



Biosolids Management Program Reverification Audit Report

**Encina Wastewater Authority
Carlsbad, California**

Audit Dates: October 19 to 22, 2015, January 6, 2016

Audit Conducted By:

DEKRA Certification, Inc. (North Wales, PA)

Auditors: Mr. Jon Shaver, Biosolids EMS Lead Auditor

Report Written By: Jon Shaver, Biosolids EMS Lead Auditor

Technical Content Review By: Doug Campbell, Encina Wastewater Authority (January 11, 2016)

Report Approved By: Michelle Hunn, DEKRA (January 13, 2016)

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

Table of Contents

1.	EXECUTIVE SUMMARY	3
2.	AUDIT DETAILS	4
2A.	Agency Details and Biosolids Program	4
2B.	Audit Team	4
2C.	Audit Criteria, Timing, Scope and Methodology.....	4
2D.	Reference Materials	5
2E.	Definitions of Audit Findings and Required Corrective Action.....	5
2F.	Appeals.....	6
3.	AUDIT CONCLUSION, FINDINGS AND AGREEMENTS.....	7
3A.	Verification Conclusion.....	7
3B.	Strengths Observed	7
3C.	Closed Nonconformances Found This Audit	7
3D.	Closed Nonconformances from Prior Audits.....	8
3E.	Nonconformances Remaining Open	8
3F.	Agreements	9
4.	RESULTS - BMP DYNAMICS & PROCESS AUDITS	11
4A	Biosolids Management Dynamics Review.....	11
4B	Outcomes	12
4C	Results - Process Audits	12
4D	Opportunities for Improvement.....	14
	APPENDICES	15
	Appendix 1 List of Participants	15
	Appendix 2 Documentation / Objective Evidence Reviewed.....	15

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

1. EXECUTIVE SUMMARY

DEKRA Certification Inc. (DEKRA) conducted an independent audit of the Encina Wastewater Authority (EWA) biosolids management program (BMP) October 19 to 22, 2015 and on January 4, 2016. The audit was conducted at EWA's request as a full Verification Audit of EWA's biosolids program required for continuing certification within the National Biosolids Partnership (NBP) Biosolids Management Program.

The purposes of this audit were to:

- Verify that the management system being used by EWA in managing its biosolids activities meets NBP expectations and requirements.
- Confirm that EWA is managing its biosolids program effectively, with practices and procedures being performed as documented.
- Verify effective corrective action for previous third party audit nonconformances.
- Examine outcomes that EWA is achieving through the use of a systematic approach for continually improving its biosolids program.

The audit scope covered the EWA biosolids value chain, consistent with NBP requirements. Audit criteria were the requirements of the 17 NBP BMP Elements and EWA's Biosolids Environmental Management System (BEMS) requirements.

Audit Findings and Conclusions

Two major nonconformances and six minor nonconformances with respect to the audit criteria were found during the audit in October 2015. EWA subsequently took action to correct the two major nonconformances. DEKRA reviewed the completed corrective actions on January 6, 2016 and verified that the actions completed were effective in preventing recurrence of the nonconformance. The result of the Corrective Action / Follow-up audit verified that the two major nonconformances were effectively corrected following the audit.

EWA has prepared corrective action plans for all nonconformances found during this audit that have been approved by DEKRA's Lead Auditor. Verification of effective corrective action for nonconformances remaining open will be included in DEKRA's next third party audit.

Based on the results of this audit, DEKRA has determined that:

- Use of a management system approach is generating positive outcomes for EWA's biosolids program in the areas of regulatory compliance, environmental performance, quality practices and relations with interested parties.
- EWA biosolids activities are consistent with NBP expectations and meet requirements of the NBP BMP Elements, with 6 minor exceptions.

Since the major nonconformances are now closed, DEKRA's Verification of the EWA Biosolids Program will continue and we recommend continuing Platinum Certification with the NBP Biosolids Management Program.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

2. AUDIT DETAILS

2A. Agency Details and Biosolids Program

Agency Detail

Agency Name, Location: Encina Wastewater Authority, Carlsbad, California (referred to as EWA in this report)

Biosolids Production Location(s): Encina Water Pollution Control Plant

Number of Employees: 67 (FTE)

Volume of Wastewater Treated (approximate): 19 to 22 MGD

Tons of Biosolids Produced (approximate): 550 dry tons per year (Class A dried pellets)

Biosolids Use / Disposition Sites Audited

Miramar Golf Course, San Diego California

Pardee Nursery, Oceanside California

Biosolids Contractors Participating

Terra Renewal – biosolids transportation and agricultural use

2B. Audit Team

EWA 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 the National Biosolids Partnership as a Biosolids EMS Lead Auditor and Biosolids Auditor. DEKRA asserts that our firm and auditor have an independent relationship with EWA that meets criteria established by NBP.

