



Third Party Verification Auditor Guidance  
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# 1 Introduction to NBP Biosolids Management Program Third Party Verification

## 1.1 Purpose of this Guidance

The National Biosolids Partnership (NBP) has developed a voluntary Biosolids Management Program (BMP) with the goal of improving the implementation and public acceptance of environmentally sound biosolids management practices. A key component of this program is the creation of an independent, third party BMP verification process to verify that the BMP of participating biosolids organizations satisfy the expectations and requirements established by the NBP. The goal of this guidance – *The Third Party Auditor Guidance* - is to ensure that the requirements and processes of NBP BMP third party verification are clearly established and communicated, and to ensure that the BMP of participating organizations are evaluated in a fair and consistent manner that corresponds with the expectations of the NBP. To this end, this *Auditor Guidance* summarizes the NBP BMP third party verification approach and addresses the following objectives.

- Introduces auditors to the National Biosolids Partnership, the NBP Biosolids Management Program, and the NBP third party verification approach.
- Communicates the requirements for achieving NBP BMP verification, including the specific requirements associated with the 17 elements of the NBP *Elements of a Biosolids Management Program (BMP Elements)*.
- Outlines processes and procedures associated with NBP BMP third party verification.
- Presents the qualifications and requirements that NBP auditors must meet.

While the primary audience for the *Auditor Guidance* is NBP third party auditors, this guidance should also be useful for other audiences interested in the NBP BMP, including organizations seeking verification of their BMP. *However, organizations seeking verification of the BMP do not need to read the Auditor Guidance to understand the requirements and expectations for receiving BMP verification.* These expectations are clearly provided in the other NBP Blueprint documents prepared for biosolids organizations (see section 1.3).

## 1.2 The National Biosolids Partnership

The 1993 U.S. Environmental Protection Agency's Part 503 regulations established federal biosolids management standards with respect to public health and the environment. This regulation has facilitated the expansion of biosolids recycling practices throughout the U.S. Biosolids contain nutrients that can be beneficially used in a wide range of agricultural, forestry, and horticultural applications. Public and regulatory community concerns over effective management of biosolids programs, however, pose formidable challenges to comprehensive beneficial utilization of biosolids.

In 1997, the Association of Metropolitan Sewerage Agencies (now the National Association of Clean Water Agencies (NACWA), the U.S. Environmental Protection Agency (EPA), and the Water Environment NBP Third Party Auditor Guidance - Sept 2024

Federation (WEF) agreed to form the National Biosolids Partnership (NBP). The NBP is a not-for-profit alliance whose purpose is to promote safe, environmentally sound, and publicly acceptable biosolids management. The NBP Biosolids Management Program is designed to be practice-neutral, and includes land filling and incineration practices, as well as beneficial reuse. Biosolids producers, service contractors, and users - together with stakeholders from regulatory agencies, universities, the farming community, and environmental organizations - all have input into shaping the NBP priorities.

### 1.3 The NBP Biosolids Management Program

The NBP has sponsored several initiatives designed to promote responsible biosolids management within the industry with the goal of enhancing the environmental performance and public perception of biosolids programs. The cornerstone of these initiatives has been the development and implementation of the NBP Biosolids Management Program (BMP), which is based on an environmental management system approach. The NBP strongly believes that biosolids management organizations will benefit from adopting a BMP. The potential benefits of adopting a BMP are numerous, including improved regulatory compliance, enhanced environmental performance, increased efficiency, reduced cost, pollution prevention, improved consistency and quality of biosolids materials, and improved relations with local communities. The NBP hopes that its BMP will be adopted throughout the biosolids industry, by wastewater treatment utilities, their contractors, and other organizations involved in biosolids production and final use and disposal.

The NBP goals for developing the BMP are the following.

- To promote environmentally sound and publicly accepted biosolids management practices.
- To help program participants demonstrate to their communities that they are committed to go beyond meeting regulatory requirements and to explain how they are working to improve their environmental performance.
- To help program participants involve their communities in defining improved performance or areas that still require attention.

