



Encina Wastewater Authority
Environmental Management System (EMS) Manual

I have reviewed and approved the Encina Wastewater Authority (EWA) EMS Manual. The Director of Environmental Compliance, who has been appointed EMS Coordinator, is authorized to make changes to this document as necessary.



Kevin M. Hardy
EWA General Manager

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Date

Encina Wastewater Authority

EMS Manual

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Element 1: EMS Manual

Introduction

The Encina Wastewater Authority (EWA) is a joint powers authority consisting of six member agencies: the Cities of Vista, Carlsbad and Encinitas, as well as the Vallecitos Water District, the Buena Sanitation District and the Leucadia Wastewater District. The EWA service area, which is located in North San Diego County, encompasses a population in excess of 350,000 and covers a 125 square mile area.

EWA operates the Encina Water Pollution Control Facility, which utilizes an activated sludge treatment process to meet secondary treatment requirements. Approximately 25% of the treated effluent is distributed to water reclamation facilities, while the rest is discharged to the Pacific Ocean. Wastewater solids undergo anaerobic digestion to meet Class B standards. The solids are then dewatered utilizing centrifuges, followed by a heat dryer, which produces Class A biosolids pellets.

EWA has been beneficially using its biosolids since the late 1980's. Prior to 2009, EWA produced Class B biosolids, which were used for land application in Southern California. Following bans by local counties on the application of Class B biosolids, EWA began hauling its biosolids to Yuma, Arizona. Due to increasing disposal costs associated with the price of fuel, EWA conducted a study to identify other options. Based on the findings of this study, a heat dryer was installed, which resulted in the production of Class A biosolids pellets. EWA subsequently entered into an agreement with CEMEX to utilize the pellets as a biofuel in their Victorville cement kiln.

EWA contracts with Solids Solutions for biosolids transportation. Solid Solutions hauls EWA's biosolids pellets to CEMEX when the kiln is in operation. During outages, they haul EWA's biosolids to Yuma, Arizona for land application.

Contracts with Solids Solutions and CEMEX require them to handle EWA's biosolids in accordance with applicable regulatory requirements and to maintain associated documentation. EWA also conducts annual site inspections and reviews records to confirm compliance.

EWA is committed to proactively addressing the challenges encountered with respect to biosolids management and has received national attention for its innovative strategies. Implementation of the heat drying technology has provided EWA with more options for beneficially using its biosolids, reduced disposal costs by about 80%, and decreased vehicular emissions associated with biosolids transportation. EWA has also developed a unique Biosolids Management Plan which lays out a diversified portfolio of reuse options that are planned for implementation over a ten-year period.

EWA is committed to continually improving all aspects of its biosolids management program. One of the tools utilized is EWA's Environmental Management System (EMS) Program. An EMS provides a standardized framework to develop, implement, evaluate and modify existing operating practices, as necessary.

On August 14, 2000, EWA's General Manager signed a Letter of Understanding with the National Biosolids Partnership (NBP) in which EWA agreed to become a demonstration agency to test the NBP's EMS Program. EWA committed to implement an EMS consistent with the NBP's EMS blueprint and to comply with the NBP's Code of Good Practice. On August 10, 2005 EWA became the ninth agency in the nation to obtain NBP certification of its EMS Program.

This EMS Manual describes EWA's Environmental Management System for biosolids. The EMS is a valuable program that will help EWA continue to successfully manage its biosolids in the future.

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 EMS Coordinator will make revisions to the EMS manual on an "as needed" basis.
3. The most recent version of the EMS Manual will be posted on EWA's EMS website (www.encinajpa.com/ems).
4. The EMS Coordinator will provide notification of significant changes to the EMS Manual to EWA staff and other interested parties through one or more of the communication tools listed in Element 9.

Element 2: Biosolids Management Policy

Introduction

EWA formally adopted the following Biosolids Management Policy on January 28, 2009, which establishes guiding principles for EWA's biosolids management program and the EMS.

EWA's Biosolids Management Policy

It is the policy of the Encina Wastewater Authority to:

- Pursue sustainable biosolids reuse options that protect human health and environmental quality, are fiscally responsible and provide flexibility with respect to end use;
- Follow the Code of Good Practice for biosolids developed by the National Biosolids Partnership; and
- Implement the Encina Wastewater Authority's Biosolids Management Plan.

The Code of Good Practice is included at the end of this section.

Procedure

1. The EMS Coordinator is responsible for ensuring that the biosolids management policy is implemented and communicated to employees, contractors and other interested parties, using one or more of the communication tools listed under Element 9.
2. Methods used to accomplish Procedure 1 include, but are not limited to the following:
 - a. Posting the Biosolids Management Policy on the EMS website (www.encinajpa.com/ems).
 - b. Discussing the Biosolids Management Policy with employees during EMS Awareness training events.
 - c. Providing a copy of the Biosolids Management Policy to the EMS internal audit team.
 - d. Talking to biosolids contractors during site visits about how the policy affects activities conducted by them.
3. If revisions to the current policy statement are needed because of changing conditions, the EMS Coordinator will notify the Executive Team of the issue and discuss suggested changes.
4. The Biosolids Management Policy will also be discussed during the annual Management Review to determine if changes are needed.
5. The General Manager will bring proposed revisions to EWA's Board of Directors for consideration.

6. If revisions to the policy are approved by EWA's Board of Directors, the EMS Coordinator will communicate the revised policy as per Step 1 above and will update the policy in the EMS Manual and on the EMS website.
7. The internal audit (Element 16) and management review (Element 17) processes will be used to evaluate if EWA is effectively implementing its Biosolids Management Policy.

