

**ISO 14001:2004 ENVIRONMENTAL MANAGEMENT SYSTEM
AUDIT REPORT**

Prepared For:

**Kent County Department of Public Works
Wastewater Division
Dover, Delaware**

Prepared By:

**Jeff DuTeau & Nick Martin
Global Environment & Technology Foundation**

July 28-29, 2005

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AUDIT SUMMARY

Organization Audited: Kent County DPW – Wastewater

Areas Within Fenceline Visited:

Wastewater Operations	Administration
Biosolids Manufacturing/Agricultural Ops	Wastewater Laboratory
Maintenance	

Auditors: Jeff DuTeau, Nick Martin Dates: July 28 - 29, 2005

ELEMENT NUMBER AND DESCRIPTION		AUDIT RESULTS	
		No. of Majors/No. of Minors	A, N, or X
4.2	Environmental Policy	0/0	
4.3			
4.3.1	Environmental Aspects	0/0	A
4.3.2	Legal and Other Requirements	0/0	A
4.3.3	Objectives, Targets and Programs	0/0	A
4.4			
4.4.1	Resources, Roles, Responsibility and Authority	0/0	A
4.4.2	Competence, Training and Awareness	0/1	A
4.4.3	Communication	0/0	A
4.4.4	Documentation	0/0	A
4.4.5	Control of Documents	0/0	A
4.4.6	Operation Control	0/1	A
4.4.7	Emergency Preparedness/Response	0/0	A
4.5			
4.5.1	Monitoring and Measurement	0/0	A
4.5.2	Evaluation of Compliance	0/1	A
4.5.3	Nonconformity, Corrective Action and Preventive Action	0/0	A
4.5.4	Control of Records	0/0	A
4.5.5	Internal Audit	0/1	A
4.6	Management Review	0/0	A
TOTAL		0/4	
Legend: A = Acceptable: Interviews and objective evidence indicates that the EMS meets all the requirements of that section of the standard.		N = Not Acceptable: The auditor has made the judgment that, based on the number and type of nonconformances, the requirements of that the section of the standard were not being met. X = Not Audited	

**ATTACHMENT 1
EMS NONCONFORMANCES**

Minor: Evaluation of Compliance

Minor: Competence, Training and Awareness

**Minor: Operational controls and Competency/Understanding
(Competency, Training and Awareness)**

Minor: Internal Audit

EMS AUDIT FINDINGS FORM

Type of Finding (circle one):

Nonconformance: Major

Minor

Positive Practice

Description (include where in the organization it was found):

- Relevant to a review and evaluation of legal (environmental) requirements
- *ISO 14001, 4.5.2 – Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements.
The organization shall keep records of the results of the periodic evaluations.*
- KCRWTF has not conducted an annual environmental (compliance) audit per procedure 2-03-P01, 5.7

ISO 14001:2004 Reference:

4.5.2 Evaluation of Compliance

Date:

July 28, 2005

Finding Number:

01

Auditor(s):

Jeff DuTeau and Nick Martin

Auditee's Representative:

Jim Newton

Corrective Action Plan (including time frames):

Develop a checklist and conduct an annual internal environmental compliance review.

EMS AUDIT FINDINGS FORM

Type of Finding (circle one):

Nonconformance: Major

Minor

Positive Practice

Description (include where in the organization it was found):

- Relevant to the EH&S Training Program.
- *ISO 14001, 4.4.2 – The organization shall identify training needs associated with its environmental aspects and its environmental management system. It shall provide training or take other action to meet these needs, and shall retain associated records.*
- Implementation and records of annual refresher training (per section 5.3 of 2-08-P01) could not be verified.

ISO 14001:2004 Reference:

4.4.2 Competence, Training and Awareness

Date:

July 28, 2005

Finding Number:

02

Auditor(s):

Jeff DuTeau and Nick Martin

Auditee's Representative:

Jim Newton

Corrective Action Plan (including time frames):

Establish and implement a refresher training plan and schedule for environmental, health & safety and biosolids issues.

EMS AUDIT FINDINGS FORM

Type of Finding (circle one):

Nonconformance: Major

Minor

Positive Practice

Description (include where in the organization it was found):

- General, relevant to overall EMS Fenceline.
- *ISO 14001, 4.4.2 – The organization shall establish, implement and maintain a procedure(s) to make persons working for it or on its behalf aware of*
 - a) the importance of conformity with the environmental policy and procedures and with the requirements of the environmental management system,*
 - b) the significant environmental aspects and related actual or potential impacts associated with their work, and the environmental benefits of improved personal performance,*
 - c) their roles and responsibilities in achieving conformity with the requirements of the environmental management system, and*
 - d) the potential consequences of departure from specified procedures.*
- KCRWTF has developed SOPs and work instruction manuals, identified equipment calibration needs, tracked performance, and implemented a compliance assurance program; however, it is not clear whether the majority of employees outside of the EMS Core Team understand what is meant by “significant” and the potential environmental and/or safety and health impact of their departure from operational controls.

ISO 14001:2004 Reference:
4.4.2 Competence, Training and Awareness

Date:
July 28, 2005

Finding Number:
03

Auditor(s):
Jeff DuTeau and Nick Martin

Auditee’s Representative:
Deanna Campagnini and Jim Newton

Corrective Action Plan (including time frames):

Develop and implement training/communication methods to help employees understand operations that have potentially significant impacts in their areas and the consequences of deviating from established SOPs and work instructions, etc. for their areas.

