

**NATIONAL BIOSOLIDS PARTNERSHIP
RE-VERIFICATION AUDIT REPORT**

**RENEWABLE WATER RESOURCES
GREENVILLE, SC**

Audit conducted by

NSF-International Strategic Registrations

William R. Hancuff, Lead Auditor

References:

**National Biosolids Partnership (NBP) *EMS Elements*
NBP *Third Party Verification Auditor Guidance – November 2001*
(*Latest Revision August 2011*)
NBP *Code of Good Practice*
ReWa Biosolids
Environmental Management System Manual
(*Revised – August 2016*)**

Final Report – October 17, 2016

INTRODUCTION

The purpose of the Biosolids Management Program (BMP) re-verification audit is to verify the Renewable Water Resources (ReWa) Biosolids Environmental Management System (EMS) conforms to BMP requirements of the National Biosolids Partnership (NBP).

The methodology of the Third Party re-verification audit is to collect and evaluate objective evidence that determines whether the ReWa biosolids EMS is functioning as intended, that practices and procedures are conducted as documented, and that the EMS as implemented conforms to the NBP's BMP Elements, the Code of Good Practice and the program goals and objectives.

RECOMMENDATION

The results of the Renewable Water Resources Re-verification audit are positive and it is the recommendation of NSF-ISR that the ReWa BMP maintain its Platinum Level Recognition Certification status.

AUDIT SCOPE

In general terms, the scope of the Third Party re-verification audit encompassed the entire biosolids value chain (pretreatment, collection and treatment, through final end use) with special attention on those practices and management activities that directly support biosolids-related operations, processes, and activities within the various Water Resource Recovery Facilities' operations including: Mauldin Road, Pelham, Lower Reedy, Durbin Creek, Georges Creek, Marietta and Piedmont Regional.

The NSF-International Strategic Registrations, Ltd. (NSF-ISR) conducted the third party re-verification audit of the ReWa BMP from September 19, 2016 through September 23, 2016. The on-site audit team consisted of Dr. William R. Hancuff, Lead Auditor.

The audit was comprehensive and included all of the NPB Elements. Auditing these elements involved document review, interviews, and activity evaluations.

The physical biosolids facilities included in the audit and visited during the evaluation included Mauldin Road Water Resource Recovery Facilities (WRRF), Georges Creek WRRF, Gilder Creek WRRF, Lower Reedy WRRF, Piedmont Regional WRRF, and Pelham WRRF. The critical control points of the biosolids value chain at these various plants were: influent pump stations, solids screens, grit collection, primary treatment, secondary treatment, thickening, aerobic digestion, anaerobic digestion, dewatering, biosolids storage, cake transfer, truck biosolids loading facilities, truck cleaning, and land application. The following land application site was observed: Mr. Tribble's farm in Anderson County, (Site ID: AN-115 – field number 3 consisting of approximately 100 acres which is producing fescue and bermuda grass for grazing.

The following individuals were interviewed as part of the audit process:

Graham Rich	Executive Director
Glen McManus	Director of Operations
Gregg Wright	Engineering Director
Joey Collins	Solids Manager
Joel Jones	Pretreatment Programs Manager
Larry Camp	Technical Resources
Kyle Lindsay	Emergency Management Coordinator (auditor)
Randy Boyette	Technical Resources Manager
Bryan Kohart	Environmental Engineer
Jolene Devaney	Administrative Assistant
Stacey Flax	Customer Service/Contract Manager
Ashley Rhinehart	Public Relations Coordinator
Felecia Wittman	Data Technician - Laboratory
Cain Massey	Operator II – Mauldin Road WRRF
Eddie R. Arms	Operator II – Mauldin Road WRRF
Josh Adams	Operator in Training – Mauldin Road WRRF
Justin Horton	Maintenance – Mauldin Road WRRF
Fred Nesbitt	Operations Foreman – Gilder Creek WRRF
Don Fowler	Operator I – Gilder Creek WRRF
Bob Ferger	Operator II – Gilder Creek WRRF
Franklin “Joe” Ortiz, Jr.	Operations Foreman – Pelham WRRF
Adam Harvey	Operations Foreman – Georges Creek WRRF
Teddy Parks	Operator II – Georges Creek WRRF
David Skyles	Operations Foreman – Lower Reedy WRRF
David Kurtz	Operator II – Lower Reedy WRRF
Dana Green	Operations Foreman – Piedmont Regional WRRF
Will Hodges	Technical Services Manager – Synagro
Tommy Nevins	Field Crew – Synagro
Jack Nevins	Tractor Driver
Jonah Grant	Truck Driver
Mike Montebello	Program Manager, Domestic Wastewater Facilities Permitting Division – Bureau of Water – SCDHEC
Brenda Green	Environmental Engineer, permit writer – SCDHEC

RE-VERIFICATION AUDIT FINDINGS

As was mentioned above the re-verification audit covered all of the elements of the standard and the overall health of the water reclamation facilities’ BMS and progress made towards continuous improvement.

The audit included review of the latest version of the ReWa BMS manual (August 2016) and element procedures and utilized the most recent version of the NBP Third Party Verification Auditor Guidance dated August 2011.

