



**National Biosolids Partnership
Biosolids Management Program Interim Audit Report**

**Camden County Municipal Utility Authority
Camden, NJ**

Audit Dates: January 20-22, 2015

Audit Conducted By: DEKRA Certification, Inc. (Chalfont, PA)

Audit Team: Mr. Jon Shaver, Certified Biosolids EMS Lead Auditor / Biosolids Auditor

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Report Date: April 12, 2015

Reviewed By: Andy Kricun, Camden County Municipal Utility Authority (4/13/15)

Approved By: Michelle Hunn, Dekra Certification, Inc. (April 14, 2015)

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1. EXECUTIVE SUMMARY

DEKRA Certification, Inc. (DEKRA) conducted an independent third party audit of the environmental management system (EMS) being used by the Camden County Municipal Utility Authority (CCMUA) in managing its biosolids program. At CCMUA's request, DEKRA conducted the audit January 20 to 22, 2015. This was interim audit #4 following DEKRA's Verification of the CCMUA biosolids management system in September 2010.

Audit Purposes

This interim audit was conducted to:

- Confirm that the CCMUA biosolids management program is functioning effectively, with practices and procedures being performed as documented.
- Verify that the biosolids management program being used by CCMUA meets National Biosolids Partnership (NBP) expectations and conforms with requirements of the NBP BMP Elements.
- Examine outcomes CCMUA is achieving by using a systematic approach for managing its biosolids program.
- Verify the effectiveness of corrective action taken in response to open nonconformances from previous third party audits.

Summary of Audit Activities and Results

DEKRA reviewed the dynamics of CCMUA's biosolids program and audited parts of that program for conformance with expectations and requirements of the NBP Biosolids Management Program Elements (audit criteria). The audit scope was consistent with NBP requirements and the interim audits program agreed by CCMUA and DEKRA.

No major nonconformances and four minor nonconformances with respect to the audit criteria were found during this audit. CCMUA has developed corrective action plans to address the nonconformance that have been approved by DEKRA's Lead Auditor. DEKRA will review the effectiveness of the completed corrective actions during the next third party audit.

Audit Conclusions

The audit determined that:

- The CCMUA biosolids management program is functioning effectively and generating positive outcomes.
- The program meets NBP expectations and requirements of the NBP EMS Elements, with minor exceptions.
- All nonconformances from prior DEKRA audits have been effectively corrected.

Based on results of this audit, DEKRA verifies that the CCMUA biosolids management program meets NBP expectations and requirements. We recommend continuing certification within NBP Biosolids Management Program.

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2. AUDIT DETAILS

2A. Local Agency Details

Agency Name: Camden County Municipal Utility Authority (referred to as CCMUA in this report)

Facility: Delaware #1 Wastewater Treatment Facility, Camden NJ

Number of Employees (approximate) = 135

Volume of Wastewater Treated (approximate): = design 80 MGD

Biosolids Produced (approximate): approx 16,000 wet tons per year (90% Class A, 10% unclassified)

Contractors Participating in Audit

Synagro Inc.

Grows Landfill (Morrisville PA)

CCMUA Biosolids Program

CCMUA's Biosolids Program includes defined processes for Pretreatment, Wastewater Treatment, Solids Dewatering, Biosolids Storage and Transportation and Biosolids Use, including incineration, and landfill. CCMUA manages their biosolids program using a management system approach based on the NBP EMS Elements.

2B. Audit Team

CCMUA authorized DEKRA Certification Inc. to conduct this Third Party Audit of their biosolids program. DEKRA is an accredited Third party Audit Company within the NBP Biosolids Management Program. Mr. Jon Shaver led the audit on behalf of DEKRA. Mr. Shaver is certified by NBP as a Biosolids EMS Lead Auditor and Biosolids Auditor. DEKRA and the auditor assigned to this audit have an independent relationship with CCMUA that meets NBP criteria for Third Party Auditors.

2C. Audit Scope and Locations

The scope of the audit was consistent with NBP requirements, the BMP Interim Audits Program and the Scope of Work agreed by CCMUA and DEKRA. The scope included parts of the CCMUA biosolids program, with special attention to practices and management activities that directly support biosolids-related operations, processes and activities. The audit was conducted at the Delaware #1 Wastewater Treatment Plant in Camden NJ.

