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Kent County Department of Public Works

Regional Wastewater Treatment Facility

Milford, DE

Surveillance Audit

OHSAS 18001:2007

KEMA-Registered Quality, Inc.

Chalfont, Pennsylvania

November 16 – 17, 2010

CONFIDENTIAL REPORT

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Approved by: NPR

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1 SUMMARY

KEMA conducted a Surveillance Audit of the Occupational Health and Safety Management System of Kent County Department of Public Works, Regional Wastewater Treatment Facility (KCRWTF) in Milford, DE based upon the OHSAS 18001:2007 Standard. To meet the requirements of KEMA accreditations, sector-qualified auditors conducted this audit in accordance with the "KEMA Auditor Manual" and the "KEMA Audit Planning Guide."

The objective of the audit was to determine the extent of conformity of the organization's management system, or parts of it, with audit criteria of the OHSAS 18001:2007 Standard, to evaluate the capability of the management system to evaluate the effectiveness of the management system in meeting its specified objectives (such as management priorities), and identify areas for potential improvement of the management system.

KEMA auditor, Jon Shaver, was on site for 1.5 eight hour days, for a total of 1.5 man days.

During the visit, KEMA reviewed the Continual Management Dynamics and audited the processes listed in section 5 below, finding one Major Nonconformance and seven Minor Nonconformance(s). The review indicated that the Occupational Health and Safety Management System is not in conformance with OHSAS-18001:2007 and improvement is required. Since one Major Nonconformance(s) remain(s) open, follow-up actions are necessary.

Multiple Minor Nonconformances were reviewed and it was determined that a structural issue has been encountered. Therefore, a Major Nonconformance has been documented in the Findings section of this report (2.2)

This audit was performed as an integrated audit in conjunction with Surveillance Audits against criteria of ISO-14001:2004, OHSAS-18001:2007 and Biosolids EMS Elements. Audit results for each standard are reported separately.

The audit was observed by Larry Bissell (ANAB Assessor) and Elysa Dickinson (KEMA Quality Manager).

2 AUDIT FINDINGS, STRENGTHS AND OPPORTUNITIES

2.1 Strengths, Opportunities

The audit team noted the following strengths and opportunities:

STRENGTHS:

- Operations Supervisors and Operators are well aware of the EHSS MS and its fundamental requirements.
- Significant EHS improvements have been made in the past 2 years and/or are being planned – chlorine & SO₂ removal, energy use reduction, waste heat capture (for admin bldg heat), greenhouse gas reduction, communication with neighbors
- The internal audit performed in 2010 was concise and provided useful findings.

OPPORTUNITIES:

- Management reviews records (e.g. 9/16/10) could include a summary description of topics discussed rather than a checklist stating that the topics were addressed.
- Internal audit results could be presented in an Executive Summary that relates results to the purpose of the audit.
- Temporary covers on walkways over basins in UV disinfection area could be secured for improved safety.
- A spreadsheet or database could be used to track equipment maintenance and lead to a predictive maintenance approach.
- Consider renaming and controlling “waste” oil and “waste” antifreeze cleanup in Shop to avoid special waste removal requirements.
- The Lockout / Tagout procedure being used could include reference to hazardous energy in addition to electrical (e.g. pneumatic, hydraulic).
- The Safety Committee could be used to determine if action arising from incident investigations should be tracked via the corrective and preventive action process.
- Some areas / equipment could be labeled (NFPA or similar) to alert personnel. Examples – COD container in lab, storage area for laboratory waste, Urea tank, antifreeze tank in Shop.

2.2 Findings

The processes described in Section 5 and the CMD in Section 4 were found to satisfy the applicable elements of the appropriate standards, with the exceptions noted below:

Description of Finding:

Engineering and Construction

Minor Nonconformance JS/10-01/4.3.1 OHSAS-18001 (4.3.1) requires a procedure be established for identifying and assessing hazards originating outside the workplace that could adversely affecting workplace health and safety.

