Example
Biosolids Management Program
Town of Anytown

Effective Biosolids Management for Smaller Communities Using the EMS Framework

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View the Document Control Log for a Summary of Revisions

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EXAMPLE

Element 1: Town of *Anytown*–EMS Manual

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown provides wastewater treatment to ***a community of approximately 1000 people***. Wastewater treatment meets state secondary treatment requirements. Two valuable end products result from these treatment processes: highly treated effluent and biosolids. Effluent is discharged to ***Smith Brook, a tributary of Jones River***. Biosolids are recycled ***through land application at a small corn farm in Jones County.***

The Town's treatment plant has been in operation for over 30 years and for this period has continually land applied Class B biosolids on farmland. The land application program has grown successfully from an operation of 50 dry tons per year to the current rate of just over 85 dry tons per year.

Biosolids transportation and land application are accomplished ***by a contractor to the Town. The contractor is responsible for hauling biosolids from the treatment plant to application sites and for land application. The Wastewater Manager is responsible for working with the farmer to select the fields and schedule land application. The Wastewater Manager is also responsible for preparation of land application reports required by the State regulatory agency.***

The Town's biosolids program has undergone few changes over its lifetime. ***The Town*** modifies its biosolids program as needed in response to factors such as new state regulations.

The Town is committed to proactively addressing the challenges that will be encountered with respect to biosolids management in the future, especially ***growth and development from the neighboring Large Town.*** We are committed to continually improving all aspects of our biosolids management program. On ***March 1, 2005***, ***the Town's mayor*** signed a Letter of Understanding with the National Biosolids Partnership (NBP) in which ***the Town*** agreed to become an NBP EMS agency with the intent to achieve national recognition for its excellent biosolids management program. ***The Town*** specifically committed to meet the national requirements for an excellent biosolids program; committed to implement an Environmental Management System and committed to the NBP's National Code of Good Practice.

This EMS manual describes ***the Town's*** Environmental Management System for Biosolids.

Procedure

1. The EMS manual is intended to be a “living” document. Revisions are expected as new information is obtained, changes to existing systems occur, and as experience is gained in managing the biosolids program.
2. ***The Town’s Public Works Director*** will make revisions to the EMS manual on an “as needed” basis.
3. ***The Wastewater Manager*** will inform ***the Public Works Director*** of significant revisions to the biosolids program.
4. ***The Wastewater Manager*** will provide notification of significant changes to the biosolids program to interested parties such as ***the state regulatory agency (DEP)***.

EXAMPLE

Element 2: Biosolids Management Policy

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown formally adopted the following Biosolids Management Policy on ***March 15, 2005***. The policy establishes guiding principals for ***the Town's*** biosolids management program and the EMS.

Biosolids Management Policy Statement

The Town of Anytown *will pursue beneficial biosolids reuse options that protect human health and environmental quality, are cost effective, and provide flexibility with respect to end use.*

The Town will implement this policy by:

- Following the *Code of Good Practice* for biosolids developed by the National Biosolids Partnership
- Periodically evaluating beneficial reuse options that provide potential for improved efficiencies or better meet the needs of the community
- Providing adequate training opportunities to personnel associated with the biosolids management programs.

The Code of Good Practice is included in the EMS Manual as Attachment 2.1.

Procedure

1. The ***Wastewater Manager*** is responsible for ensuring that the biosolids management policy is implemented and communicated ***to the hauling and application contractor*** and other interested parties, using one or more of the communication tools listed under the Communication procedure.
2. Methods used to accomplish Procedure 1 include, but are not limited to the following:
    a. meeting with the contractor to discuss how the policy affects activities conducted by the contractor
    b. revising the contract, upon agreement with the contractor or at the next renewal cycle, to reflect the provisions of biosolids management policy

c. meeting with farmer to discuss how the policy guides actions of ***the Town*** and the contractor

d. communications with interested parties are addressed in the Communications procedure.

3. If revisions to the current policy statement are needed because of changing conditions, the ***Wastewater Manager*** will notify ***the Public Works Director*** of the issue and suggested changes.
4. The ***Public Works Director*** will bring the revisions to the ***Mayor*** for consideration. Recommended revisions to the policy may also be included in the annual EMS Management Review.
5. If revisions to the policy are approved by the ***Mayor and/or Town Council***, the ***Wastewater Manager*** will communicate the revised policy as per Step 1 above. The ***Wastewater Manager*** will also replace the revised policy in the EMS Manual.

Example

Element 3: Critical Control Points

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Critical Control Points (or *key processes*) are those biosolids management activities that are under the direct control or influence of ***the Town*** that have the potential, if not managed effectively, to create significant changes to the quality of its biosolids and could create negative environmental impacts. Critical control points include activities that can affect the quality of biosolids, how biosolids are managed, or how ***the Town's*** biosolids program is viewed by the general public and regulators.

Table 3.1 identifies ***the Town's*** critical control points that need to be managed to avoid problems with the biosolids quality and potential environmental impacts. The critical control points were selected by ***the Town's Wastewater Manager*** after reviewing information contained in the National Manual of Good Practice.

