

ASA INTERNAL AUDIT REPORT – APRIL 2010

**Alexandria Sanitation Authority Advanced Wastewater Treatment
Plant
Alexandria, Virginia**

Audit Conducted By:

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References:

**NBP Biosolids EMS Guidance Manual – March 2001
Latest Update – March 2006
NBP National Manual of Good Practice for Biosolids – January 2005
NBP Elements of an EMS for Biosolids – May 2002
NBP Third Party Verification Auditor Guidance – January 2001
Latest Update – March 2006
Alexandria Sanitation Authority Environmental Management System
Manual
National Biosolids Partnership Audit Report – April 2009**

May 3, 2010

Executive Summary

The EMS internal audit team was selected in March 2010. Working with the EMS team, and following the procedure in Section 19, audit checklists from the 2009 audit were reviewed and modified as needed for each of the program elements or sections. The checklists were completed by early April 2010.

The audit team met on April 12, 2010 to plan the audit and assign EMS Section responsibilities. Additional meetings were held to update the audit team on the audit progress.

The audit was conducted from April 13, 2010 through April 30, 2010. This is the third internal audit conducted since the EMS program went online in September 2006. EMS documents including all 17 Elements (18 Sections and procedures to cover the 17 National Biosolids Partnership Elements) were reviewed and selected staff was interviewed. Operator work practices were observed in the field and compared to operational guidelines and Standard Operating Procedures establishing how each unit process related to biosolids is to be operated.

Prior to December 2009, ASA had two separate EMS systems. One system was designed to enhance management of biosolids and was modeled after the NBP program. The other was designed to improve management of ASA's environmental aspects and was modeled after ISO 14001. In order to enhance efficiencies, ASA merged the two programs to create one unified program. This work was completed in December 2009. The EMS manual

contains all of the required elements and each appears to meet the National Biosolids Partnership's minimum conformance requirements.

ASA is a certified NBP agency. To maintain this certification annual audits are conducted to verify the program meets NBP requirements. This is the second Interim Audit, and the NBP allows certified agencies to substitute third party audits with an internal audit. ASA exercised this option and this audit is in place of the third party audit.

The audit findings resulted in four Positive Observations, no Major Non-Conformances, five Minor Non-Conformances and one Opportunity For Improvement.

Overall the EMS program continues to improve. Previous issues with documentation control, following required element procedures and completing action plans have addressed.

Introduction

The purpose of the Biosolids Environmental Management System Internal Audit is to evaluate conformance with each of the NBP 17 EMS elements as well as to test the operation of the linked processes in the following categories:

- Adherence to the Biosolids Policy and the Code of Good Practice principles.
- Up-to-date Operational Guidelines (OG) at all CCPs for Operational Controls as well as Monitoring and Measurement.

- Adherence to all OGS, monitoring and measurement schedules, and record retention requirements.
- Functioning Document Management, Records Management and Management of Change Procedures.
- Proactive Public Participation, Communications, and Performance Reporting.
- Emergency Preparedness and Response Readiness.
- Internal EMS Audit and Corrective Action Procedures.
- Establishing and tracking progress toward continuous improvement Goals and Objectives.

The audit methodology consisted of a document review, staff interviews direct observation, and transaction testing as follows:

- Document review and staff interviews were conducted using EMS Team approved audit checklists.
- The audit included additional staff interviews and observation to judge conformance with EMS procedures.
- The audit team reviewed a sampling of CCP's, operational controls, and monitoring and measurement activities.
- Reviewed all non-conformances noted during the April 2009 verification audit.

ELEMENT SUMMARY

The following is a summary of findings including a brief description of the National Biosolids Partnerships requirements for each of the 17 elements.

Element 1 – EMS Manual (Section 10)

The Biosolids Environmental Management System shall be documented in an EMS manual or an equivalent set of program documents that describe the applicable policies, programs, plans, procedures and management practices in the EMS.

The ASA Biosolids EMS manual meets the minimum conformance requirements of the National Biosolids Partnership. These minimum requirements include approval at a level of management with the authority to commit resources, an ASA's Biosolids Management Policy, establishes procedures for incorporating public participation, covers all critical control points in the biosolids value train and describes activities assigned to contractors.

There were no non-conformances for this element.

Element 2 – Policy (Section 1)

The organization shall establish a biosolids management policy that commits the organization to following the principles of conduct set forth in the NBP's *Code of Good Practice*.

ASA has an established Environmental Policy. This Policy was modified to include a commitment to follow the NBP's *Code of Good Practice*. In addition, the policy also commits to following the Virginia Biosolids Council Code of Good Practices.

There were no non-conformances for this element.

Element 3 – Critical Control Points (Section 3)

The organization shall identify and document the critical control points of its biosolids management activities throughout the biosolids value chain. The

organization shall also identify potential or actual environmental impacts at each critical control point.

ASA has identified and documented all critical control points throughout the biosolids value chain, as well as identifying environmental impacts.

There were no non-conformances noted for this element.