EMS AUDIT FINDINGS FORM

Type of Finding (circle one):

Nonconformance: Major

Minor

Positive Practice

Description (include where in the organization it was found):

- Relevant to the KCWRTF EMS/H&S/NBP Internal Audit process.
- *ISO 14001, 4.5.5 – Audit program(s) shall be planned, established, implemented and maintained by the organization, taking into consideration the environmental importance of the operation(s) concerned and the results of previous audits. Audit procedure(s) shall be established, implemented and maintained that address:*
 - *the responsibilities and requirements for planning and conducting audits, reporting results and retaining associated records,*
 - *the determination of audit criteria, scope, frequency and methods.*
- Although the GETF EMS Audit Team has conducted two (2) EMS Audits for Kent County Wastewater, the facility has not conducted any internal EMS Audits as required in 2-16-P02, 3/01/05, section 5.2.11.

ISO 14001:2004 Reference:

4.5.5 Internal Audit

Date:

July 28, 2005

Finding Number:

04

Auditor(s):

Jeff DuTeau and Nick Martin

Auditee's Representative:

Jim Newton

Corrective Action Plan (including time frames):

Develop and implement an Audit Plan, including an outline of auditors, elements for review and quarterly schedule.

ATTACHMENT 2
POSITIVE PRACTICES

Type of Finding (circle one):

Nonconformance: Major Minor Positive Practice

Description (include where in the organization it was found):

- This observation is relevant to EH&S roles and responsibilities.
- During interviews with Kent County Senior Management, it was learned that Kent County Commissioners (with active support from the PW Director) are active in bringing forth ideas on EH&S. In fact, health and safety management system integration was identified as an opportunity by the Commissioners.

ISO 14001 Reference:

4.4.1 Resources, Roles,
Responsibility and Authority

Date:

July 28, 2005

Finding Number:

N/A

Auditor(s):

Jeff DuTeau and Nick Martin

Auditee's Rep.:

Reinhold Betschel

Corrective Action Plan (including time frames):

N/A

Type of Finding (circle one):

Nonconformance: Major Minor Positive Practice

Description (include where in the organization it was found):

- This observation is relevant to EH&S/NBP internal and external communications.
- The Environmental Program Manager is proactive in communicating and in his communication methods to employees, the SAB, Kent County Commissioners, and to the public.

ISO 14001 Reference:

4.4.3 Communication

Date:

July 28, 2005

Finding Number:

N/A

Auditor(s):

Jeff DuTeau and Nick Martin

Auditee's Rep.:

Jim Newton

Corrective Action Plan (including time frames):

N/A

Type of Finding (circle one):

Nonconformance: Major Minor Positive Practice

Description (include where in the organization it was found):

- This observation is relevant to the EHS-MS Fenceline.
- The detailed documentation of activities, work processes/instructions, and associated operational controls into working manuals is commendable. Most public agencies struggle with capturing institutional knowledge and the fact that this effort has been extended beyond just the significant issues further positions KCRWTF as a leading organization.

ISO 14001 Reference:
4.4.6 Operational Controls

Date:
July 28, 2005

Finding Number:
N/A

Auditor(s):
Jeff DuTeau and Nick Martin

Auditee's Rep.:
Deanna Campagnini

Corrective Action Plan (including time frames):

N/A

**ATTACHMENT 3
AUDITOR CHECKLIST**

EMS Audit	<h2 style="margin: 0;">EMS – ISO 14001:2004 Checklist</h2> <p style="margin: 0;">Organization: <u>Kent County DPW Wastewater</u> Auditors: <u>DuTeau/Martin</u> Date: <u>July 28-29, 2005</u></p>	
		M = Major Nonconformity N = Minor Nonconformity O = Observation C = Comment R = Recommendation P = Positive Practice
4.1 General Requirements		
4.1 General requirements		
Has the organization established and maintained an environmental management system consistent with the requirements contained in ISO 14001?	The Kent County Regional Wastewater Treatment Facility (KCRWTF) has an environmental management system (EMS) in place, with procedures and policies for environmental reviews and initiatives, meeting the major requirements of ISO 14001:2004.	C
Recommendations:	Recommend that the KCRWTF update their EMS Program Manual to align with <u>ISO 14001:2004</u> .	R
4.2 Environmental Policy		
Has top management defined the organization's environmental policy?	<p>Yes – noted senior management responsibilities in section 6.2 of 2-01-P02 and in Attachment A, Kent County (Levy Court) Environmental/Health and Safety/Biosolids Policy dated (3/31/05) and signed by the President of the Kent County Levy Court.</p> <p>Also noted the endorsement and commitment by top management through interviews with the Environmental Program Manager and the Assistant Public Works Director.</p>	O
Is the environmental policy appropriate to the nature, scale, and environmental impacts of the organization's activities, products, or services?	Yes – section 2.0 (Scope) of 2-01-P02 defines the management system fenceline as the wastewater and biosolids production operations at the KCRWTF County Regional Wastewater Treatment facility. Also noted that the Policy Statement (1 st paragraph) applies to the wastewater collection and treatment facility operations directed by the Department of Public Works.	O
Does the environmental policy include a commitment to continual improvement and prevention of pollution?	Yes – noted in the Kent County Environmental/Health and Safety/Biosolids Policy in section B #s 3 & 5.	O
Does the environmental policy include a commitment to comply with relevant environmental legislation and regulations and with other requirements to which the organization subscribes which relates to its environmental aspects?	Yes – noted in the Kent County Environmental/Health and Safety/Biosolids Policy in section B # 1.	O
Does the environmental policy provide a framework for setting and reviewing environmental objectives and targets?	Yes – noted in the Kent County Environmental/Health and Safety/Biosolids Policy in section B # 2 (tying Policy to mission).	O
Is the environmental policy <u>documented</u> , implemented, and maintained and communicated to all employees?	Yes, noted that the Policy is available on the internet (www.kentcountycpw.com), in the Kent County Levy Court Notebook, and in postings throughout the plant in operations and administrative buildings, including the K-F operations trailer.	O
Is the environmental policy communicated to all persons working for or on behalf of the organization?	Yes – noted that the Policy is available on the internet (www.kentcountycpw.com), in the Kent County Levy Court Notebook, and in postings throughout the plant in operations and administrative buildings.	O
Is the environmental policy available to the public?	Yes – the Policy is available to the public through posting on the internet (www.kentcountycpw.com) and in the Kent County Levy Court Notebook.	O
Recommendations:	Recommend laminated cards, additional postings. etc. (and/or other additional methods) to communicate and engrain the principles of the Kent County Policy to Wastewater and Biosolids staff.	R