The Town manages its biosolids to:

- ***produce Class B product at 65% solids***
- ***meet the regulatory requirements for metal concentrations for land application***
- ***meet the regulatory requirements for pathogen reduction for land application***
- ***achieve minimal content for plastics and debris in the biosolids***
- ***generate product that does not create objectionable odors.***

Table 3.1 also contains information on operational controls and monitoring/measurement activities.

Procedure

The following procedure will be used to review and update the selection of critical control points:

1. ***The Town's Wastewater Manager*** will review information in Table 3.1 on an annual basis, when there are regulatory changes or whenever major operational changes occur. The annual review will be conducted by ***November 30th***.
2. Revisions to Table 3.1 (if any) will be documented in writing by ***the Town's Wastewater Manager***, who will be responsible for ensuring that any necessary changes are made to Table 3.1 in the EMS manual. At a minimum, documentation will occur through notation in the annual biosolids program report.

3. If revisions to the critical control points are made by the ***Wastewater Manager***, information related to roles/responsibilities, operational controls, monitoring/measurement and any other relevant areas of the EMS (including potential environmental impacts listed in Table 3.1) will also be reviewed and modified as appropriate. Documentation will be consistent with the approach in Procedure 2 above.
4. Following an operational change that requires revisions to the critical control points or their associated environmental impacts, the ***Wastewater Manager*** will inform the NBP and the third-party verification auditor in writing of the changes.

Table 3.1: Critical Control Points, Operational Controls, SOPs, Monitoring/Measurements and Environmental Outcomes

Biosolids Value Chain (Operational Area)	Critical Control Points (Key Processes)	Operational Controls (Control Points)	Standard Operating Procedures (SOPs)	Monitoring & Measurements	Potential Environmental Impacts
Wastewater Collection and Pretreatment	None-no industrial users in the Town				
Wastewater Treatment and Solids Generation	Solids screening / grit collection	Screen cleaning and maintenance	Solids Processing SOP	Monitoring/Measurement 1. grit removed (lbs/month)	• Plastics in biosolids • Attraction of vectors (e.g. flies) • Odors
Solids Stabilization, Conditioning and Handling	Aerobic Digestion	Loading rates	Digester SOP from O&M Manual	Monitoring/Measurement 1. Digester time and temperature 2. Percent solids Relevant reports and/or requirements 1. Digester volatile solids reduction 2. Digester operation	• Odors • Attraction of vectors • Incomplete destruction of pathogens
		Digester Mixing			
	Drying bed location	Regulatory requirements	Drying bed SOP from O&M Manual		
Biosolids Storage, Loading and Transportation	Loading site	Loading procedures	Emergency Response Manual SOPs	Monitoring/Measurement 1. Tons loaded Relevant reports and/or requirements 1. Emergency response reports. 2. Hauling records.	• Spills • Roadway accidents • Truck noise and dust • Odors
		Emergency response procedures			
	Truck cover	Truck tarping procedures	Hauling Manual SOPs		
	Routing requirements	Routing and hauling procedures			
	Truck cleaning	Truck cleaning procedures			
Biosolids End Use, Disposal or Beneficial Reuse	Land Application Site Selection	State Regulations	Land application SOP Contractor SOPs	Monitoring/Measurement 1. Biosolids application rates	• Negative impacts on groundwater or surface water resources • Odors
	Location of truck unloading	Truck loading/unloading procedures			
	Depth to Groundwater	Land application site selection procedures			

Biosolids Value Chain (Operational Area)	Critical Control Points (Key Processes)	Operational Controls (Control Points)	Standard Operating Procedures (SOPs)	Monitoring & Measurements	Potential Environmental Impacts
	Agronomic Rate	State Regulations			
	Perimeter of application site	State Regulations			
	Set back distance from surface water/neighbors	State Regulations			

NOTE: THAT ANY CRITICAL CONTROL POINTS OR OPERATIONAL CONTROLS IDENTIFIED IN APPENDIX F OF THE NBP'S NATIONAL MANUAL OF GOOD PRACTICE BUT NOT SHOWN IN TABLE 3.1 WERE CONSIDERED BUT DETERMINED, THROUGH EXAMINATION OF FACILITY OPERATIONS, TO NOT BE RELEVANT TO THE PROCESSES USED AT THIS FACILITY

Example

Element 4: Legal and Other Requirements

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Identifying existing legal and other requirements that affect the various parts of ***the Town of Anytown's*** biosolids program is extremely important. Most of the existing requirements for the biosolids operation are defined by state and federal regulations and most are reflected in ***the Town's NPDES*** permit and the Federal Part 503 regulations. However, when new or revised regulations are proposed ***the Town*** identifies, tracks and assesses the potential effects on the biosolids program.

Procedure

The procedure used by ***the Town*** to identify, track, and assess the potential effects of new or revised regulations that may affect ***the Town's*** biosolids program is described below.

1. The following sources of information are used as appropriate to identify and track potential changes to regulations:
   a. Check with state biosolids coordinator at least annually
   b. Check with state Rural Water Association at least annually

2. The ***Wastewater Manager*** is responsible for ensuring that ***the Town*** is aware of potential changes to regulations. The ***Wastewater Manager*** will:

   a. Identify potential changes to regulations through review of information from various sources identified in Procedure 1 above.
   b. Evaluate potential effects on ***the Town's*** biosolids program.
   c. Determine the appropriate actions and schedule, including the need to involve other ***Town*** staff.

