

**NATIONAL BIOSOLIDS PARTNERSHIP
SECOND INTERIM AUDIT REPORT**

**Central Davis Sewer District
Wastewater Treatment Facility
Kaysville, Utah**

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 2007)
NBP *Code of Good Practice*
Central Davis Sewer District EMS Manual – July 2006
*(Updated – June 2008)***

Final Report – October 16, 2009

INTRODUCTION

The purpose of the Biosolids Environmental Management System (EMS) interim audits is to verify through regular reviews the system's health and effectiveness between verification audits. The third party on-site interim audits provide independent reviews and supports credibility between re-verification audits. The goal of the third party interim audit is to collect and evaluate objective evidence related to a portion of the EMS such that over the course of the four interim audits conducted between verification audits all 17 elements are covered. The audits determine whether the Central Davis Sewer District (CDS) Wastewater Treatment Facility 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 Code of Good Practice and EMS program objectives.

RECOMMENDATION

The results of the Central Davis Sewer District interim audit and review of their biosolids EMS program are positive, and it is the recommendation of the audit team that the Wastewater Treatment Facility Biosolids EMS maintain its "Certification" status.

AUDIT SCOPE

The NSF- International Strategic Registrations, Ltd. (NSF-ISR) conducted a third party interim audit of the Central Davis Sewer District's EMS for Biosolids from October 12, 2009 through October 13, 2009. The on-site interim audit team consisted of Dr. William R. Hancuff, Lead Auditor.

The scope of the first interim audit included a review of areas generally covered in Elements 4, 5, 14, and 17; namely the organization's progress toward goals and objectives; EMS outcomes (environmental performance, regulatory compliance, interested party relations, and quality practices); actions taken to correct minor nonconformances; the management review process; and corrective and preventive action requests and responses.

Other elements that were audited in their entirety were 1, 2, 4, and 8. Additional elements that were partially audited as they related to outcomes, changes in equipment and processes, composting and land application sites included Elements 1 and 2.

The physical biosolids facility included in the audit and visited during the on-site audit were the bulking agent storage area, tub grinder, windrow compost piles, and compost final storage area.

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

Sherman Cloward, Member of the Central Davis Sewer District, Board of Trustees.

Leland Myers, Director, Central Davis Sewer District.

Jon Hess, Plant Superintendent, Grade IV, Wastewater treatment plant operator and Grade III collection system operator

Dave VanHoff, Grade IV, Wastewater treatment plant operator and Grade II collection system operator.

Nate Cloward, Grade II, Wastewater treatment plant operator and Grade III collection system operator

Trace Workman, Grade I, Wastewater treatment plant operator and Grade III collection system operator.

Mark Schmitz, State Biosolids Management Program Coordinator, Environmental Scientist, State of Utah, Department of Environmental Quality.

Sue Shaw – Local Citizen and nearby neighbor

INTERIM AUDIT FINDINGS

The interim audit found one positive finding, no major non-conformances, no minor non-conformances, and 6 opportunities for improvement.

The following is a review of the positive observation made during the interim audit. Opportunities for improvement follow and are listed by item number, which correspond to the element minimum conformance requirement, in the sequence of the NBP standard elements.

Positive Observations

The CDSW Wastewater treatment management and plant operations personnel involved in the biosolids environmental management system development and maintenance should be recognized for their outstanding achievements, and the exceptional features of their Biosolids EMS. The following is a positive item observed during this audit.

Commendation:

- Element 17 – The district manager assembled an excellent summary of annual activities for the Management Review by the CDSW Board of Trustees during its January 8, 2009 meeting.

The continued hard work and dedication of the EMS Team is also acknowledged. While maintaining the EMS verification status is obviously a team effort the guidance provided by the Director CDSW to ensure continual improvement of the system is recognized.

Opportunities for Improvement

- Element 1.7 – Within Element 1, procedure item 5 indicates that currently the District has one second class contractor, and that this contractor supplies and operates a tub grinder for admixture sizing. CDSO has purchased its own tub grinder and no longer uses this contractor. Consider rewriting the procedure to reflect that the District may use a contractor on an emergency basis if needed, and that the second class contractor would be informed of all needed EMS responsibilities.
- Element 2.1 – Consider including the NBP principle of conduct identified in the Code of Good Practice as part of the EMS manual within Element 2: Biosolids Management Policy.
- Element 8.1 – Not all of the employees (operational staff) were aware of the EMS and how their assigned roles and responsibilities related to the entire biosolids value chain.
- Element 8.3 – Not all of the EMS training records are captured in the EMS training log. Additionally, much of the training information contained in that log focuses on safety training.
- Element 16.1 – Procedure item 1 within Element 16 of the EMS manual does not reflect the current CDSO's approach of conducting an internal audit on an annual basis regardless of whether or not a formal 3rd party verification or interim audit is conducted.
- Element 16.3 – The most recent internal audit did not specifically identify who was the lead auditor.

