



## **NBP EMS 401 Workshop**

### **Summary Report**

**Prepared by**



April 25-26, 2006

Kalamazoo, MI

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## INTRODUCTION



The University of Florida Center for Training, Research and Education for Environmental Occupations (UF/TREEO), in conjunction with the National Biosolids Partnership (NBP), conducted a two-day auditing workshop on April 25-26, 2006. The workshop primarily focuses on the conduct of an Internal Audit. In addition, time is spent on the Status Review as well as the Verification Audit.

To improve the implementation and public acceptance of environmentally sound biosolids management practices, the NBP has developed a voluntary EMS certification program for the biosolids industry.

The 11 agencies that are currently certified include:\*

- Orange County, California
- Madison, Wisconsin
- Los Angeles, California
- Ft. Worth, Texas
- Encina WW Authority, California
- Lawrence, Kansas
- King County, Washington
- District of Columbia
- Butler County, Ohio
- Metro WW Reclamation, Colorado
- Kent County, Delaware

\*see [www.biosolids.org](http://www.biosolids.org) for details of each facility's EMS

This report is intended to highlight some key topics covered during the workshop and serve as a summary of the workshop's key learning objectives. It is not intended to substitute for attending nor does it present all the material that was covered in the workshop.

There were 25 attendees representing 11 utilities. The list of attendees is shown in Appendix A, page 8.

The instructional team consisted of Peter Machno, Project Manager, NBP EMS Project; Douglas Dean, Adjunct Instructor, UF/TREEO and William Engel, Director, UF/TREEO.

Prior to attending the workshop, students were given the following assignment:

- Review the Minimum Conformance Requirements of all 17 Elements as outlined in the NBP EMS Guidance Manual

## **WORKSHOP STRUCTURE**

The agenda for the workshop is shown in Appendix B, page 9. The workshop was designed to maximize attendee participation. This was accomplished by having several hands-on exercises such as Transaction Testing, review of specific Key Outcome and Element Checklists, analyzing Audit Evidence and conducting an Audit of Madison Wisconsin Goals and Objectives. In addition there was a role play conducted of an actual Audit.

During the workshop, Julie Frazier from Butler County, Ohio (NBP Certified Program) gave a presentation on how they set up and conducted their Internal Audit.

## **OBJECTIVES AND EXPECTATIONS**

The instructional team developed the following objectives for the workshop. The intent was for the participants to be able to accomplish these objectives over the two-day training period.

Attendees will be able to:

- Identify where their facility is on the NBP EMS Timeline
- Describe the difference between Status Review, Internal Audit and Verification Audit
- Describe why audits are important
- Identify the steps in preparing for an audit
- Identify steps in conducting an audit
- Identify the steps to perform after the audit
- Describe how to prepare for the Verification Audit

## **EMS WORKSHOP**

The workshop started with a review of the NBP EMS timeline. Please see appendix C, page 11. The participants identified their position on the timeline. A big picture overview was presented covering the Status Review, Internal Audit and Verification Audit.

An approach to auditing was presented. It covered:

- Key areas of focus and interpretation
- Process
- Scope
- Schedule
- Team selection
- Methodology

Following this was an exercise on Transaction Testing. Please see Appendix D, page 12 for specifics on this exercise and the results of the five triggering events.

### **Key Areas of Evaluation**

- Policy
- Quality Management Practices
- Continual Improvement
- Compliance
- Public Participation and Communication
- Roles and Responsibilities
- Documentation, Document Control and Record Keeping
- Management Review

Check-lists covering specific questions/scenarios, necessary records, interview questions and observations were prepared for each of the key areas identified above. (See Quality Management Practices Appendix E, page 18.)

The students reviewed the checklists and related them to their own facilities and commented on the types of questions they would use. These lists provide a guide for the participants when they return to their facilities.

### **EMS Auditor Qualifications**

There was extensive discussion on the roles and responsibilities of the auditor and auditee. There were also examples provided of analyzing audit evidence. Please see Appendix F, page 21 for the exercise in analyzing audit evidence (i.e. spotting EMS deficiencies). The class results follow the description. This was followed up with two Audit Demonstrations. This was a role playing exercise utilizing a class member and the instructor. Scripts are shown in Appendix G, page 23.

### **Audit Planning**

The three stages of the audit; planning, conducting and post-audit activities were covered in detail. The design of an auditor checklist was covered. To support this discussion an exercise utilizing the Madison, Wisconsin Element 5 – Goals and Objectives was used. The students were asked to find a statement/requirement to test. Next they wrote evidence to look for on-site to document or verify that they are doing what they say in the procedure. See Appendix H, page 26.