The NBP provides a blueprint that each biosolids organization can use to implement its own BMP. At the heart of the NBP BMP is the *Code of Good Practice* that sets forth the important principles and goals which govern the operation of environmentally sustainable biosolids management programs. These principles and goals have been translated down to the operational level through the development of the *BMP Elements*. The *BMP Elements* define the specific expectations and requirements, grouped into 17 elements, which the NBP believes to be important for ensuring that biosolids management activities are performed in an environmentally sound and publicly accepted manner. The *BMP Elements* define the specific expectations and requirements that an auditor will use to verify that an organization's BMP meets the NBP Program requirements.

Individual biosolids organizations adopting a BMP have the flexibility to determine how they will satisfy the BMP requirements that are applicable to their operations. The NBP acknowledges the need for substantial local tailoring of BMP planning and implementation activities, including the establishment of goals and objectives designed to support environmental improvement and the commitment to seek continual improvement. In no instance does the NBP intend to suggest that an organization should share decision making authority outside its traditional chain of command as a basis for program participation. Also, it is not the intent of the NBP that the development or implementation of a BMP be a substitute for

regulatory oversight or that the BMP requirements be included as a regulatory requirement in NPDES permits. The BMP, however, can and should be used by organizations as a means to meet their commitment to compliance with all applicable biosolids-related regulatory requirements.

**Table 1.0: NBP BMP Blueprint Resources**

<i>Code of Good Practice</i>	Sets forth a number of broad principles that govern the operation of sustainable biosolids management programs
<i>National Manual of Good Practice</i>	Describes the full range of practices available to any organization wishing to implement a BMP. The menu approach of the Manual encourages voluntary participation by allowing biosolids organizations to assemble the mixture of practices and procedures that are most appropriate for their individual organization at key locations that need to be managed to be successful. The Manual is available from the NBP and is intended to be used as a reference and guide on developing and implementing a BMP.
<i>Elements of a Biosolids Management Program (BMP Elements)</i>	For use by organizations in implementing a BMP. These Elements lay out the requirements by which an auditor will evaluate a BMP
<i>Biosolids Management Program Guidance Manual</i>	Guides development and implementation of a BMP conforming to requirements of the <i>BMP Elements</i> . It provides information on the NBP program, BMP benefits, and a suggested approach, along with specific instructions about what an organization will need to do to achieve success.

## 1.4 BMP Verification and NBP Recognition

The NBP has developed an independent, third party BMP verification component of its program to support the goal of environmentally sound and publicly accepted biosolids management practices. Organizations interested in receiving formal recognition of their BMP and of their participation in the NBP program must achieve verification of their BMP through the NBP third party verification process. The objectives of third party BMP verification are the following.

- Verify that the BMP of participating biosolids organizations meet the expectations and requirements established by the NBP.
- Verify that BMP activities at participating organizations are being implemented in practice, as well as on paper.
- Assure environmentally sound performance of biosolids management practices.
- Increase public trust and confidence in biosolids management practices.

For the third party BMP verification auditing process, the NBP has established the following relationships between the NBP, auditing companies, the NBP Appeals Board, and participating biosolids organizations.

- The NBP accredits the third party auditors and audit organizations who may conduct the BMP verification and interim audits.
- A biosolids organization seeking BMP verification negotiates a contract and scope of work directly with an accredited NBP third party audit company.
- The third party audit company issues a statement of BMP verification to the biosolids organization after successful completion of a third party BMP verification audit.
- NBP provides program certification or recognition for biosolids organizations that meet all requirements (see 1.4.2), including successful completion of a third party BMP verification

audit.

- Auditors are required to meet specific NBP training and certification requirements (see Chapter 2). Auditors (or their organizations) will pay for their own training and certifications.
- Biosolids organizations that wish to appeal their third party verification audit results can present an appeal to the NBP Appeals Board.
- The NBP Appeals Board makes decisions on appeals. *(See Chapter 5 for more information on the verification appeals process and on the makeup and role of the Board.)*

### 1.4.1 BMP Verification Eligibility

Any public or private organization that meets the U.S. EPA definition of a biosolids preparer (see glossary) can participate and seek BMP verification through the third party verification process.