3. The following procedure is used to ensure that new legal and other requirements are appropriately communicated and implemented:

    a. The ***Wastewater Manager*** will follow Procedure 2 above
    b. The ***Wastewater Manager*** will be responsible for communicating new requirements (for example, monitoring and reporting requirements) to the contractor and farmers on whose land biosolids are applied.
    c. The ***Wastewater Manager*** will make any necessary changes to the EMS manual and related documents.

Table 4.1 identifies legal and other requirements specific to ***the Town's*** biosolids program. ***The Town's NPDES*** permit contains very specific regulatory and legal requirements.

Table 4.1: Legal Requirements and Guidance Specific To *The Town's* Biosolids Land Application Program

Regulation	Brief Description	Hard Copy (if available)
Federal Regulations		
(40 CFR Part 503)	***Federal biosolids rule-Part 503***	***Wastewater Manager's Office***
State Regulations		
ATCP 50, NR 151	***DEP Biosolids Rule***	***Wastewater Manager's Office***
NPDES Permit	***The Town's NPDES Discharge Permit***	***Wastewater Manager's Office***
Local Regulations		
County Code Title 5 , Chapter 2: Sewage Disposal	Sanitation & Health	***Wastewater Manager's Office***

Example

Element 5: Goals and Objectives

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown's Biosolids Management Policy states that it "*will pursue beneficial biosolids reuse options that protect human health and environmental quality, are cost effective, and provide flexibility with respect to end use"* by:

- Following the *Code of Good Practice* for biosolids developed by the National Biosolids Partnership
- Periodically evaluating beneficial reuse options that provide potential for improved efficiencies or better meet the needs of the community
- Providing adequate training opportunities to personnel associated with the biosolids management programs.

The Town will set or revise goals to support its policy on an annual basis using the following procedure.

Procedure

1. ***The Town*** will set or revise goals and objectives for its biosolids program on an annual basis. The goals and strategies will be finalized no later than ***December 15th***.
2. The ***Wastewater Manager*** will draft a set of goals and objectives considering:
    a. ***The Town's*** Biosolids Management Policy
    b. input (if any) received during the year from, regulators, elected officials, other interested parties and the public
    c. input from ***the Town's*** staff

   Each goal will include a short explanation of its purpose
3. Goals and objectives will be established using SMART criteria (Specific, Measurable, Achievable, Relevant and Time-bounded).
4. Goals and Objectives will be set considering each of the following-- Environmental Performance, Regulatory Compliance, Quality Management Practices and Relations with Interested Parties
5. The ***Public Works Director*** will review and approve goals and objectives; drafts may be revised by the ***Public Works Director***

6. New or revised goals and objectives will be included in the annual biosolids management program report
7. Final goals and objectives will be posted ***on the wastewater treatment plant bulletin board***
8. The ***Wastewater Manager*** will prepare an action plan to support each goal, consistent with the template shown below, that contains schedules, milestones and necessary resources
9. The ***Wastewater Manager*** will be responsible for tracking progress toward each goal on a regular basis.

Action Plan and Tracking Template

Goal/Objective	Target Date	Person Responsible	Resources Available	Interim Status	Date Completed
Goal 1 – Relations with Interested Parties ***Develop a relationship with the staff of neighboring Large Town to ensure collaboration on issues related to future development near Anytown's land application sites.***	***December 15, 2006***	***Wastewater Manager***	***Time made available for Public Works Director and Wastewater Manager to prepare for and attend meetings.***	***April 14, 2006 – Meeting with neighboring Town has been set for Friday April 28, 2006.***	
Objective 1.1 *Have a meeting with Large Town's public works director to discuss their projected development and our land application program.*	***May 15, 2006***	***Wastewater Manager*** ***Public Works Director***	***Time made available for Public Works Director and Wastewater Manager to prepare for and attend meetings.***	***April 14, 2006 – Meeting with neighboring Town has been set for Friday April 28, 2006.***	
Objective 1.2 *Take Large Town's management on a tour of our wastewater facility and land application sites.*	***July 15, 2006***	***Wastewater Manager***	***Time made available for Public Works Director and Wastewater Manager to prepare for and lead tour.***	***Tour date will be set at April 28 meeting.***	
Goal 2 – Quality Management Practices ***Identify & contract new farms for land application to ensure flexibility, contingency options and long-term viability of***	***May 15, 2007***	***Wastewater Manager***	***Time made available for Wastewater Manager to accomplish this goal.***	***April 14, 2006 – Wastewater Manager made presentation at March 2, 2006 Farmer's Association meeting and got 10 signed letters of interest.***	