### **3<sup>rd</sup> Party EMS Audit**

Pete Machno provided the details of where the agencies go from here. All the specifics regarding the 3<sup>rd</sup> Party Audit, the relationship of the NBP to the auditor as well as the relationship of NBP to the agencies was covered.

## **SUMMARY AND RECOMMENDATIONS**

Participants are invited to share their thoughts and comments both during and after the workshop. This feedback is part of the continual improvement process of presenting training courses. The instructional team makes every effort to incorporate suggestions in future training courses.

Input was received in an open forum after day one, see Appendix I, page 27. At the conclusion of the class, written evaluations were collected and summarized. (Appendix J, page 28)

The following recommendations are a result of reviewing the evaluations and having discussions with NBP personnel and the instructional team.

- Continue to have Certified utilities make presentations
- Recommend a site visit by WEF staff prior to class to review classroom setup
- Have discussions with NBP regarding restructuring NBP EMS 101, 201, 301 and 401

# Appendix

## Appendix A: Attendee list

Mike Andrews	City of Battle Creek	150 South Kendall Street	Battle Creek	MI	49105
Nick Bardis	WEF/NBP	601 Wythe Street	Alexandria	VA	22314
Richard Beardslee	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Kyle Cluff	Timpanogos Special Services District	P.O. Box 923	American Fork	UT	84003
Gary Dekock	City of Grand Rapids EPSD	1300 Market Ave., SE	Grand Rapids	MI	49503
Houssam Eljerdi	Pima Co. Wastewater Management Division	5025 W. Ina Road	Tucson	AZ	85743
Myron Erickson	City of Wyoming	2350 Ivanrest Ave., SW	Wyoming	MI	49418
Randall Fisher	City of Grand Rapids ESPD	1300 Market Ave., SE	Grand Rapids	MI	49503
Sue Foune	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Mark Gibson			Raleigh	NC	
Tim Hayes	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Dave Heinicke	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Gary Hill	Snyderville Sanitation District	2800 Homestead Road	Park City	UT	84098
Ron Janssen	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Michael Lunn	City of Grand Rapids	1300 Market Ave., SE	Grand Rapids	MI	49503
Pete Machno	NBP	601 Wythe Street	Alexandria	VA	22314
Rita Mercer	Pima Co. Wastewater Management Division	5025 W. Ina Road	Tucson	AZ	85743
Corky Overmyer	City of Grand Rapids	1300 Market Ave., SE	Grand Rapids	MI	49503
Stacey Petrovas	City of Ft. Wayne Water Pollution	5610 Lake Avenue	Ft. Wayne	IN	46815
Blake Putt	Battle Creek WWTP	2000 West River Road	Battle Creek	MI	49015
Becky Sagers	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Tim Sikma	South Huron Valley Utility Authority	34001 W. Jefferson Avenue	Brownstown	MI	48173
Jim Sizemore	Alexandria Sanitation Authority	1500 Eisenhower Avenue	Alexandria	VA	22314
Tom Street	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Nate Turner	City of Wixom	2059 Charms Road	Wixom	MI	48393
Robert Wass	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007
Mike Wetzel	Kalamazoo Water Reclamation Plant	1415 N. Harrison Street	Kalamazoo	MI	49007

## Appendix B:

**National Biosolids Partnership  
Environmental Management System (EMS) Workshop  
EMS 401  
April 25-26, 2006  
Kalamazoo, Michigan  
Agenda**

Tuesday April 25, 2006

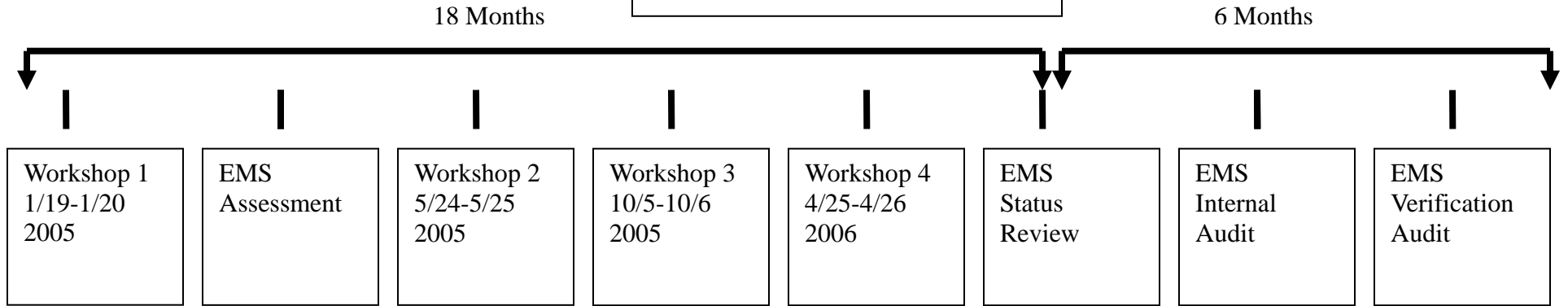
7:00 – 8:00 am	Breakfast – Networking opportunity
8:00 – 8:15 am	Welcome and Introduction (DeMichele, Machno, Engel)
8:15 – 10:00 am	EMS 401 Workshop Objectives (Engel & Machno) Section 1 Where are we now? Workshop Overview EMS Status Review EMS Internal Audit EMS Verification Audit
10:00 – 10:15 am	Break
10:15 – 12:00 noon	Auditing Approach, Framework and Methodology, Key areas of Focus and Interpretation, Process, Scope, Schedule, Team, Methodology (re: Transaction Testing) (Dean) Section 2 Exercise – Transaction Testing
12:00 – 1:00 pm	Lunch
1:00 – 1:30 pm	Relationship of NBP Four Key Outcomes to The EMS Elements (Engel) Section 3
1:30 – 3:00 pm	Key Areas of Evaluation Policy Quality Management Practices Continual Improvement Compliance Public Participation and Communication (Dean) Section 4