CODE of GOOD PRACTICE

The Code of Good Practice (the Code) is a broad framework of goals and commitments to guide the production, management, transportation, storage, and use or disposal of biosolids - in short, a comprehensive Environmental Management System for Biosolids (EMS). Those who embrace the Code and participate in the EMS commit to "do the right thing." Specifically, Code subscribers and EMS participants pledge to uphold the following principles of conduct:

<p>COMPLIANCE: To commit to compliance with all applicable federal, state, and local requirements regarding production at the wastewater treatment facility, and management, transportation, storage, and use or disposal of biosolids away from the facility.</p>	<p>CONTINGENCY & EMERGENCY RESPONSE PLANS: To develop response plans for unanticipated events such as inclement weather, spills, and equipment malfunctions.</p>
<p>PRODUCT: To provide biosolids that meet the applicable standards for their intended use or disposal.</p>	<p>SUSTAINABLE MANAGEMENT PRACTICES AND OPERATIONS: To enhance the environment by committing to sustainable, environmentally acceptable biosolids management practices and operations through an environmental management system.</p>
<p>ENVIRONMENTAL MANAGEMENT SYSTEM: To develop an environmental management system for biosolids that includes a method of independent third-party verification to ensure effective on-going biosolids operations.</p>	<p>PREVENTIVE MAINTENANCE: To prepare and implement a plan for preventive maintenance for equipment used to manage biosolids and wastewater solids.</p>
<p>QUALITY MONITORING: To enhance the monitoring of biosolids production and management practices.</p>	<p>CONTINUAL IMPROVEMENT: To seek continual improvement in all aspects of biosolids management.</p>
<p>QUALITY PRACTICES: To require good housekeeping practices for biosolids production, processing, transport, and storage, and during final use or disposal options.</p>	<p>COMMUNICATIONS: To provide methods of effective communication with gatekeepers, stakeholders, and interested citizens regarding the key elements of each environmental management system, including information relative to system performance.</p>

Element 3: Critical Control Points

Introduction

Critical control points are those biosolids management activities under the direct control or influence of EWA, which have the potential to create significant negative environmental impacts if not effectively managed. These include activities that can affect the quality of EWA's biosolids, how biosolids are managed, or how EWA's biosolids program is viewed by the general public and regulators.

Table 3.1 identifies EWA's biosolids value chain, the associated critical control points, operational controls used to ensure biosolids quality (Element 10), applicable legal and other requirements (Element 4), and potential environmental impacts that could result from inadequate control of the critical control points. The critical control points were selected by EWA's Management Team after reviewing information contained in the National Manual of Good Practice and identifying what was applicable to EWA's operations. The potential environmental impacts were assigned risk codes based on the results of a risk assessment.

Procedure

1. The information in Table 3.1 will be reviewed during the annual Management Review, when there are changes in regulatory or other requirements, or whenever major operational changes occur.
2. If revisions to the critical control points are deemed necessary, information related to roles/responsibilities (Element 7), operational controls (Element 10), monitoring/measurement (Element 13), and any other relevant areas of the EMS (including potential environmental impacts listed in Table 3.1) will also be reviewed and modified by the EMS Coordinator as appropriate.
3. The Executive Team will periodically conduct a risk assessment to evaluate the risk of potential environmental impacts for each critical control point. A risk code (1-extreme; 2-high; 3-moderate; 4-low) will be identified for each environmental impact based on its potential frequency (improbable, possible, occasional, periodical, frequent) and severity of impact (slight, moderate, severe, catastrophic).
4. The EMS Coordinator will notify the NBP and EWA's third-party auditor, in writing, of any changes in critical control points or their associated environmental impacts.

TABLE 3.1

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Wastewater Pretreatment & Collection	Industrial Users	Industrial User permits Industrial User inspection & sampling program Enforcement Response Plan & Guide Industrial User Permit Screening Survey	40 CFR Part 403 NPDES permit EWA's Pretreatment Ordinance	Water pollution - 2 Land pollution - 3 Air pollution - 4 Odors - 4
	Commercial Users	BMP Program for non-permitted Industries		
	Residential Users	Public outreach Member agency communications		
	Atypical Discharges	Special Use Permits		
	Waste Haulers	SOP #24 – Discharge of Septic Tank & Chemical Toilet Wastes at the EWPCF SOP #13 - Member Agency Waste Discharges at the EWPCF Sampling of waste haulers		
	Infiltration & Inflow	SOP#5 – Contingency Plan for Flooding & Infiltration		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

TABLE 3.1 (Continued)

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Wastewater Treatment & Solids Generation	Preliminary Treatment - Grit & Screenings	Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual	NPDES permit Air permit NBP Code of Good Practice	Water pollution - 2 Land pollution - 4 Air pollution - 4 Odors - 4
	Primary Treatment	Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual SOP #50 – Primary Scum Pumping		
	Secondary Treatment	Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual		
	Tertiary Treatment	Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

TABLE 3.1 (Continued)

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Solids Stabilization, Conditioning, & Handling	Anaerobic Digestion	SOP #19 – Digester Operations – Class B Biosolids SOP #10 – Digester Mixing Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual Lab monitoring (volatile solids reduction)	40 CFR Part 503 Air permit NBP Code of Good Practice	Water pollution - 2 Land pollution - 3 Air pollution - 3 Odors - 3
	Centrifuges	SOP #66 – Centrifuge Standard Operating Procedure SOP #65 – Centrifuge Polymer System Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual Lab monitoring (NaNIs, percent solids)		
	Dissolved Air Flotation Thickeners	Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

TABLE 3.1 (Continued)

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Solids Stabilization, Conditioning, & Handling (Continued)	Heat Dryer	SOP #62 – Heat Dryer System Operation Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual Lab monitoring (percent solids, fecal coliform, heat value)	40 CFR Part 503 Air permit NBP Code of Good Practice	Water pollution - 2 Land pollution - 3 Air pollution - 3 Odors - 3
	Regenerative Thermal Oxidizer (RTO)	SOP #63 – RTO Startup & Shutdown Operation Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual Emissions testing		
	Odor Control	SOP #2 – Odor Complaints Equipment maintenance (CMMS) Daily and monthly checklists Plant process control and monitoring Master Operations Log O&M Manual		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

TABLE 3.1 (Continued)

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Biosolids Storage & Transportation	Truck and Trailer	Biosolids hauling contract Trailer Inspection Checksheet	DOT regulations	Water pollution - 4 Land pollution - 4 Air pollution - 4 Odors - 4
	Truck Loading System	SOP #64 – Biosolids Loading Equipment maintenance (CMMS) O&M Manual	NBP Code of Good Practice	
	Transportation	Biosolids hauling contract Contractor SOPs (Spill Response, Biosolids Hauling, Biosolids Transportation) Sludge hauling manifests SOP # 54 – Biosolids Contractor Hauling & Site Inspections SOP # 32 - Biosolids Spill Response Plan		
	Off-line Digesters (emergency storage)	SOP #20 - Emergency storage of digested sludge		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