4.3 Planning

4.3.1 Environmental aspects

Has the organization established and maintained (a) <u>procedure(s)</u> to identify the environmental aspects of its activities, products, or services that it can control and over which it can be expected to have an influence?	Yes – noted a thorough method (2-02-P01; 2/17/05) that meets the requirements of 4.3.1 and involved staff from all levels and functions. In the process of determining significant operations and impacts, staff were asked to write down what they do on a daily basis as a starting point to completing input-output diagrams and then ranking for significance based on pre-determined criteria.	O
Has the organization determined which of its aspects have a significant impact on the environment?	Yes – noted in the Aspects and Impacts Worksheet for EH&S (5/25/05) with the KCRWTF activities and their associated impacts ranked from highest to lowest.	O
Has the organization ensured that its aspects and related significant impacts are considered in establishing, implementing and maintaining its EMS?	Same as above	O
Does the organization periodically update information regarding its aspects and significant impacts?	Yes – noted the procedure (section 5.5) was updated utilizing the Revised Significant Aspects Form. Noted the environmental review of ferric (from previous internal audit).	O

National Biosolids Program

Element 3: Critical Control Points

Document a listing CCPs throughout biosolids value chain – cross reference to operational controls and environmental impacts	Noted an Operational Controls Table (2/11/05) for the KCRWTF and Biosolids CCPs, many linked throughout the value chain.	O
Have the environmental impacts/potential impacts of each critical control point been identified and documented?	Yes – noted in the Aspects and Impacts Worksheet for NBP (5/25/05) with the KCRWTF and Biosolids facility activities and their associated impacts ranked from highest to lowest.	O
Is there a <u>procedure</u> for periodically reviewing/updating CCPs and associated environmental impacts analysis?	Yes – Kent County Wastewater integrated their CCP review into the method (2-02-P01; 2/17/05) used to determine and rank environmental aspects and impacts.	O
Recommendations:	Kent County gets stakeholder input from the Sewer Advisory Board (SAB) and from farmers on their biosolids process.	R

4.3.2 Legal and other requirements

Has the organization established and maintained a <u>procedure</u> to identify and have access to legal and other requirements to which the organization subscribes, that are applicable to the environmental aspects of its activities, products, or services?	Yes – procedure 2-03-P01 (3/01/05) describes the process for determining, Tracking, and communication Kent County Wastewater's legal and other requirements.	O
	Attachments A, B and C of 2-03-P01 include methods used to track legal Requirements and the laws and other requirements that Kent County Wastewater currently follows. Safety/Environmental Meetings are used to communicate changes to legal requirements to staff.	O
	KCRWTF has enrolled in EPA's Green Power Partnership.	C
	KCRWTF has not conducted an annual environmental (compliance) audit per procedure 2-03-P01, 5.7	N
Recommendations:	Note: Although the current procedure (2-03-P01) meets the 2004, 4.5.2 Requirement, recommend annotating the current procedure (2-03-P01) to Include language changes for the Evaluation of Compliance (4.5.2) Requirement. E.g., add a section on how the wastewater and biosolids Activities perform a review of compliance and other requirements.	R
	Although not available for review, K-F operations prepares an annual OSHA Report. Recommend making all EH&S and biosolids documents, reports and records available for the external audit(s).	R