## Appendix B: Agenda (continued)

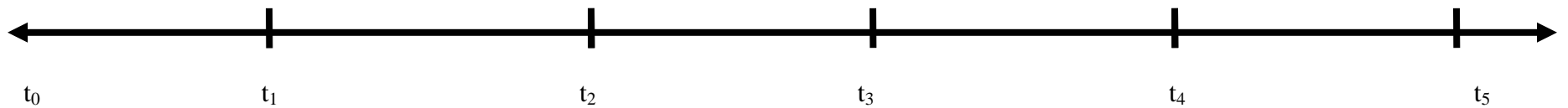
3:00 – 3:15 pm	Break
3:15 – 4:30 pm	Roles, Responsibility and Competency Documentation, Document Control and Record Keeping Management Review (Dean) Section 5
4:00 – 4:30 pm	Review of Day 1 (Engel and Machno)
<u>Wednesday April 26, 2006</u>	
7:00 – 8:00 am	Breakfast – Networking opportunity
8:00 – 10:00 am	EMS Auditor Qualifications Auditor/Auditee Roles and Responsibilities Analyzing Audit Evidence (Dean) Section 6
10:00 – 10:15 am	Break
10:15 – 12:00 noon	Audit Planning, Creating an Audit Checklist, Conducting the Audit (Dean) Section 7
12:00 – 1:00 pm	Lunch
1:00 – 2:15 pm	Internal Audit Case Study - Butler County
2:15 – 3:00 pm	Post Audit Activities (Dean) Section 8
3:00 – 3:15 pm	Break
3:15 – 4:00 pm	3 <sup>rd</sup> Party EMS Audit (Machno) Section 9
4:00 pm	Adjourn

# Appendix C

## NBP EMS Timeline



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Interim  
Audit  
3<sup>rd</sup> Party  
Required

Interim  
Audit  
3<sup>rd</sup> Party  
Optional

Interim  
Audit  
3<sup>rd</sup> Party  
Required

Interim  
Audit  
3<sup>rd</sup> Party  
Optional

Re-Verification  
Audit

## Appendix D: Transaction Testing – Exercise

<b>TRANSACTION TESTING--EXERCISE</b>	
<i>Pick one of the “triggering” changes listed in the shaded areas. Then check off what NBP EMS elements you think might require action based on the change, and describe the actions that need to be taken as a result of the change.</i>	
<b>EVENTS</b>	
<b>Personnel Change</b>	The Plant Supervisor who had supported the EMS leaves. A new Supervisor is hired that has very little EMS background.
<b>Contractor Change</b>	A new Contractor is hired. Your service agreement specifies that the Contractor is required to have EMS awareness training, an emergency response program, and public participation program. You have no knowledge of what they are doing.
<b>New Regulation</b>	Your County has passed a new law restricting routes of transport and areas in County where biosolids can be applied.
<b>Equipment/Process Change</b>	A new drying process and new equipment has been added to produce Class AA biosolids.
<b>Spill/Accidental Release</b>	A biosolids spill occurs along a public highway, resulting in a traffic delay of three hours and negative press in the newspaper.
<b>EMS ELEMENT</b>	<b>ACTIONS TAKEN/DOCUMENTATION PRODUCED</b>
<i>EMS Manual</i>	
<i>Policy</i>	
<i>Critical Control Points</i>	
<i>Legal/Other Requirements</i>	
<i>Goals and Objectives</i>	
<i>Public Participation/Planning</i>	
<i>Roles and Responsibilities</i>	
<i>Training</i>	
<i>Communication</i>	
<i>Operational Controls</i>	
<i>Emergency Preparedness</i>	
<i>Documentation/Control</i>	
<i>Monitoring/Measurement</i>	
<i>Corrective/Preventive Action</i>	
<i>Biosolids Management Report</i>	
<i>EMS Audit</i>	
<i>Management Review</i>	

