

INTERNAL AUDIT REPORT

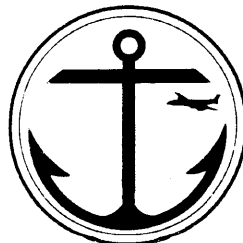
2012-01

National Pollution Discharge
Elimination System Permit

Anchorage Water and Wastewater Utility

February 9, 2012

MUNICIPALITY OF ANCHORAGE
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Mayor Dan Sullivan

February 9, 2012

Honorable Mayor and Members of the Assembly:

I am pleased to present **Internal Audit Report 2012-01, National Pollution Discharge Elimination System Permit, Anchorage Water and Wastewater Utility** for your review. A brief summary of the report is presented below.

In accordance with the 2011 Audit Plan, we have completed an audit of the National Pollution Discharge Elimination System Permit. The objective of this audit was to determine if there were sufficient internal controls to ensure the accuracy of reported data. Specifically, we selectively traced data from the monthly 2011 Discharge Monitoring Reports and the 2010 Annual Report to source documents to validate the reported quantities. In addition, we reviewed the Monitoring Program Plan and the Operation and Maintenance Plan to determine if Anchorage Water and Wastewater Utility complied with monitoring and reporting requirements.

Based on our review, we determined that Anchorage Water and Wastewater Utility's internal controls were generally sufficient to ensure compliance with the Permit's monitoring, recording, and reporting requirements. However, we found that procedures controlling Anchorage Water and Wastewater Utility's monitoring reports and Kinnetic Laboratories, Inc. supplied data did not always detect errors and omissions. Specifically, required monitoring activities were not always performed, data provided by Anchorage Water and Wastewater Utility did not always match supporting documents, and some supporting documents lacked required information. Finally, data provided by Kinnetic Laboratories, Inc. did not always match supporting documents.

There were two findings in connection with this audit. Management was responsive to the findings and recommendations.

A handwritten signature in black ink, appearing to read "Peter Raiskums".

Peter Raiskums, CIA, CFE
Director, Internal Audit

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Mayor Dan Sullivan

February 9, 2012

**Internal Audit Report 2012-01
National Pollution Discharge Elimination System Permit
Anchorage Water and Wastewater Utility**

Introduction. The John M. Asplund Wastewater Treatment Facility (Asplund) is Alaska's largest wastewater treatment facility. Asplund is a primary treatment plant operating under a National Pollution Discharge Elimination System permit (Permit) according to Section 301(h) of the Clean Water Act. This Permit provides for primary treated wastewater to be discharged into a well mixed marine environment. Processes used in the treatment include screening, grit removal, primary sedimentation and chlorine disinfection of the primary effluent (outflow) prior to discharge.

Anchorage Water and Wastewater Utility's (AWWU) current Permit was issued on August 2, 2000. The Permit requires AWWU to implement influent/effluent, water quality, biological, and toxics control monitoring programs. It also requires AWWU to submit monthly Discharge Monitoring Reports (DMR) and a Monitoring Program Annual Report (Annual Report) to the Environmental Protection Agency. Part III, *Compliance Responsibilities*, of the Permit states "Any permit noncompliance constitutes a violation of the Act and is grounds for: enforcement action; permit termination, revocation and re-issuance, or modification; or denial of a permit renewal application." AWWU staff perform all the routine in-plant monitoring conducted daily, weekly, and monthly. Since 2001, Kinnetic Laboratories, Inc. (Contractor) has been AWWU's designated contractor to cover Asplund's less routine monitoring program elements such as the biannual toxic pollutants and pesticide testing, and the ambient water quality testing.

Objective and Scope. The objective of this audit was to determine if there were sufficient internal controls to ensure the accuracy of reported data. Specifically, we selectively traced data from the monthly 2011 DMRs and the 2010 Annual Report to source documents to validate the reported quantities. In addition, we reviewed the Monitoring Program Plan and the Operation and Maintenance Plan to determine if AWWU complied with monitoring and reporting requirements.

The audit was conducted in accordance with generally accepted government auditing standards, except for the requirement of an external quality control review, and accordingly, included tests of accounting records and such other auditing procedures as we considered necessary in the circumstances. The audit was performed during the period of October through November 2011. The audit was requested by AWWU.

Overall Evaluation. Anchorage Water and Wastewater Utility's internal controls were generally sufficient to ensure compliance with the Permit's monitoring, recording, and reporting requirements. However, we found that procedures controlling AWWU's monitoring reports and Contractor supplied data did not always detect errors and omissions. Specifically, required monitoring activities were not always performed, data provided by AWWU did not always match supporting documents, and some supporting documents lacked required information. Finally, data provided by the Contractor did not always match supporting documents.

FINDINGS AND RECOMMENDATIONS

1. Internal Control Procedures Need Improvement.

- a. **Finding.** Procedures controlling AWWU's monitoring reports, which require several levels of management review and approval, did not always detect errors and omissions. Specifically:

- ***Monitoring Frequency Fell Short of Specification*** - During the last two weeks in May 2011, AWWU monitored dissolved oxygen in effluent flow, and temperature and pH in both influent and effluent flows only three times a week. However, the Permit required these parameters to be monitored four times a week.