Goal/Objective	Target Date	Person Responsible	Resources Available	Interim Status	Date Completed
beneficial reuse program.					
Objective 2.1 *Identify 3-4 local farms that would be good candidates for land application.*	***September 15, 2006***	***Wastewater Manager***	***Time made available for Wastewater Manager to accomplish this goal.*** ***$500 budget made available for the purchase of maps and soil analyses.***	***April 14, 2006 – Wastewater Manager completed search of local farm records to ensure good history of practice, review slopes near streams, well logs, haul routes and access.***	
Objective 2.2 *Obtain agreements from farmers to land apply on their fields.*	***May 15, 2007***	***Wastewater Manager*** ***Public Works Director***	***Time made available by Public Works Director and Wastewater Manager to prepare letters and meet farmers at sites.*** ***The Town has approved the budget for the Town attorney to review agreements.***		
Goal 3 – Environmental Performance ***Improve volatile solids reduction by 5%.***	***November 30, 2006***	***Wastewater Manager***	***The Public Works Director has approved the time and budget for the Wastewater to accomplish this goal.***	***April 7, 2006 – Wastewater Manager has prepared draft study plan for discussion with Rural Water Association. .***	
Objective 3.1 *Conduct benchtop study of digester loading and mixing rates.*	***May 15, 2006***	***Wastewater Manager***	***The Wastewater Manager has responsibility for this objective.*** ***$3,000 has been budgeted for***	***April 7, 2006 – Wastewater Manager has prepared draft study plan for discussion with Rural***	

Goal/Objective	Target Date	Person Responsible	Resources Available	Interim Status	Date Completed
			laboratory analyses associated with the benchtop study.	***Water Association. .***	
Objective 3.2 *Implement changes to digester SOPs to improve volatile solids reduction.*	***November 15, 2006***	***Wastewater Manager***	***The Wastewater Manager has scheduled time to update SOPs. Training on new SOPs will be conducted for the Operator by November 15, 2006.***		
Goal 4 – Regulatory Compliance ***Ensure Town biosolids program meets all applicable regulatory requirements.***	***May 1, 2007***	***Wastewater Manager***	***Time for meeting with state is part of normal operations***		
Objective 4.1 *Ensure state biosolids coordinator visits Town operations within next year.*	***May 1, 2007***	***Wastewater Manager***	***Time for meeting with state is part of normal operations***		
Objective 4.2 *Schedule visit by Rural Water circuit rider to review Town biosolids operation.*	***May 1, 2007***	***Wastewater Manager***	***Time for meeting with state is part of normal operations***	***July 15, 2006 meeting date is tentatively set.***	

Example

Element 6: Public Participation in Planning

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown has a well-managed biosolids program that has been in operation for over ***30*** years. ***Presently and historically, there has been very little interest in the Town's biosolids program. The program has had few issues to draw public attention and the majority of the public is unaware of the program. The Farmer who participates in the land application program has an excellent opinion of the program.***

Public confidence appears to be ***good*** and public interest in participating in the planning processes is relatively ***low***. ***The Town's*** proactive approach to providing the public with meaningful opportunities to provide input in the planning processes is consistent with legal requirements, the degree of current public interest, historical levels of public involvement and related local circumstances.

Procedure

1. ***The Town*** will use a combination of both formal and informal mechanisms to provide opportunities for the public to participate in the planning process.
2. Where reasonable and appropriate or when legally required, opportunities will be provided for the public to formally participate in planning processes. This determination will generally be made by the ***Wastewater Manager***.
3. Opportunities are available for the public to provide input through informal avenues.
4. Formal and informal participation mechanisms used by **The Wastewater Agency** are listed in Table 6.1.
5. Information on the third party verification process will be shared with interested parties using any of the formal or informal participation mechanisms identified in Table 6.1, as deemed appropriate by the ***Wastewater Manager***.
6. ***The Wastewater Manager*** will record and respond to significant input received from interested parties. An inquiry/complaint form will be used to record, when possible, the names, addresses, phone numbers and e-mail addresses of interested parties.

Table 6.1 The Town's Public Participation Mechanisms

Formal Participation Mechanisms	**Description**
Public informational meetings	The public will be invited to Town Council meetings when any biosolids issues are being discussed and the Town will provide the opportunity for public input during the discussion. Public meetings are held on selected projects as a means of soliciting input.
Farmer meetings	A meeting is held each fall with the farmer and any neighbors who might be interested to discuss the land application project. The purpose of the meeting is to review the previous year's performance, solicit input from the farmer and neighbors and to make preparations for the upcoming year.
Informal Participation Mechanisms	**Description**
Informational flyers	The Town, as inserts into mailings of its utility billing, will include a discussion of the Town's biosolids program and will ask the public for comments. An annual brochure will be sent to interested parties.
Plant tours and presentations to school/community groups	***The Town*** provides general plant tours to school and community groups upon request.

Example

Element 7: Roles and Responsibilities

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
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Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Clearly identifying roles and responsibilities is important to the success of both the biosolids management program and the EMS. Without a clear definition of roles and responsibilities, the likelihood of failing to comply with operational and regulatory requirements significantly increases.

Procedure

1. Roles and responsibilities for individuals (including the contractor) that are specific to the EMS are assigned by ***the Wastewater Manager***. They are reviewed and updated as necessary on an annual basis (by ***December 15th*** of each year).
2. The ***Wastewater Manager*** will also review existing roles/responsibilities whenever significant operation changes are made to ensure that roles/responsibilities are appropriately defined. Revisions to the roles and responsibilities tables are made by the ***Wastewater Manager***.
3. General descriptions of the roles/responsibilities for various positions are provided below.

Public Works Director

The ***Public Works Director*** is responsible for the overall operation of ***the Town's municipal services***.