## Appendix D: Transaction Testing – Exercise (continued)

Triggering Event	Personnel Change
Changes to Elements	
EMS Manual	
Policy	Communicated. If signature, obtain.
Critical Control Points	
Legal/Other	Communicated
Goals/Objectives	Communicated
Public Participation/Planning	
Roles/Responsibilities	Communicated; change names as appropriate.
Training	Training required; awareness; Policy communicated. Record of training.
Communication	
Operational Controls	Communicated; assigned.
Emergency Response	Communicated; assigned.
Documentation/Control	Communicated; assigned.
Monitoring/M Measurement	
Corrective/Preventive Action	
Biosolids Management Report	
EMS Audit	Given auditor responsibility; trained; record.
Management Review	Made aware of review.

## Appendix D: Transaction Testing – Exercise (continued)

Triggering Event	Contractor Change: Have little knowledge of what they are doing with EMS; meet requirements.
Changes to Elements	
EMS Manual	
Policy	Communicate; require them to conform.
Critical Control Points	Update CCP if needed; notify NBP of changes.
Legal/Other	Review legal.
Goals/Objectives	Assign them if any apply to Contractors.
Public Participation/Planning	Communicate to public routes, if pertinent.
Roles/Responsibilities	
Training	Training required for all elements; record.
Communication	Make aware of communication requirements.
Operational Controls	
Emergency Response	Training; require adherence of SOP.
Documentation/Control	
Monitoring/Measurement	Verify SOPs followed.
Corrective/Preventive Action	
Biosolids Management Report	
EMS Audit	Eventually audit.
Management Review	

## Appendix D: Transaction Testing – Exercise (continued)

Triggering Event	New Regulation
Changes to Elements	
EMS Manual	Changes to meet new rules.
Policy	
Critical Control Points	Change CCPs.
Legal/Other	Incorporate new rule.
Goals/Objectives	Might be required to change or new ones.
Public Participation/Planning	Make public aware of new law; communicate along routes.
Roles/Responsibilities	Some changes may be required.
Training	Train haulers and others in new rules.
Communication	Communicate internally/externally.
Operational Controls	Change OCs to meet new CCPs. Might change site selection criteria OC. Also review SOPs for locational changes (maps, etc.).
Emergency Response	May change due to new routes.
Documentation/Control	May change to reflect new EMS changes.
Monitoring/Measurement	Compliance review.
Corrective/Preventive Action	Perhaps.
Biosolids Management Report	
EMS Audit	
Management Review	Report changes to management.

## Appendix D: Transaction Testing – Exercise (continued)

Triggering Event	Equipment Change
Changes to Elements	
EMS Manual	Review/change process description.
Policy	
Critical Control Points	Change.
Legal/Other	Improve to Class A requirements.
Goals/Objectives	Update to reflect process change.
Public Participation/Planning	Report improvements to public.
Roles/Responsibilities	New assignments, educate; delegate new roles.
Training	Training in new process; SOPs.
Communication	Update internal networks; external awareness.
Operational Controls	Change to address CCP changes.
Emergency Response	Review hazards; SOPs as needed.
Documentation/Control	New documents; revisions; new records.
Monitoring/Measurement	MSDS; safety items; review linked process controls.
Corrective/Preventive Action	
Biosolids Management Report	
EMS Audit	
Management Review	

## Appendix D: Transaction Testing – Exercise (continued)

Triggering Event	Spill/Release
Changes to Elements	
EMS Manual	Review all manual elements pertaining to spill.
Policy	
Critical Control Points	
Legal/Other	Was it handled correctly?
Goals/Objectives	
Public Participation/Planning	
Roles/Responsibilities	Review how they were carried out—done right?
Training	Did training support incident? Adequate?
Communication	Were contacts/notifications adequate?
Operational Controls	SOP to handle spill adequate?
Emergency Response	Review Plan after spill.
Documentation/Control	
Monitoring/Measurement	
Corrective/Preventive Action	How to prevent in the future
Biosolids Management Report	
EMS Audit	
Management Review	Reported to management