Pre-job meetings and training are used to make contractors who will perform work at KCRWTF aware of EHSS MS requirements, however those procedures do not include discussion or assessment of hazards that the contractor may introduce as part of their work.

Document Control and Recordkeeping

Minor Nonconformance JS/10-03/4.4.5 ISO-14001 and OHSAS-18001 (4.4.5) require that documents requiring control be approved before use.

There is no approval noted on written operating procedures being used in the wastewater treatment operation.

Minor Nonconformance JS/10-05/4.5.4 ISO-14001 and OHSAS-18001 (4.5.4) require control of records used to demonstrate conformity.

The list of records requiring control noted in the EHSS MS Manual does not include records for personnel competency, equipment calibration, or Biosolids Program Performance Report and does not identify what records associated with “biosolids operations” and “lab operations” require control.

Biosolids Preparation

Major Nonconformance JS/10-04/4.4.6 ISO-14001 and OHSAS-18001 (4.4.6) require the organization to plan operations associated with significant environmental aspects and OHS hazard(s) by establishing documented procedure(s), where needed, and to stipulate operating criteria in those procedures.

The biosolids preparation operation has significant environmental aspects and OHS hazards and KCRWTF has deemed that operating procedures are needed. Written operating procedures have not been established for this operation.

Maintenance

Minor Nonconformance JS/10-06/4.4.2 ISO-14001 and OHSAS-18001 (4.4.2) require that persons working on behalf of the organization be made aware of the importance of conforming with the EHS Policy and requirements of the management system.

George & Lynch personnel working regularly at the KCRWTF site have not received EHSS MS training and are not made aware of their responsibilities within the EHSS MS.

Emergency Preparedness

Minor Nonconformance JS/10-07/4.4.7 ISO-14001 and OHSAS-18001 (4.4.7) require that emergency procedures be in place to address potential environmental impacts and OHS consequences.

Some EHS aspects (such as security, drowning, severe weather events, contractor emergencies) are not referenced in the Emergency Preparedness procedures.

Wastewater Treatment / Treated Effluent

Minor Nonconformance JS/10-02/4.4.2 ISO-14001 and OHSAS-18001 (4.4.2) require that records of competency (appropriate education, training or experience) be retained and controlled for persons performing tasks that can significantly impact the environment and/or occupational health and safety.

Written records confirming that wastewater treatment operators are competent in specific tasks and, therefore can perform those tasks unsupervised, are not available.

Documentation

Minor Nonconformance JS/10-08/4.1 ISO-14001 and OHSAS-18001 (4.1) require that the organization document its management system.

The Kent County EHSS MS manual does not fully reflect actual practices in some areas audited, including:

- Emergency preparedness describes some plans and some procedures but does not fully discuss “preparedness” requirements
- The use of Corrective Action Process to address employee suggestions is not described
- The link between corrective action and management of change processes does not include determination of need for EHS risk analysis
- Description of the Management Review process does not correctly state how the status of corrective and preventive actions are reviewed
- The EHSS MS procedure for controlling documents could elaborate on “as necessary” for reviewing controlled documents
- The Management of Change procedure (EHSS MS 5.1) does not include assigning responsibilities for steps in planning a change

3 REQUESTS

Per audit discussions, Kent County Department of Public Works will submit a corrective action plan for each nonconformance found during this audit to KEMA's office by December 17, 2010.

An extension of 30 days (to December 17, 2010) was granted by KEMA's office for correcting the open nonconformance remaining from KEMA's Surveillance Audit in November 2009.

A follow-up is scheduled to occur by December 17, 2010 to verify corrective action of the open nonconformance remaining from 2009, the Major Nonconformance found during the current audit and at least one of the minor nonconformances found during this audit. That follow-up will take approximately ½ day offsite. Kent County may want to review correction of other nonconformances and, if so, the audit will be extended to 1 day onsite.