The CDSO has indicated that it will address the opportunities for improvement as outlined above and will develop new objectives and targets for approval by the Board of Trustees at its January 2010 meeting.

The District's EMS has continued to demonstrate continued improvement over the past year and it is expected that this will continue into the future.

CENTRAL DAVIS SEWER DISTRICT COMMENTS

Central Davis Sewer District accepts the comments and opportunities for improvement identified as part of the audit. The opportunities for improvement will be addressed by corrective action plans in positive manner.

OUTCOMES MATTER

The CDSB Biosolids Environmental Management System established five biosolids EMS goals for 2008. In addition five biosolids EMS goals were established for 2009. The goals and objectives were developed by the CDSB director with input from the operators and consideration of potential public concerns. The CDSB Biosolids goals for its EMS were also established cognizant of each of the four outcome focal points of the NBP program as identified below:

1. Environmental Performance,
2. Regulatory Compliance,
3. Relations with Interested Parties, and
4. Quality Biosolids Management Practices.

While it is not a requirement to attain all objectives established, it is a critical component of the system to make progress towards accomplishing the overall goals. The CDSB established several goals for 2008 and 2009. The goals have been established using Specific, Measurable, Achievable, Relevant, and Time Bound (SMART) criteria. Progress was made in attaining the goals and objectives through 2008 and thus far in 2009. The facility's performance relative to each of the above outcome groups is addressed below.

In the Environmental Performance outcome area, the CDSB established two goals in 2008, each with a specific objective. In 2009 the District also established two goals. The first goal was related to maintaining exceptional performance and the second goal

The first goal established for 2008 was to maintain exceptional performance, which had the objective of no regulatory violations or odor complaints during the calendar year. The performance indicator is to have no complaints or off-site odor detection above 20 dilutions to threshold (D/T). The District has an odor sampling and evaluation program that employs a Nasal Ranger Field Olfactometer and H₂S evaluation using the Gerome 631X. Additionally the District has installed an odor neutralization system that permits dispensing of an odor masking agent in the vicinity of the composting area should odors become an issue. There were no Utah Pollutant Discharge Elimination System (UPDES) violations or recorded odor complaints in 2008.

For 2009 CDSB established the same goal and objective, and as of October 2009 the District had no UPDES violations or recorded odor complaints.

The second goal established for 2008 was to improve compost quality by reducing the amount of rag/clean wipes reaching the wastewater treatment plant. Some rag/clean wipes are produced with a soft fiber that disintegrates well when passing through the wastewater system; while others with interlocking fibers are extremely resistant to tearing and pass through the system. The later materials often compromise the operation of the collection system and treatment plant as well as impacting the composting operations and final product quality. The objective of this goal was to create and distribute information to home owners explaining the problem and requesting assistance in reducing quantities

disposed in the commode. Two methods of public education were determined to be used: a video and a brochure. An educational video was produced and has been used in school education programs, tours and neighborhood presentations, and is distributed to interested parties through the Water Environment Association of Utah. Although the use of a brochure (leaflet) met some resistance final approval of the format and content was attained in October 2009 and production for home distribution in specified areas is scheduled for November 2009.

A new goal established for 2009 was to evaluate the potential for recycling additional waste wood products through coloring of ground wood chips. The objective of this evaluation was to determine costs and marketability of colored wood chips. The use of this approach would allow the District to maintain a surplus of bulking agent wood chips, which if not used could be marketed as opposed to disposed in a landfill. In 2009 a report was prepared which showed that the cost benefit of purchasing coloring equipment would not be offset by the sale of such a product.

In the Regulatory Compliance outcome area, the District established three goals for 2008. The first goal was partially addressed as an environmental performance outcome above, but is further discussed here.