## Appendix E: Quality Management Practices

Function	Big Picture	Specific Questions / Scenarios	Document & Records Review	Interviewees	Interview Questions	Observations
Quality Management Practices	<p>Effective management of critical control points minimizes environmental impacts and ensures product quality and compliance</p> <p>Organization is committed to implementing best management practices</p> <p>Good housekeeping is evident</p> <p>Sustainable and accepted biosolids management practices are used or being developed</p>	<p>Has the agency identified critical control points? Are they consistent with the NMGP, throughout the biosolids value chain?</p> <p>If they aren't consistent with the NMGP, are they adequate to ensure that biosolids management activities meet legal, quality and public acceptance requirements and do not have undesirable environmental impacts?</p> <p>Are they up-to-date?</p>	<p>Document listing CCPs throughout biosolids value chain - cross referenced to operational controls and environmental impacts</p> <p>Compare list of CCPs vs NMGP – Appendix F</p>	<p>EMS Coordinator, Biosolids manager</p> <p>Other staff with key biosolids management roles</p>	<p>How often are CCPs reviewed? When are CCPs revised? If changes are made, what is the process used for making changes?</p> <p>Why are the identified CCPs different than those in the NMGP (if they are different)?</p> <p>If they are different, how are the identified CCPs adequate to ensure that biosolids management activities meet legal, quality and public acceptance requirements and do not have undesirable environmental impacts?</p> <p>How do you manage CCPs to ensure that the 4 outcomes are achieved?</p>	<p>Match identified CCPs with on-site operations.</p> <p>Judge whether identified CCPs are indeed sufficient to meeting four outcomes.</p> <p>Are there any activities or processes that should be identified as CCPs that aren't currently?</p>

## Appendix E: Quality Management Practices (continued)

Function	Big Picture	Specific Questions / Scenarios	Document & Records Review	Interviewees	Interview Questions	Observations
		Are environmental impacts identified?	Document listing CCPs throughout biosolids value chain - cross referenced to operational controls and environmental impacts	EMS Coordinator	How were impacts identified? Where are impacts documented? How often are they reviewed? Who is responsible for reviewing them?	Visit each CCP and assess evidence of environmental impacts
		Has the agency developed and implemented SOPs or other appropriate methods at all critical control points to effectively manage environmental impacts?	Document Review - OCs, SOPs	Staff and contractor staff responsible for specific CCPs	What SOPs do you have for CCPs to manage environmental impacts? - Where are they?	Practices are consistent with SOPs
		Are Operational Controls consistent with NMGP? If not, why not?	List of OCs	EMS Coordinator, Biosolids manager	Why are the identified OCs different than those in the NMGP (if they are different)?	
		Are staff procedures/work practices consistent with documented operational controls?	Document Review – OCs, SOPs	Supervisors	When changes are made in work practices or operational controls, what process is used to make sure the Ocs and SOPs stay consistent?	Compare staff or contractor work practice to documented OC at each CCP
		Are appropriate systems in place for monitoring and measurement of biosolids management activities to ensure compliance, measure performance and track progress?	Documents listing monitoring and measurement SOPs.  Records of monitoring and measurement at CCPs.	Biosolids manager	How do you measure for compliance, environmental impacts or progress toward goals?  How are results recorded?	Observe staff performing monitoring and measurement procedures

## Appendix E: Quality Management Practices (continued)

Function	Big Picture	Specific Questions / Scenarios	Document & Records Review	Interviewees	Interview Questions	Observations
		Are effective preventive maintenance procedures in place at each critical control point?	Document referencing SOPs for preventive maintenance.  Maintenance logs and records.	Operators Maintenance	How often do you perform maintenance on the equipment associated with this CCP?  How do changes or problems with the CCP impact your preventive maintenance process?	
Contractors	Contractor procedures and practices are consistent with those of agency EMS and support the agency in efforts to improve in the four key outcome areas.	Are the CCPs and operational controls that are managed by contractors clearly identified and followed?	Contracts, operating agreements, SOPs	Contractors	Do you have documentation of that identifies CCPs that contractors control? Do you have a QA/QC process related to your contractors?	
		Are contractor procedures/work practices consistent with their documented operational controls?	SOPs for contractors and subcontractors	Contractors		Contractor staff and Subcontractors
		Do contractors measure and monitor activities to assure compliance with applicable legal and other requirements, as defined by service agreements?	Contracts, operating agreements, SOPs	Contractors and subcontractors	What type of measurements or monitoring do you conduct? How is it recorded?	

