



National Biosolids Partnership
Biosolids EMS Internal Audit Report

Renewable Water Resources
Greenville, SC

Audit Report Date: November 5, 2018

Audit Conducted By:
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Audit Dates: Oct 5th- Oct 19th

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1. Summary

1A. Objectives

In October 2011, ReWa received national certification for its Environmental Management System (EMS) program through the National Biosolids Partnership (NBP). NSF International Strategic Registrations returned in October of 2012 for ReWa's first interim audit. ReWa has continued to maintain its certification since 2011.

ReWa's EMS for Biosolids requires an internal audit of the program each year. The Internal Audit Team, hereafter known as the "auditors", conducted the seventh internal audit of the Environmental Management System (EMS) for Biosolids during the latter half of the month of October 2018

The objective of the internal audit was to verify that the EMS was continuing to be used by ReWa to manage its biosolids activities and is conforming to the expectations and requirements of the National Biosolids Partnership (NBP) *Environmental Management System for Biosolids* standard. The internal audit also provides suggestions for improvement.

1B. Audit Scope

In general terms, the scope of the Internal Audit encompasses the entire biosolids value chain (pretreatment, collection and treatment, stabilization, storage and transportation and final end use) with special attention on those practices and management activities that directly support biosolids-related operations, processes, and activities within the organization.

Per the Audit Plan, all EMS Elements were reviewed with emphasis on Elements 1,8, 15 and 17 In addition, there was a review of BMP outcomes, the management review process, the organizations progress towards goals and objectives and actions taken to correct minor non-conformances, corrective action requests and responses as well as preventative action request.

2. Audit Details

2A. Agency Details

Agency Name: Renewable Water Resources
Address: 561 Mauldin Rd., Greenville, SC 29607
Volume of Wastewater Treated: 41 million gallons per day (average)
Biosolids Produced: 8200 dry tons Class B product per year
Number of Employees: 182
Water Resource Recovery Facilities (WRRF); Durbin Creek, Georges Creek, Gilder Creek, Lower Reedy, Marietta, Mauldin Road, Pelham, Piedmont Regional, Altamont and North Greenville University.

2B. Audit Participants

The Internal Audit Team consisted of the following ReWa staff:

Shantell Sweeney – Quality Assurance Analyst, Lead Auditor
Christopher Bright - Utility Locate Technician
Will Nading - Project Engineer

Employees in the following rolls were interviewed:

Business Services Continuity Director
Director Of Regulatory Services
Durbin Creek Operations Supervisor
Durbin Operator 2
Executive Administrative Assistant
Human and Strategic Resources Manager
Lower Reedy Operator 2
Mauldin Road Operations Supervisor
Mauldin Road Operator 2
Pretreatment Programs Technician
Regulatory Services Manager
Senior Engineering Project Manager
Water Resource Recovery Manager

3. Summary Of Audit Findings

3A. EMS Outcomes

The TBIOS mixing system was installed at Pelham. The project encompassed the design and installation of a TBIOS mixing system a well as solids piping modifications, solids unloading station and a new GBT System This project resulted in the time to upload has decreased by 35% when compared to gravity discharge.

Continuous efforts have been made with regards to the interested party relations. In October of 2017, a Farmers' Appreciation dinner was hosted. In addition, a survey was conducted in order to gain insights of the farmers perception of the program

The EMS Team continues to evaluate all non-conformances, as well as opportunity for improvements from previous audits. The findings are addressed and documented within the Log. All findings are shared with Senior management during management review

3B. Nonconformances

A total of 2 minor non-conformances were found.

3E. Opportunity for Improvement

A total of 10 opportunities for improvement have been suggested.

4. Detailed Audit Results

The following summary of audit results addresses each of the seventeen EMS elements; observations made and audit results and findings. Any nonconformances or opportunities for improvement are identified by the Minimum Conformance Requirement (MCR) and auditee responses are included.

Element 1:

Opportunity for Improvement

Element 1 states, 5 of ReWa's 9 facilities can produce various forms of biosolids that are beneficially reused. However, Element 1 lists 6 facilities, not 5, that can produce biosolids that are beneficially reused. (Gilder Creek, Lower Reedy, Mauldin Road, Pelham, Georges Creek and North Greenville) Consider updating the documentation that indicates which facilities are able to produce usable biosolids.