TABLE 3.1 (Continued)

Biosolids Value Chain	Critical Control Points	Operational Controls	Legal & Other Requirements	Potential Environmental Impacts – Risk Code
Biosolids Use or Disposal	Site Management Practices - site location - offloading location - storage/staging area - setbacks for surface water, neighbors, wells - depth to groundwater - agronomic rate - truck cleaning site - dust control - odor control	SOP # 54 – Biosolids Contractor Hauling & Site Inspections Signed contract with contractor specifying compliance with all local, state, and federal regulations Contractor SOPs (Biosolids Land Application, Biosolids Reception at Plant, Biosolids Truck Unloading, Biosolids Fire & Spill Prevention, Biosolids Transfer to the Surge Bin, Biosolids Dust Control, Biosolids Consumption) Agronomic loading rate calculations	40 CFR Part 503 ADEQ regulations Cement kiln air permits NBP Code of Good Practice	Water pollution - 4 Land pollution - 4 Air pollution - 4 Odors - 4
	Biosolids Quality	SOP #19 – Digester Operations – Class B Biosolids SOP #57 - Biosolids Sampling Lab monitoring (volatile solids reduction, NANIs, percent solids, fecal coliform, heat value)		
	Landfill Contingency	Contingency agreement with landfill Contingency agreement with hauling contractor Lab monitoring (waste profile)		

Risk Code: 1 - Extreme; 2 - High; 3 - Moderate; 4 - Low

Element 4: Legal & Other Requirements

Introduction

Identifying legal and other requirements that impact the various aspects of EWA's biosolids program is extremely important. Most of the existing requirements are reflected in EWA's NPDES permit and the Federal 40 CFR Part 503 regulations. However, new regulations are periodically proposed by various agencies and must be identified and tracked to assess the potential effects on EWA's biosolids program.

Procedure

1. EWA utilizes the following sources of information to identify and track legal requirements that affect biosolids management:
 - a. NACWA Regulatory and Legislative Updates,
 - b. Water Environment Federation Fact Sheets,
 - c. NBP Weekly Biosolids Updates,
 - d. Membership in professional organizations (SCAP, CWEA, CASA, WEF, NACWA),
 - e. Workshop, seminar and technical conference attendance,
 - f. Personal contacts with key individuals at local, state and federal agencies, and
 - g. Consulting engineers
2. The EMS Coordinator is responsible for ensuring that EWA is aware of potential changes to regulations. The EMS Coordinator will:
 - a. Identify potential changes to regulations through review of information from various sources identified in Procedure 1 above;
 - b. Evaluate potential effects on EWA's biosolids program; and
 - c. Determine the appropriate actions and schedule, including the need to involve other EWA staff.
3. Other requirements that impact EWA's biosolids program include the voluntary commitment to comply with the NBP Code of Good Practice.
4. The EMS Coordinator is responsible for ensuring that the Biosolids Management Policy (Element 2), critical control points (Element 3), operational controls (Element 10), monitoring and measurement activities (Element 13), and SOPs are updated, as appropriate, to incorporate changes in regulations and the NBP Code of Good Practice.
5. Supervisors are responsible for communicating changes in procedures to appropriate EWA staff.
6. The Resource Recovery Manager is responsible for ensuring that contractors handling EWA's biosolids comply with any new requirements.
7. Compliance with legal and other requirements is determined through various monitoring and measurement activities (Element 13).

Element 5: Goals & Objectives

Introduction

EWA's business planning process includes biannual strategic planning sessions with its Board of Directors. During these sessions, the Board reviews EWA's mission statement, vision and organizational values, and identifies key issues facing the organization that need to be addressed over the next five years. EWA's Executive Team uses this input to develop a five-year business plan.

EWA's business plan includes four Strategic Focus Areas (SFAs): #1 - Environmental Protection; #2 – Effective & Motivated Workforce; #3 – Asset Management; and #4 – Organizational Effectiveness. Each SFA contains a number of specific programs that have an aspirational goal statement, short-term and long-term objectives, and a responsible party. Each objective has a critical success indicator and a completion target.

One of the programs within SFA#1 is the Biosolids Management Program. The stated goal of this program is to maintain independently verified compliance with national biosolids management standards while implementing a diversified portfolio of biosolids reuse markets. Objectives for this program are established primarily based on EWA's Biosolids Management Plan, which is a roadmap for developing various markets for EWA's biosolids pellets.

Procedure

1. EWA's business plan will be updated every two years.
2. In establishing objectives for the biosolids management program, the following items will be considered:
 - a. EWA's Biosolids Management Plan;
 - b. EWA's Biosolids Management Policy;
 - c. Input (if any) received throughout the year from the general public, regulators, elected officials, and other interested parties; and
 - d. Input from EWA staff.
3. Objectives will be established using SMART criteria (Specific, Measurable, Achievable, Relevant and Time-bounded).
4. Objectives will be established in each of the four EMS outcome areas: environmental performance, regulatory compliance, quality management practices and relations with interested parties.
5. Final objectives will be posted on the EMS website (www.encinajpa.com/ems).
6. The EMS Coordinator will prepare an action plan to support each objective that contains a schedule and assigns a responsible party.
7. The EMS Coordinator will be responsible for tracking progress toward each objective on a regular basis.

8. Progress on objectives will be discussed in Executive Team meetings and the annual Management Review to determine if things are on track or if changes are needed (Element 13).
9. Quarterly reports will be provided to EWA's Board of Directors regarding the status of objectives for the current fiscal year.
10. Progress on objectives will be summarized in the internal audit report and the Annual Biosolids Program Report.

Element 6: Public Participation in Planning

Introduction

EWA operates a well managed biosolids management program, which historically generated little public interest. The level of public outreach increased since EWA implemented a Biosolids EMS Program and also during the planning and implementation of the heat dryer project. Public confidence remains high, while public interest in participating in planning processes is relatively low.

Public interest has been more of an issue with regard to land application. EWA land applied biosolids in Riverside County until 2001 when public concern resulted in a ban on Class B biosolids application. As a result, EWA began hauling its biosolids to Yuma, Arizona. The Biosolids Coordinator for the Arizona Department of Environmental Quality informed EWA that they do not want attention drawn to the fact that a number of Southern California POTWs are hauling biosolids to their state, thus a passive public participation approach is followed for the land application site in Arizona.