To be eligible for an NBP BMP verification audit, an organization must meet the following criteria:

- Have committed in writing to follow the NBP Code of Good Practice through a letter of understanding with the NBP, signed by a leader within the organization;
- Have implemented a BMP that meets the requirements of the BMP Elements and had the BMP operating for at least three months; and
- Have conducted at least one internal BMP audit.

The NBP encourages biosolids organizations to submit an application for the third party verification audit two or three months in advance of their desired audit date to allow lead time for contract negotiations and scheduling. Applicants can complete the requirement of having the BMP operate for at least three months prior to receiving the third party audit while the audit scheduling process is taking place.

### 1.4.2 NBP Program Recognition and Certification

The NBP has created a tiered program of recognition for organizations that choose to participate in the Biosolids Management Program. The tiers reflect an organization’s efforts to commit to the BMP, develop and implement the BMP, and have the BMP audited by internal and external audit teams. Audits of the BMP help ensure that it meets the requirements of the BMP, produces desired outcomes, and is continually improved and maintained over time.

The requirements for each tier of NBP recognition are as follows.

Tier	Commitment to Code of Good Practice	Annual NBP Report and registration	Interim Audit	Third Party Verification Audit
Bronze	x	x		
Silver	x	x	Every 2 years	
Gold	x	x	Every 2 years	Required
Platinum	x	x	Every 2 years	Every 5 years
Diamond	x	x		Every 10 years

Organizations may choose to participate in the NBP program at any of these tiers. All biosolids organizations are encouraged to: start with a commitment to the NBP *Code of Good Practice*, learn about a BMP, and implement and seek audits as fits their organization.

The NBP has revised the program recognition offerings over time to increase flexibility for program participants. While organizations may ultimately choose to not pursue NBP Gold-level Recognition or Platinum-level Certification, both of which require at least 1 independent third-party audit, the NBP program materials are designed to prepare an organization's BMP for audit-readiness.

*(See Chapter 5 of this Guidance for additional information on the interim and re-verification audits, as well as maintenance of program recognition and certification.)*

NBP provides recognition in the form of a "seal of approval" for organizations that receive program recognition. NBP recognition does not serve as a seal of product quality assurance, as direct product quality testing is not part of the BMP audit. Those organizations who receive program recognition are granted permission to use the NBP BMP seal on buildings, equipment, signs, or other items as deemed appropriate (except for biosolids materials). *(See Chapter 5 of this Auditor Guidance for details about the NBP "visual indicator" and accompanying designation statements.)*

### 1.4.3 Verification Audit Scope & Approach

Consistent with the NBP *BMP Elements*, the BMP verification audit scope encompasses all parts of the biosolids value chain (wastewater pretreatment and collection through biosolids final use or disposal) that are relevant to the biosolids organization being audited. The auditor should remember that as a management program for biosolids, attention should be focused on those practices and management activities that directly support biosolids-related operations, processes, and activities, as opposed to all wastewater treatment utility activities.

The NBP third party verification audit process is comprised of two major components. First, the designated auditor conducts a desk audit of the participating organization's application and supporting BMP documentation. During this review, the NBP anticipates that the auditor will be able to determine if the biosolids organization has satisfied the basic BMP documentation requirements. This review must take place before any on-site activity. A brief on-site visit may also be warranted, but would not constitute a part of a verification audit. The auditor must make a determination if, based upon his/her documentation review, the organization's BMP has any major issues that could result in not being verified during an on-site visit. The biosolids organization will be informed with a written report of the findings of the document review process.

Second, the auditor will conduct an on-site BMP verification audit. The on-site portion of the audit should emphasize examination of the effectiveness of the organization's BMP, as implemented, at delivering the organization's intended outcomes - which should be documented in the BMP Manual, biosolids management policy, and/or goals and objectives - on a consistent basis.