The interim audit found no major non-conformances, 7 minor non-conformances, 3 opportunities for improvement and 2 positive commendations. The following is a review

of the positive observations made during the audit process. Minor non-conformances and opportunities for improvement follow and are listed by requirement number, which correspond to the Element minimum conformance requirement, in the sequence of the NBP standard elements.

Commendations

Requirement 14.5 – ReWa has developed an approach to address all of the past opportunities for improvements generated during internal and third party BMP audits through creation of AWOs in order to “catch up” in preparing corrective actions on these past findings.

Element 16 – The internal audit team performed a detailed and thorough audit of the ReWa Biosolids Environmental Management System in 2015 and the team is to be congratulated on their excellent effort.

Minor Nonconformities

Requirement 2.1 – ReWa’s Element 2: Biosolids Management Policy Procedure states that the Biosolids Management Policy has been reviewed and approved by the Executive Director. There is a new Executive Director who had not yet developed or approved the ReWa Biosolids Management Policy.

Requirement 3.5 – A critical control points minimum conformance requirement indicates that the organization must provide notification to the third party auditor after any operational changes that require a change to the identified critical control points. In January 2015 ReWa shut down the operation of the Grove Creek WRRF and the Piedmont WRRF, and commenced operation of the Piedmont Regional WRRF without providing notification to the third party auditor.

Requirement 6.2 – In the key areas of interpretation of the standard minimum conformance requirement for public participation in planning it indicates that auditors must verify that the biosolids organization has notified interested parties about their intent to receive an independent third party audit and have built into their BMP planning a discussion with interested parties about approaches for observing the third party audit. ReWa’s Element 6: Public Participation in Planning Procedure does not specifically describe the above process and there was no formal direct contact with the list of stakeholders regarding the opportunity to observe the 2016 third party audit.

Requirement 6.5 – ReWa’s Element 6: Public Participation in Planning Background indicates that ReWa considers the feedback from interested parties for improving biosolids management activities during the annual update of goals and objectives. There was no objective evidence available to demonstrate that input from interested parties was considered in updating goals and objectives.

Requirement 11.2 – A minimum conformance requirement of the standard emergency preparedness and response element requires the organization reviews and evaluates the effectiveness of emergency preparedness and response procedures. ReWa has prepared an emergency response plan but has not conducted the required spill drills at various water resource recovery facilities to evaluate the effectiveness of the procedures.

Requirement 14.5 – The standard minimum conformance requirement for nonconformance – preventive and corrective action requires that the organization establish formal corrective action plans to address findings of internal BMP audits and audits conducted by third parties. ReWa’s Element 14: Nonconformance – Preventive and Corrective Action Procedure does not address how ReWa will address “opportunities for improvement” (OFI) findings of these audits. While it is not mandatory to address all OFIs, conversely simply not addressing OFIs does not embrace spirit of the Biosolids Management Policy Code of Good Practice commitment to “do the right thing,” and is contrary to one of the ten principals of the Code of Good Practice, i.e. continual improvement.

Requirement 14.6 – ReWa’s Element 14: Nonconformance – Preventive and Corrective Action Procedure No. 4 indicates that the status of nonconformances will be reviewed monthly, no later than the last work day of each month, and documented in the “Nonconformance Review Log” EMS Document 14.3. Review of the log revealed that not all monthly reviews were conducted as required.

Opportunities for Improvement

Requirement 5.5 – The Biosolids Management Program Goal associated with improving solids handling at Pelham WRRF was originally established in April 2013 but has been on hold for three years. It was recently revitalized but the SMART criteria were not updated to reflect new conditions.

Requirement 14.1 – Consider providing a hands-on workshop at each of the water resource recovery facilities to instruct operational personnel on how to complete the preparation of Corrective Action Improvement Request Form.

Requirement 16.2 – Not to detract from the excellent work of the internal audit team, consideration should be given to further discussion by the audit team on the ratings of the findings: major, minor and opportunities for improvement; however the Lead Auditor makes the final determination of the rating.

For the minor non-conformances, the ReWa BMS Team prepared Nonconformance/Non-compliance Action Work Orders and will implement corrective actions according to their BMS procedures to provide continual improvements to their biosolids management program. All proposed corrective action worksheets were found to be acceptable and final closure will be confirmed during the next third party external interim audit. As a further measure to demonstrate continuous improvement the opportunities for improvement will be addressed to the maximum extent possible.

And finally, the efforts of the BMS Team must be acknowledged. While retaining the BMS platinum recognition certification status is obviously a team effort, the hard work and dedication of Jolene Devaney, Stacey Flax, Greg Wright, Glen McManus, Joey Collins, Larry Camp and Brian Kohart, to maintain this status must be recognized.

ReWa COMMENTS

ReWa remains fully committed to the National Biosolids Partnership's Environmental Management System (EMS) for our biosolids program. As a result following our EMS, we continue to see improvements in biosolids quality, process efficiency, public relations and financial benefits as well. We found the audit process to be a great experience and a wonderful tool toward improving our program. We agree with the audit findings and will address all non-conformances and opportunities for improvement.