4.3.3 Objectives, Targets and Programs		
Has the organization established and maintained <u>documented</u> environmental objectives and targets, at each relevant function and level within the organization?	Yes – verified procedures (2-04-P01, 6/01/2005 & 2-05-P01, 6/01/05) that set, track and maintain Kent County's objectives and targets.	O
Are the organization's objectives and targets (measurable where practical) consistent with its environmental policy, including a commitment to applicable legal and other requirements, to the prevention of pollution and to continual improvement?	Yes – noted 4 set objectives and targets in an EHS-MS Table that are being tracked and maintained for KCRWTF and biosolids operations. The most recent (5/1/05) objective and target implementation step for reducing SSOs included setting up a FOG Program.	O
Has the organization, when establishing and reviewing its objectives, considered: <ul style="list-style-type: none"> ➤ The legal and other requirements? ➤ Its significant environmental aspects? ➤ Its technological options? ➤ Its financial, operational, and business requirements? ➤ The views of interested parties? 	Yes – in procedures and Kent County conducts quarterly and annual reviews of their objectives and targets.	O
Has the organization established and maintained environmental management program(s) for achieving its objectives and targets?	Yes – noted Programs (in the EHS-MS Table) that defined action items, responsibilities, and timeframes for completion.	O
Do environmental management program(s) designate responsibility for achieving objectives and targets at each relevant function and level of the organization?	Yes – as above	O
Do environmental management program(s) define the means and timeframe by which they are to be achieved?	Yes – as above.	O
	Kent County objectives and targets are communicated and reviewed with management through Quarterly Core Team Meetings (1/31/05) and updates are made as necessary. Kent County also communicates progress of objectives and targets to the Sewer Advisory Board through quarterly meetings.	O
4.4 Implementation and Operation		
4.4.1 Resources, Roles, Responsibility and Authority		
Has management provided resources essential to the implementation, control and improvement of the environmental management system? Resources include human resources and specialized skills, organizational infrastructure, technology and financial resources?	In interviews with Kent County management, it was clear that their was a commitment (through resources) to environmental health & safety and biosolids goals. Note: During interviews with Kent County Management, it was learned that the Kent County Commissioners (with active support from the PW Director) bring up ideas on EH&S. In fact, integration of an H&S management system was brought forward from the Commissioners.	O P
Has the organization defined, <u>documented</u> , and communicated the roles, responsibilities, and authorities to facilitate effective environmental management? How is this done?	Kent County maintains a procedure (2-06-P01, 6/01/05) that defines roles and responsibilities for Kent County. In addition, noted Core Team meetings and training to staff that included roles and responsibilities for maintaining the EMS.	O
Has the organization's top management appointed (a) specific management representative(s) who irrespective of other responsibilities, has defined roles, responsibilities, and authority to: <ul style="list-style-type: none"> ➤ Ensure that the environmental management system (EMS) requirements are established, implemented, and maintained in accordance with the 2004 International Standard. ➤ Report on the performance of the EMS to top management for review and as a basis for improvement of the EMS. 	Yes – noted direct management support given to the Environmental Program Manager – a Department Manager level position. The Environmental Program Manager at Kent County has been given authority to maintain the EMS. Noted an EHS-MS Organizational Structure and a Biosolids Value Chain as part of 2-06-P01. The Environmental Program Manager is proactive in communicating and in his communication methods to employees, the SAB, Kent County Commissioners, and to the public.	O O P

Recommendations:	Recommend adding (to Core Team Meeting Agendas) the following reviews to document they have been completed: environmental aspects and impacts; legal and other requirements; objectives and targets; and the training matrix.	R
4.4.2 Competence, Training and Awareness		
How does the organization ensure that personnel performing tasks which can cause significant environmental impacts are competent on the basis of appropriate education, training, and/or experience? Are records retained?	Noted various training records for wastewater operators and maintenance staff, including wastewater operator certifications, OJT, etc.	O
Has the organization identified the training needs for all personnel whose work may create a significant impact upon the environment? How is this done?	Noted a thorough review of significant impacts, objectives and programs in Kent County's EMS Awareness Training. Verified a Management Review Agenda and Meeting Notes (1/11/05) that included a review of training needs.	O
Has the organization established and maintained procedure to make it employees at each relevant function aware of: <ul style="list-style-type: none"> ➤ The importance of conformance with the environmental policy and procedures and with the requirement of the environmental management system (EMS)? ➤ The significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance? ➤ Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the EMS? ➤ The potential consequences of departure from specified operating procedure? 	KCRWTF utilizes a procedure (2-08-P01, 3/10/05) to ensure that all employees are trained, competent, and aware of their EH&S responsibilities. Noted a Training Matrix (attached to 2-08-P01) to identify employee and training requirements. KCRWTF utilizes a number of training methods, including operations and safety videos.	O O O
	Implementation and records of annual refresher training (per section 5.3 of 2-08-P01) could not be verified. Recommend establishing and implementing a <u>refresher training</u> plan and schedule for environmental, health & safety and biosolids issues.	N
Recommendations:	Recommend integrating K-F staff into EH&S and EMS training conducted by wastewater and updating the Training Matrix for K-F staff. It is not required that all training be integrated, but to the extent possible certain elements must be communicated and practiced through a "system" viewpoint encompassing the entire EHS-MS Fenceline. Recommend that EHS-MS issues be included in daily planning and morning "task" sessions with the inclusion of practical examples to further understanding.	R R
4.4.3 Communication		
Regarding its environmental aspects and environmental management system, has the organization established and maintained procedures to ensure: <ul style="list-style-type: none"> ➤ Internal communication between the various levels and functions of the organization? ➤ Proper receiving, <u>documenting</u>, and responding to relevant communication from external interested parties? 	KCRWTF utilizes (2-09-P01, 6/01/05) as their method to communicate environmental issues to staff and to stakeholders and the public. Kent County Wastewater communicates environmental issues internally through training, a newsletter, and EH&S meetings.	O O
Has the organization considered its process(es) for external communication on its significant environmental aspects and <u>documented</u> its decision?	KCRWTF also utilizes (2-09-P01, 6/01/05) for managing their external communication requirements on environmental issues. Noted an EHS-MS Complaint/Inquiry Communications Log and a Complaint/Inquiry Response Form attached to 2-09-P01 to track external communications. Neither has been used as yet since there have been no external communications issues related to the environment.	O O

