington requires their permittees to notify the Washington State Department of Health (DOH) of bypasses and overflows, so DOH can notify the drinking water facilities; this language has recently been added to its permit template. Washington permit writers have the option to also include notification of local health departments. Washington permits do not authorize bypasses at SSOs. The permits prohibit the bypasses but reference enforcement discretion and administrative orders. Ecology requires that all municipalities report SSOs. One regional office, the Northwest

Regional Office (NWRO), sent a letter to all satellite systems in January 2008 to inform them of the requirement to notify Ecology of SSO incidents.

Oregon regulations provide boilerplate language regarding SSOs and bypasses that prohibits most SSO discharges, but they appear to authorize SSO discharges where the permittee shows that there were no feasible alternatives to the overflow. Region 10 has raised concerns with ODEQ regarding that issue, but, at the time of the review, the state had not made changes to comply with the federal bypass provision at 40 CFR 122.41(m).

Permits in both Oregon and Washington authorize or approve bypasses at POTWs serving combined sewers. Permits in Oregon authorize or approve bypasses at POTWs serving sanitary sewers. The Region is currently evaluating whether the states have required the permittees to perform adequate feasibility analyses before the authorizations or approvals. Region 10 has been working with the city of Portland for several years to obtain an analysis, but it has not received a draft. In Washington, where it has taken a phased approach to CSO control since 1989, the state requires the permittees to conduct feasible alternative analyses, but the Region is not sure if those analyses meet the requirements of the 1994 CSO Control Policy.

Oregon regulations seem to provide that municipal permits may authorize or excuse SSOs and bypasses that result in conditions more severe than a design storm specified in the regulations. Region 10 has been working with Oregon to revise SSO language to resolve this issue.

3.2.10 Concentrated Animal Feeding Operations

EPA reviewed general permits issued by the states in Region 10 for CAFOs. The general permits cover all animal sectors in the Region and were chosen because of their widespread applicability. The following sections include background and permit review findings for each state.

Idaho

Idaho is not authorized to issue NPDES permits. Therefore, animal feeding operations that qualify under federal CAFO regulations are covered under EPA Region 10's NPDES CAFO general permit.

According to the information provided to EPA Headquarters by the Region, 401 CAFOs are in Idaho. Those are primarily in the beef and dairy livestock sectors. Idaho has taken specific actions to address water quality impacts from the livestock sectors. In 1995 a memorandum of understanding was developed between state agencies, the federal government, and private organizations to address dairy operations. In 2000 a similar process was initiated for beef operations. A total of 220 CAFOs are covered by an NPDES permit.

The Idaho Department of Environmental Quality reviews and approves plans and specifications for all new or modified waste treatment and disposal facilities before construction. Since 1995, the Idaho State Department of Agriculture has assumed greater authority for the regulation of animal feeding operations in Idaho.

The current NPDES general permit was issued on May 27, 1997, and does not reflect the changes made to the CAFO regulations in 2003 and the subsequent revisions to the regulations

as a result of the *Waterkeeper* decision. In view of those findings, the current NPDES general permit is outdated and must be reissued as soon practicable after the promulgation of the revised CAFO regulations.

Oregon

Oregon's Confined Animal Feeding Program began in the early 1980s. CAFOs in Oregon are regulated by Oregon Department of Agriculture's (ODA's) Natural Resources Division. The most recent development in Oregon's CAFO program was the implementation of Senate Bill 1008, enacted in 1993. That bill, introduced at the request of the Oregon Dairy Farmers' Association, provides the ODA statutory authority to administer the entire CAFO program, from the issuance of permits through enforcement, including civil penalty assessment. In 1995 Oregon passed the Agricultural Water Quality Management Act (AgWQM), which directs ODA to work with farmers and ranchers to develop Agricultural Water Quality Management Area Plans for watersheds. That voluntary program requests that farmers use BMPs in designated watersheds with AgWQM Area Plans.

In Oregon, NPDES permits are required for facilities that discharge pollutants to surface waters and include both state and federal requirements. Water Pollution Control Facilities (WPCF) permits are issued for systems that do not directly discharge to surface water. The NPDES and WPCF programs issue both individual and general permits. To assure continued protection of ground and surface water, ODA has been directed by the 2001 Oregon legislature, to convert the program from a WPCF permit program to an NPDES program. EPA has since directed ODEQ and ODA to issue NPDES permits to CAFOs that fit the federal definition of a CAFO. In addition, the 2001 Oregon Legislature authorized and directed the transfer of the NPDES permit program for CAFOs from ODEQ to ODA upon approval by EPA. EPA has not approved the transfer; as a result, ODEQ still has the lead for issuing NPDES permits to CAFOs.

According to information provided to EPA Headquarters by Region 10, 584 CAFOs are in Oregon. Those are primarily in the dairy and poultry (turkey) livestock sectors. All the CAFOs are covered by an NPDES permit.

The following aspects of the Oregon CAFO permit warrant kudos:

- Permit coverage must be obtained by state small and medium confined animal feeding operations that confines animals for more than 4 months and has a wastewater control facility or disposal system for wet wastes.
- The *Public Notice and Participation Requirement* section explains the requirement to provide public notice and participation before the approval of new permit coverage, renewing permit coverage, or approving proposed substantial changes to an Animal Waste Management Plan (AWMP).
- The *Public Notice and Participation Requirement* section also introduces an innovative approach to the permitting process and reads as follows, "Oregon Department of Agriculture (ODA) may batch multiple notices as regionally appropriate."
- The *Land Application* section gives direction to the permittee on how to minimize the movement of nutrients: "The permittee's application of manure, litter, and process wastewater must not exceed the capacity of the soil and crops to assimilate nutrients and

minimize water pollution. These applications must be quantifiable and based on the NRCS Phosphorus Index, USDA/NRCS Oregon Agronomy Technical Note #26, revised October 2001, and must account for all other nitrogen and phosphorus sources."

- The *AWMP Updates and Changes* section clearly delineates the requirements of the permittee should it make any updates or changes to its AWMP.

The following provisions in the Oregon permit present the issues described below:

- The language in the *Setback Requirement* section is not as stringent as the federal regulation found at 412.4(c)(5)(ii) *Alternative practices compliance alternative*, which reads as follows, "As a compliance alternative, the CAFO may demonstrate that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback."
- In the *AWMP Elements* section, please provide an explanation of this sentence, "For other operations, references used instead of actual testing data or test protocols if testing" [page 13, S3.C.3(i)].

Washington

Washington ECY, Water Quality Program, is responsible for the regulation of CAFOs under the State Water Pollution Control Act. Under the act, any animal feeding operation that results in the disposal of wastes into waters of the state requires a discharge permit. Discharges to surface waters would require an NPDES permit and those to groundwater would require a state waste discharge permit. Waters of the state include both surface and ground waters. Normally, the CWA and state Water Pollution Act requirements are administered jointly.