## **Appendix F: Analyzing Audit Evidence (i.e., Spotting EMS Deficiencies) — Exercise**

You have been asked to conduct an EMS audit of the biosolids value chain at the City of Paradise Municipal Plant. Indicate which element(s) of the NBP EMS might apply in each of the situations described below:

1. While touring the Paradise treatment facilities, you notice a sandblasting operation to remove old paint from metal railings being refurbished. The spent sandblast grit is lying on the ground and storm water from the grit pile is draining into the chlorine contact chamber. When asked, the Plant Supervisor is not aware of this situation.
2. In discussions with the Plant Supervisor, it is discovered that operators are trained in the operation of the digesters and sludge drying equipment through on-the-job training. There are no records documenting the date of training or topics covered. The basis of the training is reportedly the Plant Operation and Maintenance manuals delivered when the plant was first constructed in 1975, kept in the Plant's library.
3. Inspection of the plant's emergency response plan identifies the Public Works Director as the Emergency Coordinator responsible for implementing response measures in the event of a release. During an interview, the Director indicates that he is mainly a "figurehead" and that the lead operator of the wastewater treatment facility is actually the person who will provide "hands-on" response to a gaseous chlorine release. During an interview, the lead operator replied that he was transferred to the position about two months ago and was not aware of this assignment.
4. You are unable to identify any procedure that enables the Municipal managers to identify applicable environmental laws and regulations. The EMS Coordinator assures you that she reviews several publications and the internet each month to ensure that the Plant personnel are always aware of their legal requirements.
5. While examining a complaints file you notice several requests for information from the environmentalists concerned about the land application of biosolids. You are not able to find any correspondence or method to respond to these requests. The EMS Coordinator and Plant Supervisor are not aware of whether the utility has responded.
6. In the biosolids loading area, you notice what seems to be a good procedure to require the signature of the drivers receiving the load, as well as acknowledging the receipt of the utility's spill reporting procedures. The loading operator states that the procedure has a few "bugs" in it and is being ignored until it is revised by the EMS Coordinator.
7. A review of a folder containing corrective actions resulting from previous audits revealed several corrective actions that did not appear to be closed out. The EMS Coordinator reported that they had been closed but the forms were not signed off.

## **Appendix F: Analyzing Audit Evidence (i.e., Spotting EMS Deficiencies) — Exercise (continued)**

1. EMS awareness training, internal communication, legal and other requirements  
(Although this event may not be auditable since it is outside the Value Chain. It is, however, an indicator)
2. Training, documents/records, critical control points, operational controls, roles and responsibilities
3. Communication, ERP – needs to be changed, training, roles/responsibilities
4. Legal and other requirements, roles and responsibilities, documents and document control, goals and objectives
5. Public participation, roles and responsibilities, documentation, communication, goals and objectives
6. Training, corrective action, communication, document control, roles and responsibilities
7. Internal EMS audit, roles and responsibilities, training, non-conformance and corrective action

## Appendix G: Audit Demonstration 1

**Auditor:**

Hi, my name is \_\_\_\_\_. I'm here as part of the biosolids audit. I see you have our agenda. I will be asking you a few questions and will be taking a few notes. Do you have any questions before we start?

**Auditee:** No

**Auditor:** OK. Why don't you describe to me what you do in this department?

**Auditee:** This department operates the digester, the screw presses and load the tracks with biosolids.

**Auditor:** OK. What are the environmental aspects that are connected with what you do?

**Auditee:** Well, odor, for one thing, and excess metals if we're not careful in our monitoring.

**Auditor:** HMMM, interesting. What's this? (Auditor grabs a piece of paper of the Auditee's desk.)

**Auditee:** That's our process checklist.

**Auditor:** What's the checklist used for?

**Auditee:** We have that checklist as a process check on the digester.

**Auditor:** Does everyone complete the checklist?

**Auditee:** No.

**Auditor:** *Oh!* You say you have a checklist, but not everyone uses it. *Why is that?*

**Auditee:** Because the checklist is cumbersome and the operators do not like to use it. We use it if we have to.

**Auditor:** Auditor smiles, raises an eyebrow. Smugly writes a deficiency while the auditee watches.

Now, obviously, if you're not using this checklist you must feel competent to do the job without it. What makes you so sure that your people are qualified?

**Auditee:** We're trained to do it.

**Auditor:** So you were trained. Can I take a look at the training records?

**Auditee:** My manager has them, I think. But he's in a meeting right now.

## **Appendix G: Audit Demonstration 1 (continued)**

**Auditor:** In a meeting. (Looking at watch) Darn it, that figures. Never around when you need them (writes another note). OK, I saw from an earlier procedure that you calibrate this instrument.

**Auditee:** That's correct.

**Auditor:** Can you demonstrate for me how you calibrate it?

**Auditee:** I don't know how yet. I have not been trained to do it.

**Auditor:** What?! You've been here, what 3 months, and haven't been trained. That should have been completed day one! (Writes more notes). Well, I thank you very much for your time. Can you recommend a restaurant?

## Appendix G: Audit Demonstration 2

**Auditor:**

Hi, my name is \_\_\_\_\_. (Holds out hand to shake but auditee doesn't move from crossed arm position). I'm here as part of the biosolids audit. I hope you received your agenda.