Recommendations:	Recommend providing (proactive) internal communications to K-F biosolids staff (e.g., policy/POC cards, significant operations postings, etc.).	R
4.4.4 Documentation		
<p>Has the organization established and maintained documentation to:</p> <ul style="list-style-type: none"> ☞ The environmental policy, objectives and targets? ☞ Describe the scope of the EMS? ☞ Describe the core elements of the management system and their interaction? ☞ Provide direction to related documentation, including records and control of processes related? <p>Note: these requirements are often met by having a documented Environmental Management System Manual.</p>	<p>Yes – noted an EHS-MS Program Manual (2-01-P01, 6/01/05) that Kent County Wastewater maintains to describe the core elements of their EMS.</p> <p>Noted integration of biosolids and health and safety into the Program Manual.</p>	<p>O</p> <p>O</p>
Recommendations:	Recommend that Kent County Wastewater update their EMS Program Manual to align with <u>ISO 14001:2004</u> .	R
4.4.5 Control of Documents		
<p>Has the organization established and maintained <u>procedures</u> for controlling all documents required by this International Standard to ensure:</p> <ul style="list-style-type: none"> ☞ Changes and the current revision status of documents are identified? ☞ The current versions of relevant documents are available at all points of use? ☞ Documents of external origin relative to the EMS are identified and controlled? ☞ Obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use? ☞ Any obsolete documents are retained for legal and/or knowledge preservation purposes are suitably identified? 	<p>Yes - KCRWTF maintains a method (2-12-P01, 3/01/05) to control and provide access to their documents.</p> <p>All documents reviewed are easily identified for intended subject and purpose, and includes the current date of the document as well as revision history.</p> <p>Obsolete documents are removed by the EMS Librarian from distribution sources (Librarian has master book, with working copies at Operations, Maintenance, etc.). The Librarian removes obsolete documents from all locations.</p>	<p>O</p> <p>O</p> <p>O</p>
Are the organization's documents legible, dated (with dates of revision), and readily identifiable, maintained in an orderly manner and retained for a specified period?	The EMS Librarian maintains a master copy of EMS and related procedures. The master copies are controlled by the Librarian and stamped as master copies.	O
Has the organization established and maintained procedures and responsibilities concerning the creation and modification of the various types of documents?	Yes – KCRWTF has also established 2-10-P01, 2/16/05 and 2-12-P02, 3/10/05 to create, maintain, and modify working documents and procedures. The Environmental Program Manager determines when new or modified EMS and related procedures are necessary.	O
Recommendations:	Recommend taking the "Approved By:" section out of the header of EMS and related procedures since it is not used.	R

4.4.6 Operational control		
Has the organization identified and planned those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives, and targets?	Yes, KCRWTF's Procedure 2-07-P01 conforms to ISO requirements and provides a viable process for establishing operational controls. Employees within each significant/critical area have identified activities, described work processes/instructions in detail, and clearly documented operational controls (including pictures, diagrams, and other means for clarification). In several areas, this process has been expanded beyond those aspects deemed significant, which has broadened the collection of "institutional knowledge". KCRWTF has developed SOP manuals for departmental use, reference, and training. Area supervisors are responsible for ensuring SOPs are followed and kept up-to-date within their respective areas.	O
Has the organization planned these activities, including maintenance, in order to ensure that they are carried out under specified conditions by: <ul style="list-style-type: none"> ➤ Establishing and maintaining <u>documented</u> procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets? ➤ Stipulating operation criteria in the procedures? ➤ Establishing, implementing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicating relevant procedure and requirements to suppliers and contractors? 	<ul style="list-style-type: none"> ➤ Yes, KCRWTF has developed SOP manuals for departmental use, reference, and training. ➤ Yes, all procedures reference preventative maintenance procedures and schedules, equipment calibration, and key operating parameters (e.g., pH). ➤ Yes, KCRWTF has included K-F Environmental, biosolids contractor, within the operational control efforts. KCRWTF will negotiate the incorporation of EMS language within their contract with K-F upon renewal. KCRWTF has limited other contractors, but will especially review if septage haulers need additional training/communication. 	O
Recommendations:	It is recommended that KCRWTF clearly designate activities/areas as significant (i.e., markers on equipment, aspect lists in relevant office space and break rooms). KCRWTF should consider following through on the decision to post laminated instructions or diagrams where deemed useful for increased consistency and control. Additionally, KCRWTF should further ensure that employees understand where absence from SOPs could lead to significant environmental impacts and/or safety and health risks and clearly be able to demonstrate that such employees are competent in this regard. KCRWTF should also consider adding language within the procedure to address how/when operational controls are reviewed for inclusion and/or adjustments.	R
4.4.7 Emergency Preparedness and Response		
Has the organization established and maintained procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them?	Yes, Procedure 2-13-P01 conforms to ISO requirements and provides guidance for identifying, planning for, training and responding to emergencies. KCRWTF has implemented a required Risk Management Plan (RMP) to address chlorine and sulfur dioxide management, as well as a general procedure for handling other emergencies. Employees that work in chlorine or sulfur dioxide related activities are required by the state and county governments to specific emergency preparedness and response training and maintain appropriate equipment on-site. Auditors also reviewed the SSO Sampling Plan and Response procedure. KCRWTF's general emergency response is to mitigate any situation to the extent possible without placing an employee in a compromising situation and to call 911 and an employee's supervisor.	O
Has the organization reviewed and revised, where necessary, its emergency preparedness and response procedure, in particular, after the occurrence of accidents or emergency situations?	Yes, the implemented process includes respective incident response forms, root cause analysis, and corrective action. There have been no emergency response situations since implementation of the EMS procedure. SSOs have decreased significantly, with employee response following defined procedures upon occurrence.	O
Has the organization periodically tested such procedures where practicable?	Yes, KCRWTF is required to test procedures and equipment for chlorine and sulfur dioxide related response. Furthermore, emergency response is included in regular safety and health trainings and meetings.	O