To make the verification determination, auditors will evaluate the adequacy of an organization's BMP with respect to the NBP Program expectations and requirements established through the *BMP Elements*. At the same time, however, the NBP directs auditors to defer substantially to the expertise and knowledge of local conditions that program participants have and the decisions they then make regarding practice selection, environmental performance improvements, and public participation methods. The NBP BMP



has been specifically designed to provide substantial latitude for individual biosolids organizations to determine *how* to address the NBP expectations and requirements.

Many organizations have experienced regulatory and financial audits and are familiar with that approach to auditing. The NBP verification audit approach is very different. The NBP audit is about how a biosolids program is managed and if the organization is actually managing the way the NBP BMP requires. The auditor reviews the organization's BMP to confirm that it meets all the NBP requirements. This confirmation includes a determination of the effectiveness of the organizations BMP continual improvement program for environmental performance, quality management practices, regulatory compliance and relations with interested parties.

NBP expects that the 17 BMP Elements are working together as a "system." For example, the communications component (element 6) and the public participation component (element 9) come together when working with the interested parties. Important feedback from the interested parties might result in establishing a new performance goal or objective (element 5). These three elements work together with the intended result of improved relations with interested parties, one of the four key outcome areas. In this example, the auditor would examine the three elements together to determine if they are working as a "system." Auditors typically analyze several elements that might make up a system. If the system is not effectively leading to the intended outcome, the auditor will look at the individual elements to determine where there may be a nonconformance or an opportunity for improvement.

## 1.5 Structure of the Third Party Auditor Guidance

This section introduces the reader to the contents of the remainder of this *Auditor Guidance*.

**Chapter 2** presents the qualifications and requirements for individuals who wish to participate as auditors in the NBP third party BMP verification process. This chapter presents the minimum auditor qualifications and the process for becoming an accredited NBP BMP auditor.

**Chapter 3** describes pre-audit activities – what happens before the auditor's on-site visit - including the BMP paperwork review (or "desk audit"), and other pre-audit activities.

**Chapter 4** describes the on-site verification audit, providing a guide to the format and scope of the on-site portion of the third party verification audit. This chapter addresses important logistical information, including special considerations related to the on-site audit process, such as public participation, contractor involvement, and final use and disposal operations.

**Chapter 5** describes post-audit activities such as audit reporting, corrective actions, and maintenance of program certification.

**Chapter 6** covers the Policy Elements (Element 1 – BMP Manual; Element 2 - Biosolids Management Policy) and provides interpretation of key areas.

**Chapter 7** covers the Planning Elements (Element 3 - Critical Control Points; Element 4 - Legal and Other Requirements; Element 5 - Goals and Objectives; Element 6 - Public Participation in Planning) and provides interpretation of key areas.

**Chapter 8** covers the Implementation Elements (Element 7 - Roles and Responsibility; Element 8 - Training; Element 9 - Communications; Element 10 - Operational Control of Critical Control Points; Element 11 - Emergency Preparedness and Response; Element 12 - Documentation, Document Control and Recordkeeping) and provides interpretation of key areas.

**Chapter 9** covers the Measurement and Corrective Action Elements (Element 13 - Monitoring and Measurement; Element 14 - Nonconformances: Preventive and Corrective Action; Element 15 - Biosolids Management Program Performance Report; Element 16 - Internal BMP Audit) and provides interpretation of key areas.

**Chapter 10** covers the Management Review Element (Element 17 - Periodic Management Review of Performance) and provides interpretation of key areas.

**Chapter 11** provides Auditor support information, including potential methods for objective evidence review and examples of potential BMP nonconformances under each of the 17 BMP Elements.

**The Glossary** provides definitions of key terms for the NBP Biosolids Management Program.

The **Document Control Log** provides a summary of updates that have been made to this Auditor Guidance since its initial release.