2C. Audit Criteria, Timing, Scope and Methodology

Audit Criteria

The audit criteria included requirements stipulated in the National Biosolids Partnership (NBP) BMP Elements (July 2011) and EWA's Biosolids EMS.

Audit Timing

This Verification Audit was conducted October 19 to 22, 2015, with a follow-up audit on January 6, 2016.

Audit Scope

The scope of the audit included parts of the EWA biosolids program, which encompasses pretreatment, solids generation, solids stabilization, handling and storage, biosolids transportation and biosolids use, with special attention to practices and management activities that directly support biosolids-related operations, processes and activities. The following topics were covered, consistent with NBP requirements and the Scope of Work agreed by EWA and DEKRA.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

1. Verification of effective corrective action for nonconformances from previous DEKRA audits.
2. Continual Biosolids Management System Dynamics Review, including:
 - Significant changes affecting biosolids program
 - BMP changes (incl documentation)
 - Biosolids Policy commitments
 - Effectiveness of Communications Program, Corrective & Preventive Action, Goals & Objectives, Management Reviews
3. Management Direction (including Biosolids Policy, Roles & Responsibilities, Management Reviews).
4. BMP Planning, Checking and Improvement, including:
 - BMP Planning Processes (public participation, legal and other requirements, communications program, critical control points & operational controls, roles and responsibilities, employee training, document control and recordkeeping)
 - BMP Checking and Improvement Processes (goals/ objectives and related action plans, internal audits, corrective / preventive actions, management reviews).
5. Operating practices:
 - Biosolids preparation (including stabilization, conditioning, storage and handling)
 - Biosolids use (including control of contractors)
6. Examination and verification of outcomes EWA is achieving through its BMP in environmental performance, regulatory compliance, quality practices and relations with interested parties.

Audit Methodology

The audit was conducted by qualified auditors following guidelines in the NBP Auditor Guidance (August 2011). Using a process auditing approach and sampling techniques, auditors observed practices in place, interviewed key persons and reviewed pertinent documents and records 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 management system effectiveness. This audit was conducted as a systems audit and is not a verification of compliance with any legal requirements applicable to practices performed by EWA or its contractors.

2D. Reference Materials

The following documents were used as references during this audit:

- EWA EMS Manual (current version)
- 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

2E. Definitions of Audit Findings and Required Corrective Action

Major Nonconformance – a serious omission from requirements and/or other departure that represents, or could cause a failure of the management system. Major nonconformances must be corrected within 90 days for DEKRA's verification to be issued.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

Minor Nonconformance – an isolated departure from requirements that does not represent a management system failure. Minor nonconformances require timely and effective corrective action. A certified DEKRA auditor must verify the effectiveness of the corrective action taken in order to maintain DEKRA's Verification.

Opportunity (for improvement) – possible improvement in the EMS based on auditor observations. There is no obligation for action in response to these observations.

2F. Appeals

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the Verification conclusion of a third party audit. The appeals process involves an Appeals 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 Audit Company's verification decision or interim audit decision. Information about the appeals process is available from the National Biosolids Partnership. Contact Ms. Lisa McFadden at lmcfadden@wef.org.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

3. AUDIT CONCLUSION, FINDINGS AND AGREEMENTS

3A. Verification Conclusion

Based on results of this audit, DEKRA issues the following Verification Statement concerning the EWA's biosolids management system.

"DEKRA Certification, Inc. has independently verified that the biosolids management program being used by Encina Wastewater Authority supports continual improvement in environmental performance, meeting regulatory compliance obligations, utilizing good management practices and creating meaningful opportunities for public participation and is in conformance with requirements of the National Biosolids Partnership Biosolids Management Program."

3B. Strengths Observed

Effective initiatives are in place to make biosolids a value-added product for customers to increase revenue.

3C. Closed Nonconformances Found This Audit

The following nonconformances found during this audit were closed following review of completed corrective actions:

Major Nonconformance JS/15-04/5 NBP BMP Element 5 requires the organization to establish and periodically review measurable biosolids program goals and objectives. 9 of 13 biosolids objectives for FY2015 are not stated in a measurable way (e.g. "conduct 2020 plan meeting", "complete website", "monitor social media trends", "complete production schedule").
Note - The lack of measurability is a carryover from 2014 audit and continuing nonconformance has escalated this to a major nonconformance.