Wastewater Manager

The ***Wastewater Manager*** reports to the ***Public Works Director*** and has overall management responsibility for the ***wastewater treatment plant and the biosolids reuse program***. The ***Wastewater Manager*** is responsible for coordinating activities within the wastewater treatment operation, for establishing overall direction, determining priorities, and ensuring that all aspects of the operation and maintenance of the treatment facility are conducted in an efficient, cost effective manner and are compliant with existing rules and regulations. The ***Wastewater Manager*** is also responsible for ensuring that the contractor performs hauling and land application tasks in accordance with the terms of the contract and any other operation agreements.

Contractor

The Town uses a contractor to ***haul and land-apply biosolids***. ***Approximately 40 truck loads are hauled and land applied to the farmer's field each year.*** The ***contractor*** supplies ***trucks, equipment and drivers for the hauling and spreading of the biosolids***. The ***contractor*** is responsible for ensuring that operations are conducted in a safe and environmentally sound manner consistent with applicable SOPs. ***The contractor*** is responsible for ***completing trip tickets that are one of the primary sources of information for load tracking and regulatory reporting***. Additional responsibilities are identified in the contract document and applicable SOPs. Contracts between ***the Town*** and contractors are written so that ***the Town, in coordination and consultation with the Farmer,*** retains responsibility for field selection, application at agronomic rates and identification of interested parties. ***The Town*** retains responsibility for monitoring/sampling and regulatory reporting.

Example

Element 8: Training

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Training is important for ensuring good job performance. ***The Town of Anytown*** demonstrates the importance it places on training through the following statement:

"THE TOWN OF ANYTOWN WILL PROMOTE EMPLOYEE SAFETY, PERSONAL ACHIEVEMENT AND PROFESSIONAL DEVELOPMENT"

Training occurs through a variety of mechanisms, including (but not limited to):

- ***On the job training***
- ***Review of external publications***
- ***Safety and emergency response training sessions***

Procedure

1. Training is generally based on performance needs as determined by the ***Wastewater Manager***.
2. Formal training hours are documented in ***the wastewater manager's personnel file***.
3. The following process will be used to ensure that ***the contractor*** has a general awareness of the biosolids value chain, the EMS, and how they relate to their areas of responsibility. The ***Wastewater Manager*** is responsible for implementing these steps:
    a. At least one meeting addressing the EMS will be held with ***the contractor.***
    b. Contractor participation in training activities is required per contract language.
4. The ***Wastewater Manager*** will identify relevant training opportunities for the contractors providing biosolids services to ***the Town.*** This will include general EMS awareness training.

Example

Element 9: Communication

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
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Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown is committed to proactively communicating information on ***the Town's biosolids*** operations (including the EMS program) both internally and to interested external individuals and agencies. Public confidence in ***the Town's*** biosolids program is ***moderate*** due in part to ***the Town's long history of excellent biosolids management***. ***The Town's*** communication efforts are consistent with legal requirements, the degree of current public interest, historical levels of public involvement and related local circumstances. Given the structure of ***the Town's*** service contract, contractors ***do not*** play a formal role in ***the Town's*** communications effort.

Procedure

Identification of interested individuals/organizations

1. A list (or lists) of individuals interested in ***the Town's*** biosolids program and/or EMS related activities has been developed and is maintained by the ***Wastewater Manager***. Current "interested individuals" include:

    - ***Farmer who own land where biosolids are land applied.***
    - ***Residents next to land application fields.***
    - ***Neighbors of the treatment plant.***
    - ***State Biosolids Regulator***
    - ***Town Council***
    - ***State Rural Water Association***

2. Contact information for interested individuals is currently contained in ***a spreadsheet*** that is maintained and updated by the ***Wastewater Manager***. Individuals are added to this list, if they provide contact details, when they contact ***the Town's Wastewater Manager***.

Communication approach

1. The ***Wastewater Manager*** will have primary responsibility for ensuring effective communications on the part of ***the Town*** as it relates to the biosolids program and the EMS.
2. Information to be made available upon request to interested parties will include:
    a. ***The Town's*** Biosolids Management Policy.
    b. Information about legal and other requirements.
    c. ***The Town's*** biosolids program goals and objectives.
    d. Biosolids Management Performance Reports.
    e. Information related to independent, third party EMS verification audit reports.
3. Specific approaches used to facilitate communication, and the frequency of their use, are left to the discretion of the ***Wastewater Manager***. Examples of communication include meetings, emails, letters, reports, tours, presentations, newspaper articles and radio programs.
4. ***The Town*** recognizes that communication initiated by interested parties and other individuals may take a wide variety of forms including telephone calls, letters, email, meeting participation, internet contact or other forms. ***The Town*** will give equal weight to all forms of communication.
5. An effort will be made to initially respond to all inquiries or requests for information within 24 hours of receipt of the inquiry or request. Complex inquires/requests may require additional response time.
    a. Simple inquiries or requests for information will not be documented. These may include phone calls related to routine questions, and other similar inquiries/requests. The ***wastewater manager*** responding to an inquiry/request will use their best professional judgment to determine if inquiries/requests fall into this category.
    b. Significant or detailed requests for information, inquiries or complaints will be documented. These may include detailed requests for information by interested parties, including homeowners, regulators and elected officials. Acceptable documentation methods include letters, memorandums, email records, telephone logs, written meeting summaries, notes to files, or other similar methods.