This objective was to have no Utah Pollutant Discharge Elimination System (UPDES) permit violations in 2008. Part II of the UPDES permit specifically addresses Biosolids Requirements. And although there was a minor recordkeeping discrepancy identified in early 2008 associated with keeping composting temperature records for 15 days, a letter from the State of Utah Department of Environmental Quality indicated that while the records may not have been complete (1 day missing) the intended temperatures were maintained and the matter was closed. Note that an EMS corrective action worksheet was prepared and supplemental training on documentation was delivered to all operational personnel as a preventive measure.

The same goal and objective was established for 2009. An interview with the State Biosolids Management Program Coordinator confirmed that so far in 2009 there have been no permit violations.

The second regulatory outcome related goal for 2008 was to ensure site restrictions are met for land application areas. There are homes proposed for construction on the east of the District's northern farm fields. Secure separation is needed to ensure site restrictions are met and to prevent problems with children in the farm/land application area. The objective was to provide separation from future housing by installing a six-foot high security fence along the District property in this area.

A security fencing contract was awarded to Custom Fence in mid-2007. By the end of 2007 the contractor had installed 3,480 feet of chain link fence with three strand barb wire on top. One gate was also installed. The District awarded an additional contract to Custom Fence in 2008 for the installation of 3,300 feet of the same fencing along with two gates. This work was completed by mid-2008.

This goal and objective was carried forward to 2009 and fencing was installed on the remainder of the District site. Custom Fence completion the installation of all fencing in June 2009.

The third regulatory compliance outcome related goal in 2008 was the evaluation of the land application field dikes to ensure they are sufficient to contain storm water runoff and minimize the possibility of flushing phosphorus into the Great Salt Lake. The District completed the survey of the dikes and evaluated the retention area along with the potential runoff. A report of the dikes adequacy was prepared and it was determined that the dikes needed to be raised in some areas in 2008.

A new related goal and objective was developed for 2009 consisting of increasing the dike height in the areas required. The construction of the needed increases was completed by May 2009.

In the Relations with Interested Parties outcome area, the District established several goals and objectives in 2008 and 2009, some of which overlap with other outcome areas.

The first goal in this area for both 2008 and 2009 was to have no odor complaints, which was discussed in the Environmental Performance outcome section above. This goal was attained in 2008 and continues to be attained thus far in 2009.

The second goal in this area established for both 2008 and 2009 was associated with the installation of a six foot high security fence along the boundary of the Districts property. This objective is the same as already discussed in the Regulatory Compliance outcome area above. Expansion and completion of this goal was attained in June 2009, such that now all of the property not bounded by the Great Salt Lake is fenced.

The third goal established for both 2008 and 2009 was associated with the creation and distribution of a public education video and brochure containing information on the problems associated with commode disposal of rags and wipes. This goal was discussed in the Environmental Performance outcome area above.

The fourth goal in 2008 was to develop understanding of the EMS process with other wastewater treatment plants and to broaden awareness of the National Biosolids Partnership. The method to be used is sponsorship of a training seminar for interested POTW's and State regulators and staff regarding the advantages of an EMS and NBP certification. The state-wide training with participation by Utah State regulator and an NBP representative took place on March 6, 2008.

In the Quality Biosolids Management Practices outcomes area, the District established three goals and objectives, all three of which were discussed in other outcomes areas.

The first goal of 2008, which was carried over into 2009, was the same as describe previously in the Environmental Performance outcome and Relations with Interested

Parties outcome related to minimizing rag and wipe disposal into the wastewater collection system. Reduction in these materials will eliminate their interference in the composting process as well as make the aesthetics of the final compost product more appealing. Educational materials were produced and used in 2008 and leaflets produced in 2009 will distributed throughout the year.

The second goal of 2008, which was carried over into 2009, was the same as the one originally described in the Regulatory Outcome area above dealing with installation of fencing around the District boundary of the northern farming area. The installation of this fencing provides an indirect benefit to biosolids management practices and all fencing was completed by June 2009.

CONCLUSIONS AND RECOMMENDATIONS

The results of the third party interim audit show the CDS D has a very strong Environmental Management System. The NSF lead auditor found no major or minor nonconformities. Therefore, it is the recommendation of the audit team that (CDS D) Wastewater Treatment Facility Biosolids Environmental Management System (EMS), Kaysville, Utah retain its “verification” status.

As was mentioned previously, an EMS is a continuous improvement process, and retention of verification status is not the end. The results of this and future audits are intended to provide value added to the system 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 improvement the results of each audit provide an additional incremental step in the overall system’s improvement.