The audit included the following subjects:

1. Management System Dynamics
 - Management of Significant Changes
 - Biosolids Policy Commitments
 - Effectiveness Reviews:
 - Management Review Process

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- Corrective & Preventive Action Process
 - Goals & Objectives Process
 - Examination of outcomes being achieved in the areas of regulatory compliance, interested party relations, environmental performance and quality practices.
2. Process Audits
 - Biosolids Use – Landfill
 - Communications Program
 - Control of Contractors
 - Document Control
 - Internal Audits
 - Management Involvement (incl policy, planning, mgmt review)
 - Recordkeeping
 3. Verification of effective correction of open nonconformances from previous Third Party audits (December 2013)
 4. Interested party interviews
 - Meishka Mitchell (Coopers Ferry Partnership)

2D. Audit Methodology

The audit was conducted by qualified auditors following guidelines stated in the NBP Auditor Guidance (August 2011). The auditor observed practices in place, interviewed key persons and reviewed pertinent documents and records using sampling techniques to assess the systematic performance of the process being audited and the consistency of biosolids management practices with written procedures. Interested parties were interviewed and transaction tests were performed to verify the effectiveness of the management system. This audit is not a verification of compliance with any legal requirements applicable to biosolids practices performed by the agency or its contractors.

2E. Definitions of Audit Findings & Required Corrective Action

Major Nonconformance – a serious omission from requirements and/or other departure that represents, or could cause, a systemic failure, or the existence of multiple related minor nonconformances, or failure to effectively correct a nonconformance in a timely manner. For verification to continue, major nonconformances must be corrected and verified by third party audit within 90 days.

Minor Nonconformance – an isolated departure from requirements that does not represent a systemic failure. Minor nonconformances require timely and effective correction by the agency and verification by the third party auditor during the next third party audit.

Opportunity (for improvement) – a possible improvement in the management system based on audit observations. There is no obligation for action in response to these observations.

2F. Reference Materials

The following documents were used as references during this audit:

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CCMUA EMS Manual (August 2011)

National Biosolids Partnership "BMP Elements" (July 2011)

National Biosolids Partnership Biosolids EMS Third Party Auditor Guidance (August 2011)

National Biosolids Partnership Code of Good Practice

National Biosolids Partnership Manual of Good Practice

2G. Additional Information

Further information about this audit and/or the National Biosolids Partnership Biosolids Management Program can be obtained from Camden County Municipal Utility Authority. Contact Mr. Andy Kricun (e-mail: andy@ccmua.org).

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3. SUMMARY OF AUDIT RESULTS

3A. Verification Conclusion

Based on results of this audit, DEKRA has verified that the CCMUA biosolids management system is functioning effectively and continues to meet expectations and requirements of the National Biosolids Partnership Biosolids Management Program, with minor exceptions. We recommend continuing certification within the NBP Biosolids Management Program.

3B. Strengths Observed

During this audit, DEKRA noted the following strengths in the CCMUA biosolids management system.

- CCMUA is an excellent example of how community outreach and leadership can help improve environmental and other performance both for the plant and the community.

3C. Audit Findings – Nonconformances

The following minor nonconformance was identified during the audit. CCMUA has prepared corrective action plans for each nonconformance and those plans have been approved by the Lead Auditor.

Minor Nonconformance JS 15-01/8 NBP BMP Element 8 requires the organization to establish and maintain a training program, including general awareness of the BMP, to ensure employees responsible for specific biosolids management activities are competent in performing their assigned tasks and duties.

A new contractor Supervisor now working at the CCMUA plant regularly has not received awareness training in the CCMUA EMS or its biosolids policy and goals.

Minor Nonconformance JS 15-02/10 NBP BMP Element 10 requires the organization to maintain operational controls at critical control points, including process control systems.

The automated process control system is not protected against unintended intrusion (e.g. no password protection).

Minor Nonconformance JS 15-03/14 NBP BMP Element 14 requires the organization to establish formal corrective action plans to address the findings of internal BMP audits.

Findings from the internal audit in January 2014 were not linked to the Corrective Action process.

Minor Nonconformance JS 15-04/17 NBP BMP Element 17 requires the organization to review the BMP and its performance relative to policy commitments.

The Management Review conducted December 2014 did not address the Biosolids Policy commitments.

3D. Appeals

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the findings of a third party EMS audit. The appeals process involves an Appeals

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Board; representing a balance of biosolids management interested parties, including an environmental advocacy group, and wastewater industry professionals. An appeal must be submitted within 30 days of the date of this audit report. Information about the appeals process is available from the National Biosolids Partnership. Contact Ms. Lisa McFadden at lmcfadden@wef.org.