According to information provided to EPA Headquarters by Region 10, 159 CAFOs are in Washington. Those are primarily in the dairy sector. Only 24 operations are covered by an NPDES permit; the remainder are operating without NPDES permits.

The current NPDES general permit was issued on June 21, 2008, and does not reflect the subsequent revisions to the CAFO regulations that were made as a result of the *Waterkeeper* decision. In view of those findings, the reissued NPDES general permit must be revised to reflect the promulgated revisions to the CAFO regulations.

Specific issues identified in the current general permit include the following:

- In the *Nutrient Management Plans* section, in addition to the United Stated Department of Agriculture's Natural Resources Conservation Service (USDA/NRCS) *Field Office Technical Guide* the permittee should be encouraged to refer to other documents developed by USDA: *Comprehensive Nutrient Management Plan (CNMP) Guidance* (December 1, 2000) and NRCS *General Manual*, Title 190, Part 402 – Nutrient Management (November 24, 2000). The state should also refer the permitee to *Comprehensive Nutrient Management Plans (CNMP) Technical Criteria*, being developed by USDA, when it is finalized.
- In the *Environmental Monitoring* section, the permit requires the annual soil testing of nitrate-nitrogen, which is more stringent than the federal requirements. However, the

permit is less stringent than the federal requirements in that the permit does not require the soil to be analyzed a minimum of once every 5 years for phosphorus content.

3.2.11 Whole Effluent Toxicity (WET)

EPA reviewed eight permits in Region 10— one industrial and one municipal permit were evaluated per state. The WET WQS for each state were reviewed carefully before reviewing the permits or fact sheets (or both) to see if the permit requirements adequately and correctly implemented NPDES WET permit requirements. EPA reviewed the following in the permit and fact sheet: general permit provisions to 40 CFR Part 136 references or more specific permit test provisions for WET test methods; whether and how WET RP determinations were made; adequacy of monitoring frequencies as representative of the effluent; and whether an adequate basis or rationale was provided in the permit fact sheet for other WET requirements.

The NPDES regulations at 40 CFR 122.44(i)(1)(iv) require permits to include monitoring, and the monitoring must be done using EPA's WET analytical methods cited in 40 CFR Part 136. The permits were checked for inconsistencies between the general permit WET test conditions and inclusions of more specific outdated citations to WET test methods. Permits must require and use the most recent EPA analytical test methods, including WET test methods, by either specific current test method references or by incorporating the general reference to 40 CFR Part 136. Evidence of permit language inconsistencies and outdated WET test methods was found in three state permits (Idaho, Oregon, and Washington).

Regulations at 40 CFR 122.44(d) require that several factors be considered when determining WET RP. Among those factors, the monitoring data used should be representative of the effluent, including ensuring that effluent variability is considered and addressed (although any evidence of RP is deemed sufficient). 40 CFR 122.48(b) requires that permits establish monitoring requirements to yield data representative of the monitored activity, and 40 CFR 122.44(i)(l) requires that monitoring requirements ensure compliance with permit limitations. Monitoring frequencies are based on the nature of the facility, similar facilities, and, if applicable, the existing or previous (or both) permit's monitoring results or compliance history. In addition, EPA's 1991 *Technical Support Document (TSD) for Water Quality-based Toxics Control* recommends conducting toxicity tests quarterly for one year to adequately assess the variability of toxicity observed in effluents. Below the suggested initial minimum frequency, the chances of missing toxic events increases. The toxicity test result for the most sensitive of the tested species is considered to be the measured toxicity for an effluent sample.

General WET Findings

Permit Documentation: Some permit fact sheets lack adequate documentation of the rationale and basis supporting permit WET requirements and decisions such as RP determinations, WET limits, and monitoring frequencies, reductions, and triggers. In permits from all four states, it is unclear whether an RP determination was done because it is not discussed in the permits or the fact sheets. Specifically, the Idaho industrial permit fact sheet demonstrates RP and indicates a need for a WET limit, but the permit requires WET monitoring only and does not contain a WET limit. In most of the permits, there is no clear explanation for interpreting WET test data and insufficient information on the mixing zones (MZ) or zones of initial dilution (ZID) or both.

EPA WET Test Method Citations: EPA WET test methods specifically cited in some permits are outdated or conflict with fact sheet citations, including when the general permit conditions referenced 40 CFR Part 136 test methods. For example, Oregon's industrial permit lists outdated 1993 and 1994 WET test methods and cites 40 CFR Part 136 methods, which is an inherent inconsistency within the permit and, therefore, does not provide clear direction to the permittee. In reviewing the state permits, it was noted that some fact sheets do not include a WET test method citation at all. The lack of or inconsistent references to EPA WET test methods in a permit does not provide clear direction to the permittee, especially in determining compliance, and can contribute to unnecessary confusion between the permittee and the permitting authority as well as the testing laboratory when WET data generated from outdated WET methods are used for compliance determinations.

Permit Conditions and Monitoring: The basis for requiring annual monitoring and how that frequency is representative of the permitted effluent discharge and protective of the respective state WET WQS should be explicitly documented in the permit fact sheet. The monitoring frequency rationale should include an explanation of when the samples are taken during the year and account for seasonal or production considerations.

Alaska

Permit Documentation: The municipal permit (Mendenhall WWTP – City and Borough of Juneau, AK0022951) fact sheet lacks rationale for permit decisions and adequate documentation for informing the permittee of expectations, such as instructions for permit required actions, while the industrial permit (Alyeska Pipeline Service Company, AK0023248) is very explicit. The municipal fact sheet does not contain sufficient documentation to substantiate whether the state's aquatic life protection criteria or WET WQS were met. The industrial permit's fact sheet, however, adequately describes the reason for requiring only WET test monitoring based on the RP analysis results. Alaska WQS lack specific criterion for acute WET but contain a WET criterion for chronic exposure including the chronic survival endpoint.

EPA WET Test Methods (cited): Although the municipal permit does not require WET limits, chronic monitoring was required but by using only one species. The industrial permit does not specify a WET test dilution series but indicates instead that the dilution series bracket the test concentrations according to the previous IC_{25}'s results. Because toxicity might not always occur at the same concentration, EPA recommends a definitive concentration series that accounts for the receiving water concentration that is based on low-flow conditions and is less variable over time. The industrial permit requires chronic testing with two invertebrate species but does not require vertebrate or plant species as required by EPA.