OUTCOMES MATTER

Renewable Water Resources Biosolids Management Program establishes goals and objectives on an annual basis synchronized with its fiscal year, which runs from July 1 through June 30. In 2016 ReWa changed its fiscal year to coincide with the calendar year. This results in ReWa's BMP performance year for 2016 extending through the end of December 2016. It has been decided to continue to remove completed or infeasible goals annually, but continue to track progress on those remaining throughout the year.

The goals and objectives were developed by the Solids Manager (Biosolids EMS coordinator) and the Biosolids Team without input from the public, however they were developed for the most part using Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) criteria. Details of action plans and measurability of several of the goals have been greatly improved.

The ReWa biosolids goals for its EMS were established cognizant of each of the four following outcome areas of the NBP program:

- Environmental Performance,
- Regulatory Compliance,
- Relations with Interested Parties, and
- Quality Biosolids Management Practices.

While it is not a requirement to accomplish all goals and objectives established, it is a critical component of the system to make progress towards achieving the majority. ReWa continued improvement of its Environmental Management System for Biosolids through progressing and completing goals established in previous years as well as the current year. A brief summary of the facilities' performance is presented below and the outcome groups

affected by the goal are addressed at the end of each discussion. It should be noted that the above-mentioned goals in some cases fulfill more than one outcome area.

2013 (reestablished 2015) – Measure Satisfaction of the Farmers in the Land Application Program

As part of the continual improvements efforts in the area of relations with interested parties ReWa established this goal to survey its customers to determine their level of satisfaction with their service and the product. There are sixty-five farmers in the land application program. The action plan is to develop a satisfaction survey form, which will be mailed to each farmer after application of biosolids to his/her land. The objective is to identify gaps in service and ways to improve the program. Due to the illicit discharge of PCBs and contamination of some of the biosolids, land application was reduced drastically and the survey was delayed. This goal was revived in June 2015 and scheduled for completion in December 2016. A farmers' appreciation luncheon is scheduled for October 18, 2016 and the survey will be distributed immediately following. The measureable goal is to have a response rate of 30%.

Outcome Area: Relations with Interested Parties.

2013 – Enhance Fats Oils and Grease (FOG) Handling at Mauldin Road WRRF

The objective is to increase the efficiency of FOG processing to result in increased anaerobic digester methane gas production by 56,000 cubic feet per day for use as fuel by the combined heat and power (CHP) project. Additionally the project will reduce FOG being discharged to the headworks by 6,000 gallons per day. The project is designed to provide more concentrated feed stock into the digesters and therefore measurably increase the digester gas production. Additionally, the reduction or elimination of the FOG processed through the headworks will reduce operational problems there and in the primaries. The initial action plan was to develop a comprehensive plan, and initiate design for receiving and processing FOG. Engineering services were retained to conduct the required study, which was 60% complete at the time the PCB contamination issue was identified. Because the some of the illicit discharges of PCBs into the ReWa system was determined to be associated with grease traps the FOG project was put on hold until procedures can be implemented to ensure the safe use of FOG as intended by this goal. The project was reinitiated in mid-2015 and as of July 2016 was at the 95% complete design phase, with permitting in progress. It is projected that this project will become operational by March 2018.

Outcome Areas: Environmental Performance, Regulatory Compliance, Relations with Interested Parties, and Quality Biosolids Management Practices.

2013 – Upgrade Grit Classifier at Mauldin Road WRRF

This project is to replace the existing grit classifiers at Mauldin Road WRRF with the goal of improving process reliability. The objective is to reduce the frequency of grit

system clean-outs from between 3 and 4 times per year to zero times per year; and to measurably increase the quantity of grit removed from the system by an estimated 2.5 cubic yards per week. Grit causes serious wear on pumps throughout the biosolids value chain and accumulates in digesters, reducing their capacity for digestion. One classifier was installed and operational by June 2014 and both classifiers were functioning by October 2014. It was estimated that an additional 1.5 cubic yards of grit per week was being removed by the upgraded system and after a year and a half of operation, as of January 2016 there were zero system cleanouts required. This goal was determined to be a success, although continued monitoring is being performed.

Outcome Areas: Environmental Performance, and Quality Biosolids Management Practices.

2014 – Expand Control of Unregulated Industrial Discharges

The objective of this goal is to identify previously unknown industrial dischargers that have a potential for adversely impacting biosolids quality. The approach is to identify industries that discharge to the ReWa collection system through the use of industry lists. It is estimated that there are over 1,000 commercial class customers within the ReWa service area that are currently not regulated through discharge permits. The action plan for this goal, which is to evaluate 100% of businesses to determine if regulation is necessary, is to send a survey to the newly identified industries regarding their discharge, and on receipt of the responses evaluate them to determine if there may be any chemicals or physical characteristics of concern. A list of 850 industries were reviewed and 200 identified for additional survey by 2015.

Outcome Areas: Environmental Performance, Regulatory Compliance, Relations with Interested Parties, and Quality Biosolids Management Practices.

2014 –Increase Capacity to Process Biosolids at Georges Creek WRRF

The original action plan for this goal involved relocating the gravity belt thickener and storage tank from Grove Creek WRRF, which had been removed from service, to Georges Creek WRRF to increase the capacity of solids storage by 400,000 gallons and improve the solids concentration from 1.8 % to 4.0% to reduce the cost of transporting solids. The feasibility study was completed at the end of June 2014 and it was determined to not be financially justifiable to relocate the equipment. A new action plan is being developed and funded for a new study commencing in June 2017 to increase the biosolids processing capacity at Georges Creek.