## 2 Third Party BMP Auditors - Qualifications & Requirements

Clear guidelines are necessary regarding auditor qualifications and requirements to ensure that the third party verification process of the NBP BMP sustains public confidence and acceptance, and provides program participants assurance that their BMP will be consistently and fairly evaluated. The establishment of minimum qualifications and requirements serves to:

- prevent potential conflicts of interest that may color auditor findings and recommendations or interested party perceptions of audit result legitimacy;
- ensure that auditors have sufficient familiarity and experience with wastewater treatment and biosolids management operations, practices, and regulations to evaluate organizations' BMP effectively;
- ensure that auditors have sufficient expertise related to management systems auditing; and
- ensure that auditors have sufficient training on and understanding of the specific goals, elements, and requirements associated with the NBP BMP.

This chapter reviews the minimum requirements that NBP-certified auditors must meet and summarizes the auditor certification, oversight, and evaluation processes.

### 2.1 Auditor Qualifications

All independent, third party lead auditors who provide BMP verification audits for the NBP must be certified by the NBP. To receive certification, auditors (individuals) must have the following minimum qualifications.

- Have a minimum of 5 years experience in wastewater treatment and biosolids program management (if the audit is conducted by a team, at least one auditor must have a minimum of 5 years experience in wastewater treatment and biosolids program management).
- Successfully completed formal training on the 17 Elements of BMP, AND training on the auditing process
- **A Third-Party Lead Auditor for the verification audits** must be a RABQSA International certified ISO 14001 Lead BMP Auditor (if the audit is conducted by a team, at least one auditor must be a certified Lead BMP Auditor) and affiliated with a company registered to perform ISO 14001 audits. [Note that alternative means for certification may be investigated]. **Lead auditors for Interim Audits are not required to have the RABQSA certification.**
- Be knowledgeable of applicable federal biosolids regulations, as well as relevant NBP resources, such as: *Code of Good Practice*, *BMP Elements*, *BMP Guidance*, *Auditor Guidance*, and *National Manual of Good Practice* (
- At the time of the audit, be familiar with applicable state/local regulations, requirements and practices.
- Must disclose any potential conflicts of interest and mitigation activities for each audit they will perform.

The NBP believes that the above combination of skills and experience will provide auditors who are competent in systems auditing, as well as familiar with wastewater and biosolids program management.

These skills, and the requirements regarding conflicts of interest, will also provide for auditors that are seen as credible by interested parties.

## 2.2 Auditor Certification

To be certified by the NBP to perform third party BMP audits, all auditors must meet the minimum qualifications described above and provide resumes, certifications, and/or other documentation to NBP demonstrating qualifications. Additionally, all third party auditors must pass a written exam to clearly demonstrate an understanding of the 17 *BMP Elements* and the *Auditor Guidance* of NBP Biosolids Management Program.

## 2.3 Auditor Oversight and Evaluation

NBP staff review the third party audit reports and/or conduct audit debriefs with the third party auditors and local biosolids organization after each third party BMP audit. NBP staff members also randomly observe third party auditors conducting audits to assure that NBP requirements are being met. The purpose of these activities is to ensure that the third party audits are being conducted consistent with the BMP requirements and NBP expectations.

## 3 Pre-Audit Activities

This chapter addresses the various activities of the NBP third party BMP verification process that occur prior to the on-site verification audit, including notification of interested parties, the verification application process, and BMP paperwork review or desk audit. These activities are designed to ensure that an organization's BMP is ready for third party verification in the form of an on-site audit.

### 3.1 Notification of Interested Parties

Prior to applying for a third party verification audit, the biosolids organization must notify its interested parties of its intent to receive an independent third party audit and have built into the BMP planning a discussion with interested parties about approaches for observing the third party audit. The NBP believes this provides the organization the best opportunity to manage expectations about audit results, articulate any constraints needed on audit observation, and understand how best to conduct the audit to gain maximum public acceptance of biosolids management activities.