CORRECTIVE ACTION: In response to this nonconformance, EWA took immediate action to update FY2016 Goals & Objectives to reflect measurability. EWA determined that this nonconformance was caused by lack of understanding of "measurable" leading to inconsistencies in the measurability of goals and objectives. As a result EWA developed BMP requirements for using measurable metrics or standards with objectives used for continual improvement. Evidence of completion of this action was reviewed and the corrective action found to have effectively corrected the problem and addressed the cause. This nonconformance is now closed.

Major Nonconformance JS/15-05/5 NBP BMP Element 5 requires the organization to establish an action plan that describes improvement activities it is pursuing to achieve its biosolids program goals and objectives. Action plans were developed for 2014 objectives, however no documented action plans are in place for achieving FY 2015 and FY 2016 objectives.

CORRECTIVE ACTION: In response to this nonconformance, EWA took immediate action to document plans for achieving 2016 objectives. EWA determined that this nonconformance was caused by the 2016 Tactical Plan, which was not included within the BMP requirements. As a result EWA created formal action plans for FY2015 and final FY2016 goals and objectives and placed action plans in the EMS calendar for tracking quarterly. Evidence of completion of this action was reviewed and the corrective action found to have effectively corrected the problem and addressed the cause. This nonconformance is now closed.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

3D. Closed Nonconformances from Prior Audits

Three minor nonconformances remained open from the previous DEKRA audit in 2014. As a result, EWA took corrective action and DEKRA reviewed the effectiveness of that corrective action during this Reverification Audit. The results of that review are noted below

Minor Nonconformance JS 14-01/ 5 NBP expects the organization to establish and periodically review measurable biosolids program goals and objectives for its biosolids management activities. 12 of the 15 “objectives” developed in 2014 do not have a measurable performance target. (e.g. develop fact sheet, increase public awareness, hold study session)

CORRECTIVE ACTION: EWA determined that this nonconformance was caused by a confusing link between the Business Plan and objectives. As a result EWA revised objectives for the period 2015-2020. Evidence of completion of this action was reviewed and the corrective action found to have effectively corrected the problem and addressed the cause. This nonconformance is now closed.

Minor Nonconformance JS 14-02/ 14 NBP expects corrective action plans to include individual(s) responsible, the estimated completion date, and required resources and that progress in completing the corrective actions be tracked and periodically updated to reflect completion.

Corrective action plans established following investigation of a fire incident in July 2014 did not include responsibility or timing for the action or verification of effective completion.

CORRECTIVE ACTION: EWA determined that this nonconformance was caused by lack of follow-up by the investigator. As a result EWA created a CAPA log for tracking corrective actions. Evidence of completion of this action was reviewed and the corrective action found to have effectively corrected the problem and addressed the cause. This nonconformance is now closed.

Minor Nonconformance JS 14-03/ 16 NBP expects the organization to conduct internal audits to periodically analyze its BMP and determine whether it is effectively meeting its biosolids management policy and program requirements.

The most recent internal audit of the BMP was conducted one year ago. With several recent changes affecting the BMP, this is not sufficient frequency to analyze and improve BMP effectiveness.

CORRECTIVE ACTION: EWA determined that this nonconformance was caused by lack of audit schedule since NBP requirements were not understood. As a result EWA developed a plan / schedule for internal audits from 2014 to 2016. Evidence of completion of this action was reviewed and the corrective action found to have effectively corrected the problem and addressed the cause. This nonconformance is now closed.

3E. Nonconformances Remaining Open

The following nonconformances found during this audit remain open:

Minor Nonconformance JS/15-01/1 NBP expects the organization to document the EMS in a manual that contains procedures required by the BMP Elements. The EWA EMS Manual does not meet this requirement as follows:

- The definition of critical control points in Section 3 does not include need to control regulatory compliance

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

-
- Section 4 could more clearly state how legal and other requirements are incorporated into the EMS
 - Section 13 does not include procedures for monitoring / measuring performance at critical control points.
 - Section 14 does not state how noncompliances are investigated

Minor Nonconformance JS/15-02/3 NBP expects the organization to identify and document critical control points of its biosolids management activities throughout the biosolids value chain. Critical control points are defined to ensure biosolids activities meet legal, quality, and public acceptance requirements and do not have undesirable environmental impacts. Critical control points and operational controls noted in Table 3.1 do not include impacts / risks for quality or public acceptance.

Minor Nonconformance JS/15-03/5 NBP BMP Element 5 requires the organization to establish goals and objectives for its biosolids management activities that reflect identified priorities. There is no clear link to describe or demonstrate how “key policy issues” (2020 Business Plan) connect to biosolids program goals and objectives.