Outcome Areas: Environmental Performance, Quality Biosolids Management Practices.

2014 – Improve Tank Mixing at Lower Reedy WRRF

This project encompasses the evaluation of the existing mixing systems and recommendations for future improvements. The objective is to reduce the cost (primarily energy and consumption of natural resources) of mixing. The measurable environmental benefit is estimated to be a reduction of greenhouse gases by 104 metric tons per year. A contract was awarded in March 2014 to evaluate mixing options. A draft report was completed in June 2014 in which it was recommended that large bubble mixing should be implemented. Design began at the end of 2014 and is estimated to be at the 90% design completion at the first of October 2016.

Outcome Areas: Environmental Performance, Relations with Interested Parties, and Quality Biosolids Management Practices.

2014 – Improve Influent Screening at Marietta WRRF

The action plan for this goal involved a feasibility study to evaluate influent screening and development of options for the future of Marietta WRRF. The original project commenced in April 2013 with the 90% design completed by June 2014. Because of the uncertainty of the future of the Marietta WRRF no final recommendation was made until 2015. The construction contract was awarded in June 2015 and was 80% complete by October 2016. The project will become operational by the end of 2016. The measureable increase in the volume of screenings collected is estimated to be 6 cubic yards per week. Improved screening will reduce operation and maintenance problems and costs at the plant.

Outcome Areas: Environmental Performance, Relations with Interested Parties, and Quality Biosolids Management Practices.

2014 – Improve Solids Handling at Pelham WRRF

This project involved the design and installation of new rotary lobe primary sludge pumps with grinders to replace the existing air diaphragm pumps. The measurability of the goal is the reduction of digester overflow cleanouts due to line stoppages from once per year to Zero times per year. This was to be accomplished by the inclusion of grinders prior to pumping the primary sludge to the digester. The equipment was designed in 2014 and installation was completed by November 2015. Evaluation of the effectiveness through April 2016 showed that digester overflow clogging continued to be a problem and maceration of solid materials did not provide the benefits anticipated.

Outcome Areas: Environmental Performance and Quality Biosolids Management Practices.

CONCLUSIONS AND RECOMMENDATIONS

The results of the third re-verification audit are positive. The review and approval of the corrective action plans for each of the minor non-conformances identified during this audit has been completed. The full implementation of the corrective actions for the minor findings will be accomplished according to the schedule proposed in the Nonconformance/Noncompliance Action Work Orders and it is the recommendation of the audit team that ReWa's Biosolids Management Program maintain its platinum level recognition certification status.

As was mentioned previously, a BMP is a continual improvement process. The results of this and future audits will provide value added to the program and should be viewed as an overall opportunity to improve. Every audit is a snapshot in time, and does not, or cannot, identify each and every area for improvement. And yet, while no single audit identifies all of the areas for enhancement the results of each audit provide an additional incremental step in the overall program's improvement.

Discussions between the ReWa Biosolids manager and the third party auditor resulted in agreement to the following proposed interim audit approach. Each interim audit will include a review of: the organization's progress toward goals and objectives; EMS outcomes (environmental performance; regulatory compliance; interested party relations; quality practices); actions taken to correct minor non-conformances; the management review process; corrective action requests and responses; and preventive actions. In addition to the above, the following elements will be audited according to the following tentative schedule:

Year 5 (third party) Re-verification (Completed)

Year 6 (third party) – Elements 3, 10, 12, 13

Year 7 (internal) – Elements 1, 8, 15, 17

Year 8 (third party) – Elements 5, 6, 9, 14, 16

Year 9 (internal) – Elements 2, 4, 7, 11

Year 10 (third party) – Re-verification (comprehensive)