- ***AWWU Provided Data Did Not Always Match*** - Data used to prepare the monthly DMR did not match supporting documentation for one of 27 samples selected from the Biochemical Oxygen Demand (BOD) test and two of 27 samples selected for the total chlorine residual test.
- ***Supporting Documents Lacked Required Information*** - Two supporting documents did not show the date of the analysis or the initials of the individual who performed the analysis. Part II, *Monitoring, Recording, and Reporting Requirements*, Paragraph F, *Records Contents*, of the Permit requires records of monitoring information to include the date the analyses were performed and the individual who performed the analyses.

- Recommendation.** The Treatment Division Director should ensure that Permit monitoring and reporting procedures are reviewed and strengthened.
- Management Comments.** Management concurred. See full text of management's response in Attachment 1.
- Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

2. **Procedures Over Contractor Provided Data Need Improvement.**

- Finding.** Procedures controlling data provided by the Contractor did not always detect errors. For example, salinity data for one monitoring station and water temperature data for another monitoring station in the 2010 Annual Report did not match the data in the appendices.

- b. **Recommendation.** The Treatment Division Director should ensure that procedures regarding the review of Contractor data are reviewed and strengthened.

- c. **Management Comments.** Management concurred. See full text of management's response in Attachment 1.

- d. **Evaluation of Management Comments.** Management comments were responsive to the audit finding and recommendation.

Discussion With Responsible Officials. The results of this audit were discussed with appropriate Municipal officials on December 21, 2011.

Audit Staff:
Scott Lee

Attachment 1



Municipality of Anchorage

Anchorage Water & Wastewater Utility



General Manager's Office

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Mayor Dan Sullivan

Board Chair Tim Sullivan

February 1, 2012

Peter Raiskums
Director
Internal Audit, MOA

Dear Mr. Raiskums,

Thank you for your review of our processes and your working draft report dated January 3, 2012 detailing your findings.

AWWU agrees that based on the review you performed, our internal controls are generally sufficient to ensure compliance with the Permit's monitoring, recording, and reporting requirements. However, we recognize that our processes are not perfect, and that some improvements could be made to our processes to avoid or detect errors and omissions in implementing permit-required monitoring efforts.

With respect to individual findings, we offer the following responses:

1) *Internal Control Procedures Need Improvement*

- ***Monitoring Frequency Fell Short of Specification.*** We missed one sample set out of four required for each of two weeks in late May for effluent dissolved oxygen and influent and effluent temperature and pH. The consistency of other measurements during this week and through other time periods suggests that significant undocumented variation is unlikely. There is no indication that effluent quality was impaired or water quality in the receiving waters was affected by the missed sampling.
- ***AWWU Provided Data Did Not Always Match.*** Results reported on the Discharge Monitoring Report (DMR) appear to have been mis-transcribed from original documentation for a single BOD analysis and 2 of 27 average daily chlorine residual tests. The transcription errors had negligible effect on the monthly averages for either analyte, and resulted in no environmental or compliance consequences.

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Supporting Documents Lacked Required Information. We failed to record analysis dates and initials of the analyst in two supporting documents. The missing information does not imply any inaccuracy or misrepresentation of the analytical data provided.

2) Procedures over Contractor Provided Data Need Improvement

The audit discovered several discrepancies in the contractor's report, apparently the result of rounding errors. None of the discrepancies materially affected the discussions and conclusions provided in the report.

The findings of the audit have provided a useful basis for reviewing and updating our quality control procedures, particularly in terms of data review and data validation. We have expanded the documentation of data review and validation efforts significantly. The new procedure, documented in the AWWU Laboratory Services Quality Assurance/Quality Control Plan, dated January 2012, calls for a formal checklist of review and validation steps by the originating analyst, followed by a full review by a peer analyst prior to verification by a third-level data validator and finally by the lab supervisor. AWWU has additionally developed a compliance sampling and analysis tracking and accountability program utilizing Microsoft Project software.

Similarly for contract laboratories, enhancements to the data review and validation program are included in the Monitoring Program Workplan, dated January, 2012, prepared by Kinnetics Laboratories. Laboratory data will be verified by a peer reviewer, with a tertiary review by a lab manager before release to AWWU. Potential for transcription error will be reduced by institution of electronic data deliverables (EDD's) with every report from the contract laboratories. Kinnetic Laboratories is also developing a database for all in-house and subcontracted analytical data to reside and for contract lab EDD's to be uploaded directly to. Report preparation will now include transfer of validated data directly from the database to report tables. A second check will be performed to ensure that data tables correctly reflect laboratory findings, and will be followed up with a tertiary check and sign-off by laboratory QA personnel prior to reporting. Laboratory reports are provided as appendices in all past and future annual reports, as well.

We are confident that these steps will lead to improvement in the process of reporting NPDES permit monitoring compliance data. We thank you for your assistance in bringing these discrepancies to our attention.

Sincerely,



Craig Woolard
General Manager, AWWU

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