EWA's approach to providing the public with meaningful opportunities to provide input in planning processes is consistent with legal requirements, the degree of current public interest, historical levels of public involvement and related local circumstances. EWA uses input obtained from interested parties as the basis for continuing to improve its public participation approach. This approach reflects EWA's commitment to the NBP's Code of Good Practice and its plan for independent third-party verification of conformance with the EMS requirements.

Procedure

1. EWA will communicate with interested parties, which may include the public, contractors, EWA Board members, member agency staff, governmental officials, regulatory agencies and the media.
2. EWA will use a combination of both formal and informal mechanisms to provide opportunities for the public to participate in planning processes. Methods to obtain public participation are outlined in Element 9.
3. When 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 General Manager. Formal participation opportunities include:
 - a. EWA Board of Director's meetings – EWA's Board meetings are open to the public. Board meeting agendas and minutes are available on EWA's website at www.encinajpa.com.
 - b. Public hearings – Other public hearings may be scheduled when major plant modifications are planned.

4. Opportunities are available for the public to provide input through informal avenues. Informal participation opportunities include:
 - a. Website – EWA maintains an EMS website (www.encinajpa.com/ems) that contains information about its biosolids management program. The site has a “Contact Us” page where people can email their questions/comments.
 - b. Interested Parties – EWA maintains an email list of people who have identified themselves as Interested Parties. These individuals receive notification of upcoming third-party audits and the opportunity to participate or provide input. They also receive copies of the Annual Biosolids Program Report, and internal and external audit reports.
 - c. E-bulletin – EWA publishes an e-bulletin entitled RenEWAbLe News that has contact information for people to submit questions/comments.
 - d. Plant tours – EWA provides tours to various school and community groups.
 - e. Community outreach – EWA staff participates in various community outreach events (e.g. street fairs and Public Works fairs) where they distribute biosolids pellets and the Annual Biosolids Program Report, and discuss EWA’s biosolids management program.
 - f. Professional organizations – EWA staff make presentations to various professional organizations regarding EWA’s biosolids program.
5. EWA will record and respond to significant input received from interested parties in a timely manner. The response may vary depending on the nature of input received, but may include phone calls, complaint investigations, emails and letters. Odor complaints and product user input with associated responses are maintained by the Operations Department. Records of public input and related responses will be maintained by the EMS Coordinator.
6. Public and product user input will be presented to the Executive Team for evaluation and included in the summary for the annual Management Review.

Element 7: Roles & Responsibilities

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 various individuals (including contractors) that are specific to the EMS are assigned by the EMS Coordinator.
2. The EMS Coordinator will review existing roles/responsibilities on an annual basis and whenever significant operational changes are made to ensure that roles/responsibilities are appropriately defined, and will make revisions as necessary.
3. General descriptions of the roles/responsibilities for various positions are provided below.

General Manager - serves as the Biosolids Program Manager; is responsible for the overall operation of EWA; ensures adequate resources are available for implementation of the EMS; conducts periodic EMS Management Review; establishes biosolids program goals and objectives; plays a major role in tracking legal requirements.

Assistant General Manager – conducts periodic EMS Management Review; provides input on biosolids program goals and objectives.

Director of Environmental Compliance – serves as the EMS Coordinator; has overall responsibility for the Pretreatment Program, laboratory, permit compliance, safety and EMS Program; monitors EMS program performance; coordinates public outreach activities; prepares Annual Biosolids Program Report; updates EMS documents; coordinates internal and external audits; conducts periodic EMS Management Review; develops and tracks progress on corrective/preventive actions; provides input on biosolids program goals and objectives, and tracks progress; identifies, tracks and assesses impacts of new regulations; assigns roles/responsibilities related to the EMS.

Director of Operations – has overall responsibility for operation of the wastewater treatment plant and biosolids reuse program; manages Wastewater Treatment, Solids Stabilization, Biosolids Storage/Transportation, and Biosolids Use/Disposal critical control points; conducts periodic EMS Management Review; provides input on biosolids program goals and objectives.

Director of General Services – has overall responsibility for maintenance of the wastewater treatment plant and IT program; manages maintenance elements of Wastewater Treatment, Solids Stabilization, and Biosolids Storage/Transportation critical control points; conducts periodic EMS Management Review; provides input on biosolids program goals and objectives.

Resource Recovery Manager – manages biosolids processing operations including the centrifuges, heat dryer and product load-out; manages biosolids hauling and reuse contracts; coordinates schedules for pick-up/delivery of biosolids; monitors biosolids contractor operations; communicates changes in requirements to biosolids contractors.

Chief Plant Operator – manages liquid treatment operations; ensures compliance with all regulatory requirements.

Shift Supervisor/Operator – performs daily tasks associated with operation of the liquid and solids treatment system; maintains documentation to demonstrate compliance with all regulatory reporting requirements.

Maintenance Manager – manages repair and maintenance activities; ensures tasks are completed and proper documentation is maintained.

Mechanical Technician/Maintenance Worker/Electrical Technician – performs preventive maintenance, calibration and repair of treatment plant equipment; maintains documentation of completed tasks.

Maintenance Planner – inputs preventive maintenance tasks and maintenance service requests into the CMMS; coordinates maintenance tasks and ensures necessary parts are available.

Systems Manager – manages EWA's IT support and electrical activities; responsible for updates to the EMS website and online SOPs and Safety Policies and Procedures (SPPs).

Systems Technician – provides IT support to EWA staff related to networks, servers, databases, computers and phones; ensures data back-ups are maintained.

Laboratory Manager – manages laboratory operations; ensures proper QC procedures are followed and necessary documentation is maintained; coordinates reporting of data as required by EWA's NPDES permit, in support of the biosolids program, and to operations staff.

Chemist – collects samples and performs analyses as required by EWA's NPDES permit, to assess plant performance, and in support of the biosolids program; informally communicates results to operations staff.

Source Control Manager – manages Pretreatment critical control points; coordinates with member agencies to identify new industrial users; issues discharge permits; takes enforcement action against noncompliant industrial users; coordinates local limits evaluations; updates program documents as necessary.

Industrial Waste Control Inspector – performs industrial user inspections and sampling; conducts public outreach.