In addition, a follow-up audit was scheduled to verify corrective action of all remaining nonconformances by May 17, 2011. That audit will require 1 day onsite.

The current total headcount is 50, including 18 persons on 3 shifts. This has not changed substantially since the last audit.

The next audit, a Certification Renewal Audit, was tentatively scheduled for the week of November 14, 2011. Kent County would like to continue the integrated ISO-14001 + OHSAS-18001 + Biosolids EMS audit method. KEMA's regional office will confirm the exact date.

4 CONTINUAL MANAGEMENT DYNAMICS REVIEW

4.1 Organization Revisions

Recent revisions to the organization were reviewed and there were no substantial or structural changes.

Some significant changes in the operations at KCRWTF are under construction and planned for startup in 2011, including installation of a solar energy system, waste heat recovery system and greenhouse equipment for biosolids drying. The Management of Change process is being used to plan these installations.

4.2 Revisions to the Occupational Health and Safety Management System and Associated Documents

Major changes to the EHSS MS Manual, top level documentation and major systems of the management system were reviewed and there were no structurally significant revisions.

4.3 OH&SMS Audits/Assessment of compliance and Other Requirements Including Corrective Action and Closure

Internal audits conducted since the last surveillance were reviewed. The most recent internal audit of the EHSS MS was conducted 9/30/10 and findings are being corrected using the Corrective and Preventive Action process. Effectiveness of the audits as well as resultant corrective action was assessed. The internal audit process was found to be effective.

The compliance assessment to regulatory requirements conducted since the last surveillance was reviewed. These assessments include internal audits for compliance with environmental and health and safety regulations and permits and inspections by regulatory agencies. Effectiveness of the assessments as well as resultant corrective action was assessed. The process of compliance assessment to regulatory requirements was found to be effectively implemented.

The compliance assessment to other requirements conducted since the last surveillance was reviewed. These assessments include third party audit of conformance with the National Biosolids Partnership EMS Elements and Code of Good Practice. Effectiveness of the assessments as well as resultant corrective action was assessed. The process of compliance assessment to other requirements was found to be effectively implemented.

4.4 Closed Corrective Actions from prior KEMA Audits

All but one nonconformance from KEMA's Surveillance Audit in November 2009 have been corrected. Closure of those nonconformances was reviewed by KEMA and reported in April 2010.

4.5 Corrective Actions from prior KEMA Audits remaining open

One Corrective Action remained open, as described below. The Closed Loop Corrective Action process has been assessed. Failure to close the Nonconformances does not indicate a serious issue. Following is the justification for extending the deadline for Corrective Action closure.

Minor Nonconformance JS/09-04/4.4.5 ISO-14001, OHSAS-18001 and NBP EMS Elements require control of management system documents.

Some SOPs in use are in “draft” form (i.e. no final approval), some (such as confined space entry procedure) have more than one version in place and some (e.g. EHSMS Manual) do not have pages identified, dated or numbered.

Corrective Action - KCRWTF determined that the cause of this nonconformance was inadequate management priority. In response, KCRWTF assigned correction to the Safety Committee and the action plan was given a high priority. Written Work Instructions have been developed in all areas except biosolids. Work Instructions for biosolids are underway and will be completed within 30 days. Final review of this nonconformance has been extended for 30 days (to December 17, 2010) with approval from KEMA’s office.

4.6 Performance Measurement and monitoring including Corrective Actions

OHS performance is monitored by the Safety Committee, comprised of representatives from each function. Recordable injuries and incidents are measured.

4.7 Accidents, Incidents, Non-conformances and Corrective/preventive Action not found in other sections

Incidents, including accidents, emergencies and near-misses are investigated and corrective action plans are established by the Safety Committee.

4.8 Occupational Health and Safety Policy including commitments to Improve Health and Safety Performance, to Comply with Regulatory and Other Requirements, Continual Improvements

Occupational Health and Safety Policy: The KCRWTF “EHSS MS Policy” is in place, communicated internally and available to the public. It includes commitments to prevent injury / ill-health, prevent pollution, comply with regulations and continual improvement. The Policy is reviewed and updated, as necessary, by the Core Team comprised of senior managers, and approved by the Levy Court and Works Director.