Element 2:

ReWa appears to have complied in all material with respects with the MCR's established by the NBP for this Element.

Element 3:

ReWa appears to have complied in all material with respects with the MCR's established by the NBP for this Element.

Element 4:

ReWa appears to have complied in all material with respects with the MCR's established by the NBP for this Element.

Element 5:

Opportunity For Improvement

Element 5 states, "Goals and objectives are established with consideration to NBP's Manual of Good Practice, regulatory requirements, input from interested parties, and ReWa's Biosolids Management Policy." The third-party audit conducted in December of 2017, provided valuable feedback from interested parties. In the CY2017 Biosolids Annual Performance Report, it was stated that, "Based upon further feedback from the survey, ReWa intends to develop future goals that will assist not only our farmers, but our ReWa staff as well. Listed below are a few future goals: Develop a scheduling program for the delivery of our biosolids to our farmers including an estimate of product amount, create an informational welcome kit for new farmers who participate in the biosolids program, establish a biosolids newsletter to communicate program changes and updates to our biosolids program." This statement suggests that the findings of the survey are future goals for the EMS Program. Consider clarifying the statement shared in the Annual Performance Report to communicate the EMS's Team's intent to respond to the recommendations made by the third party auditor.

Element 6:

ReWa appears to have complied in all material with respects with the MCR's established by the NBP for this Element.

Element 7:

Opportunity for Improvement

ReWa Element 7 states, "EMS Document 7.1 defines key biosolids program roles and responsibilities, including the EMS coordinator who has the overall responsibility and management authority for overseeing the EMS and EMS documents." Due to several title changes, some roles in the EMS no longer apply, consider updating the EMS Manual roles and responsibilities to match current roles and responsibilities

Element 8:

Opportunity for Improvement

ReWa Element 8 states, “New and transferred employees are subject to ReWa’s New Employee Orientation/Training Guideline (Parts A and B) courses. The Human Resource department will insure the New Employee Orientation Training Forms are completed within 6 months (plus or minus 2 weeks) of the Employee start or transfer date, and on-the-job training consistent with his/her assigned biosolids roles and responsibilities. Form Part B currently requires training to be signed by the Safety Coordinator. Recent training has skipped this step. Consider identifying and document the intended process for completing Form B.

Element 9:

ReWa appears to have complied in all material with respects with the MCR’s established by the NBP for this Element.

Element 10:

Minor Non-Conformance

Element 10 States, “As a review and check on any new CCP or change to a current CCP, the Solids Manager will ask the plant foreman for an annual review of CCP’s and SOP’s. A new or updated CCP may require a new or updated SOP. If a SOP needs to be created or updated, then plant foreman will report the change on EMS Document 10.2 (Operational Control Annual Review Form) and document the changes on EMS Document 10.1 (Operational Control Change Form). Foremen will forward a copy of the Document 10.1 and 10.2 to the Solids Manager upon completion.” One treatment facility submitted Form 10.2, notifying that there were no change the critical control points, however there was a change to an SOP. Form 10.1, which documents the specifics of the SOP change was not completed. In addition, document 10.1 requires documentation to verify the new SOP has been posted, communicated and the old SOP recalled. One facility did not verify the new SOP has been posted, communicated on document 10.1.

Opportunity for Improvement

Element 10 states, “Review and update operational controls for Solids Management (CCP’s/SOP’s) All SOP’s and CCP’s relating to Collections, Pretreatment and Solids Management actives will be reviewed annually by the Solids Manager, following the same procedure used by other ReWa departments. Currently only SOP’s SOP’s and CCP’s relating to Collections, Pretreatment and Solids Management actives will be reviewed annually. Consider establishing a trigger and documentation to ensure all required SOPs are reviewed.

Element 11:

Minor Non-Conformance

Element 11 states, “Live spill drills will be conducted, one per quarter, at each facility. Results will be recorded in the After-Action Report and filed in the G drive in the EMS folder. It was communicated that the intent is to conduct one drill per quarter. In August a spill drill was conducted, document and recorded as required by ReWa EMS. This drill satisfied the requirement for 2nd quarter. There was no drill exercise executed or documented in the first quarter.

Opportunity for Improvement

ReWa Element 11 states, “Live spill drills will be conducted, one per quarter, at each facility. Results will be recorded in the After-Action Report and filed in the G drive in the EMS folder.” Consider specifically identifying who is responsible for initiating spill drills to ensure the drills are executed.