Permit Conditions and Monitoring: The municipal permit requires only monitoring with no actual WET permit limits established for acute or chronic toxicity. Under the monitoring-only scenario, indications of toxicity do not require any follow-up testing or TIE/TRE requirements. The industrial permit does not require any additional requirements (e.g., accelerated monitoring or TIE/TRE) in those instances when toxicity is indicated, but the permit may be reopened to establish a limit if necessary.

Idaho

Permit Documentation: The municipal permit (City of Preston WWTF, ID0020214) lacks an RP analysis for acute and chronic WET, and requires chronic monitoring with triggers but contains no limits. Because Idaho lacks numeric criteria for toxicity, Region 10 uses the chronic criterion of 1.0 TUc. Also, because a mixing zone is lacking as a result of low dilution available, it is enforced as end-of-pipe; therefore no acute toxicity testing is necessary. Idaho's WQS lack narrative or numeric criterion for acute or chronic WET and include a reference to outdated WET test methods.

EPA WET Test Methods (cited): The municipal permit cites the EPA 2002 chronic WET test methods, while the industrial permit (Hecla Mining Company-Grouse Creek Unit, ID0026468) cites the 1993/1994 WET test method documents. Both the municipal and industrial permits require chronic testing for only two species—a vertebrate (fathead minnow) and an invertebrate (*C. dubia*) and does not require the plant (*S. capricornutum*). The industrial permit requires acute testing with only one species, rainbow trout, while EPA requires a minimum of two species (vertebrate and invertebrate). Specifics of WET testing including test duration, sample type, and test type (i.e., static or renewal) are not detailed in the municipal permit and are considered insufficient permit documentation.

Permit Conditions and Monitoring: The municipal permit requires semiannual monitoring during the first year only and, afterwards, only annual monitoring for the life of the permit. It is recommended that more frequent monitoring, such as quarterly monitoring on the basis of the chronic toxicity RP demonstration, would be more representative of the effluent discharge. EPA recommends that monitoring be representative of the effluent discharge pursuant to the NPDES regulations (40 CFR Part 122.44 (d)), and, therefore, for this permit EPA recommends that a more frequent monitoring provision be included that would be more representative of the permittee's effluent discharge and would better support the basis behind the WET RP determination as is required by the NPDES regulations (40 CFR Part 122.48(b)). Because the municipal permit lacks either an acute or chronic WET limit, details in the permit regarding WET noncompliance are absent. Therefore, the details within the permit pertaining to follow-on actions by the permittee for WET noncompliance such as accelerated WET, monitoring, TIE/TRE, or a permit reopener provision were not able to be reviewed.

Oregon

Permit Documentation: The industrial permit (West Linn Paper Company, OR0000787) contains no WET limits, and the municipal permit (City of Seaside WWTP, OR0020401) contains both acute and chronic WET limits. The industrial permit fact sheet lacks adequate documentation of the state WET criteria and the relevant implementation procedures.

EPA WET Test Methods (cited): Both permits cite outdated EPA WET test methods. The industrial permit cites the 1993/1994 methods but does add an "or newer" caveat, which would incorporate a permit test method requirement to use EPA's most current (presently 2002) WET test methods, while the municipal permit cites the 1990/1994 methods. Both permits contain citations to monitoring being conducted under 40 CFR Part 136, thereby possibly confusing permittees as to which test method they are required to use. Specifics of WET testing including

test duration, sample type, dilution series, and required reference toxicant testing are not detailed in the permits.

Permit Conditions and Monitoring: The municipal permit conditions and WET noncompliance instructions for the permittee such as accelerated WET monitoring and TRE/TIE are not detailed in the permit. Specifically, it is unclear whether toxicity observed in an accelerated test is a violation of the permit. The requirements of the permittee when conducting a TIE/TRE are not in the municipal permit.

Washington

Permit Documentation: The municipal permit (WA0024023, City of Yakima) contains a chronic limit, and the industrial permit (WA0003239, Richmond Beach Asphalt Plant and Terminal) contains both an acute and a chronic WET limit, including sublethal endpoints such as fertilization using the sea urchin as the test organism. The industrial permit does not explain the WET RP decision to substantiate why WET limits were not required, while the fact sheet for the municipal permit indicates chronic RP, thus requiring chronic WET limits. The municipal permit does include acute monitoring but no acute WET limits, and the rationale cited in the permit is based on a no observed toxicity finding under a previous permit along with the removal of the acute WET limit.

EPA WET Test Methods (cited): Both permits cite outdated EPA WET test methods. Both permits cite EPA's 1990 WET test methods, but the industrial permit adds an "or most recent version of referenced protocols" caveat for chronic testing, which would require the permittee to use EPA's most current (presently 2002) WET test methods. Both permits contain a general permit provision citation for monitoring to be conducted using methods pursuant to 40 CFR Part 136. It is suggested that outdated WET test method references be removed from the permit since the date specific references to a WET test method override general provisions. EPA general counsel advised that references to date-specified WET test methods are what drive the permit even if there are incorporations by reference to the current promulgated WET test methods. Therefore, it is better to include only a general permit condition that serves as an incorporation by reference to 40 CFR Part 136 and avoid permit language citing outdated analytical methods. In the Washington permits, if the 1990 WET test method reference were deleted and a strong reference to Washington's ECY publication *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*,[10] indicating that it contains the test methods permittee is to use) was emphasized, it would rectify that permit language inconsistency. The industrial permit requires acute testing with a freshwater invertebrate (Daphnid) and a marine vertebrate (Topsmelt or Silverside).

Permit Conditions and Monitoring: The municipal permit does not include an RP analysis for the decision to not include acute WET limits, but RP was demonstrated and included in the permit to support the requirement for chronic WET limits.

[10] ECY, WQ-R-95-80. This publication, which is also known as the "Canary Book," is updated every year or so.

3.2.12 National Pretreatment Program

The General Pretreatment Regulations (40 CFR Part 403) establish responsibilities of federal, state, and local government; industry; and the public to implement pretreatment standards to control pollutants from the industrial users that could cause pass through or interfere with POTW treatment processes or that could contaminate sewage sludge.

The goal of this pretreatment program PQR was to assess the status of the pretreatment programs in Region 10, and assess specific language in POTW NPDES permits. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR 122.42(b) (POTW requirements to notify the director of new pollutants or change in discharge)
- 40 CFR 122.44(j) (Pretreatment Programs for POTWs)
- 40 CFR 403.8 (Pretreatment Program Requirements: Development and Implementation by POTW)
- 40 CFR 403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval)
- 40 CFR 403.12(i) (Annual POTW Reports)
- 40 CFR 403.18 (Modification of POTW Pretreatment Program)

This section also summarizes the following: which states have approved pretreatment programs, program oversight (number of audits and inspections conducted, numbers of significant industrial users (SIUs) in approved pretreatment programs, and numbers of categorical industrial users discharging to municipalities that do not have approved pretreatment programs), and the status of streamlining rule implementation.