Example

Element 10: Operational Controls

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
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Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Operational controls include standard operating procedures, work practices, or other activities that are required to ensure that critical control points are effectively managed.

Elements 3 and 10 are closely linked. Table 3.1 in Element 3 contains detailed documentation of critical control points, related operational controls, standard operating procedures, monitoring and measurements and potential environmental impacts.

Procedures

1. Operational controls have been identified by ***the Town's Wastewater Manager***, based on consideration of information contained in the NBP *National Manual of Good Practice*, legal and other requirements, and state best practices; as well as personal experience of ***the Town's*** staff. Operational controls and related procedures include preventative maintenance procedures, work management systems and any relevant contracted procedures. Current operational controls are found in Table 3.1 of the EMS Manual.

2. Operational controls will be reviewed by ***the Wastewater Manager*** on an annual basis (by ***November 30th***) or whenever significant changes in plant processes and/or operations occur. Revisions (if any) to Table 3.1 and associated SOPs and monitoring/measurements will be made by ***the Wastewater Manager*** following these reviews.

3. Changes will be documented in writing and will be noted in the annual biosolids program report.

NOTE: THAT ANY CRITICAL CONTROL POINTS OR OPERATIONAL CONTROLS IDENTIFIED IN APPENDIX F OF THE NBP'S NATIONAL MANUAL OF GOOD PRACTICE BUT NOT SHOWN HERE WERE CONSIDERED BUT DETERMINED, THROUGH EXAMINATION OF FACILITY OPERATIONS, TO NOT BE RELEVANT TO THE PROCESSES USED AT THIS FACILITY

Example

Element 11: Emergency Preparedness & Response

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Having well-defined Emergency Preparedness and Response procedures are an important aspect of biosolids management activities. These procedures help to minimize the risk associated with unusual or emergency situations that can potentially impact human health or environmental quality.

Procedure

1. ***The Town's Wastewater Treatment Plant*** has an ***Emergency Response Manual*** which is formally reviewed and updated a minimum of once every ***three*** years. Interim revisions to specific sections of the ***Emergency Response Manual*** are made on an "as needed" basis.

2. The ***Emergency Response Manual*** establishes clear protocol for how a wide variety of situations should be handled. Copies of the ***Emergency Response Manual*** a kept in the ***Wastewater Manager's office***. Important emergency contact information is kept in all vehicles used in ***the Town's*** biosolids program, including contractor vehicles.

3. Testing and training with respect to safety and emergency response procedures is conducted on a periodic basis as determined by ***the Wastewater Manager***.

4. The ***hauling and application of biosolids*** is performed by a contractor to ***the Town.*** Relevant portions of ***the Town's Emergency Response Manual*** are applicable to these contracted activities and the contractor is not required to develop their own Emergency Response and Preparedness Plans. The contractor is required to follow relevant sections of ***the Town's Emergency Response Manual.***

Example

Element 12: Documentation, Document Control & Recordkeeping

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town has established and maintains documentation for the biosolids management program, including the 17 elements of its EMS. Procedures have been established to ensure that biosolids management program documentation is reasonably available, has been created following established document creation protocol, is kept up to date through periodic reviews and revision (if applicable), and is properly documented with version information, effective dates and references to replaced or superseded versions. Record retention periods are also established.

Procedure

1. The following documents related to ***the Town's*** EMS program or relevant biosolids management activities are considered "controlled" documents:

    a. Policy statements
    b. The EMS Manual
    c. SOPs

2. A master document is the controlled document and will be maintained ***as a hard copy in the Wastewater Manager's office***. The master version of a document will contain a header or a footer stating that it is the master version.

3. Standard operating procedures and the EMS manual will contain the following document control information:

Created/Approved:	***By:***
Date issued:	
Date last reviewed:	***By:***
Date last revised:	***By:***

4. All EMS documents, including policy statements, process control SOPs, equipment maintenance SOPs and all other relevant SOPs and the EMS Manual will be maintained in the ***Wastewater Manager's office***.

5. Version and revision history will be maintained for all controlled documents.

6. Record retention periods will be consistent with ***the Town's*** records retention policy. When documents have reached the retention date, the document will be reviewed by the ***Wastewater Manager*** to determine whether the retention period needs to be extended.

7. Data resulting from monitoring and measurement activities is retained in ***as hard copy files in a designated cabinet in the Wastewater Manager's office.*** This information is retained ***for 10 years*** and then discarded.

8. ***The Wastewater Manager*** has sole responsibility for updating/revising the EMS manual to reflect current practices. Minor grammatical edits, links to new or revised documents, etc. are not considered significant changes. Updates/revisions will generally made in response to one or more of the following:

    a. Internal audits
    b. External audits
    c. Operational changes
    d. Annual reviews of Critical Control Points, Operational Controls and biosolids program goals and objectives
    e. Annual Biosolids Management Program Performance Report

Example

Element 13 – Monitoring and Measurement

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

Monitoring and measurement activities conducted by ***The Town of Anytown*** generally fall into one of the following three categories:

- Activities conducted to demonstrate compliance with legal/regulatory requirements.
- Activities conducted to document performance at critical control and operational control points.
- Activities conducted to track progress toward achieving biosolids program goals and objectives.