Element 12:

ReWa appears to have complied in all material with respects with the MCR’s established by the NBP for this Element.

Element 13:

ReWa appears to have complied in all material with respects with the MCR’s established by the NBP for this Element.

Element 14:

Opportunity for improvement

Element 14.7 states, “OFI’s will be listed and ranked within three months of receiving audit findings. OFI’s will be completed in no more than 12 months from the time it is listed on the AWO tracking log.” OFI’s have been given priority, however when listed on the AWO log a date has not been assigned to allow the effective evaluation of 12-month deadline.

Opportunity for Improvement

ReWa Element 14 states, “The preventive and corrective action process is overseen by the Operations Manager/Solids, who provides the resources and support to identify the root cause of any non-conformance and to develop and

implement the necessary corrective action to prevent recurrence.” In addition, SOP EMS Corrective Action or Improvement Procedure states, “ReWa is committed the continual improvement of the overall environmental performance and compliance of our biosolids process. To encourage and promote all company employee recommendations for the solids process improvement, a corrective action/improvement form has been created. All employees are encouraged to complete this form with suggestions for biosolids improvements.” While the form and SOP are available and accessible, employees are not aware of the form and its purpose. Consider bringing more awareness to this resources in order facilitate continual improvement.

Element 15:

ReWa appears to have complied in all material with respects with the MCR’s established by the NBP for this Element.

Element 16:

ReWa appears to have complied in all material with respects with the MCR’s established by the NBP for this Element.

Element 17:

Opportunity for Improvement

ReWa Element 17 states the review consists of “A list of accomplishments, Evaluation of performance against established goals and objectives, Examination of factors contributing to observed performance, Revision of existing goals and objectives in addition to establishment of new ones as appropriate, Identification of actions needed to correct or prevent future shortfalls and support continuous improvement.” While great care is given to review all the results from previous audit, outsides survey, there is not a consistent review and follow-up and suggested changes made because of the management review. Consider documenting each management meeting with detailed minutes, in order to help track improvements that are made based on feedback from management.

5. Documents Reviewed

Biosolids Annual Report (2018)

Biosolids Application Documentation

Biosolids Spill Emergency Response Drill Scenario

EMS Corrective Action or Improvement Request Form For Solids (Version #002-
Revision Date 5-15-2017)

EMS Doc 10.2 Durbin Creek

EMS Doc 10.2 Georges Creek

EMS Doc 10.2 Gilder Creek

EMS Doc 10.2 Lower Reedy

EMS Doc 10.2 Mauldin Rd

EMS Doc 10.2 NGU

EMS Doc 10.2 Pelham

EMS Doc 14.1 AWO #198

EMS Doc 14.1 AWO #194

EMS Doc 14.1 AWO #199

EMS Document 5.1 Biosolids Management Program Goals and Objectives (Capital
Project : FOG Handling Enhancements)

EMS Document 5.1 Biosolids Management Program Goals and Objectives (Capital
Project: Pelham Solids Handling Improvements)

EMS Document 5.1 Biosolids Management Program Goals and Objectives (Georges
Creek Solids Storage Improvements)

EMS Document 5.1 Biosolids Management Program Goals and Objectives (Georges
Creek Solids Storage Improvements)

EMS Document 5.1 Biosolids Management Program Goals and Objectives (Pelham
Secondary Scum Pumping Improvements)

EMS Management Review 2015

EMS Management Review 2016

EMS Management Review 2017

EMS TimeLine Version #0010 Revision Date 8-30-2018)

NBP 6th Interim Audit Report (November 2017)

ReWa After Action Report (Pied Reg Spill Drill)

ReWa NBP Internal Audit Report (July 21,2017)

ReWa New Employee Orientation/Training Guide Part "A" Process (Revision Date 8-14-2012/#NEOTG003)

ReWa New Employee Orientation/Training Guide Part "B" Safety (Revision Date 10-31-2011/Version NEOTG002)

ReWa Organizational Chart

Synagro Spill Control Plan and Procedures

Table 3.03 Critical Control Points Durbin Creek WRRF (Revision Date 1-30-18)

Table 3.08 Critical Control Points Mauldin Road WRRF (Revision Date 5-3-16)