POTW Program Oversight (Audits and PCIs)

Two of the four Region 10 states have approved state pretreatment programs (Oregon and Washington) and two do not (Alaska and Idaho). Alaska's pretreatment authorization is being phased in, and the NPDES portion became effective in November 2009. According to PCS and ICIS 2007 data, two approved POTW pretreatment programs are in Alaska, 12 in Idaho, 25 in Oregon, and 11 in Washington. In Region 10 states, PCS and ICIS have recorded that three audits were conducted in Idaho in 2006 and no audits conducted during 2007; four pretreatment compliance inspections (PCIs) were conducted in 2006 (two in Alaska, two in Idaho); and 10 PCIs were conducted during 2007, all at POTWs in Oregon. Washington did not conduct any audits or PCIs in 2006 or 2007.

It is difficult to assess whether the states are on target to meet Compliance Monitoring Strategy (CMS) goals (memorandum from OECA Assistant Administrator Nakayama, October 17, 2007). Data would be needed for the 5-year permit term for each POTW to assess CMS compliance, and only PCI and audit data for 2006 and 2007 are available. CMS goals are that one audit and three PCIs are conducted per 5-year NPDES permit term.

Categorical Industrial Users (CIUs) where EPA or State has Oversight

According to information reported in 2006, Alaska has 9 SIUs in approved POTW programs, Idaho has 82, Oregon has 288, and Washington has 192. Also from 2006 data, the numbers of CIUs discharging to POTWs that do not have approved pretreatment programs total 41; by state, three are in Alaska, four are in Idaho, 34 are in Washington, and there are none in Oregon. At that time, these CIUs were reported to be *controlled* (having regular oversight by the Region or control mechanisms issued, typically by the authorized state). However, the 2007 *end-of-year* data reported by the Region for Water Quality measure 21b identifies that 85 percent (or 35) of 41 CIUs were reported as controlled; these data were not itemized by state.

Streamlining

The two states that are approved for pretreatment, Oregon and Washington, are in the process of modifying their state codes to incorporate the requirements of the streamlining rules by reference; POTW program modification would follow state regulation adoption. None of the Region 10 states are classified as 40 CFR 403.10(e) states.

NPDES Permit Quality Review

For the permit review, EPA selected six permits from Region 10 (one in Alaska, one in Idaho, two in Oregon, and two in Washington). The permits were reviewed to determine whether they contain all requirements at 40 CFR 122.42(b), 40 CFR 403.8, and 40 CFR 403.12(i). The permits reviewed for Alaska and Idaho were issued by Region 10. POTW permits that were reviewed were selected at random from POTW permits and associated fact sheets that were already collected by the Regional Review Team.

The discharge flows for the six POTWs reviewed are as follows:

Unalaska, AK – 0.8 mgd (million gallons per day)
Dalles, OR – 4.15 mgd
Seaside, OR – 2.25 mgd
Westside WWTP in Vancouver, WA – 12 mgd
Sumner, WA – 2.0 mgd
South Fork Coeur d'Alene River Sewer District, ID – 4.3 mgd.

Pretreatment Program regulations at 40 CFR 403.8(a) require POTWs with design flows greater than 5 mgd with industrial wastewater that could cause pass-through or interference to develop pretreatment programs. Smaller designed POTWs may be required at the discretion of the EPA or state authority.

The Alaska permit does not contain pretreatment program requirements, nor does the fact sheet contain a justification for why a pretreatment program is not necessary. The only mention of pretreatment in the permit is under the civil penalties section where it includes violations of a pretreatment program as a negligent violation. The reopener clause in Section IV.K of the permit refers to sludge requirements only, and it does not contain a reopener clause in case a new industrial user is discovered [reporting required by 40 CFR 122.42(b)] and the decision is made that a pretreatment program should be developed.

The Idaho permit does not contain pretreatment program requirements, nor does the fact sheet contain a justification for why a pretreatment program is not necessary. The only mention of pretreatment in the permit is under the civil and criminal penalties sections where it includes violations of a pretreatment program as a negligent violation. The reopener clause in Section V.K of the permit refers to sludge requirements only, and it does not contain a reopener clause in case a new industrial user is discovered [reporting required by 40 CFR 122.42(b)] and the decision is made that a pretreatment program should be developed.

The permits from Oregon contain pretreatment program requirements. One of the POTWs is required to conduct an industrial waste survey update, and on the basis of the results, the state would determine whether a pretreatment program is required and reopen the NPDES permit to include pretreatment program requirements, if necessary. Because this permit was effective in May 2008, it is likely that the determination is still underway. The second permit reviewed contains most of the required components but has two deficiencies. The permit does not include requirements at 40 CFR 122.42(b) to notify the director of new pollutants or changed discharge volume or character, and it does not contain the statement that the POTW provide the requisite funding and personnel to implement the pretreatment program as required at 40 CFR 403.8(f)(3). Also, one of the CFR citations was incorrect. Number 12, of Schedule E, regarding annual pretreatment program reports cites 40 CFR 403.12(h) for annual report requirements. The correct citation is 40 CFR 403.12(i).

The permits from Washington contain pretreatment program requirements. One of the Washington permits was very thorough except that it does not include requirements at 40 CFR 122.42(b) to notify the director of new pollutants or changed discharge volume or character. The other Washington permit does not contain the 40 CFR 122.42(b) requirement and lacks many requirements listed at 40 CFR Part 403 such as legal authority, funding statement, monitoring, reporting, control mechanism, slug control evaluation, enforcement, public participation, local limits, or annual reports.

4.0 SUMMARY OF FINDINGS AND PROPOSED ACTION ITEMS

The NPDES Regional Program and PQR identified areas where the Region and its states are 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 10 NPDES permit programs. This list of proposed Action Items will serve as the basis for ongoing discussions between Region 10 and its authorized states, as well as between Region 10 and EPA Headquarters. The discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion.

The proposed Action Items are divided into three categories to identify the priority that should be placed on each item and facilitate discussions between Regions and states.

- Category 1—Most Significant: Proposed Action Items will address a current deficiency or noncompliance with a federal regulation.
- Category 2—Recommended: Proposed Action Items will address a current deficiency with EPA guidance or policy.
- Category 3—Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the state's or Region's NPDES permit program.

The Category 1 and Category 2 proposed Action Items should be used to augment the existing list of *follow-up actions* established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals or could serve as a roadmap for modifications to Region 10 program management.

Note that the NPDES Program Review for Region 10 took place in early fall 2008, and the states and Region 10 might have already taken significant steps for improvement in deficient areas.