The Town's Biosolids permit and or NPDES permit identifies monitoring, measurement and reporting requirements for solids and biosolids by ***the State DEP*** and/or EPA, and addressed here as essential to the overall quality of treatment plant operations. ***The Town*** also conducts additional monitoring to measure performance at critical control points. Table 3.1 contains a comprehensive listing of monitoring and measurements.

The Town stores all of its monitoring data as hard copy paper files. The files are stored in a filing cabinet in the Wastewater Manager's office. Data collected to comply with legal requirements is stored for the length of time required by regulation. All other data is stored for 10 years and then discarded.

Procedure

1. Monitoring and measurement activities will be reviewed by ***the Wastewater Manager*** an annual basis (by ***December 15th***) or whenever significant changes in plant processes and/or operations occur. Revisions (if any) to Tables 3.1 and associated SOP's and monitoring/measurement documents will be made by the ***Wastewater Manager***.
2. Analytical or instrumentation data is stored ***as hard copy files in a designated cabinet in the Wastewater Manager's office. Data collected to comply with legal requirements is stored for the length of time required by regulation. All other data is stored for 10 years and then discarded.***

3. Progress towards meeting goals and objectives will be tracked at intervals deemed appropriate by the ***Wastewater Manager***. Progress will be noted on the Goals and Objectives Action Plan Template.

4. The ***Wastewater Manager*** is responsible for evaluating the need for monitoring and measurement activities (if any) on the part of the contractor and incorporating necessary language into the service agreement(s). The Wastewater Manager will be responsible for making any necessary changes to the EMS manual and supporting material to reflect monitoring and measurement responsibilities required on the part of the contractor.

Example

Element 14: Nonconformances – Preventive & Corrective Action

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The purpose of this element is to establish, document and maintain procedures for investigating noncompliance with EMS protocols, legal/regulatory and other requirements, including conformance issues that may arise from monitoring/ measurement activities, or nonconformances noted as a result of internal or external EMS audits.

Procedure

1) *NPDES* Related Legal/Regulatory Nonconformances

Legal/Regulatory Requirements are either specifically identified in ***the Town's NPDES*** Discharge Permit, Biosolids permit, or are incorporated by reference. The permit(s) contains procedures for investigating nonconformances of legal/regulatory requirements identified in the permit.

2) EMS Nonconformances Identified During Internal Audits

a. Internal audits will be conducted in accordance with procedures developed under Element 16.

b. An audit worksheet will be completed for each element audited. The worksheet will contain the following information:

i. Element #
ii. Audit type (for example, internal or external audit)
iii. Auditor's name
iv. Time period being audited
v. Audit date(s)
vi. Summary of findings
vii. Nonconformances (if any) and cause
viii. Corrective actions already taken (if any)
ix. Recommended additional corrective actions (if any)

x. Person(s) responsible for implementing corrective action(s)
xi. Changes in policies, programs, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any)
xii. Estimated completion date
xiii. Required resources
xiv. Tracking

c. The auditor will complete (i) through (v) above, as well as all specific questions contained in the worksheets. A current copy of the NBP Third Party Auditor's Guidance document will be available as a resource to the internal audit team.

d. Completed audit worksheets will then be submitted to ***the Wastewater Manager***. ***The Wastewater Manager*** will complete (vi) through (xiv) on the worksheet. This may be done by completing the appropriate sections directly on the worksheet or addressing them through a separate written report.

e. ***The Wastewater Manager*** is responsible for tracking progress. Progress will be tracked using methods that ***the Wastewater Manager*** deems appropriate. For minor nonconformances, progress will be tracked every ***4*** weeks. For major nonconformances, progress will be checked every ***2*** weeks. Tracking will be documented by completing the tracking sheet which is included as part of the audit worksheet.

f. ***The Wastewater Manager*** will prepare and submit a written report to ***the Public Works Director*** by ***November 1st*** of each year, summarizing the internal audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances. The audit report may be a stand alone document or may be included as part of other prepared reports (e.g. the Biosolids Management Performance Report). The audit report will be ***provided to interested parties upon request***.

3) EMS Nonconformances Identified During 3rd Party Audits

a. 3rd party audits will be conducted in accordance with the procedures identified by the National Biosolids Partnership.

b. Audit reports will be submitted to ***the Town's Wastewater Manager***.

c. If the auditor identifies nonconformances, ***the Wastewater Manager*** will follow the steps listed under Step #2b (ii-vi) above.

d. Minor nonconformances will be corrected within a ***90*** day period and major nonconformances will be corrected within a ***30*** day period, unless the auditor and ***the Town*** agree that these timeframes need to be extended.

Sample audit and corrective action worksheet

i. Element #

ii. Audit type:

iii. **Auditor's name:**

iv. **Period being audited:**

v. **Audit date(s):**

vi. **Summary of findings:**

vii. **Nonconformances (if any) and cause:**

viii. **Corrective actions already taken (if any):**

ix. **Recommended additional corrective actions (if any):**

x. **Person(s) responsible for implementing corrective action(s):**

xi. **Changes in policies, programs, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any):**

xii. **Estimated completion date:**

xiii. **Required resources:**

xiv. **Tracking:**

Corrective action worksheet

Date	Status of corrective action	Supporting documentation

Example

Element 15: Biosolids Management Program Report

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town will periodically prepare a performance report that provides summary information on activities associated with the biosolids management program(s) and the EMS.