Safety & Training Manager – coordinates employee training and maintains associated documentation; reviews/revises emergency procedures and SPPs as necessary.

EWA Board of Directors – approves Biosolids Management Policy, biosolids goals and objectives, and financial resources for implementation of the EMS.

Contractor – EWA uses a contractor for biosolids hauling and land application. The contractor shall supply necessary trucks and trailers, and shall complete a manifest indicating the weight of each load hauled. The contractor is responsible for maintaining records and submitting reports to EWA in support of its EMS including testing results, and reports of any complaints received and corrective actions taken. Additional responsibilities are identified in the contract documents.

Element 8: Training

Introduction

Training is essential for ensuring good job performance. In recognition of its importance, EWA has a full time Safety & Training Manager.

Training occurs through a variety of mechanisms, including:

- On-the-job training
- Tailgates
- All-hands meetings
- Online training
- Vendor provided training
- Attending conferences/workshops

Procedure

1. Training is generally based on performance needs as determined by EWA Directors and Supervisors.
2. The Safety & Training Manager is responsible for scheduling, tracking and maintaining documentation of formal training.
3. EMS Awareness Training is provided to new employees during orientation and throughout the year to all staff during all-hands meetings. The training includes general awareness of the Biosolids EMS Program, as well as how each employee's roles and responsibilities relate to the entire biosolids value chain.
4. Contractors are informed of EWA's EMS Program during contract negotiations. Specific language is inserted in their contract to require them to maintain records in support of the EMS. EWA staff also talks to the contractors about the EMS Program during annual site visits and reviews pertinent records.

Element 9: Communication

Introduction

EWA is committed to proactively communicating information about its biosolids management program. The communication method is somewhat different for internal and external parties, but is consistent with the message and the audience it is intended to reach. The methods chosen are based on local circumstances, the method of biosolids management, the audience's communication history, and the degree of interest in EWA's biosolids management activities.

Procedure

1. The EMS Coordinator will have primary responsibility for ensuring effective communications regarding EWA's Biosolids EMS Program.
2. The EMS Coordinator maintains a list of "Interested Parties" that are interested in EWA's biosolids program. Individuals are added to the list upon supplying their contact information to EWA. Current individuals on the list include:
 - a. EWA's Board of Directors,
 - b. EWA's Member Agency Managers,
 - c. EPA Biosolids Coordinator,
 - d. State Biosolids Regulators,
 - e. Contractor personnel, and
 - f. Others that have expressed interest.
3. Internal parties are informed of EWA's Biosolids Management Policy, their role in the Biosolids EMS, applicable legal and other requirements, and other biosolids related issues by various methods such as:
 - a. EWA Board of Directors' meetings,
 - b. Executive Team meetings,
 - c. Management Team meetings,
 - d. Department meetings,
 - e. All-hands meetings,
 - f. EMS Awareness training,
 - g. Internal emails, and
 - h. EWA's biosolids website
4. External parties are made aware of EWA's Biosolids Program by various mechanisms such as:
 - a. EWA's EMS website (www.encinajpa.com/ems), which contains EWA's Biosolids Management Policy, applicable legal and other requirements, the EMS Manual, goals and objectives for continual improvement, Annual Biosolids Program Reports, internal audit reports, and third-party audit reports;

- b. EWA's Board of Directors' meetings, which are open to the public. Board agendas and minutes are posted on EWA's website (www.encinajpa.com);
 - c. Emails to individuals on the Interested Parties list who receive notification of third-party audits and the opportunity to participate, as well as copies of the Annual Biosolids Program Report, internal audit reports and third-party audit reports;
 - d. Tours of the Encina Water Pollution Control Facility;
 - e. Community events such as street fairs, where staff discuss EWA's biosolids program and distribute biosolids pellets;
 - f. Newspaper articles; and
 - g. Presentations to professional organizations by EWA staff.
5. Biosolids contractors are made aware of EWA's Biosolids EMS Program through:
 - a. Contract negotiations;
 - b. Contract requirements to operate in compliance with EWA's EMS and maintain necessary documentation; and
 - c. Site visits by EWA staff where the EMS Program is discussed.
6. Biosolids contractors are required to document any public complaints related to use of EWA's biosolids and corrective actions taken, and make this information available to EWA.
7. EWA receives public input through various means:
 - a. EWA's EMS website (www.encinajpa.com/ems), which contains a link for comments and question,
 - b. EWA Board of Director's meetings,
 - c. Interested Parties,
 - d. Presentations,
 - e. Tours groups,
 - f. Phone calls,
 - g. Regulatory agencies, and
 - h. Public officials.
8. All questions/comments received through the website are directly forwarded to the EMS Coordinator. Other public input is forwarded to the EMS Coordinator as well. Records of public input and related responses will be maintained by the EMS Coordinator.
9. An effort will be made to initially respond to all inquiries or requests for information within 48 hours of receipt. Complex inquires/requests may require additional response time. Simple inquiries or requests for information will not be documented.
10. Odor complaints will be documented and investigated by the Operations Department in accordance with SOP #2.
11. Feedback from product users and related responses will be maintained by the Operations Department.
12. Public and product user input will be presented to the Executive Team for evaluation and included in the summary for the annual Management Review.

Element 10: Operational Controls

Introduction

Operational controls include standard operating procedures, work practices, or other activities that are required to ensure that critical control points are effectively managed. Table 3.1 in Element 3 contains detailed documentation of critical control points, related operational controls, legal and other requirements, and potential environmental impacts.

Procedure

1. Operational controls have been identified by EWA's Management Team, based on consideration of information contained in the NBP [National Manual of Good Practice](#), legal and other requirements, industry best practices, and personal experience of EWA's staff. Current operational controls are found in Table 3.1 of the EMS Manual.
2. Operational controls will be reviewed annually by the Executive Team and whenever significant changes in plant processes and/or operations occur.
3. New or revised SOPs will be approved by the appropriate Department Director and then uploaded to the desktop of each computer workstation.
4. Necessary revisions to Table 3.1 and will be made by the EMS Coordinator and uploaded to the EMS website (www.encinajpa.com/ems).
5. Contractors are required to develop standard operating procedures related to their handling of EWA's biosolids and provide employee training. EWA staff reviews the SOPs and employee training records during site visits.