Minor Nonconformance JS/15-06/12 NBP BMP Element 12 requires the organization to establish and maintain document control procedures and practices. EWA requires the “Emergency Response Guide” to be controlled. The Emergency Response Guide presented during the audit did not have clearly stated approval and was not dated or have revision number and is therefore not controlled.

Minor Nonconformance JS/15-07/14 NBP BMP Element 14 requires the organization to investigate any nonconformance with BMP procedures and to document necessary corrective actions taken to prevent a recurrence. There was no formal corrective action record for the fire event involving EWA biosolids that occurred at Pardee Nursery or for the use of overheated biosolids at the plant, both of which occurred about the same time in 2013. The causes of these events could be related.

Minor Nonconformance JS/15-09/17 NBP expects the organization’s management to review the BMP and its performance relative to policy commitments, goals, objectives, and established performance measures. Records for the management review(s) in 2015 do not demonstrate review of performance relative to policy commitments or performance measures.

Note – #15-08 was removed based on information provided by EWA following the October audit.

3F. Agreements

EWA and DEKRA will develop an Interim Audits Program to cover interim audits of the EWA BMP over the next four years. The interim audits will be scheduled so that the complete EWA biosolids EMS will be audited at least once during the current Certification cycle.

The initial Interim Audit in the current Certification Cycle is due by October 2016. Since major nonconformances were found during the 2015 Reverification Audit, DEKRA requires the Interim Audit in 2016 to be a Third Party Audit.

The next Re-verification Audit is due in 2020.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

4. RESULTS - BMP DYNAMICS & PROCESS AUDITS

The following outlines results of DEKRA's audit of processes used in managing the EWA biosolids program and the level of conformance with applicable requirements of the NBP BMP Elements.

4A Biosolids Management Dynamics Review

Significant Changes

The use of EWA biosolids as a fertilizer amendment has expanded and use on golf courses has begun. Use as a fuel for cement kilns has ended.

Fires in the heat dryer operation in 2014 caused EWA to be unable to produce dried Class A for approximately 4 months and requiring EWA to increase shipments of Class B biosolids to Arizona for agriculture use.

No significant changes in biosolids roles and responsibilities affecting the EMS have occurred in the past year.

BMP Changes

No changes to the EWA BMP have occurred in the past year.

BMP Policy

The Biosolids Policy Statement remains as approved in 2004. The Policy commits EWA to follow the National Biosolids Partnership Code of Good Practice.

Communications Program

The public communications and outreach program continues as a top priority. Interested parties interviewed stated that EWA has good communication channels with them.

Goals and Objectives

12 of 13 objectives established for FY2015 were achieved. The Goals and Objectives process is functioning effectively, except as stated in Nonconformances 15-03, 15-04 and 15-05.

Internal Audits

An internal audit was conducted in July 2015 and findings are addressed. The Internal Audit process is functioning effectively.

Corrective & Preventive Action

The Corrective and Preventive Action process is being used effectively to address audit nonconformances. The Corrective and Preventive Action process is functioning effectively, except as stated in nonconformance 15-07.

Management Reviews

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

The Executive Management Team meets quarterly to address biosolids program performance and to plan ongoing improvements. The Management Review process is functioning effectively, except as stated in Nonconformance 15-09.

4B Outcomes

The EWA biosolids program is improving through the use of a systematic approach to managing their biosolids program. The following improvement outcomes within the past two years were confirmed.

Environmental Performance

Alternative fuel practices (e.g. use of grease trap waste) is leading to increased self sufficiency for energy (now approx 75% self generated)

Regulatory Compliance

Third party audits are helping personnel analyze programs and work activities for better performance.

Quality Practices

Improved product quality and marketability is leading to increased revenue (2016 \$ revenue 15% > 2014)

Relations with Interested Parties

Increased use of social media (e.g. Facebook) is generating a lot of public attention & positive feedback.

A demonstration garden for Pure Green product is viewed by persons touring the plant.

4C Results - Process Audits

As part of this audit DEKRA audited the following processes that EWA uses within its biosolids management program and determined the level of conformance of each process with NBP expectations and requirements of the audit criteria.