Attachment 1

Documents and Other Objective Evidence Reviewed During the Re-verification Audit

Element 1. BMP Manual

- Interviews with Graham Rich, Executive Director; Glen McManus, Director of Operations; Joey Collins, Solids Manager; Larry Camp, Process Control; Control; Bryan Kohart, Environmental Engineer, and Shantell Sweeney, Laboratory Technician (Lead EMS Auditor).
- Element 1: Biosolids Management Documentation, Version EMS008, issued 06/13/12, revised 06/07/16.
- EMS Document 1.1: EMS for Biosolids Element Descriptions
- Element 2 – Biosolids Management Policy, Version EMS003, dated 06/27/08, revised 02/03/14.
- Element 3: Critical Control Points, Version EMS010, issued 06/27/08, revised 05/03/2016.
- Table 3.01 – Critical Control Points, Overall Critical Control Points, Revision date: 11/03/14.
- Table 3.02 – Critical Control Points, Altamont WRRF, Revision date: 09/02/11.
- Table 3.03 – Critical Control Points, Durbin Creek WRRF, Revision date: 06/18/13.
- Table 3.04 – Critical Control Points, Georges Creek WRRF, Revision date: 09/02/11.
- Table 3.05 – Critical Control Points, Gilder Creek WRRF, Revision date: 06/18/13.
- Table 3.05A – Critical Control Points, Grove Creek WRRF, Revision date: 07/18/14. Note: Plant is off line. No discharge. Waiting on SCDHEC to close out.
- Table 3.06 – Critical Control Points, Lower Reedy WRRF, Revision date: 05/16/13.
- Table 3.07 – Critical Control Points, Marietta WRRF, Revision date: 05/16/13.
- Table 3.08 – Critical Control Points, Mauldin Road WRRF, Revision date: 05/03/16.
- Table 3.09 – Critical Control Points, Pelham WRRF, Revision date: 05/16/13.
- Table 3.10 – Critical Control Points, Piedmont Regional WRRF, Revision date: 05/16/13.
- Table 3.10A – Critical Control Points, Piedmont WRRF (old plant), Revision date: 07/18/14. Note: Plant is off line. No discharge. Waiting on SCDHEC to close out.
- Element 4: Legal and Other Requirements, Version EMS012, issued 06/27/08, revised 08/09/16.
- EMS Document 4.1: Federal and State Requirements
- Element 5: Goals and Objectives for Continual Improvement, Version EMS008, issued 06/27/08, revised 10/08/14.
- EMS Document 5.1: Biosolids Management Program Goals and Objectives Version 4, Issue date 9/6/11, revised 10/29/12. (Form)
- Element 6: Public Participation in Planning, Version EMS008, issued 06/27/08, revised 02/03/14.
- Element 7: Roles and Responsibilities, Version EMS013, issued 06/27/08, revised 08/08/16.

- EMS Document 7.1: EMS Roles and Responsibilities.
- Element 8: Training, Version EMS014, issued 06/27/08, revised 08/09/16.
- EMS Document 8.1: Training Requirements by Job Title.
- Element 9: Community and Public Outreach, Version EMS012, issued 06/27/08, revised 06/16/16.
- Element 10: Operational Control of Critical Control Points, Version EMS012, issued 06/27/08, revised 08/09/16.
- EMS Document 10.1: Operational Control Change Form, Version 006, issue date 04/02/09, revised 01/13/14.
- EMS Document 10.2: Operational Control Annual Review Form, Version 002, issue date 01/04/12, revised 11/06/12.
- Element 11: Emergency Preparedness and Response, Version EMS008, issued 06/27/08, revised 08/27/16.
- Element 12: EMS Documentation and Document Control, Version EMS014, issued 06/27/08, revised 08/09/16.
- Element 13: Monitoring and Measurement, Version EMS003, issued 06/27/08, revised 06/17/14.
- Element 14: Nonconformance-Preventive and Corrective Action, Version EMS014, issued 06/27/08, revised 08/09/16.
- Element 15: Periodic Biosolids Program Performance Report, Version EMS004, issued 06/27/08, revised 07/16/14.
- Element 16: Internal EMS Audit, Version EMS011, issued 06/27/08, revised 08/09/16.
- Element 17: Periodic Management Review of Performance, Version EMS005, issued 06/27/08, revised 08/09/16.

Element 2. Biosolids Management Policy

- Interviews with Graham Rich, Executive Director; Glen McManus, Director of Operations; Joey Collins, Solids Manager; Larry Camp, Technical Resources; Bryan Kohart, Environmental Engineer, and Shantell Sweeney, Laboratory Technician (Lead EMS Auditor).
- Element 2 – Biosolids Management Policy, Version EMS003, dated 06/27/08, revised 02/03/14.
- Policy available on ReWa Environmental Management System web page (https://rewaonline.org/wp-content/uploads/2015/04/rewa_biosolids_policy.pdf)
- Laminated 8 ½ x 11 card containing Biosolids Management Policy and Biosolids Mission Statement and Code of Good Practice – posted on laminated posters at various locations throughout wastewater reclamation plants.
- Verified employees and contractors received awareness training through interviews.
- Checked employees’ biosolids policy on personal laminated cards.