Element 11: Emergency Preparedness & Response

Introduction

Having well-defined emergency response procedures is 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. EWA has developed various emergency response plans and procedures that are related to biosolids management activities. These are located on the desktop of each computer workstation.
2. The Safety & Training Manager is responsible for coordinating periodic reviews of emergency plans and procedures, and ensuring that any revisions are uploaded to the desktop of each computer workstation.
3. The Safety & Training Manager is responsible for coordinating and documenting periodic training/drills with respect to safety and emergency response procedures.
4. Per their contract, EWA's biosolids hauling contractor is required to have a Spill Response Plan and to train their employees on emergency response procedures. A copy of the Spill Response Plan and spill clean-up equipment must be carried in trucks used to transport EWA's biosolids.
5. CEMEX's contract requires them to develop procedures for dust control, and fire and spill prevention, and to train their employees on these procedures.

Element 12: Document Control & Recordkeeping

Introduction

EWA 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 effective/review/revision dates.

Procedure

- The following documents related to EWA's EMS program or relevant biosolids management activities are considered "controlled" documents:

Document	Location	Responsible Person
EMS Manual	EMS website	EMS Coordinator
Standard Operating Procedures (SOPs)	Computer desktop	Director of Operations
Emergency Response Plans	Computer desktop	Safety & Training Manager
Contracts with biosolids contractors	Administration building, 2 nd floor file room	General Manager

- The controlled version of the EMS Manual, SOPs and emergency response plans is maintained online, while printed versions are uncontrolled. The person identified above is responsible for updating these documents as necessary and forwarding any revisions to the Systems Supervisor for uploading to the website or computer desktop. These documents are identified with an effective date, last reviewed date, and last revised date. Archived versions of these documents are maintained indefinitely.
- Contracts with biosolids contractors are maintained with other contract files in the Administration building. These are approved by EWA's Board of Directors.
- The following records related to EWA's EMS program or relevant biosolids management activities are considered "controlled" records:

Record	Location	Responsible Person
EWPCF automated data	SCADA	Systems Supervisor
EWPCF checklists/logs	Operations files	Director of Operations
EWPCF maintenance records	CMMS	Maintenance Manager
Biosolids monitoring data	LIMS	Laboratory Manager
Industrial user (IU) sampling data	LINKO	Source Control Manager
IU permits, inspection reports, correspondence	Source Control Program files, server	Source Control Manager
Training records	Safety office	Safety & Training Manager

Record	Location	Responsible Person
Incident investigations	Safety office	Safety & Training Manager
Odor complaints	Operations files, server	Director of Operations
Goals & objectives	EMS office, server	EMS Coordinator
Corrective actions	EMS office, server	EMS Coordinator
Internal/external audit reports	EMS office, server	EMS Coordinator
Annual biosolids program reports	EMS office, server	EMS Coordinator
Management Review	EMS office, server	EMS Coordinator
Interested party input	EMS office	EMS Coordinator

5. Controlled records are retained indefinitely.
6. Biosolids contractors are required to maintain records as specified in their contract in support of EWA's EMS. This may include: manifests indicating the weight of biosolids hauled; analytical testing results; records of employee training; and documentation of complaints and corrective actions taken. EWA staff reviews this documentation on an annual basis.

Element 13 – Monitoring & Measurement

Introduction

EWA conducts monitoring and measurement activities to demonstrate compliance with legal/regulatory requirements (NPDES Permit, 40 CFR Part 503, APCD permits), to document performance at critical control and operational control points, and to track progress toward achieving biosolids program goals and objectives.

Procedure

1. Monitoring and measurement activities are conducted to demonstrate compliance with legal and other requirements (Element 4).
2. Treatment plant operations are monitored by the SCADA system. Operators also record information on daily/monthly checklists and the Master Operations Log. SCADA system data is maintained on the network server. Checklists and logs are maintained by the Operations Department. These records are maintained indefinitely.
3. Equipment maintenance records are maintained in the CMMS, located on the network server. These records are maintained indefinitely.
4. Laboratory data is stored in the Laboratory Information Management System (LIMS), located on the network server. This data is maintained indefinitely.
5. Industrial user sampling data is stored in the LINKO Pretreatment Program database, located on the network server. Industrial user permits, inspection reports, and correspondence are located on the network server and in files maintained by Source Control Program. These records are maintained indefinitely.
6. Progress towards meeting goals and objectives is discussed during Executive Team meetings and the annual Management Review, and tracked by the EMS Coordinator (Element 5).
7. The EMS Coordinator is responsible for evaluating the need for monitoring and measurement activities (if any) on the part of biosolids contractors and ensuring that necessary language is incorporated into their service agreement.
8. Biosolids contractors are required to conduct monitoring and measurement activities to document compliance with legal requirements and their service contract, and to make this information available to EWA.
9. The Resource Recovery Manager is responsible for ensuring that biosolids contractors are conducting required monitoring and measurement activities. Inspection reports, trailer inspection checksheets, hauling manifests, and contractor biosolids testing data are maintained by the Operations Department.
10. When monitoring and measurement activities reveal a nonconformance, appropriate corrective actions will be taken (Element 14).

Element 14: Nonconformances – Preventive & Corrective Action

Introduction

EWA has established formal procedures for investigating odor complaints, spills, and noncompliance with applicable regulatory requirements or with internal EMS procedures that are identified during routine monitoring/measurement activities or internal/external EMS audits.

Procedure

1. Violations of EWA's NPDES and APCD permits will be investigated and responded to in accordance with requirements of the applicable permit. Responses to regulatory agencies will be maintained in the office of the Director of Environmental Compliance.
2. Odor complaints will be investigated in accordance with SOP #2. An Odor Complaint form will be completed detailing the results of the investigation and any corrective actions taken. The original form will be maintained by the Operations Department and a copy saved in the Odor Complaints directory. A quarterly report summarizing any odor complaints will be submitted to the City of Carlsbad Planning Department.
3. Spills will be investigated and the proper notifications made in accordance with SOP #44. A Sanitary Sewer Overflow Report form will be completed, which includes the cause of the spill and any corrective actions taken. The original form will be maintained by the Operations Department and a copy saved in the Spill Reports directory.
4. The EMS Coordinator will complete a Corrective and Preventive Action Request form (CAR) for nonconformances identified by internal and third-party audits. The CAR will describe the nonconformance and be assigned to an individual who is responsible for conducting an investigation by an estimated completion date. This individual is responsible for assessing what caused the problem, and identifying temporary fixes (if applicable) and/or permanent corrective actions to be taken to prevent a recurrence. If the solution is long-term and/or requires major expenditures, it may be included in the next year's tactical plan or budget.
5. Progress toward completing the CARs will be tracked by the EMS Coordinator.
6. Completed CARs will be maintained in the office of the EMS Coordinator.
7. The EMS Coordinator is responsible for making any necessary changes to the EMS Manual or coordinating revisions to procedures and policies, which are identified based on the investigation of any nonconformances.
8. The annual Management Review will include a review of corrective action information to evaluate the effectiveness of the corrective action process and to look for trends. Where trends in causes are identified, these can lead to