3E. Agreements / Next Steps

Corrective action plans (including root cause & planned action) are required for each nonconformance. Send to Jon Shaver for approval (jon.shaver@dekra.com).

CCMUA to complete corrective action in a timely manner. Closure of minor nonconformances will be verified during next DEKRA third party audit.

The next audit of the management system (NBP Recertification) to be conducted no later than December 2015. It can occur earlier if CCMUA wishes (May 2015?) so timing matches ISO-14001 certification timing. CCMUA and DEKRA to determine actual timing.

A draft report of the results of this audit will be sent to CCMUA within 14 days. CCMUA should review that report for technical accuracy and send any changes and comments to the Lead Auditor. The final report will be issued to CCMUA and NBP within 30 days following receipt of comments.

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4. MANAGEMENT SYSTEM DYNAMICS

Review of the management system dynamics and outcomes is intended to verify that the biosolids management system is functioning effectively and generating positive outcomes (results) and that changes are being incorporated into the system. The following summarizes DEKRA's review of the dynamics of the CCMUA biosolids management system.

4A Significant Changes

The following significant changes have occurred, or are underway, at CCMUA affecting their critical control points and biosolids EMS:

1. The biosolids dryer has been certified for operation for 8 months of the year. Certification for winter months is expected soon. Synagro has been contracted for operating the dryer.
2. The former Maintenance Director has been appointed as Operations and Maintenance Director. The former Operations Director has been appointed Director of Collections Systems.

Transaction tests determined that this change was implemented in a manner that is consistent with CCMUA Biosolids Policy and EMS requirements.

4B Management System and Documentation Revisions

The EMS Manual, top-level documentation and major processes within the biosolids management system were reviewed. There were no structurally significant revisions. The manual is consistent with requirements of the NBP BMP Elements.

4C Examination of Outcomes

The CCMUA biosolids program is improving using their management system. The following outcomes within the past two years were confirmed.

Regulatory Compliance

Water treatment operation now treats 100% of effluent to near drinking water standards.

Environmental Performance

CCMUA and Camden Collaborative Initiative "Green Infrastructure" projects since 2010 now capture and divert 4.4 million gallons per day of stormwater.

Completing Atlantic Basin Interceptor allows plant to service south Camden County, eliminating 2.4 mgd sewage discharges into Pinelands from 3 wastewater plants.

Quality Practices

Focus on improving biosolids drying operation by CCMUA plant personnel and Synagro personnel has improved ability to produce Class A product from 60% to 90% of total solids.

Relations with Interested Parties

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Success of CCMUA community outreach program demonstrated through recognition by NACWA as “Peak Performer”, by USEPA as top “Clean Water Utility of the Future” and by American Planning Association for 2014 national Sustainable Green Infrastructure award.

Rates paid by citizens have continued well below inflation rate for past 18 years despite capital expenditures and improved operations.

4D Biosolids Policy Commitments

The CCMUA Biosolids Management Policy remains as approved in October 2009. The Policy includes a commitment to follow the principles of the NBP Code of Good Practice. During this Interim Audit, DEKRA’s Lead Auditor reviewed performance of CCMUA biosolids program and found biosolids activities to be consistent with commitments made in the Policy and the principles of NBP’s Code of Good Practice.

4E Effectiveness Reviews

Biosolids Goals & Objectives

Eight of ten objectives for 2014 were achieved and satisfactory progress is being made for the other objectives. Objectives and action plans have been updated for 2015.

Communications Program

A strong, proactive Communications Program continues, with good interaction and response with interested parties, particularly members of the public and local community groups. CCMUA continues their involvement with the local “Green Infrastructure Program”, including the Camden Collaborative Initiative.

Corrective and Preventive Action Process

CCMUA uses its Corrective and Preventive Action Process to investigate and correct management system nonconformances, most of which are identified by internal and third party audits. Nonconformances found during DEKRA’s audit in 2013 were effectively corrected in a timely manner.

Management Reviews

Reviews of ongoing biosolids activities are conducted weekly to plan activities and address any concerns, particularly about effluent quality and odors. An annual report is issued to employees and the public.

4F Closed Nonconformances From Previous Third Party Audits

Corrective action taken in response to nonconformances from DEKRA’s audit of the CCMUA Biosolids Management System in December 2013 and the status of those nonconformances are summarized below.