**Auditee:** Yeah, I got it!

**Auditor:** OK. I'm going to be asking a few questions and taking some notes.

**Auditee:** What's with this EMS stuff anyway? What good is all of this doing?

**Auditor:** Well, part of what I'm doing is to verify the effectiveness of your EMS. An effective EMS should lead to improved environmental performance. Now, I see that your company offers EMS awareness training. Have you had the chance to attend one of these?

**Auditee:** No.

**Auditor:** I see. Scheduling problems?

**Auditee:** I just didn't think it was important enough.

**Auditor:** Well, I hope you'll try and attend one of those classes sometime soon. Anyway, I'll just ask a couple of questions and move on. Please tell me briefly what you do in this department.

**Auditee:** We make sure the sludge dryer is operated correctly. If we screw it up then our supervisor blows a fuse and there's a chance something bad could happen to the environment.

**Auditor:** How does what you do potentially impact the environment?

**Auditee:** Well, if we mess up the process it shuts the whole dryer down and dust flies everywhere, including into Old Hazel's yard across the street.

**Auditor:** I see. Well, that sounds pretty serious. How do you ensure that people do the right thing to avoid this?

**Auditee:** We're trained on the job, and have to take a competency test.

**Auditor:** OK. Where are the records for the training kept? Do you have a certificate?

**Auditee:** *I haven't a darn clue!* Why don't you check with Human Resources.

**Auditor:** That's a good suggestion. Well, I appreciate your explaining to me how things work in the department. Thanks again for your time.

## Appendix H: Audit Planning

Reference	Requirement:	Look For/Evidence:	Auditor Notes:
Madison Element 5 Procedure, Goals and Objectives	Page 2, says goals and strategies are supposed to be finalized by February 15 <sup>th</sup> of each year	Ask the EMS Coordinator for goals/strategies from last year. Check date (finalized by February 15). Ask how goals/strategies have been used to set existing goals and objectives.	

1. Examine website to see final goals.
  - a. Is list on website most current?
  - b. Are goals included in Biosolids Management Report?
2. Verify computer cost accounting.
3. Where does the Metrogro manager interface for goals?
  - a. How has employee input been documented?
4. See action plans – Deadlines set?
  - a. How are appropriate intervals set?
  - b. How is progress tracked?
5. Documentation of public input?
  - a. When, where and how.
  - b. How was this used to set goals and objectives?
6. Ask representative employees about their knowledge of job as it relates to goals.

## Appendix I: Comments

### Day 1 Comments

- Audit information good (5)
- Textbook is very good (check lists) (7)
- Use of icons for key outcomes
- Need soft drinks and snacks in pm
- Keep looking at big picture (Emphasize)
- Good mix of lecture and discussion
- Input structure to the internal audit
- Picked up the importance of training
- Transaction testing very good
- Madison was good
- We were specific per requests

## Appendix J: Evaluations and Written Comments

**Course Evaluation**  
Environmental Management Systems  
April 25-26, 2006  
Program EMS401

<b>PROGRAM</b>	<b><u>Poor</u></b>				
<b><u>Excellent</u></b>	1	2	3	4	5
Course content met expectations					4.23
Level of content was appropriate					4.20
Course was relevant to job needs					4.33
Time allocated for coverage of topics					3.93
Effectiveness of audio visuals					3.80
Usefulness of course materials/handouts					4.40
Accomplishment of learning objectives					4.14
<b>PRESENTATIONS</b>					
Interesting					3.90
Responses to questions					4.37
Emphasis on important topics					4.23
Clarity of presentation					4.17
Enthusiasm and energy					4.10
Knowledge of the subject					4.67
Group discussions					4.17
Breakout Session					4.04
<b>OVERALL RATING OF COURSE</b>					
Course					4.23
Instructor(s)					4.47
Organization of program					4.34
Facility used/meeting room					3.80
Break functions/lunch functions					3.83
Hotel accommodations					4.29