Element 3. Critical Control Points

- Element 3: Critical Control Points, Version EMS010, issued 06/27/08, revised 05/03/2016.
- Table 3.01 – Critical Control Points, Overall Critical Control Points, Revision date: 11/03/14.
- Table 3.02 – Critical Control Points, Altamont WRRF, Revision date: 09/02/11.
- Table 3.03 – Critical Control Points, Durbin Creek WRRF, Revision date: 06/18/13.
- Table 3.04 – Critical Control Points, Georges Creek WRRF, Revision date: 09/02/11.
- Table 3.05 – Critical Control Points, Gilder Creek WRRF, Revision date: 06/18/13.
- Table 3.05A – Critical Control Points, Grove Creek WRRF, Revision date: 07/18/14. Note: Plant is off line. No discharge. Waiting on SCDHEC to close out.
- Table 3.06 – Critical Control Points, Lower Reedy WRRF, Revision date: 05/16/13.
- Table 3.07 – Critical Control Points, Marietta WRRF, Revision date: 05/16/13.
- Table 3.08 – Critical Control Points, Mauldin Road WRRF, Revision date: 05/03/16.
- Table 3.09 – Critical Control Points, Pellham WRRF, Revision date: 05/16/13.
- Table 3.10 – Critical Control Points, Piedmont Regional WRRF, Revision date: 05/16/13.
- Table 3.10A – Critical Control Points, Piedmont WRRF (old plant), Revision date: 07/18/14. Note: Plant is off line. No discharge. Waiting on SCDHEC to close out.
- Interviews with Glen McManus, Director of Operations; Joey Collins, Solids Manager; Randy Boyette, Technical Resources; Larry Camp, Technical Resources; Bryan Kohart, Environmental Engineer, and Shantell Sweeney, Laboratory Technician (Lead EMS auditor).
- Interviews with critical control point personnel: Cain Massey, Operator II - Mauldin Road WRRF; Eddie R. Arms, Operator II – Mauldin Road WRRF; Josh Adams, Operator in Training – Mauldin Road WRRF; Justin Horton Maintenance – Mauldin Road WRRF; Fred Nesbitt, Operations Foreman – Gilder Creek WRRF; Don Fowler, Operator I – Gilder Creek WRRF; Bob Ferger, Operator II – Gilder Creek WRRF; Franklin “Joe” Ortiz, Jr., Operations Foreman – Pelham WRRF; Adam Harvey, Operations Foreman – Georges Creek WRRF; Teddy Parks, Operator II – Georges Creek WRRF; David Skyles, Operations Foreman – Lower Reedy WRRF; David Kutrz, Operator II – Lower Reedy WRRF; Dana Green, Operations Foreman – Piedmont Regional WRRF; Will Hodges, Technical Services Manager – Synagro, and Tommy Nevins, Field Crew – Synagro.
- Field review of biosolids value chain critical control points at above listed plants.
- Viewed land application site at Mr. Tribble’s farm in Anderson County, (Site ID: AN-115 – field number 3 consisting of approximately 100 acres which is producing fescue and bermuda grass for grazing.

Element 4. Legal and Other Requirements

- Element 4: Legal and Other Requirements, Version EMS012, issued 06/27/08, revised 08/09/16.
- EMS Document 4.1: Federal and State Requirements

- Interviews with Joey Collins, Solids Manager; Joel Jones, Pretreatment Programs Manager; Randy Boyette, Technical Resources; Shantell Sweeney, Laboratory Technician (Lead EMS auditor) and Kyle Lindsay, Emergency Management Coordinator (EMS auditor).
- Interview with state regulators: Mike Montebello, Program Manager, Domestic Wastewater Facilities Permitting Division – Bureau of Water – SCDHEC and Brenda Green Environmental Engineer, permit writer – SCDHEC.
- Synagro land application site books with plans.
- Interview with Will Hodges, Technical Services Manager – Synagro; Tommy Nevins, Field Crew – Synagro.

Element 5. Goals and Objectives

- Element 5: Goals and Objectives for Continual Improvement, Version EMS008, issued 06/27/08, revised 10/08/14.
- EMS Document 5.1: Biosolids Management Program Goals and Objectives Version 4, Issue date 9/6/11, revised 10/29/12. (Form)
- Interview with top management: Graham Rich, Executive Director.
- Interviews with select BMP team members: Joey Collins, Solids Manager; Larry Camp Technical Resources; Shantell Sweeney Laboratory Technician (Lead EMS auditor); Kyle Lindsay Emergency Management Coordinator (EMS auditor); Bryan Kohart Environmental Engineer; Jolene Devaney Administrative Assistant; and Stacey Flax Customer Service/Contract Manager.
- Evaluated current Goals and Objectives (2013 – 2016) for use of SMART criteria.
- Reviewed the status and progress of all active Goals and Objectives.
- ReWa FY 2015 Biosolids Performance Report.
- ReWa 2016 (draft) Biosolids Annual Performance Report.

Element 6. Public Participation in Planning

- Element 6: Public Participation in Planning, Version EMS008, issued 06/27/08, revised 02/03/14.
- Element 9: Community and Public Outreach, Version EMS012, issued 06/27/08, revised 06/16/16.
- List of Biosolids Program Interested Parties, updated through 10/15/2013.
- Interviews with Graham Rich Executive Director; Glen McManus Director of Operations; Joey Collins Solids Manager; Larry Camp Technical Resources; Jolene Devaney Administrative Assistant; Stacey Flax Customer Service/Contract Manager and Ashley Rhinehart Public Relations Coordinator.

- Interview with state regulators: Mike Montebello, Program Manager, Domestic Wastewater Facilities Permitting Division – Bureau of Water – SCDHEC and Brenda Green Environmental Engineer, permit writer – SCDHEC.
- ReWa Biosolids brochure.
- 90 Years – Clean Water for the Environment – ReWa Annual Report to the Community for the year ending June 30, 2015.
- ReWa Environmental Management System web page and links. (https://rewaonline.org/wp-content/uploads/2015/04/rewa_biosolids_policy.pdf)
- Viewed 2015 Internal Audit Results and Biosolids Performance Reports on website.

Element 7. Roles and Responsibilities

- Element 7: Roles and Responsibilities, Version EMS013, issued 06/27/08, revised 08/08/16.
- EMS Document 7.1: EMS Roles and Responsibilities.
- Interviews with select BMP team members: Joey Collins, Solids Manager; Larry Camp Technical Resources; Shantell Sweeney Laboratory Technician (Lead EMS auditor); Kyle Lindsay Emergency Management Coordinator (EMS auditor); Bryan Kohart Environmental Engineer; Jolene Devaney Administrative Assistant; and Stacey Flax Customer Service/Contract Manager.