Recommendations:	KCRWTF should consider further reinforcement of personnel understanding of emergency response through continued communications (i.e., emergency meeting spots, basic steps in mitigation). Furthermore, KCRWTF should post emergency phone numbers, basic response steps, and evacuation routes in key locations and within vehicles to further enhance processes. Since K-F operations and training are handled separately with regards to training, it is recommended that training records and example materials be maintained on-site for future audits and increased control and response.	R
4.5 Checking		
4.5.1 Monitoring and Measurement		
Has the organization established and maintained procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment?	Yes, Procedure 2-14-PO1 conforms to ISO requirements and provides a list of monitoring and measurement activities relevant to significant aspects and objectives and targets.	O
Does the monitoring and measurement include the recording of information to track performance, relevant operational controls and conformance with the organization's environmental objectives and targets?	Yes, KCRWTF's methods of monitoring and measurement include such techniques as spill logs, lab sampling records, work orders, preventative maintenance checklists and logs, compliance audits, and monthly SAB/Levy Court reports. KCRWTF has instituted environmental management programs to facilitate tracking of objectives and targets, including key milestones to assess performance. Monitoring and measurement is clearly linked to significant aspects and objectives and targets. Data is consistently collected and reported within the SAB/Levy Court reports and management review meetings. Verified May and June 2005 KCWTF Operations and Maintenance Report that was briefed to the SAB, with a summary of operating performance parameters and PM activities. The Report included a review of Agricultural Operations (a significant issue and objective and target and a status of EMS activities.	O O
Does the organization calibrate equipment and maintain records according to the organization's procedures?	Yes, Procedure 2-14-PO2 provides a process for ensuring calibration, which is conducted almost exclusively by outside service providers. Calibration requirements have been included in all SOPs and within operational controls. Records have been maintained and were readily accessible.	O
Recommendations:	The Core Team should continue to actively discuss EHS-MS performance measurement and the potential inclusion of performance incentives and/or recognition. KCRWTF should include the Computerized Maintenance Management System in the monitoring and measurement procedure and process. KCRWTF should clearly state within their procedure that calibration is conducted by external service providers. In addition, KCRWTF should consider maintaining a list of equipment requiring calibration within their procedure.	R
4.5.2 Evaluation of Compliance		
Has the organization established and maintained a <u>procedure</u> for periodically evaluating compliance with applicable environmental legislation and regulations? Does the organization maintain records of these evaluations?	Yes, Procedure 2-03-PO1 conforms to ISO requirements and provides a process for evaluating and complying with legal and other requirements. DNREC conducts annual regulatory inspections with specific checklist and notifies KCRWTF and K-F for permit renewals and reporting. Area supervisors are responsible for permit renewals and maintaining respective records. U.S. EPA conducts a pre-treatment audit every five years and biosolids quality is checked annually. KCRWTF is required to submit an annual report to U.S. EPA with specific guidance on reportable parameters, including the amount of Kentorganite. KCRWTF has maintained an exceptional compliance status. Yes, complete records are maintained on-site.	O
Has the organization established and maintained a procedure for periodically evaluating compliance with applicable other requirements to which it subscribes? Does the organization maintain records of these evaluations?	Yes, KCRWTF's insurance carrier (past OSHA Inspector) conducts annual inspections for Safety and Health. Yes, complete records are maintained on-site.	O