Element 4 – Legal and Other Requirements (Section 4)

The organization shall establish a procedure for identifying and tracking legal and other requirements applicable to its biosolids management activities. The procedure shall include a management process for incorporating changes and new requirements into the elements of its EMS. The organizations shall establish and maintain records of applicable legal and other requirements.

ASA has procedures for tracking legal and other requirements and required records appear to be maintained, with a document listing records.

There are no non-conformances associated with this element. One observation is the procedure needs to be updated to reflect new staff responsibilities. This will be addressed in a minor non-conformance for Roles, Resources and Responsibilities element.

Element 5 – Goals and Objectives (Section 5)

The organization shall establish and periodically review measurable biosolids program goals and objectives for its biosolids management activities.

Goals and objectives have been established and appear to use the SMART criteria. Two minor non-conformances were identified resulting from the action plan for the objective needing specific information detailed in the Documentation Control procedure and the posting on the ASA external website specific information.

Element 6 – Public Participation in Planning (Section 9)

The organization shall select and implement a proactive public participation approach to involve interested parties in its biosolids management program and EMS planning process. The approach selected shall reflect the organization's commitments to ten principles in the NBP's *Code of Good*

Practice, including its plans for independent third-party verification of conformance with the EMS elements.

ASA has a proactive approach for involving interested parties in the biosolids program. There are no new non-conformances associated with this element. A minor observation is the website does not contain a brochure about the biosolids management process. This will be addressed in a minor non-conformance for the Goals and Objectives element.

Element 7 – Roles and Responsibilities (Section 6)

The organization shall establish and maintain records of the assigned roles and responsibilities for its biosolids management program and activities.

This element generally meets the NBP's minimum conformance requirements including appointing an individual with overall responsibility for the program, defining roles and responsibilities of its employees for performing biosolids management activities, providing the resources necessary to execute these responsibilities and defining the roles and responsibilities for contractors performing biosolids management activities. The roles and responsibilities appear to be well defined.

A minor non-conformance was observed with the specific roles and responsibilities not corrected in all cases due to organization changes.

Element 8 – Training (Section 7)

The organization shall establish and maintain a training program to ensure that its employees responsible for specific biosolids management activities and for implementing various EMS functions are competent in performing their assigned tasks and duties.

ASA has an established biosolids and EMS training program for staff including awareness and skills training.

A minor non-conformance was observed due to incomplete training records for awareness training.

Element 9 – Communication (Section 8)

The organization shall establish and maintain a proactive communications program that provides ongoing information about its biosolids management program and its EMS to interested parties and the public.

ASA meets the minimum requirements for this element. No non-conformances were identified. External website content will be addressed in the non-conformance for Goals and Objectives.

Element 10 – Operational Control of Critical Control Points (Section 10)

The organization shall develop and implement standard operating procedures, work management practices, or other appropriate methods at all critical control points throughout the biosolids value chain to manage potential environmental impacts effectively.

Operational Guidelines and Standard Operating Procedures have been developed throughout the biosolids value train. Staff is familiar with the procedures and appears to be using or referencing them in their daily work routine.

There were no non-conformances for this element.

Element 11 – Emergency Preparedness and Response (Section 13)

The organization shall establish and maintain emergency preparedness and response plans and procedures to ensure effective response to accidents and emergency situations associated with its biosolids management activities.

Emergency plans and procedures related to emergency situations related to the biosolids program have been established and maintained.

There were no non-conformances for this element.

Element 12 – Documentation, Document Control, and Recordkeeping (Section 11 and 18)

The organization shall establish and maintain documentation, documents, and records for its entire biosolids management program including the 17 elements of its EMS.

The merging of the two EMS programs resulted in separate procedures for Document control and Recordkeeping. The two procedures appear to meet the NBP minimum conformance requirements.

There was one non-conformance for incomplete documentation found for contractor recordkeeping.

Element 13 – Monitoring and Measurement (Section 14)

The organization shall establish and maintain regular monitoring and measurement procedures and practices for all of its biosolids management activities to: Ensure its compliance with applicable legal and other requirements, measure biosolids program performance at critical control points, track progress toward achieving its biosolids program goals and objectives as required under Section 5.

There were no non-conformances for this element.

Element 14 – Nonconformances (Section 16)

The organization shall establish and implement a procedure to investigate any noncompliance with regulatory requirements or nonconformance with any internal EMS procedures, identify the cause and take actions to correct the nonconformance, and document the necessary corrective actions taken to prevent a reoccurrence.

ASA has procedures for non-conformances, and the tracking and completion of action plans has greatly improved. All non-conformances noted in the 2009 Internal Audit and 2009 Interim Audit have been completed.

There were no non-conformances for this element.

Element 15 – Biosolids Management Program Report (Section 17)

The organization shall complete a periodic, written biosolids management program performance report summarizing the performance of its biosolids management program.

The report for 2008 appears complete and addresses all requirements in the procedure. The 2009 report has been drafted and being reviewed by the Management Team.