preventive action as determined by the Executive Team or EMS Coordinator. This information will also be utilized to develop value chain specific internal audit focus areas and/or to identify areas in the EMS that may need revision or updating based on nonconformances that occurred during the year.

Element 15: Biosolids Management Program Performance Report

Introduction

EWA will publish an Annual Biosolids Program Report that provides summary information on activities associated with the biosolids management program.

Procedure

- 1) EWA will prepare a written report on an annual basis summarizing the performance of the biosolids management program during the previous calendar year. The EMS Coordinator is responsible for developing this report, which will contain the following information:
 - a. Monitoring and measurement results;
 - b. Performance of the biosolids program relative to established goals, objectives and legal requirements;
 - c. Contractor performance;
 - d. Internal EMS audit results; and
 - e. Third-party audit results (if applicable).
- 2) The Annual Biosolids Program Report will be posted on EWA's EMS website and emailed to individuals that have identified themselves as interested parties.

Element 16: Internal EMS Audit

Introduction

EWA will conduct periodic internal audits of the EMS program to evaluate whether it is effectively meeting its Biosolids Management Policy and program requirements, and making progress toward its goals and objectives, as well as to identify opportunities for improvement.

Procedure

- 1) EWA will conduct internal audits of the EMS program on an annual basis. The audit will cover each element of the value chain including: wastewater treatment, solids stabilization, storage and transportation, beneficial reuse, and pretreatment, as well as laboratory operations, information technology and management.
- 2) The audit will consist of: interviews with representatives from departments that support biosolids activities; facility tours/inspections, including biosolids contractors; and a review of records.
- 3) Audit questions will be developed by the EMS Coordinator with input from Department Directors. Questions will address EMS awareness, as well as department-specific issues, including areas of concern identified by the Management Review, third-party audit, or previous internal audits.
- 4) The EMS Coordinator will select an audit team to conduct the internal EMS audit consisting of representatives from each department. Auditors will typically work in teams of two and audit areas outside their area of expertise.
- 5) The EMS Coordinator will meet with the audit team to discuss the purpose of the internal audit, the methodology, and the schedule for completion.
- 6) The audit team will return completed audit questionnaires to the EMS Coordinator along with supporting documentation.
- 7) The EMS Coordinator will prepare a draft audit report for review by the Management Team. The report will summarize the audit findings and assess the effectiveness of the EMS Program, including whether EWA is complying with its Biosolids Management Policy and making progress toward its goals and objectives.
- 8) The final audit report will be placed on EWA's website and emailed to interested parties.
- 9) The EMS Coordinator will develop CARs in response to any nonconformances identified by the audit (Element 14).
- 10) All documents and records related to internal audits will be maintained by the EMS Coordinator.
- 11) The internal EMS audit program will be revised based on feedback received from the audit.

Element 17: Management Review

Introduction

Management review of the Biosolids EMS Program is a continuous process. The EMS is included on biweekly Executive Team meeting agendas and discussed as issues arise. Progress on EMS-related goals is discussed during these meetings, with quarterly updates provided to EWA's Board of Directors.

EWA will conduct a comprehensive review of its Biosolids EMS Program on an annual basis. The purpose of this review will be to assess the possible need for changes to the 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 EWA's commitment to continual improvement.

Procedure

- 1) EWA's Executive Team will conduct an annual review of the Biosolids EMS, which will cover activities conducted during the previous year.
- 2) The EMS Coordinator will schedule the Management Review meeting after completion of the internal audit report.
- 3) The scope will include a review of:
 - a. EWA's Biosolids Management Policy,
 - b. Progress towards achieving biosolids goals and objectives,
 - c. Critical control points and operational controls,
 - d. Public and product user input,
 - e. Corrective action process, and
 - f. Internal/external audit results
- 4) The EMS Coordinator will document findings from the Management Review, including an assessment of the overall suitability, adequacy and effectiveness of the Biosolids EMS. The findings will be distributed to the Executive Team.
- 5) The EMS Coordinator will develop an Action Plan to address necessary changes to policies, goals/objectives, plans, procedures, work practices and other EMS elements identified by the Management Review. Action items will be assigned to a responsible party with a due date.
- 6) The EMS Coordinator will track progress on completion of action items and make changes to the EMS manual as necessary.

GLOSSARY

Biosolids – solid organic matter recovered from a wastewater treatment process that is frequently used as fertilizer.

Biosolids Management Activities – a wide range of activities that impact the quality of wastewater solids and biosolids, including pretreatment activities, wastewater treatment processes, solids stabilization processes, conditioning and dewatering processes, transportation, storage, and beneficial use or disposal.

Biosolids Management Policy – statement by an organization committing it to the principles set forth in the NBP *Code of Good Practice* with respect to biosolids management and any other overall environmental goals voluntarily adopted by the organization.

Biosolids Management Program – a comprehensive program covering an organization's biosolids activities throughout the biosolids value chain, including implementation of management processes for critical control points in order to mitigate environmental impacts, meet legal and other requirements, and execute action plans to achieve biosolids program goals and objectives.

Biosolids Program Goal(s) – performance improvement goals that are consistent with an organization's Biosolids Management Policy to assure biosolids activities comply with applicable laws and regulations, meet quality and public acceptance requirements, and prevent other unregulated adverse environmental and public health impacts by effectively managing all critical control points. Biosolids program goals include, but are not limited to, compliance with specific regulatory requirements, improving biosolids quality and public acceptance, and reducing or eliminating direct/indirect negative environmental impacts.