Commitment to comply with Regulatory and Other Requirements: Communication with regulatory agencies occurs regularly. No noncompliances have occurred in the past year.

Continual Improvement: Use of chlorine and sulfur dioxide has been replaced by disinfection using ultra violet radiation.

Improve Health and Safety Performance: The Safety Committee meets monthly to discuss, plan and implement improvements in workplace safety and health.

4.9 Review of status of hazards identification, targets and OH&S risk assessments and applicable programs

A “what-if” approach is used to analyze OHS hazards. Identified aspects are prioritized using a numeric rating system based on reasonable judgment by the Core Team.

4.10 Internal Communications

An effective internal communications process is in place, including weekly staff meetings and monthly Safety Committee meetings.

4.11 Management Involvement (includes Management Review)

Management involvement has been demonstrated through actions taken regarding issues raised in management reviews and programs for measurement and improvement. The actions taken are consistent with communicated occupational health and safety objectives. The Core Team, comprised of senior managers, meets semi-annually to review the performance of the EHSS management system.

4.12 Use of Certificate and Registrar Seals

Use of Certificate References and Registration Seals were reviewed, and changes were discussed. There were no concerns.

4.13 Audit Program Changes

The audit program was modified slightly to reflect updated process names and owners. The Audit Program used at the audit will be adjusted to reflect current status, including the next audit processes

5 PROCESS AUDITS

5.1 Participants

The principal staff involved on behalf of the company were:

Name	Position/Department	
Chris Austin	Plant Superintendent	KCRWTF
Glen Bennett	Field Inspector	KCRWTF
Mike Henrick	Pipefitter	George & Lynch (contractor)
Hans Medlarz	Works Director	KCRWTF
Jim Newton	Environmental Program Manager	KCRWTF
Steve Phillips	Maintenance Mechanic	KCRWTF
Keith Powell	Assistant Works Director	KCRWTF
Bill Vincent	Operations Supervisor	KCRWTF
Rich Whitmore	Operator	KCRWTF
Rob Underwood	Biosolids Regulator	DNREC
Bill Yonker	Interested party (neighbor, member SAB)	

Where necessary other employees provided additional explanations.

5.2 Processes Audited

The following processes were audited:

Process	Audit Planning Guide Used
Corrective & preventive action (incl accidents, incidents)	1.02
Document control & recordkeeping	1.04
Engineering & construction	1.06
Goals / objectives / targets / programs (+ mgmt of change)	1.11
Compliance (incl permits, monitoring, regulatory communication, compliance assessment)	1.13
Waste storage, handling & disposal (hazardous and nonhazardous)	1.14
Chemicals storage, handling & distribution	1.15
Emergency preparedness	1.19
Maintenance – plant (KCRWTF)	3.12
Biosolids preparation (incl stabilization, conditioning, handling & storage)	5.18
Wastewater treatment & effluent	5.18

5.3 Reviewed documents

Annual report – 2009
Biosolids Daily Test Sheet
Biosolids Monthly Report Sept 2010
Biosolids production check sheet
Chart – fecal coliform & enterococcus removal 10/27/10 to 11/10/10
Class IV Operator license
Compliance Assessment checklist
Contractor safety Guidelines 11/30/09
Core Team mtg minutes 9/16/10, 4/26/10
CPAR (various)
Critical control points & operational controls table
Daily operating logs (various)
Daily Shift Procedure 11/1/10
DMR and Plant Operations Reports
EHSS MS Manual
Emergency Evacuation drill record 4/25/08
Emergency Response Plan 10/10
Emergency shutdown procedure – biosolids
Environmental and Safety Meeting minutes 9/15/10
Environmental aspects / OHS hazards & risks analysis table
Field Data – clarifiers, blowers
Hazard Communication and Chemical safety communication
Incident reports 11/3/10, 9/12/10
Internal audit report 9/30/10
KCRWTF Organization Chart
Levy Court Newsletter
List – regulations applicable to KCRWTF
Management of Change forms
Operating data Sept 2010
Pre-construction meeting minutes – Greenstone Eng'g (2/3/10)
Safety Handbook 2-27-03
Safety Meetings minutes 9/20/10, 7/19/10, 7/1/10
SPCC Plan 6/2/10
Specifications for Construction – UV Modifications Oct 2009
SSO and Operations Update 10/10
SSO letter to DNREC 10/1/10
Stormwater Plan 11-06
Training logs (various)