Element 8. Training

- Element 8: Training, Version EMS014, issued 06/27/08, revised 08/09/16.
- EMS Document 8.1: Training Requirements by Job Title.
- Interviews with Joey Collins Solids Manager; Larry Camp Technical Resources; Shantell Sweeney Laboratory Technician (Lead EMS auditor); Kyle Lindsay Emergency Management Coordinator (EMS auditor); Bryan Kohart Environmental Engineer; and Stacey Flax Customer Service/Contract Manager.
- Interviews with critical control point personnel: Cain Massey Operator II – Mauldin Road WRRF; Eddie R. Arms Operator II – Mauldin Road WRRF; Josh Adams Operator in Training – Mauldin Road WRRF; Justin Horton Maintenance – Mauldin Road WRRF; Fred Nesbitt Operations Foreman – Gilder Creek WRRF; Don Fowler Operator I – Gilder Creek WRRF; Bob Ferger Operator II – Gilder Creek WRRF; Franklin “Joe” Ortiz, Jr. Operations Foreman – Pelham WRRF; Adam Harvey Operations Foreman – Georges Creek WRRF; Teddy Parks Operator II – Georges Creek WRRF; David Skyles Operations Foreman – Lower Reedy WRRF; David Kutz Operator II – Lower Reedy WRRF; Dana Green Operations Foreman – Piedmont Regional WRRF and Felecia Wittman Data Technician – Laboratory.
- Interviews with contractor staff (Synagro): Will Hodges Technical Services Manager; Tommy Nevins Field Crew; Jack Nevins Tractor Driver and Jonah Grant Truck Driver.

Element 9. Communications

- Element 9: Community and Public Outreach, Version EMS012, issued 06/27/08, revised 06/16/16.
- Element 6: Public Participation in Planning, Version EMS008, issued 06/27/08, revised 02/03/14.
- Interviews with Graham Rich Executive Director; Glen McManus Director of Operations; Joey Collins Solids Manager; Larry Camp Technical Resources; Jolene Devaney Administrative Assistant; Stacey Flax Customer Service/Contract Manager and Ashley Rhinehart Public Relations Coordinator.
- Interview with state regulators: Mike Montebello, Program Manager, Domestic Wastewater Facilities Permitting Division – Bureau of Water – SCDHEC and Brenda Green Environmental Engineer, permit writer – SCDHEC.
- ReWa Biosolids brochure.
- 90 Years – Clean Water for the Environment – ReWa Annual Report to the Community for the year ending June 30, 2015.
- ReWa Environmental Management System web page and links. (https://rewaonline.org/wp-content/uploads/2015/04/rewa_biosolids_policy.pdf)
- Viewed 2015 Internal Audit Results and Biosolids Performance Reports on website.

Element 10. Operational Control of Critical Control Points

- Element 10: Operational Control of Critical Control Points, Version EMS012, issued 06/27/08, revised 08/09/16.
- EMS Document 10.1: Operational Control Change Form, Version 006, issue date 04/02/09, revised 01/13/14.
- EMS Document 10.2: Operational Control Annual Review Form, Version 002, issue date 01/04/12, revised 11/06/12.
- Interviews with Joey Collins Solids Manager; Randy Boyette, Technical Resources; Larry Camp Technical Resources; Shantell Sweeney Laboratory Technician (Lead EMS auditor); Kyle Lindsay Emergency Management Coordinator (EMS auditor); and Bryan Kohart Environmental Engineer.
- Interviews with critical control point personnel: Cain Massey Operator II – Mauldin Road WRRF; Eddie R. Arms Operator II – Mauldin Road WRRF; Josh Adams Operator in Training – Mauldin Road WRRF; Justin Horton Maintenance – Mauldin Road WRRF; Fred Nesbitt Operations Foreman – Gilder Creek WRRF; Don Fowler Operator I – Gilder Creek WRRF; Bob Ferger Operator II – Gilder Creek WRRF; Franklin “Joe” Ortiz, Jr. Operations Foreman – Pelham WRRF; Adam Harvey Operations Foreman – Georges Creek WRRF; Teddy Parks Operator II – Georges Creek WRRF; David Skyles Operations Foreman – Lower Reedy WRRF; David Kutrz Operator II – Lower Reedy WRRF; Dana Green Operations Foreman – Piedmont Regional WRRF and Felecia Wittman Data Technician – Laboratory.
- Interviews with contractor staff (Synagro): Will Hodges Technical Services Manager; Tommy Nevins Field Crew; Jack Nevins Tractor Driver and Jonah Grant Truck Driver.

Element 11. Emergency Preparedness and Response

- Element 11: Emergency Preparedness and Response, Version EMS008, issued 06/27/08, revised 08/27/16.
- ReWa Spill Procedure Version SOP005 issued 5/1/06, revised 06/09/14.

Element 12. BMP Documentation and Document Control

- Element 12: EMS Documentation and Document Control, Version EMS014, issued 06/27/08, revised 08/09/16.
- Document Control Log (for tracking all BMP procedure document changes.)
- Interviews with Joey Collins Solids Manager and Shantell Sweeney Laboratory Technician (Lead EMS auditor)
- Biosolids Application Documents and Procedures for Biosolids Contractors 09/22/2014.
- EMS Timeline – latest revision 6/6/2016.