There were no non-conformances for this element. The 2008 report is not available on the external website and is being addressed in the non-conformance for Goals and Objectives.

Element 16 – Internal EMS Audit (Section 19)

The organization shall establish and maintain an internal audit program to periodically analyze its EMS for biosolids and to determine whether it is effectively meeting its biosolids management policy, program requirements, and program goals and objectives.

ASA's procedure appears to meet the requirement for this element.

There were no non-conformances for this element.

Element 17 – Management Review (Section 20)

The organization's management shall, at intervals that it determines appropriate, review the biosolids environmental management system and its performance relative to policy commitments, goals, objectives, and established performance measures to ensure its continuing suitability, adequacy, and effectiveness.

ASA has developed a procedure for conducting Management Reviews and completed a review in April 2009. There is currently a scheduled Management Review in Ma 2010.

There were no non-conformances for this element.

Listing of Findings

Positive Observations

The EMS manual represents a comprehensive collection of procedures that are well written and conform to the minimum conformance requirements. The merging of the two separate EMS programs required extensive modifications to the procedures to continue to meet both NBP and ISO

14001 requirements. The effort should result in greater efficiencies and unified procedures.

Documentation practices have improved with all relevant documents available to staff through the SharePoint website. Procedures and operational control documents are periodically reviewed and revisions are well documented.

Improvements in managing non-conformances have significantly improved. All 2009 Internal and Interim non-conformances were completed in a timely manner. While the program did not generate many Corrective Action Notices during the merging of the programs, recent activity demonstrates staff embracement of the value of the corrective and preventative process.

Staff work practices are consistent with documented operational controls. Staff is familiar with the program, roles and responsibilities, and the location of documents needed to perform their job. Staff reviews and provides awareness training annually for operational controls.

Opportunities for Improvement

The program now has more than 142 program wide operational controls. This number is expected to grow as the program matures. A system should be considered to better track training requirements and completed training, especially for flexible staff that may work many areas of the facility.

Minor Non-Conformances

Item #5.2 and 9.1 – ASA has instituted several avenues for public participation including; mass mailing, ASA website posting, outreach pamphlet, and generated list of interested parties. The current website does not have the website posting (recently revised website). Additional observations regarding updating the website were made during the audit.

The website has the mission, vision statements. It does not have the biosolids program in it to date.

Item #5.6 – An action plan has been developed for meeting objectives. This action plan needs to conform to the latest revision of EMS Action Plans.

Item #6.2, 6.3 and 4.1 – The matrix is organized by position, with significant detail of roles and responsibilities and authorities documented. The matrix needs to be updated to reflect current organizational structure.

The procedure as well as the matrix identifies overall EMS responsibility as the EMS Coordinator, with the specific current staff identified. The procedure requires, “Assigning a specific EMS Coordinator with sufficient authority, awareness, competence and resources to oversee the responsibilities of the EMS. This will include reporting to the Management Team the EMS performance, improvements, and recommendations. The Alexandria Sanitation Authority’s EMS Coordinator is designated and documented in EMSD-4.4.1-2 Roles & Responsibilities Matrix.” The matrix identifies the EMS Coordinator as, “EMS Coordinator (Currently the Clean Rivers Environmental Programs Coordinator)”. This needs to be updated to reflect current EMS Coordinator assignment (Regulatory Compliance Coordinator).

The procedure for identifying and tracking legal and other requirements applicable to biosolids management activities are detailed in EMSP-4.3.2-1 - Legal and Other Requirements Procedure.doc. This procedure requires various coordinators to annually, or as needed, review and update the requirements. The document is not current due to organizational changes and requires modification.

Item #7.3 – Awareness training occurred and was documented in 2006. Biosolids training occurred and documented in 2008. The records did not contain the contractors training records. The element requires annual training for all staff. Records are kept in the HR department ABRA system.

Item #11.4 - There are no files listed for the contractor.

Recommendations

Based on the internal audit findings, the Audit Team makes the following recommendations:

- 1) ASA has recently updated the external website, which does convey biosolids and EMS related information, however specific references in several procedures require specific content, which was not added when the website was updated. This information needs to be included.
- 2) ASA has merged two EMS systems into a unified program as well as incorporate several non-EMS templates into the system. This effort will improve organizational efficiencies. ASA needs to insure that all forms used, specifically if EMS related, conform to document control procedures.
- 3) Significant organizational changes have resulted in changes with roles, responsibilities and authorities. These changes need to be reflected in the roles and responsibilities matrix as well as various procedures and documents throughout the system.
- 4) Training is integral to a successful program and the EMS has training components for EMS awareness, skills and operational controls, however due to the numerous training programs, ASA should develop a system to make sure training is occurring to required staff and is transparent to managers and leaders.
- 5) Documentation for contractor activities is not available for all aspects of contractor management. It is likely that organizational changes have resulted in some documents not being easy to locate. ASA should develop a system to insure that organizational changes or staff turnover does not result in inaccessible documentation.