Based on discussions between the Facility’s Biosolids EMS Coordinator and the third party auditor the following interim audit schedule is proposed for the next three years.

The scope of each interim audit will include a review of areas generally covered in Elements 4, 5, 14, and 17; namely the organization’s progress toward goals and objectives; EMS outcomes (environmental performance, regulatory compliance, interested party relations, and quality practices); actions taken to correct minor nonconformances; the management review process; and corrective and preventive action requests and responses.

In addition, other EMS components that will generally be audited include Elements 1, 2, 15 and 16, while concentration will be placed on the following elements during each interim audit:

Year 3 (third party) – Elements 3, 10, and 13

Year 4 (third party) – Elements 7, 11, and 12

Attachment 1

Documents and Other Object Evidence Reviewed During the First Third Party Interim Audit

Element 1. Documentation of EMS for Biosolids

- Central Davis Sewer District – EMS Manual – June 2007, Last Updated June 2008.
- EMS Manual Element 1: Central Davis Sewer District EMS Manual, dated Sept 8, 2007.
- EMS Manual Element 2: Biosolids Management Policy containing CDSO Biosolids Management Statement, dated Sept 8, 2007.
- Interview, Sherman Cloward, Member of the Central Davis Sewer District, Board of Trustees.
- Interview with Leland J. Meyers, CDSO Manager.
- EMS Manual Element 3: Table 3.1 – Critical Control Points, Operational Controls, SOPs, Monitoring/Measurement and Environmental Outcomes
- EMS Manual Element 6: Public Participation in Planning, dated June 7, 2007.
- EMS Manual Element 7: Roles and Responsibilities, dated Oct 29, 2007.
- EMS Manual Element 9: Communication, dated Sept 9, 2007.

Element 2. Biosolids Management Policy

- EMS Manual Element 2: Biosolids Management Policy containing CDSO Biosolids Management Statement, dated Sept 8, 2007.
- Sherman Cloward, Member of the Central Davis Sewer District, Board of Trustees.
- Interview with Leland J. Meyers, CDSO Manager.
- Interview Jon Hess, Dave VanHoff, Nate Cloward, and Trace Workman on Policy awareness.
- Safety Meeting Minutes – January 15, 2009 (Biosolids EMS awareness training)
- Policy communicated to interested parties through availability on web-site.

Element 4. Legal and Other Requirements

- EMS Manual Element 4: Legal and Other Requirements, dated June 7, 2007.
- Table 4.1: Legal Requirements and Guidance Specific To Central Davis Sewer District Biosolids Land Application Program
- Table 4.2: UT0020974 Summary of Permit Requirements
- UPDES Permit No. UT0020974
- Interviews with Leland J. Meyers and Jon Hess.
- Interview with Mark Schmitz, State Biosolids Management Program Coordinator, Environmental Scientist, State of Utah, Department of Environmental Quality.

Element 5. Goals and Objectives for Continual Improvement

- EMS Manual Element 5: Goals and Objectives, dated January 2, 2008.
- Goals & Objectives - Action Plan & Tracking – Critical Outcome Indicators 2008.
- Goals & Objectives - Action Plan & Tracking – Critical Outcome Indicators 2009.
- Interviews with Leland J. Meyers and Jon Hess.
- Biosolids Annual Report for 2008
- CDSO NBP EMS Report on Goals and Objectives – Reporting Year 2008
- CDSO NBP EMS Report on Goals and Objectives – Reporting Year 2009
- Annual Activities – Management Review – January 19, 2008.
- CDSO Board Meeting Minutes – January 8, 2009
- Biosolids EM Consideration presented to the CDSO Board Meeting January 2009
- Custom Fence Company – Change Order for 1,780 ft of installed fence, three double drive gates and repairs and barb wire additions.
- Analyses of dikes around land application fields for determination of control of 100 year flood
- Report on Colorization of Mulch
- Drafts of two versions of single page leaflets requesting public help in reducing disposable wipes down the toilet.
- “Don’t Waste the Wipes” video on DVD
- CDSO Board Meeting Minutes – February 12, 2009
- Access and evaluation of website.

Element 6. Public Participation in Planning

- Addressed in Relations with Interested Parties Outcomes
- Interview with Sue Shaw – Local Citizen and nearby neighbor

Element 8. Training

- Employee General Awareness Training contained in EMS training log book and safety training log book.