4.1 NPDES Regional Program Review

4.1.1 Permit Issuance

Only one Region 10 state has met the 90 percent current goal for permit issuance, and only 30 percent of permits for tribal facilities in Region 10 are current. Additionally, nearly half of the country's permits that have been expired for longer than 10 years are in Region 10. Proposed action items to address these issues include the following:

- Region 10 should develop a plan with interim milestones to aggressively address its permit issuance backlog, including tribal backlog and issuance of permits expired for more than 10 years. (Category 2)
- Region 10, Oregon, and Washington should select and commit to finalize more priority permits. (Category 2)

4.1.2 Endangered Species Act and National Historic Properties Act Consultations

Difficulties in coordination with the Services have resulted in time-consuming delays in permitting facilities, particularly with respect to Region 10's CGP and MSGP.

- Region 10 should work with EPA Headquarters to overcome coordination issues with the Services. (Category 2)

4.1.3 Alaska Program Authorization

Alaska was authorized to administer the NPDES program October 31, 2008. At the time of the review, Alaska had not proposed any permits. A proposed Action Item to aid the successful transition of the NPDES Program to Alaska is as follows:

- Region 10 should work closely with Alaska to ensure that permit issuance goals are met. (Category 2)

4.2 Permit Quality Review

4.2.1 Core Permit Review

In general, the core review indicated that the permits reviewed are largely consistent with state and EPA rules, guidance, and policy pertaining to NPDES permits. Recommendations for addressing issues or concerns that were identified for each state are presented below.

Oregon

ODEQ is making progress on the Blue Ribbon Commission recommendations. The more recent NPDES permits and fact sheets reviewed are improved over older permits, and results of the ODEQ standardization processes are evident. Progress is also being made toward a watershed approach to NPDES permitting. Proposed Action Items to help the state strengthen its NPDES permit program are the following:

- ODEQ should continue to work with Region 10 to implement the outcome of compliance schedule litigation and to ensure that compliance schedules include specific time frames and final limits in a manner consistent with applicable law and regulations. (Category 1)
- ODEQ should continue to work with Region 10 to ensure that the bypass definition in ODEQ NPDES permits is as stringent as the federal definition contained in 40 CFR Part 122. (Category 1)
- ODEQ and Region 10 should work to revise language in the monitoring section of the permit (Schedule B in ODEQ NPDES permits) that allows a modification to the permit without public comment. (Category 1)
    - Since the time of the review, the standard language has been revised to resolve this issue.

- ODEQ needs to ensure that for discharges to waterbodies shared with other states, they comply with the requirements found in 40 CFR 124.10 (c)(ii). (Category 1)
- ODEQ should continue to strengthen permit documentation, including fact sheets, to clearly establish the basis for permit decisions, including RP determinations, limit derivation, and how any delay in permit issuance affects the permit issuance process (e.g., ensuring current data). Also, if technology-based effluent limitations are carried forward from the previous permits, the fact sheet should explain why such limits remain appropriate. (Category 1)
- As ODEQ develops and modifies their IMDs, it is recommended that ODEQ coordinate the IMDs with EPA Region 10 to ensure all policy and guidance conform to federal requirements. (Category 2)

Washington

Overall, ECY's permit quality appears to be quite good. Washington is the only state in Region 10 to reach its backlog goal. Proposed Action Items to help the state strengthen its NPDES permit program are the following:

- ECY should further bolster its fact sheets by addressing the following: (all Category 3)
  - Fact sheets should include a clear discussion of which pollutants were evaluated and why.
  - ECY should complete development of its antidegradation procedure to clarify when antidegradation provisions apply and what is required to meet those requirements (and permit documentation should address this as applicable).
  - ECY should include a standard heading for antibacksliding in the fact sheets to prompt consideration of and documentation regarding antibacksliding.
  - ECY should document receiving water quality (or impairment) in fact sheets.
  - ECY should include in its fact sheets clear references to permit limit calculation documents or files that are not included in those fact sheets but are maintained elsewhere in the permit file.
- EPA Region 10 should evaluate the feasibility of providing continued modeling support for Visual Plume software. (Category 3)

Region 10

In general, the Region 10 permits were well-constructed and included detailed fact sheets. Proposed Action Items to help the Region strengthen its NPDES permit program are the following:

- Region 10 should continue to reduce its permit backlog to 10 percent. (Category 2) That effort should include examination of the following contributing factors:
  - Coordination with the NEPA process.
  - Whether training or additional coordination will facilitate consultation with tribes and the Services regarding NPDES permits.
  - Streamlining the state certification process.
  - Additional use of general permits (under development).
- Region 10 should improve their fact sheets by doing the following: (all Category 3)

- Region 10 fact sheets should identify the §303(d) status of the receiving water and whether the receiving water is subject to a final TMDL for a pollutant of concern.
- Region 10 fact sheets should include a clear discussion of which pollutants were evaluated and why.
- Region 10 fact sheets should include a standard heading for antidegradation in the fact sheets to prompt consideration of and documentation regarding antidegradation.
- Region 10 fact sheets should include a standard heading in the fact sheets for antibacksliding to prompt consideration of and documentation regarding antibacksliding.
- Region 10 should include in its fact sheets clear references to permit limit calculation documents or files that are not included in those fact sheets but are maintained elsewhere in the permit file.

- Region 10 should ensure that no permits have terms that are longer than 5 years. (Category 1)
- Region 10 should ensure that standard operating procedures for state policy/procedures are current and in use. (Category 3)

4.2.2 Mercury Methods

As described in section 3.2.1, a review of mercury methods specified in the permits reviewed for the Region 10 states indicates that the permits generally reference methods available under 40 CFR Part 136 but do not specify the more stringent mercury methods. Of the seven permits reviewed that required monitoring for mercury, six permits require the use of methods approved in 40 CFR Part 136, and one permit requires the use of method 1631E. Proposed Action Items for Region 10 and its states are the following:

- Region 10 should ensure that the states are aware of the most current mercury methods and should verify that each state is incorporating sufficiently sensitive analytical methods into relevant permits. See *Analytical Methods for Mercury in National Pollutant Discharge Elimination System (NPDES) Permits*, at http://www.epa.gov/npdes/pubs/mercurymemo_analyticalmethods.pdf. (Category 2)
- States in Region 10 should implement policies and procedures to evaluate which methods are appropriate for application data and monitoring during the permit term. (Category 2)

4.2.3 Impaired Waters and TMDLs

In the eight permits reviewed, receiving water impairments appear to be considered and addressed in an iterative manner. Two of the permits will implement TMDLs that were not final when the permits were issued. In the other permits, it is common for the permit authority to assess whether the discharge contributed to the impairment and to develop permit provisions accordingly. In most of those cases, the impairment was discussed to some extent in the fact sheet. One Idaho permit provides a compliance schedule for meeting limits on a pollutant of concern. No impairment is identified or discussed in the Alaska permit reviewed. Proposed Action Items for Region 10 and states are the following:

- The fact sheet or permit file should include consistent documentation regarding whether the receiving water is listed as a §303(d) impaired waterbody. (Category 3)
- The fact sheet or permit file should include discussion of whether a facility discharges pollutants of concern and, if so, how the permit conditions were developed consistent with state requirements to account for such impairments. (Category 3)

The TMDL review indicated that all TMDL allocations that were applicable and final when the permits were issued were implemented in the respective permits. One permit in Idaho was issued before the TMDL became final, and the fact sheet and permit indicate that the WLA will be implemented in the permit when the TMDL became final. A proposed Action Item for Region 10 and states is as follows:

- Region 10 and the states should continue to document the status of relevant TMDLs in the fact sheet or permit files, including how permit conditions reflect applicable TMDL results. (Category 3)

4.2.4 Use of *E. coli* and Enterococcus Bacteria Standard

The Region 10, Oregon and Washington permits reviewed implement the applicable state standards for *E. coli* or fecal coliform, which are consistent with the corresponding federal standards. Alaska and Washington WQS include standards for fecal coliform. Idaho and Oregon standards address *E. coli*. Alaska and Oregon also are subject to 40 CFR 131.41 (Washington ECY and DOH implement the BEACH program, which monitors beaches for enterococcus levels). A proposed Action Item for Region 10 and states is as follows:

- Region 10 should work with Alaska and Washington to explore the states' adoption of *E. coli* (or enterococcus**)** WQS. (Category 2)
    - ECY has already demonstrated in the last standards revision that its fecal coliform criteria are as stringent as the *E.coli* criteria. This was approved by EPA.

4.2.5 Thermal Variances & Cooling Water Intake Structures (CWA §316(a) & 316(b))

With regard to temperature discharge limits and variances under CWA §316(a), most of the permits reviewed indicate that the temperature limits in the permits are based on the use of a mixing zone. One permit from Alaska was based on a §316(a) variance. Most of the permits reviewed do not include permit conditions implementing §316(b). One Alaska permit indicates that requirements would not be developed until the §316(b) Phase II rule is promulgated. Region 10 and states should implement the following proposed Action Items to improve implementation of §316(a) and (b) requirements in permits:

- Permits and fact sheets should explicitly document the basis (including the use of mixing zones) for any§316(a) thermal variances. (Category 1)
- States should include §316(b) cooling water intake structure permit conditions for existing facilities on a BPJ basis, and the basis for the determination of Best Technology Available should be documented in the permit fact sheet. (Category 1)

- States should ensure that §316(b) is applied to all applicable facilities, not just power generating facilities. (Category 1)
- States should reevaluate any §316(a) thermal variances and §316(b) requirements at each permit renewal 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. (Category 1)

4.2.6 Stormwater

Region 10 has been responsible for permitting stormwater sources in two states and opted in 2002 to issue individual permits to the Phase II MS4s for a variety of reasons (e.g., to address site-specific endangered species, critical habitat, and impaired water issues). However, the Region has not devoted the necessary staff resources to issue and reissue the MS4 permits while at the same time trying to implement and enforce other aspects of the stormwater program. Fourteen Phase II MS4 permits are now more than 5 years past due, and three Phase I MS4 permits have been expired for more than 3 years. That does not reflect on the efforts of the regional stormwater staff who have worked very hard to implement the program (working with permittees, states, and other stakeholders) to promote and oversee the stormwater program. The Region has added some staff hours to the program but there remains a large gap between available and needed resources to adequately implement the program.

Region 10 and its states spend a significant amount of time dealing with ESA issues and permit appeals, and this adds to the resource burden in the stormwater program. Virtually every stormwater action taken in Washington and Oregon is appealed. Recently, Washington won a district court decision requiring MS4s to consider Low Impact Development as a component of Maximum Extent Practicable when developing local stormwater management programs.

Proposed Action Items for Region 10 and states are the following:

- Region 10 must develop and maintain a schedule for addressing the lack of MS4 permits and the backlog of expired permits. At present, only 9 of 28 MS4 permits are issued and effective. Sixteen Phase II MS4 permits are now more than 5 years past the date that they were to have been issued (although 10 have been proposed). In addition, all three Phase I MS4 permits have been expired for at least 3 years. (Category 1)
- With regard to Phase II MS4 permits: (all Category 2)
  - Public Education—Permits should specifically identify (or require the permittee to identify) a focused set of target audiences and build and evaluate public education programs around water quality priorities.
  - Post Construction—Permits should include some type of objective, performance standard, design standard, or outcome and should include more quantifiable requirements regarding inspection frequencies and maintenance agreements and tracking.
  - Pollution Prevention and Good Housekeeping—For the next permit term, the scope of requirements should be more comprehensive. For examples, see Chapter 6, Pollution Prevention/Good Housekeeping, in the EPA MS4 Permit Improvement Guide, at http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf.

- Monitoring—Simplify QAPP requirements and develop an approach to estimate pollutant loadings. Develop a long-term indicator program (physical, biological in-stream indicators), so that by the end of the permit term, something meaningful is in place.
- Reporting—Permits should include a discrete set of quantifiable variables that are reported. Suggest the use of EPA's new annual report status summary cover sheet.

- Region 10 should more substantively review and comment on the draft NPDES stormwater permits from Washington, Oregon, and (upon authorization of the NPDES program) Alaska, to ensure that narrative effluent limits in state permits are consistent and progressive. For guidance, refer to EPA's *MS4 Permit Improvement Guide*, online at http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf. (Category 2)
- Region 10 is looking to EPA Headquarters for guidance on how address certain chemical flocculants. (Category 3)

4.2.7 Combined Sewer Overflows

Region 10 deserves kudos for being the one of the first EPA Regions to fully achieve the SS measure goal. In addition, the Region has supported Washington's CSO program, which is a very mature program and is one of the best organized CSO programs in the nation. Proposed Action Items for EPA Headquarters and Region 10 are the following:

- Region 10 needs to focus more on post construction compliance monitoring requirements to make sure that the CSO control plans are achieving the expected water quality results, especially the pre-CSO Control Policy programs, on a case-by-case basis. (Category 2)
- Region 10 needs to coordinate more with the EPA Headquarters for its CSO training needs. (Category 2)

4.2.8 Sanitary Sewer Overflows

All Region 10 states require municipal permittees to report SSOs to the permit authority. It appears, however, that municipal satellite collection systems are not required to report SSOs from their systems. Municipal permits in Idaho and Alaska require that permittees notify drinking water facilities after an SSO event. Oregon and Washington do not require such notification, but Washington requires its permittees to notify the Washington DOH of bypasses and overflows so DOH can notify the drinking water facilities. Washington permit writers have the option to include notification of local health departments. Municipal permits in Washington also require notification of SSOs in shellfish areas to the Health Department. Washington permits do not authorize or approve bypasses of SSOs. The permits prohibit bypasses, but reference enforcement discretion and administrative orders.