Biosolids Program Objective(s) – a detailed performance improvement requirement, quantified wherever possible, based on a biosolids program goal. One or more objectives must usually be met in order for the underlying goal to be achieved.

Biosolids Public Acceptance Requirements – biosolids physical, chemical, biological and aesthetic characteristics and management methods that must be met consistently and reliably in order to achieve public acceptance of the organization's selected biosolids management methods.

Biosolids Quality Requirements – biosolids physical, chemical, biological and aesthetic characteristics that must be met consistently and reliably in order to apply the organization's selected biosolids management method(s).

Biosolids Value Chain – sequence of activities from wastewater pretreatment, discharge, and collection through wastewater treatment, solids treatment, and handling, storage, transportation, and disposal or beneficial use of biosolids that impact the quality and stability of biosolids and their suitability for the selected management method.

Code of Good Practice – broad framework of goals and commitments to guide the production, management, transportation, storage and use or disposal of biosolids.

Continual Improvement – EMS process for systematically improving the overall management of biosolids to achieve the organization's biosolids program goals and objectives set forth in the organization's biosolids management policy and the National Biosolids Partnership *Code of Good Practice*.

Corrective Actions – specific actions and steps taken to correct an organization's nonconformance(s) to environmental policies, procedures, and other requirements, and to mitigate any resultant impacts to the environment.

Critical Control Points – those locations, unit processes, events, activities and other requirements in the chain of activities from pretreatment/collection to final biosolids disposition under the organization's direct control or influence that require effective policies, programs, procedures, practices, monitoring, and measurement to assure that biosolids meet the applicable legal requirements for the selected management method. Critical control points include unit treatment processes and all biosolids management activities that are covered under applicable legal and other requirements and/or could otherwise have an impact on the environment.

Emergency Preparedness – a structured emergency planning process to ensure that plausible emergency situations that can affect appropriate biosolids management have been identified, response plans and procedures developed, and trained emergency response personnel and equipment are available and in a state of readiness.

Emergency Response – specific emergency plans and activities that are initiated to contain an emergency situation and bring it under control so as to minimize environmental impacts.

Environmental Management System for Biosolids (EMS) – an organized management system that meets the requirements of the EMS Elements for achieving the biosolids management policy requirements and for developing, implementing, reviewing, and maintaining effective biosolids management programs, procedures, and practices. The EMS needs to manage all critical control points associated with biosolids activities where there is a potential to create significant negative environmental impacts.

EMS Documents – various documents that collectively comprise the biosolids EMS documentation, including the biosolids management policy, procedures, practices, operating instructions, and other supporting documents required by the EMS and applicable biosolids laws and regulations.

EMS Records – various records/reports of biosolids management activities required by the EMS and applicable biosolids laws and regulations, including but not limited to records/reports of monitoring, measurement, laboratory testing, inspections, operating logs, emergency response incidents, outside party inquiries, public participation meetings, audits, corrective actions, management reviews and periodic performance reports. Records describe the results of specific biosolids management activities for a prescribed event, activity, and/or period of time.

Environmental Impacts – any change to the environment (positive or negative) including public health, public nuisance and odor problems, that wholly or partially result directly or indirectly from the organization's activities, products or services, including those activities that alter (positively or negatively) the acceptable disposal/use method or create public nuisance and public health risks.

Environmental Performance – measurable results of the environmental management system based on its biosolids management policy and goals and objectives.

Executive Team – includes the General Manager, Assistant General Manager, Director of Environmental Compliance, Director of General Services, and Director of Operations.

Interested Parties – individuals, groups or other public/private organizations interested in, involved with or otherwise affected by the organization's biosolids management activities, including customers, farmers, regulators and other local/state governmental officials, community residents, the media, environmental and public interest groups, university professors and the general public.

Internal Audit – a systematic internal investigation process for objectively evaluating the organization's conformance to the requirements of the EMS and identifying deficiencies to be corrected or resolved.

Legal Requirements – the federal, state and local environmental laws and regulations that are applicable to an organization's biosolids management program activities.

Management Review – addresses the possible need for changes to the biosolids management policy, goals and objectives, or any EMS element based on internal audit findings, third-party audit results, changing circumstances, and the organization's commitment to continual improvement.

Management Team – includes the Executive Team plus the Chief Plant Operator, Resource Recovery Manager, Safety & Training Manager, Laboratory Manager, Source Control Manager, Maintenance Manager and Systems Manager.

Measurement – a systematic method for estimating, testing, or otherwise evaluating key parameters and characteristics of an organization’s biosolids management activities to determine compliance with a specific standard, regulatory or other performance requirement, or to measure progress toward its biosolids program goals and objectives.

Monitoring – a systematic process of watching, checking, observing, inspecting, keeping track of, regulating or otherwise controlling key parameters and characteristics of an organization’s biosolids management activities to determine compliance with a specific standard, regulatory or other performance requirement, or to measure progress toward its biosolids program goals and objectives.

NBP – an acronym for National Biosolids Partnership, which is a not-for-profit alliance between the Water Environment Federation (WEF), the National Association of Clean Water Agencies (NACWA), and the US Environmental Protection Agency (EPA) whose purpose is to promote safe and environmentally sound biosolids management.

National Manual of Good Practice – detailed set of guidance on the identification of critical control points and the selection of appropriate management practices.

Nonconformance – a deviation from the established biosolids management program and EMS requirements that has the potential to create a noncompliance situation or significant environmental impact.

Operational Controls – ordinances, regulations, standard operating procedures, work practices, technology, instrumentation and process controls, monitoring and other criteria developed, implemented, and maintained by an organization to ensure effective management of all critical control points associated with its biosolids management activities so that the organization’s biosolids program conforms with the biosolids management policy, meets legal and other requirements, and achieves the biosolids program goals and objectives.

Other Requirements – other binding biosolids management practices and environmental requirements to which an organization voluntarily subscribes as part of its environmental management system. Examples include binding agreements with customers, suppliers, and public organizations and commitments to “beyond compliance” performance.

Preventive Actions – specific actions and steps taken to identify, analyze, and eliminate the root causes of noncompliance(s) and nonconformance(s) and to put in place permanent solutions that will prevent a recurrence.

Public Outreach – refers to communicating current and future biosolids plans and operations.

Public Participation – refers to seeking public input and feedback on the biosolids EMS and general biosolids program.