Process	Conformance with Applicable BMP Elements
<u>BMP Dynamics Review:</u> Significant changes affecting biosolids program Changes in BMP processes and documentation Consistency with Biosolids Policy, NBP Code of Good Practice Progress in achieving biosolids goals and objectives Communications with interested parties	Conforms
<u>Management Involvement & Direction</u>	Conforms

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

Process	Conformance with Applicable BMP Elements
Biosolids Policy Roles & Responsibilities Management reviews	
<u>Biosolids Program Planning</u>	
BMP Documentation	Conforms, except as noted in minor nonconformance 15-01
Public Participation	Conforms
Communication Program	Conforms
Competency, Training & Awareness	Conforms
Compliance (with legal & other requirements)	Conforms
Critical Control Points & Operational Controls	Conforms, except as noted in minor nonconformance 15-02
Document Control	Conforms, except as noted in minor nonconformance 15-06
Recordkeeping	Conforms
<u>Checking & Improvement Processes</u>	
Corrective and Preventive Action	Conforms, except as noted in minor nonconformance 15-07
Goals & Objectives	Conforms, except as noted in minor nonconformance 15-03
Internal Audits	Conforms
Management Review	Conforms, except as noted in minor nonconformance 15-09
<u>Biosolids Operations</u>	
Pretreatment	Conforms
Biosolids Preparation and Handling	Conforms
Emergency Preparedness & Response	Conforms

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

Process	Conformance with Applicable BMP Elements
Maintenance	Conforms
Control of Contractors	Conforms
<u>Biosolids Use / Disposition</u>	
Biosolids Use – Miramar Golf Course	Conforms
Biosolids Use - Nursery Plus (tree nursery)	Conforms

4D Opportunities for Improvement

The following opportunities for improvement in the EWA biosolids management program were noted. EWA has no obligation to take any action in response.

- EWA documentation describing the Biosolids EMS could be structured using processes (rather than elements) for better understanding of how activities interact with each other.
- The desired results for the EMS could be more clearly stated so the effectiveness of process interaction can be monitored.
- Standard Operating Procedures could include qualifications for persons who perform the task, consequences of deviation from the procedure, what to do if operating criteria are not met and include environmental, quality and public relations risks in addition to safety
- A link between the EWA Mission Statement, Biosolids Policy and Biosolids Goals could clarify the desired results for the Biosolids EMS, particularly for terms such as “sustainable” and “fiscal responsibility”.
- Consider periodically monitoring sale of amendment containing biosolids to the public by nursery customer to ensure consumer satisfaction requirements are met.
- A “management of change” procedure could be helpful in planning changes that can affect various functions.
- Consider having agronomic records for biosolids applied to golf courses.
- Consider adding Pre-emergency Planning and Post-emergency Action to the Emergency Response Guide.

Biosolids Management Program Reverification Audit Report

Encina Wastewater Authority, Carlsbad California

APPENDICES

Appendix 1 List of Participants

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

EWA Personnel

Scott Allan	Heat Dryer Supervisor
Debbie Biggs	Director of Operations
Doug Campbell	Director of Environmental Compliance
John Fetu	Maintenance Manager
Kevin Hardy	General Manager
Jimmy Kearns	Capital Projects Manager
Don Little	Source Control Manager
Octavio Navarrete	Operations Manager
Garry Parker	Director of General Services
Jeff Parks	Lab Manager
Michael Steinlicht	Assistant General Manager
Jean Tobin	Safety Manager
David Ummel	Systems Manager
LeeAnn Warchol	Admin Services Manager

Contractors

Chris Marks	Terra Renewal (Denali)
-------------	------------------------

Interested Parties

Diane Goodwin	Neighbor
Jim Hernandez	EWA Director / HBA Architects Escondido
John Moriarity	Nutrients Plus
Steve Parker	Superintendent – Miramar Golf Course
Ron Powell	Pardee Nursery

Appendix 2 Documentation / Objective Evidence Reviewed

Action plan update – heat drying	List of permits (Sharepoint)
Action plans FY2014	MSDS (various)
Biosolids Management Plan 2009	NPDES permit 0107395 (6/2/11)
Biosolids Management Policy 8/13/13	NPDES permit monitoring
BMP Performance report 2015	Odor complaint information 10/31/14
Business Plan 201020	Performance indicators 8/31/15
CARs (various)	Permit responsibilities 2015
Critical control points and operational controls table (6/5/15)	Risk analysis worksheet 9/9/10
Emergency response guide 10/25/13	SOPs (various)
EMS Manual rev 10/25/13	Spill drill June 2015 + follow-up
Encina.com website	Tactical Plan FY 2015-16
FY 2016 goals 9/10/15	Training - coliform sampling
Gas tech readings 11/22-12/25/14	Training – contractor orientation
Incident investigation September 2014	Training records (various)
Internal audit 7/23/15, 12/9/13	Training records (various)
	Vision 2010

END OF REPORT