With regard to peak flow bypasses, Oregon regulations provide boilerplate language regarding SSOs and bypasses that prohibit most SSO discharges but appear to authorize SSO discharges where the permittee shows that there were no feasible alternatives. Region 10 has raised concerns with ODEQ regarding the issue. In addition, permits in Oregon authorize or approve bypasses at POTWs serving combined sewers. Oregon permits authorize or approve bypasses at POTWs serving sanitary sewers. The Region is evaluating whether the states have required the

permittees to perform adequate feasibility analyses before the authorizations or approvals. Proposed Action Items for Region 10 and states are the following:

- Region 10 should continue work with Oregon to change SSO and bypass permit language to ensure that the language does not authorize discharges, but rather provides a framework for enforcement discretion. (Category 1)
  - Since the time of the review, Oregon has revised its permit language related to SSOs in the individual permits and in the permit template, so permits now being issued have overflow language that meets the NPDES regulations.
- Region 10 should ensure that Oregon and Washington conduct adequate feasibility analyses before approving bypasses in permits. (Category 1)
- Region 10 should work with its states to ensure that municipal satellite collection systems are required to report SSOs. (Category 2)

4.2.9 Concentrated Animal Feeding Operations

The states in Region 10 have made progress in developing NPDES permits to regulate the discharge of pollutants from CAFOs. Some permits need to be updated to meet the requirements of the federal regulations. Proposed Action Items for Region 10 and states are the following:

- The current Idaho NPDES general permit was issued on May 27, 1997, and does not reflect the changes made to the CAFO regulations in 2003 and the subsequent revisions to the regulations in response to the *Waterkeeper* decision. As a result, the current NPDES general permit is outdated and must be reissued by Region 10 as soon practicable after the promulgation of the revised CAFO regulations. (Category1)
- Oregon should address the following recommendations:
  - The CAFO general permit must be revised to include, at a minimum, the language found at 40 CFR 412.4(c)(5)(ii) *Alternative practices compliance alternative*. (Category 1)
  - Oregon should submit a formal program revision package to EPA to transfer the responsibility for regulating CAFOs under the NPDES permit program from ODEQ to ODA. (Category 1)
  - Clarify the language found on Page 13, S3.C.3(i) AWMP Elements, "For other operations, references used instead of actual testing data or test protocols if testing." (Category 3)
- The current Washington State NPDES general permit was issued on June 21, 2008, and does not reflect the subsequent revisions to the CAFO regulations as a result of the *Waterkeeper* decision. The reissued NPDES general permit, among other things, must be reissued taking the following into consideration: (Category 1)
  - Require the soil to be analyzed a minimum of once every 5 years for phosphorus content.
    - The CAFO permit requires phosphorus sampling every 5 years as one of the minimum elements of a nutrient management plan, and, because the NMP terms are the terms of the permit coverage, this meets the CAFO federal rule requirement.

- CAFO regulations require that only CAFOs that discharge or propose to discharge must apply for an NPDES permit.
  - Permit section S2.A states, "This permit is applicable to:
    1. CAFOs that are discharging or proposing to discharge to state waters
    2. CAFOs that are required by federal rule to obtain permit coverage, and
    3. AFOs or CAFOs that seek permit coverage."

    That language meets the federal CAFO rule requirements.
- CAFO regulations require greater public participation in the issuance of a CAFO NPDES permit. Permitting authorities are required to review the NOI and NMP and allow the public meaningful review and comment on each, as well as on the terms of the NMP that are incorporated into the permit.
  - The CAFO program is being implemented in that way. All NMPs are reviewed by both Washington State Department of Agriculture and ECY. Once the NMP is acceptable to Ecology, public notice is run once a week for 2 weeks. From the date of the second public notice, a 30-day public comment period begins when the NMP can be reviewed and commented on.
- EPA has removed the 100-year, 24-hour storm containment structure standard for new large swine, poultry and veal facilities, because of lack of a record supporting this technology, and has replaced it with a zero-discharge requirement.
  - Washington's CAFO permit still includes the 100-year, 24-hour storm event language for new large swine, poultry, and veal facilities. That will be removed during the next permit rewrite and reissuance. The same section (S1.A) which addresses new large swine, poultry, and veal operations also states that discharge is prohibited unless the facility is designed to meet the 100-year, 24-hour rainfall event standards.
- CAFO regulations allow CAFO operators to voluntarily certify that they do not discharge or propose to discharge and as such have no duty to apply for an NPDES permit.
  - Region 10 staff members have had several discussions with ECY coordinated by ASWIPCA to make clear that delegated states have the choice of adopting a voluntary certification program, and that such a program is *not required*. At this time, Washington has chosen *not* to adopt voluntary certification.
- CAFO regulations include a framework for identifying the terms of the NMP that must be enforceable requirements of a CAFO's NPDES permit. The framework includes two alternative approaches for specifying terms of the NMP with respect to rates of application, which are needed to satisfy the requirement of the NMP include "protocols to land apply manure, litter or process wastewater…that ensure appropriate agricultural utilization of the nutrients" [40 CFR 122.42(e)(1)(viii)]. The framework also includes supplemental annual reporting requirements for permitted CAFOs to accompany these alternative approaches.
  - NMP types (linear and narrative) are not yet specified in the current CAFO permit. This will be updated during the next permit rewrite and reissuance. Permit section S3 also addresses the minimum elements that a NMP must include to be considered acceptable by ECY.

4.2.10 Whole Effluent Toxicity

EPA Region 10 should consider increasing its state oversight and coordination of NPDES state WET program implementation to ensure compliance with states' aquatic life protection (or WET) WQS. That could include an analysis of state WET programs (Oregon and Washington). EPA should ensure that EPA WET test methods are incorporated by reference to 40 CFR Part 136 in all permits to avoid inconsistent references to outdated methods. EPA Region 10 should ensure that the state fact sheets thoroughly document the rationale for each permit decision and requirement (or lack of permit requirements) including monitoring, reductions in monitoring frequency, or a WET limit. The state permits, at a minimum, should provide a clear explanation to substantiate their WET permit decisions and WET RP assessments including providing a summary or reference to the supporting WET data.

The proposed Action Items for the Region 10 states follow.