## Appendix J: Evaluations and Written Comments (continued)

### Written Comments

#### 1. General Comments

- A. Liked the hotel. Columns in meeting room were annoying-blocked us from seeing others speaking in the room. Did not have soft drinks/snacks 1<sup>st</sup> day-corrected 2<sup>nd</sup> day. Also did not have coffee 1<sup>st</sup> day but was also corrected.
- B. Clarity of presentation-good expect for Tuesday afternoon. Not nearly enough breaks. Needs more breaks, every 60-75 minutes would be good. Room with large pillars in the middle should be avoided. Need to have coffee ready.
- C. It would be very helpful to have several “veterans” of the program attend the session-maybe one at each table. Their comments & input in the discussions-both formal & informal-were most beneficial & enlightening. Over all good seminar. Facilities & food were great.
- D. I would like to see the audit questions answered by “yes” or “no”. The same format as MDEQ Biosolids when they do their yearly audit.
- E. Good job in presentation. A “ton” of material in a relatively short time frame.
- F. Good material but the room 1<sup>st</sup> day was hot.
- G. Shorten info.
- H. I can not see any advantage to going around the room with comments at the end of each day.
- I. Excellent course-will help us a great deal.
- J. Awesome job!!!
- K. Some speakers are a bit monotone. Interest would be better if speaking was more enthusiastic.
- L. The 4 workshops could be moved from 4-2 day to 2-3 day to save time & money for all attending. We tend to over think the program which can make it harder to finish.
- M. Energy level of group was down except during breakout exercises.
- N. Informative, good support & background from speakers.
- O. Doug Dean did an excellent job of presenting-knowledgeable & experienced with audits. Add some humor to “break up” presentation of a very serious topic. Hotel needs to work on providing better coffee.
- P. Should have been involved from beginning as the internal auditor, playing catch up to the EMS/NBP way of thinking.
- Q. Heavy meals make us sleepy. Fruit would have been nice for breakfast. The 1<sup>st</sup> day morning break at 9:00am to early. Made the rest of the morning slide. Overall good seminar.
- R. It seems that most of the course content could have been condensed to almost 3 maybe 2 sessions, audit pull outs should have been communicated earlier in the course.

## Appendix J: Evaluations and Written Comments (continued)

- S. Once again—great job—these 4 workshops have been in the top 5% of all training I've ever received in my 30+ year career. TREEO does a great professional job. They know their material, present it in an interesting & entertaining way and hold the interest of the participants.
- T. Excellent program, need more commitment from my agency. I believe electronic homework would be valuable.
- U. The course was very useful but it is too hard to go 2 hours with no break. Sessions need to be broken up more.
- V. This workshop was very necessary to help move us to the audit process. This brings home how overwhelming this process can be. Need more short breaks!
- W. This subject for us showed how far we have to go because of your detail.
- X. Opened my eyes to the amount of work remaining to be done before our 3<sup>rd</sup> party audit.

### 2. Describe the most valuable portion of the course.

- A. The foldouts & handouts will be very valuable.
- B. Having someone in the session that has already been through the process. Having presenters & NBP staff available for discussions at breakfast/lunch & on breaks. Very approachable & supportive networking opportunities were/are very valuable.
- C. The reference binder.
- D. The minimum requirements for EMS should have been handed out at the 2 meetings. This really helps in writing your elements.
- E. Case studies reinforced material presented.
- F. Instructor's knowledge.
- G. All
- H. Audit tables.
- I. Examples of audit questions & reports helpful to illustrate how company this procedure could be.
- J. Detailed examples of audit questions.
- K. Everything, examples.
- L. Pull out sections.
- M. What the auditor might ask & how.
- N. Worksheets, better county experience.
- O. The exercises supported a good understanding of material covered.
- P. This course helped me identify the elements. We need to work on to prepare for our internal audits. Great accommodations, food, drinks. Nicely done.
- Q. "Tear out sheets" essentials for 1<sup>st</sup> time internal audits.
- R. Case studies & example audit interviews.
- S. The pull outs to know what the auditors will be looking for.

## Appendix J: Evaluations and Written Comments (continued)

- T. The auditing portion and some of the initial start up session to help understand the elements, using Madison as a template, “thank you”.
- U. Checklists & materials are good sharing between agencies very valuable.
- V. Content, interaction with others participating in the same program, meeting new folks from other areas of the company.
- W. Examples in hand outs.
- X. Examples of what an auditor would ask.
- Y. The hands on break out.
- Z. The hands on breakouts.
- AA. Butler County was good because it was specific & easy to relate.
- BB. Importance of a thorough internal audit to preparation of 3<sup>rd</sup> party audit.

### 3. Describe the least valuable portion of the course.

- A. Not enough breaks. Do not need introductions. Don’t need to go around the room & tell what you learned at the end of the day each day.
- B. To long sessions more interaction on groups needs.
- C. Comments at end of day!
- D. Too long between breaks-such in-depth book training; 1 ½ hours max at a time.
- E. Letting people know where food & rooms were located ahead of time!
- F. Regulator involvement is not very strong.
- G. Nick should attend the classes.
- H. All components of the course were beneficial.
- I. Would like to have an outline for performing audit (pull outs were helpful) but an outline to mold would or could be more helpful to get people started.
- J. We already had Butten County come & present at 301. Would have been nice to hear from someone else.
- K. Nothing comes to mind! Again-GREAT JOB!
- L. Going around the room & asking what everyone found useful.
- M. Introductions & ending feedback.
- N. Introductions & ending feedback.
- O. Some slow presentation but all important, even connecting us back to the partnership.
- P. All parts of the workshop were relevant to certification.