Element 9. Communications

- Addressed in Relations with Interested Parties Outcomes
- Interview with Sue Shaw – Local Citizen and nearby neighbor

Element 14. Nonconformances: Preventive and Corrective Action

- EMS Manual Element 14: Nonconformances – Preventive and Corrective Actions, dated Sept 10, 2007.
- Reviewed Audit and Corrective Action Worksheets prepared to address third party interim audit findings from October 2008.
- Biosolids Internal Audit Report for audit conducted December 17 and 18, 2008.

- Reviewed Audit and Corrective Action Worksheets prepared to address results of internal audit of December 17 and 18, 2008.
- Reviewed Audit and Corrective Action Worksheets prepared to address results of interim audit of October 2008
- Interview with Leland J. Meyers and Mark Schmitz, State Biosolids Management Program Coordinator, Environmental Scientist, State of Utah, Department of Environmental Quality (auditor).
- Reviewed Audit and Corrective Action Worksheets prepared to address results of non-audit system findings.

Element 15. Periodic Biosolids Program and EMS Performance Report

- EMS Manual Element 15: Biosolids Management Program Report, last reviewed Sept 6, 2007.
- EMS Annual Report and Management Review submitted to Board of Trustees – February 2009.
- Interviews with Leland J. Meyers
- Biosolids Annual Report for 2008
- CDSN NBP EMS Report on Goals and Objectives – Reporting Year 2008
- CDSN NBP EMS Report on Goals and Objectives – Reporting Year 2009
- CDSN Board Meeting Minutes – January 8, 2009
- Biosolids EM Consideration presented to the CDSN Board Meeting January 2009
- Reviewed 2008 Annual Biosolids Report with extensive summaries of monitoring and measurements.

Element 16. Internal EMS Audit

- EMS Manual Element 16: Internal EMS Audit, dated January 19, 2008.
- Reviewed Internal Auditor's Worksheets.
- Reviewed Internal Audit Report for audit conducted on December 17 and 18, 2008
- Interviews with Leland J. Meyers
- Interviewed Mark Schmitz, State Biosolids Management Program Coordinator, Environmental Scientist, State of Utah, Department of Environmental Quality. (internal auditor)

Element 17. Periodic Management Review of Performance

- EMS Manual Element 17: Management Review, dated June 8, 2007.
- Reviewed CDSN Annual Activities Management Review - February 2009.
- Interview, Sherman Cloward, Member of the Central Davis Sewer District, Board of Trustees.
- Interview with Leland J. Meyers, CDSN Manager.

Attachment 2

National Biosolids Partnership Appeals Process

Biosolids organizations that participate in the National Biosolids Partnership (NBP) Environmental Management System (EMS) Program are required to undergo an EMS verification audit by an independent, third party auditor assigned by the NBP and yearly interim audits. The purpose of the EMS audit is to determine whether or not the organization's EMS conforms with -- that is, meets the requirements of -- the NBP program, as defined in the EMS Elements¹. The spirit of these requirements includes a well-documented program and meaningful opportunities for interested party involvement.

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the findings of a third party EMS audit. The verification 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 official verification decision or interim audit decision.

To submit an appeal before the Appeals Board, the petitioner must set forth the specific EMS element(s) and requirements that is believed to have not been evaluated and/or implemented consistent with NBP requirements as reflected in the EMS Elements, along with the objective evidence to support that claim. For example, a petitioner may believe that a major nonconformance exists but was not found by the auditor. In this case, the petitioner would need to identify in the petition the specific EMS element believed to be out of conformance and why.

To submit an appeal, petitioners must fill out and submit the standardized appeals petition form that is available on the NBP website at <http://www.biosolids.org>. A formal appeal must be submitted within 30 days of the verification decision or interim audit decision by the audit company.

The Board's Administrative Officer receives all appeals petitions on behalf of the Board and conducts a basic completeness check. Upon completion of this check, the petition is either forwarded to Appeals Board members or back to the petitioner with incomplete areas documented. Petitions should be sent via certified, return receipt requested mail to:

The NBP EMS Appeals Board, Attention: Board Administrative Officer, c/o
Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314

¹ The *EMS Elements* and other program materials are available on the NBP website at <http://www.biosolids.org>.

The Appeals Board will examine the facts, interview parties involved, deliberate the case, and then make a determination as to whether a major nonconformance does or does not exist. Appeals cases vary in complexity. As a result, the time required for the Board to evaluate a case and make a decision might vary. However, the overall Board target for processing an appeal is approximately four months.