Recommendations:	The current procedure should be modified to ensure conformance with the 2004 ISO 14001 Standard. KCRWTF should consider adding currently non-regulated waste streams (e.g. solid waste) into an annual assessment for continued monitoring. In addition, KCRWTF is considering participation in the U.S. EPA Performance Track which will further require annual reporting and data collection relevant to regulated activities. It is recommended that KCRWTF have key records ready for review by future auditors prior to request.	R
4.5.3 Nonconformity, Corrective Action and Preventive Action		
Has the organization established, implemented and maintained procedures for handling and investigating nonconformance, determining root cause, taking action to mitigate any impacts caused, and for initiating and completing corrective and preventive action to prevent recurrence?	Yes, Procedures 2-15-PO1 and 2-15-PO2 conform to ISO requirements and provide a process for determining, tracking, and completing nonconformances and corrective/preventative actions. KCRWTF has leveraged an existing culture of root cause analysis and corrective action, mostly driven by state requirements of spill and incident notices. KCRWTF has developed a clear process for employee identification of non-conformances and corrective/preventative action, planning, and closure with distinct responsibilities identified. KCRWTF provided an action log and presented records form records verifying planning and completion of corrective/preventative actions.	O
Has the organization implemented and recorded any changes in the recorded procedures resulting from corrective and preventive action?	Yes – noted a number of updates to procedures resulting from corrective actions implemented as a result of the Dec 2004 EMS Audit, including changes to the EMS Manual and Legal and Other Requirements Procedure.	O
Has the organization implemented and maintained a process to review the effectiveness of corrective and preventive actions taken?	Yes, KCRWTF responded to nonconformances and corrective/preventative actions discovered during the December 2004 internal audit and tested relevant changes for effectiveness through the July 2005 internal audit.	O
When corrective and preventive actions are taken to eliminate the causes of actual and potential nonconformances, are they appropriate to the magnitude or problems and commensurate with the environmental impact encountered?	Yes, KCRWTF addressed actual or potential nonconformances appropriately to ensure that they were corrected and prevented.	O
Recommendations:	KCRWTF should ensure that personnel, especially area supervisors, clearly understand and are proficient in their ability to implement and process suggestions for corrective/preventative actions. This is especially true since this process has only been tested following the December 2004 Internal Audit and has yet to be initiated by personnel outside of the Core Team.	R
4.5.4 Control Records		
Are records maintained, as appropriate to the system and to the organization, to demonstrated conformance to the requirements of this International Standard?	Yes, Procedure 2-11-PO1 conforms to ISO requirements and provides a process for ensuring that relevant records are maintained and readily retrievable. The procedure also includes a list of records with appropriate retention times. A sampling of records was verified, including maintenance checklists, training, compliance, and SAB/Levy Court meeting notes/reports. This process has been further integrated and controlled due to the EMR relocation from the Dover office to the plant. Furthermore, the documentation and librarian process has been successfully implemented since the December 2004 audit. Records were readily accessible upon request.	O
Has the organization established and maintained procedures for the identification, maintenance, and disposition of environmental records, including: <input checked="" type="checkbox"/> Training records? <input checked="" type="checkbox"/> The results of audits (EMS audits)? <input checked="" type="checkbox"/> The results of reviews (Management Reviews)?	Yes, KCRWTF presented a records log which clearly identifies applicable records to be maintained with associated disposition times. Records included training requirements and completion, audit reports, and management and compliance review documentation. Verified the following records maintained by KCRWTF: Dec 2004 EMS Audit, Internal Audit Corrective Action Table, a CPAR (#04-001) to implement an Objective and Target Review (closed 1/31/05), NBP Readiness Assessment Corrective Actions, and a Core Team Meeting (7/13/05).	O O
Are the organization's records legible, identifiable, and traceable to the activity, product, or service involved?	Yes, records were maintained appropriately and easily identifiable.	O
Are the environmental records stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration, or loss?	Yes, records are maintained as defined within KCRWTF Controlling Records Procedure 2-11-P01. The EMR maintains System records and those relevant to legal and other requirements, with daily operating records maintained by area supervisors.	O

Are the retention times for records established and recorded?	Yes, retention times are clearly defined within KCRWTF's procedure and records log. Noted KCRWTF records that were archived and boxed with dates, record type, etc.	O
Recommendations:	Ensure that applicable records are readily retrievable for K-F Environmental operations and/or that someone from Kent County is able to easily access and retrieve records, as requested.	R
4.5.5 Internal Audit		
Has the organization established and maintained program(s) and procedure(s) for periodic environmental management system audits to be carried out in order to: <ul style="list-style-type: none"> ➤ Determine whether or not the environmental management system conforms to planned arrangements for environmental management including the requirements of this International Standard and has been properly implemented and maintained? ➤ Provide information on the results of audits to management? 	Yes, Procedure 2-16-PO1 conforms to ISO requirements. KCRWTF has developed an Internal Audit procedure in conformance with EHS-MS requirements. An audit team has been selected based upon specific characteristics and MS knowledge and the recommendation of department managers. Internal auditors participated in the December 2004 and July 2005 internal audits to gain proficiency. The EMR and Assistance Director participated in formal audit training provided through the EMS Initiative for Public Entities program. Results from the December 2004 Audit and the NBP Audit have been adequately communicated throughout the organization, including with management. The first two internal audits conducted at KCRWTF have been planned and facilitated by an external service provider.	O
Is the organization's audit program, including any schedule, based on the environmental importance of the activity concerned and the results of previous audits?	Yes, KCRWTF places emphasis on significant aspect areas and will incorporate previous audit results as a key driver in subsequent audits. KCRWTF has shown proficiency in following through on results of previous audits.	
Does the audit procedure cover the audit scope, frequency, and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results?	Yes, Procedure 2-16-PO1 provides a clear methodology for planning, conducting, and reporting internal audit activities. Kent County is in the process of revising the proposed internal audit schedule, based upon feedback from area supervisors.	
	Although the GETF EMS Audit Team has conducted two (2) EMS Audits for KCRWTF, internal EMS Audits have not been conducted as required in 2-16-P02, 3/01/05, section 5.2.11.	N
Recommendations:	KCRWTF should work to further institutionalize the internal auditing process, which is currently reliant upon external consultants. The KCRWTF audit team was provided audit training materials, case studies, and mock interviews to increase internal auditing capacity during the July 2005 internal audit.	R
4.6 Management Review		
Does the organization's top management, at planned intervals, review the environmental management system to ensure its continuing suitability, adequacy and effectiveness?	Yes, Procedure 2-17-PO1 conforms to ISO requirements and provides a viable process for conducting management reviews. KCRWTF has established a sound management review and participatory process and the full support of management is clearly in place. The management review team consists of the Public Works Director, Assistance Public Works Director, EMR, SAB, and Levy Court Board of Commissioners. KCRWTF provides monthly updates to the SAB/Levy Court, which includes an EMS, Biosolids, and safety/health component. The Public Works Director and Assistant Public Works Director continue to maintain high participation.	O
Are the management reviews documented and retained?	Yes, records of monthly reports and management review meetings were provided and included adequate detail for decision making.	O
Does each management review address the possible need for changes to policy, objectives, and other elements of the environmental management system, in the light of: <ul style="list-style-type: none"> ➤ Environment management system audit results? ➤ Changing circumstances? ➤ The commitment to continual improvement? 	Yes, monthly SAB/Levy Court reports and meeting notes include all necessary information, necessary changes, audit results, and continued commitments. The Policy was recently changed due to inclusion of ISO 18001 with the revised Policy accepted and signed by the Levy Court.	O
Recommendations:	KCRWTF should maintain the high standard established for management participation and review, as the results and value to continuous improvement are clearly reflective. It is recommended that K-F biosolids operations management be included in the management review process.	R