Element 13. Monitoring and Measurement

- Element 13: Monitoring and Measurement, Version EMS003, issued 06/27/08, revised 06/17/14.
- Interviews with Joey Collins Solids Manager; Randy Boyette, Technical Resources; Larry Camp Technical Resources; Shantell Sweeney Laboratory Technician (Lead EMS auditor); Kyle Lindsay Emergency Management Coordinator (EMS auditor); and Bryan Kohart Environmental Engineer.
- Interviews with critical control point personnel: Cain Massey Operator II – Mauldin Road WRRF; Eddie R. Arms Operator II – Mauldin Road WRRF; Josh Adams Operator in Training – Mauldin Road WRRF; Justin Horton Maintenance – Mauldin Road WRRF; Fred Nesbitt Operations Foreman – Gilder Creek WRRF; Don Fowler Operator I – Gilder Creek WRRF; Bob Feger Operator II – Gilder Creek WRRF; Franklin “Joe” Ortiz, Jr. Operations Foreman – Pelham WRRF; Adam Harvey Operations Foreman – Georges Creek WRRF; Teddy Parks Operator II – Georges Creek WRRF; David Skyles Operations Foreman – Lower Reedy WRRF; David Kutz Operator II – Lower Reedy WRRF; Dana Green Operations Foreman – Piedmont Regional WRRF and Felecia Wittman Data Technician – Laboratory.
- Interviews with contractor staff (Synagro): Will Hodges Technical Services Manager; Tommy Nevins Field Crew; Jack Nevins Tractor Driver and Jonah Grant Truck Driver.
- Checked periodic progress reviews on goals and objectives.
- Review of Notice and Necessary Information form for Durbin Creek: metals analyses, pathogen reduction and vector attraction reduction of slurry hold tank sample 08/01/2016 and 08/02/2016.
- Fecal Coliform Geometric Mean Worksheet – Durbin Creek 08/01/2016 and 08/02/2016.
- ReWa Durbin Creek WRRF – PCB Results.

- NPDES – Discharge Monitoring Report (DMR) for ReWa Sludge permit dated August 24, 2016.

Element 14. Nonconformances: Preventive and Corrective Action

- Element 14: Nonconformance-Preventive and Corrective Action, Version EMS014, issued 06/27/08, revised 08/09/16.
- Element 16: Internal EMS Audit, Version EMS011, issued 06/27/08, revised 08/09/16.
- EMS Document 14.1: Nonconformance/Noncompliance Action Work Orders for Minor nonconformances identified in internal audit and external third interim audit.
- EMS Document 14.2: Nonconformance/Noncompliance Action Work Order Tracking Log.
- Reviewed electronic folder containing open Action Work Orders.
- Reviewed current status of all corrective action work orders and correction status for findings identified in internal audit and external verification audit maintained in completed Document 14.2 form.
- Reviewed Spreadsheet that identifies the history of Opportunities for Improvement associated with all internal and external EMS audits (developed to assign priorities for corrective actions.)
- Interview with Joey Collins, Solids Manager.
- Interviews with internal audit team members: Shantell Sweeney Laboratory Technician (Lead EMS auditor) and Kyle Lindsay Emergency Management Coordinator (EMS auditor)

Element 15. Biosolids Management Program Report

- Element 15: Periodic Biosolids Program Performance Report, Version EMS004, issued 06/27/08, revised 07/16/14.
- Interviews with Joey Collins, Solids Manager
- Interviews with Jolene Devaney Administrative Assistant; Stacey Flax Customer Service/Contract Manager and Ashley Rhinehart Public Relations Coordinator.
- Reviewed 2015 Biosolids Performance Report.
- Reviewed 2016 (draft) Biosolids Performance Report.
- Viewed Biosolids Performance Reports on website.

Element 16. Internal BMP Audit

- Element 16: Internal EMS Audit, Version EMS011, issued 06/27/08, revised 08/09/16.
- Element 14: Nonconformance-Preventive and Corrective Action, Version EMS014, issued 06/27/08, revised 08/09/16.
- Interview with Joey Collins, Solids Manager.
- Interviews with internal audit team members: Shantell Sweeney Laboratory Technician (Lead EMS auditor) and Kyle Lindsay Emergency Management Coordinator (EMS auditor)

- Biosolids EMS Internal Audit Plan, June 15 – June 22, 2015
- NBP 2015 Biosolids Internal Audit Report – January 13, 2016.

Element 17. Management Review

- Element 17: Periodic Management Review of Performance, Version EMS005, issued 06/27/08, revised 08/09/16.
- Interview with top management: Graham Rich, Executive Director.
- Interviews with Joey Collins, Solids Manager; Bryan Kohart, Environmental Engineer and Shantell Sweeney, Laboratory Technician.
- EMS Timeline – latest revision 6/6/2016.
- EMS for Biosolids – Management Review Agenda – 2015
- ReWa EMS 2015 Management Review Meeting Notes – 10:30 a.m. October 7, 2015.
- Agenda ReWa EMS Yearly Update – 1:30 p.m. April 27, 2016