Alaska

- An acute WET provision should be included in the state's WQS to meet the CWA requirements for protection of aquatic life. (Category 1)
- The fact sheets should more accurately and completely document the basis for permit requirements, especially monitoring requirements. (Category 2)
- The procedure used and the results obtained for the WET RP determination should be stated in the fact sheet. (Category 2)
- The permit should require the appropriate number of test species for acute and chronic testing. (Category 2)
- Fact sheets should consistently document whether the state's aquatic life protection criteria or WET WQS were met. (Category 2)
- Adequate WET test dilution series, as recommended by EPA, should be included in the permit because toxicity may not always occur at the same concentration as previous WET tests. (Category 2)

Idaho

- The state's WQS should be more specific with regard to including both acute and chronic WET criteria provisions in addition to its current general *free from toxic substances* provision to provide more support to the permit provisions developed. (Category 3)
- The fact sheets should more accurately and completely document the basis for permit requirements, especially monitoring requirements. (Category 2)
- The procedure used and the results obtained for the WET RP determination should be stated in the fact sheet. (Category 2)
- To avoid confusion, the permit must cite directly to the most current version of the EPA WET test methods or only cite by reference to 40 CFR Part 136 as the permit test method requirement. (Category 1)
- The permit should require the appropriate number of test species for acute and chronic testing. (Category 2)

- WET test specifics for permittees' monitoring of their effluent such as WET test duration, sample type, and test type (i.e., static or renewal) need to be detailed in the fact sheets. (Category 2)

Oregon

- The fact sheets should more accurately and completely document the basis for permit requirements, especially monitoring requirements. (Category 2)
- The procedure used and the results obtained for the WET RP determination should be stated in the fact sheet. (Category 2)
- To avoid confusion, the permit must cite directly the most current version of the EPA WET test methods or only cite by reference to 40 CFR Part 136 as the permit test method requirement. (Category 1)
- Permit conditions for WET noncompliance permit requirements, such as accelerated monitoring and follow up actions for observed toxicity, should be clearly documented in the permit. (Category 2)
- The permit should contain instructions for a TIE/TRE investigation, if needed. (Category 2)

Washington

- Permits must require the appropriate test species for the receiving waterbody (i.e., freshwater species for freshwater receiving waters and marine species for estuarine or marine receiving waters). However, if a different choice of test organism is selected because of the nature of the effluent, all acute testing (with an invertebrate and a vertebrate) should be done with the same approach such that the test organisms used should both be a saltwater species (or freshwater species) and not split (one freshwater, and one saltwater test organism) as is presently included in the industrial permit reviewed.(Category 2)

4.2.11 Pretreatment Program

The permits and fact sheets reviewed contain some deficiencies. It could not be determined from the permits and fact sheets reviewed for Alaska and Idaho whether the POTWs were required to have pretreatment programs, and if not, there was no justification for this finding in the fact sheet. The proposed Action Items for Region 10 and states are the following:

- Region 10 must ensure that the POTW permits for Alaska include pretreatment program requirements, as necessary, in the NPDES permits. If a pretreatment program is not required, justification for this finding should be discussed in the permit fact sheet, and the reopener clause should be expanded to include the ability to revise a permit when the decision is made that a pretreatment program should be developed. Upon full delegation, Alaska will be responsible for ensuring that permits contain all required components. (Category 1)
- Region 10 must ensure that the permits for Idaho include pretreatment program requirements, as necessary, in the NPDES permits. Idaho must include pretreatment program requirements in the NPDES permits. If a pretreatment program is not required,

justification for that finding must be discussed in the permit fact sheet, and the reopener clause should be expanded to include the ability to revise a permit when the decision is made that a pretreatment program should be developed. (Category 1)

- Oregon must ensure that requirements at 40 CFR 122.42(b) and 40 CFR 403.8(f)(3) are included in NPDES permits and ensure that the CFR sections are cited correctly. (Category 1)
- Washington had one very detailed permit that lacks only the requirements at 40 CFR 122.42(b). The second permit lacks many required components. The state must ensure that all required components are included in the NPDES permits. (Category 1)
- To assess CMS goal achievement, the Region should establish a plan to track inspections and audits conducted at POTWs and address whether the POTWs are meeting the goals of one audit and three PCIs per 5-year NPDES permit term. Region 10 should work with Washington to ensure that audits and PCIs are being conducted as required and that the data are being reported into PCS/ICIS. (Category 3)

List of Appendices

APPENDIX A. CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

Appendix A. 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 before discharge or expiration. Additionally, 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 might be subject to widespread public interest or raise major issues. Fact sheets MUST contain all the elements prescribed at 40CFR124.8 AND 40CFR124.56.	- Any facility that fails to submit a complete permit application at least 180 days before 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**
The 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 those 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 those exceptions must clearly document the basis. - Any permit that contains a compliance schedule that extends a statutory deadline for meeting secondary treatment requirements.

Nonmunicipal Dischargers	
CWA/NPDES requirements	**Conditions subject to disapproval**
The CWA requires permits issued to nonmunicipal 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 (ELGs) 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 judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(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 40 CFR 125.3(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
The 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, certain tenets may not be waived by the state procedures. Those include - Where valid, reliable, and representative effluent data or in-stream 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 might be sparse or absent), a limit MUST be included in the permit (e.g., a new POTW plans to chlorinate its effluent and in-stream chlorine toxicity is anticipated). - Where a technology-based is limit is required (because of an ELG or BPJ) AND the limit is not protective of water quality standards, a water quality-based effluent limitation (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 in-stream 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, certain tenets may not be waived by those 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, stormwater). - 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 on the basis of the unique characteristics of the permitted facility. The appropriateness of the conditions, therefore, must be assessed on a case-by-case basis. However, certain elements of special conditions 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 *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.

V. Special Conditions	
Municipal and Nonmunicipal Dischargers	
CWA/NPDES requirements	**Conditions subject to disapproval**
In general, special conditions will be established on the basis of the unique characteristics of the permitted facility. The appropriateness of these conditions, therefore, must be assessed on a case-by-case basis. However, certain elements of special conditions 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 conditions* be placed in all NPDES permits. The regulations allow states to omit or modify those 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 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 nonmunicipal 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 B. CORE REVIEW CHECKLISTS

Appendix B. Core Review Checklists

NPDES Permit Quality Review Checklist for Nonmunicipals

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 stormwater) 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 waterbody(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 on the basis of best professional judgment (BPJ) for all pollutants discharged at treatable concentrations? (Y/N/NA)		
23.	For all limits developed using 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 noncompliance

- Bypass
- Upset

50.	Does the permit contain the additional standard condition for existing nonmunicipal 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 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 BOD_5 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) 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 waterbody 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)		

Water Quality-Based Effluent Limits

		Response	Comment
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 that 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 influent monitoring 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 stormwater program requirements? (Y/N/NA)		
45.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines 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 noncompliance
- 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)		