Procedure

1) ***The Wastewater Manager*** will prepare a written report on an annual basis that summarizes the performance of the biosolids management program. The performance report will be completed by ***February 28*** of each year and will address performance during the previous calendar year. At a minimum, the report will contain the following information:

    a. Summaries of monitoring data and other measurements that demonstrate the performance of ***the Town's*** biosolids program relative to established goals, objectives and legal requirements.
    b. Summary of relevant contractor activities.
    c. Summaries of actions that have been taken on a voluntary basis.
    d. Progress towards achieving biosolids program goals and objectives.
    e. A summary of internal audits.
    f. A summary of independent third party audits (if applicable).

The performance report will be available ***to interested parties.***

Example

Element 16: Internal EMS Audit

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town will conduct periodic internal audits of the EMS program in order to determine the effectiveness of the biosolids program.

Procedure

1) ***The Town*** will conduct internal audits of the EMS program on an annual basis, except in those years when a formal 3rd party audit is conducted.
2) Internal audits will be completed by ***January 20*** of each year and will address program activities completed during the previous operating period.
3) The audit will be conducted by ***the Town's*** EMS Internal Audit Team under the direction of ***the Wastewater Manager***. The EMS Internal Audit Team will consist of ***the Public Works Director, the State Rural Water Association circuit rider and a wastewater manager from another agency***.
4) The audit will evaluate the effectiveness of the biosolids program, including progress toward goals and objective, response to non-conformances, management review, public participation and communications. Specific EMS Elements may be evaluated as a part of this review, at the discretion of the Wastewater Manager.
5) All documents and records related to internal audits will be maintained in ***the Wastewater Manager's office***.
6) The NBP Agency EMS Guidance Manual and other appropriate documents will be made available as a resource to the audit team. The objective methods listed in Guidance are as follows:
    i. Document and records review
    ii. Interviews
    iii. Direct observation
7) Nonconformances will be addressed using the procedure identified in Element 14.
8) ***The Wastewater Manager*** will prepare and submit a written report to ***the Public Works Director*** by ***February 15*** of each year, summarizing the internal audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances. The audit report may be a stand alone document or may be included as part of other prepared reports (e.g. the Biosolids Management Performance Report). The audit report will be available ***electronically on the Town's website and hard copies provided to interested parties upon request***.

9) ***The Wastewater Manager*** will periodically evaluate the need to provide training or guidance to the internal auditors. ***The Wastewater Manager*** will be responsible for coordinating any subsequent activities related to training or guidance.

Sample audit and corrective action worksheet

i. Element #

ii. Audit type:

iii. Auditor's name:

iv. Period being audited:

v. Audit date(s):

vi. Summary of findings:

vii. Nonconformances (if any) and cause:

viii. Corrective actions already taken (if any):

ix. Recommended additional corrective actions (if any):

x. Person(s) responsible for implementing corrective action(s):

xi. Changes in policies, programs, plans, operational controls and monitoring/measurements needed to prevent reoccurrence (if any):

xii. Estimated completion date:

xiii. Required resources:

xiv. Tracking:

Tracking Worksheet

Date	Status of corrective action	Supporting documentation

Example

Element 17: Management Review

Created/Approved:	***03/30/2005***	**By:** ***Sam Smith, Public Works Director***
Date issued:	***03/30/2005***	
Date last reviewed:	***03/30/2006***	***By: Jane Doe, Wastewater Manager***
Date last revised:	***03/30/2005***	**By:** ***Jane Doe, Wastewater Manager***

Introduction

The Town of Anytown will conduct a management review of its biosolids and EMS program on an annual basis. The purpose of this review will be to address the possible need for changes to policy, goals and objectives, the biosolids management program, and other EMS elements based on internal EMS audit results, third party verification audit results, changing circumstances, and ***the Town's*** commitment to continual improvement.

Procedures

1) ***The Wastewater Manager*** will review EMS and related biosolids management activities on an annual basis.
2) The review will be conducted by ***March 31*** of each year and will cover activities conducted during the previous year.
3) The scope will include:
    a. Review monitoring data and other measurements that demonstrate the performance of ***the Town's*** biosolids program relative to established goals, objectives and legal requirements.
    b. Review progress towards achieving biosolids goals and objectives.
    c. Review internal audit results.
    d. Review of performance relative to each of the 17 elements of the EMS.
    e. Review 3rd party audit results.
    f. Review the need for changes in existing policy or the adoption of new policy to support the EMS and biosolids related activities.
4) To facilitate the review, the ***Wastewater Manager*** will prepare a written report that addresses each of the above areas. The report will include recommendations (if any) for changes that should be considered by the ***Public Works Director***.

5) The report and management review will be carried out in close coordination with the Biosolids Management Program Performance Report and the internal EMS audit. To the extent practicable, an effort will be made to develop a single report on an annual basis.
6) The ***Wastewater Manager*** will have a meeting with the ***Public Works Director*** to discuss the report.
7) Any changes to policies, goals/objectives, plans, procedures, work practices and other EMS elements deemed necessary as part of the management review will be documented in writing by the ***Wastewater Manager***.
8) The ***Wastewater Manager*** will develop a schedule and action plan to address recommendations from the management review.