6 DEFINITION OF TERMS AND GUIDELINES FOR CLOSURE OF FINDINGS

NONCONFORMANCE:

Whenever it is found that a requirement of the standard or of the organization's Occupational Health and Safety Management System is not fully conformed to, the nonconforming condition is documented in a Corrective Action Request, and included in this report. Nonconformances are classified according to risk, as Major and Minor:

MAJOR NONCONFORMANCE:

The requirement has not been met. Evidence indicates one or more of the following:

- 1) Systemic failure of the Occupational Health and Safety Management System
- 2) Any situation that would most probably result in the adverse effect to the occupational health and safety policy.
- 3) A condition that may result in an adverse effect to the health and safety of the employees.

MINOR NONCONFORMANCE:

The requirement has not been fully met. Evidence indicates the finding is:

- 1) Non-systemic
- 2) An isolated occurrence
- 3) Not likely to result in the failure of the Occupational Health and Safety Management System

CORRECTIVE ACTION: Closed loop Corrective Action by the organization is required to be initiated, carried out, and completed in a timely manner whenever a requirement of the standard or of the organization's Occupational Health and Safety Management System has not been met. Corrective action analysis by the organization shall include determination of applicability to other parts and processes of the registered organization.

Major Nonconformances will be monitored closely by KEMA. The organization shall:

- 1) Within thirty days of the audit: Submit a corrective action plan to KEMA's office. 2) Within ninety days of the audit: Correct the nonconformance, and submit objective evidence of corrective action to KEMA's office for approval.
- 3) KEMA may conduct a follow up audit to verify closure of a Major Nonconformance.

For each Minor Nonconformance, the organization shall:

- 1) Within thirty days of the audit, submit a corrective action plan to KEMA's office.
- 2) Within time lines established in the Corrective Action plan, correct the nonconformance.
- 3) Within six months of the audit, KEMA will verify the implementation of the corrective actions, either at the next scheduled audit, or in a follow-up audit, unless arranged otherwise.

STRENGTHS and OPPORTUNITIES: Additionally, KEMA auditors may identify strengths and opportunities in areas where requirements of the standard and of the organizations Occupational Health and Safety Management System have been met. In these cases, no corrective action is required, and there is no formal review by KEMA.

7 CLIENT CERTIFICATION



Affiliate with the N.V. KEMA In The Netherlands



CERTIFICATE

Certificate Number: 180928.D1

The Environmental Management System of:

**Kent County Regional Wastewater
Treatment Facility
139 Milford Neck Road
Dover, DE 19963
United States**

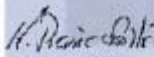
Including Its Implementation, meets the requirements of the standard:

OHSAS 18001:2007

Scope:

The collection and treatment of wastewater and generation of treated water and biosolids

This Certificate is valid until: January 25, 2012
This Certificate is valid as of: January 25, 2009
Certified for the first time: January 25, 2006



H. Pierre Salié
President
KEMA-Registered Quality

The method of operation for environmental certification is defined in the KEMA General Terms And Conditions For Quality And Environmental Management Systems Certifications. Integral publication of this certificate is allowed.

Excellence you can trust.

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This certificate shows information valid as of the day of the audit. It has been included in this report per accreditation body requirements.