ATTACHMENT 4
CLOSEOUT OF PREVIOUS EMS NONCONFORMANCES

Corrective Action	CPAR #	Responsible Person	Target Completion Date	Actual Completion Date	EMS Audit - 07/28-29/05
Revise document control procedure		Jim Newton	1/31/2005	12/29/2004	Noted updates/changes to 2-12-P01, 3/01/05; EMS Librarian has been trained and understands her document control responsibilities
Revise EMS Library procedure		Jim Newton	1/31/2005	12/28/2004	Noted updates/changes to 2-12-P02, 3/01/05
Revise structure and responsibility procedure		Jim Newton	1/31/2005	12/28/2004	Noted updates/changes to 2-06-P01, 6/01/05; including an update of the Kent County Organizational Structure Chart (Attachment A)
Revise management review procedure		Jim Newton	1/31/2005	12/20/2004	Noted updates/changes to 2-17-P01, 3/01/05
Revise public participation procedure		Jim Newton	1/31/2005	12/27/2004	Not reviewed
Revise EMS manual		Jim Newton	1/31/2005	12/20/2004	Noted updates/changes to 2-01-P01, 6/01/05
Revise objectives and targets procedure		Jim Newton	1/31/2005	12/28/2004	Noted updates/changes to 2-04-P01, 6/01/05
Revise significant aspect procedure		Jim Newton	1/31/2005	12/28/2004	Noted updates/changes to 2-02-P01, 2/17/05; a review of new processes/activities is being completed (e.g., ferric)
Revise legal procedure		Jim Newton	1/31/2005	12/28/2004	Noted updates/changes to 2-03-P01, 3/01/05 to include a review of the legal matrix (Attachment C)
Revise other EMS system procedures based on internal audit		Jim Newton	1/31/2005	12/29/2004	Completed
Revise EMP table		Core Team	1/31/2005	1/19/2005	Verified changes to EHS-MS as attached to 2-05-P01, 6/01/05
Conduct significant aspect review		Core Team	2/28/2005	1/19/2005	Verified a review of Kent County's significant issues (EHS Aspects and Impacts Worksheet) during a quarterly EMS Core Team Meeting (1/31/05)
Incorporate phosphorous system into aspect analysis		Core Team	2/28/2005	1/19/2005	Noted updates/changes to 2-02-P01, 2/17/05; a review of new processes/activities is being completed (e.g., ferric)
Conduct objectives and targets review	04-001	Core Team	2/28/2005	1/19/2005	Verified a review of objectives and targets on 1/31/05 – CPAR generated to close this issue
Conduct management review		Levy Court	2/28/2005	1/18/2005	Verified records of a management review (1/11/05)
Consolidate EMS records at the plant		Jim Newton	3/31/2005	3/30/2005	The Environmental Program Manager maintains a majority of applicable EMS records
Conduct a legal review		Jim Newton	3/31/2005	3/1/2005	Noted updates/changes to 2-03-P01, 3/01/05 to include a review of the legal matrix (Attachment C)

Corrective Action	CPAR #	Responsible Person	Target Completion Date	Actual Completion Date	EMS Audit - 07/28-29/05
Add consequences of deviation section to operational controls		Deanna Campagnini	3/31/2005	3/29/2005	Verified a number of new procedures, work instructions, and other controls in place for Wastewater and biosolids (K-F) operations
Train EMS Librarian		Jim Newton	2/28/2005	1/19/2005	EMS Librarian understands her responsibilities for tracking and maintaining EMS and related documentation
Add SO2 evaluation to objectives and targets		Core Team	2/28/2005	1/19/2005	SO2/CI evaluation has been included as a review of potential improvement in Kent County's objectives and targets – see ESH-MS Table
Add EMS reference to contractor language		Jim Newton	12/30/2005		Not reviewed

AUDIT CONCLUSION

Kent County DPW Wastewater has made clear commitment to incorporating environmental management into their daily operations and continues to enhance and improve its EMS, incorporating ISO 18001 and the National Biosolids Program requirements into an overall systems approach. Kent County has successfully developed and implemented the major elements of an ISO 14001:2004 conformant management system.

Note: Recommendations are written into the applicable checklist section/element throughout the Audit Report. Many of the EMS Audit recommendations within this Report are aimed at enhancing Kent County Wastewater's EHS-MS to meet ISO 18001 requirements and to enhance integration. Although outside of the scope of an (EMS) Audit, some of the recommendations were made to assist with the overall integration and effectiveness of Kent County's management system.