Minor Nonconformance JS 13-01/ 17 NBP EMS Element 17 requires the organization management to review the BMP and its performance relative to policy commitments, goals,

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objectives, and established performance measures. The Management Review conducted 12/6/13 did not address performance relative to policy, goals & objectives or results of internal audits.

Corrective Action – CCMUA determined that this nonconformance was caused by Misunderstanding of requirements. In response, CCMUA amended the 2013 management review, including discussion of consistency with policy commitments, progress in achieving goals and objectives and audit results. Requirements for Management Review in the EMS Manual were reviewed. DEKRA's Lead Auditor verified that this action was effectively completed to prevent recurrence of the nonconformance. This nonconformance is now closed.

4G Interested Party Interviews

During this audit, DEKRA interviewed a representative of the Coopers Ferry Partnership, the Coordinator for Camden SMART and the Camden Collaborative Initiative. That representative was complimentary about CCMUA's participation in community groups and its external communications.

4H Use of NBP Certification and DEKRA Verification

Use of and references to NBP Certificate and DEKRA Verifications were reviewed. There were no concerns.

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5. PROCESS AUDITS

The following describes the results of DEKRA's audit of processes that CCMUA uses in managing biosolids activities. Consistent with NBP requirements, only parts of the management system are audited during interim audits, such that the entire management system and all 17 EMS Elements are covered at least once during the four annual interim audits between Verification Audits.

5A Processes Audited

5a. Summary

DEKRA audited processes that CCMUA uses in managing its biosolids program and determined the level of conformance of each process with NBP expectations and requirements of the audit criteria. Based on review of the biosolids program, our conclusion with respect to consistency with NBP requirements is summarized below.

BMP Element	Conformance with Applicable NBP BMP Elements
1. Biosolids Management Program Manual	Conforms
2. Biosolids Management Policy	Conforms
3. Critical Control Points	Conforms
4. Legal and Other Requirements	Conforms
5. Goals and Objectives	Conforms
6. Public Participation in Planning	Conforms
7. Roles and Responsibilities	Conforms
8. Training	Conforms, with minor exception noted in Section 3 of this report
9. Communication	Conforms
10. Operational Control of Critical Control Points	Conforms, with minor exception noted in Section 3 of this report
11. Emergency Preparedness and Response	Conforms
12. Documentation, Document Control and Recordkeeping	Conforms
13. Monitoring and Measurement	Conforms
14. Nonconformances: Preventive and Corrective Action	Conforms, with minor exception noted in Section 3 of this report
15. Biosolids Management Program Report	Conforms
16. Internal BMP Audit	Conforms

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BMP Element	Conformance with Applicable NBP BMP Elements
17. Management Review	Conforms, with minor exception noted in Section 3 of this report

5b. Opportunities for Improvement

The following “opportunities” for improving the CCMUA EMS were noted during the audit. Opportunities do not represent nonconformances and CCMUA has no obligation to take any action in response to them.

- Consider modifying the goal for interested party relations to reflect desire for advocacy on environmental issues.
- Several initiatives are in place for communicating with the public about environmental improvements (e.g. Stormwater Runoff mailing). It could be useful to measure the effectiveness of these communications.
- Internal audit reports could include the purpose(s) of the audit and conclusions for each purpose based on evidence found in the audit.
- Management review could be considered to be a process, rather than annual meeting.
- Consider conducting performance reviews with contractor(s) participating in biosolids activities to review performance against agreed measures and objectives.

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APPENDICES

List of Participants

The following persons participated in this audit. Other persons provided additional explanations, as necessary.

CCMUA Personnel

Doug Burns	EMS Coordinator
Jack Connolly	Assistant Director O&M
Andy Kricun	Executive Director
Steve Lee	Operator
Rob Rankin	Operator (Synagro, Inc.)

Interested Parties Participating

Meishka Mitchell VP Neighborhood Initiatives, Coopers Ferry Partnership

List of Documents & Records Reviewed

Biosolids EMS Performance Report 2013
Biosolids Policy & CCMUA Resolution 10/19/09
C/P Action Request – Incident May 2013
CCMUA website
Clean Waters Presentation (by A. Kricun October 2014)
Daily Odor Control & Effluent Quality Report
EMS Manual 2012, 2013
EMS Performance Reports 2011, 2012, 2013
Internal audit report 1/14/14
Internal audit worksheet 12/20/14

List of Camden Smart completed projects
Management Review records (December 2013,
December 2014)
News brief – Flood Relief Project
Objectives 2014, 2015
SCADA screens (various)
Summary of accomplishments 2014

END OF REPORT