During the BMP audit, auditors shall verify that such notification has been made. Auditors should note, however, that the NBP does not require a biosolids organization to have interested parties observe or otherwise participate directly in the independent, third party audit. This same notification to interested parties is required for third party interim audits.

### 3.2 NBP Verification Audit Application Process

The NBP encourages biosolids organizations to submit an application for the third party verification audit two or three months in advance of their desired audit date to allow sufficient lead time to conduct contract negotiations and schedule the third party verification audit. The applicant can complete the requirement of having the BMP operate for at least three months prior to receiving the third party audit while the audit scheduling process is ongoing. To apply for a verification audit, a biosolids organization must submit the following materials to one of the NBP-accredited third party audit companies.

- A completed BMP Verification Application form, which includes a description of the organization's method(s) for use or disposal of biosolids, the desired biosolids characteristics, operations associated with biosolids production throughout the biosolids value chain, a characterization of contractor biosolids operations, and documentation of notification of interested parties about the intent to receive an audit and a discussion with interested parties about approaches to observe the audit.
- A signed letter from the participating biosolids organization to the NBP that includes a clear statement of the date at which the organization believes it has achieved full implementation of its BMP (defined as the date when management officially approved the BMP Manual). This date starts the clock for the at least three months of BMP operating experience necessary to receive the initial verification audit.
- A copy of the organization's Biosolids Management Policy that includes a commitment to following the principles of conduct set forth in the *Code of Good Practice*.
- A copy of the organization's most recent internal BMP audit report.
- Supporting documentation in the form of a BMP Manual or collection of relevant documents that demonstrates that the organization's BMP addresses all of the 17 *BMP Elements*.

The information in the application shall include a list or description of actual operational controls, standard operating procedures, and operating records, sufficient to allow the auditor to gain an understanding of the organization and its operations prior to coming on-site. The supporting documentation should demonstrate that the organization has established policies, programs, procedures, and/or systems for each of 17 *BMP Elements* and their associated requirements. The NBP anticipates that most organizations will submit a BMP Manual that describes the organization's BMP and that references additional specific documents (e.g., Emergency Response Plan, operating procedures) but does not include them. Documentation of the organization's critical control points in a BMP Manual will help the auditor understand the type of utility operations, including final use or disposal, and determine whether the identified critical control points are consistent with the NBP reference manuals, and what the scope of the audit should be.

The audit company shall review the BMP verification audit application to confirm that the organization meets the program eligibility requirements identified in Chapter 1 of the *Auditor Guidance*. As well, the audit company shall review the application to ensure that it has been filled out completely, and that all required documents have been submitted. If the application indicates that the organization does not meet the program eligibility criteria, the audit company will contact the organization with that information. If all of the required documentation is not included in the application package, the audit company will contact the organization to request the missing information. Once the audit company has confirmed that the organization meets the program eligibility criteria and that the required documentation is included, a representative from the audit company will notify the applicant, and the applicant organization can proceed with scheduling the desk and on-site portions of the verification audit.

The biosolids organization should work with the selected audit company to develop a mutually agreed upon audit plan (with scope, schedule and budget). Sufficient budget detail shall be provided by the audit company to address biosolids organization questions about cost (e.g., number of required audit days, desk audit costs, and final report detail). When the audit company and biosolids organization have reached agreement on the audit plan, the biosolids organization and the audit company shall establish a contract for audit services.

If the biosolids organization prefers, NBP can handle the contract negotiations and set up an agreement between NBP, the biosolids organization, and the audit company for audit services. However, NBP will charge the biosolids organization an administrative fee of 15% on the cost of the audit to cover costs.

### 3.3 BMP Documentation Review

Once the audit company has received a copy of the BMP Verification Application and documentation, it shall assign a Lead Auditor to conduct the "desk audit." ***A desk audit is preferred to be conducted virtually and asynchronously to minimize the impact on daily utility biosolids operations and staff.*** A brief report will be issued to the biosolids organization on the results of the desk audit. If the report indicates that the desk audit found issues that could result in a verification failure, the audit company must contact the biosolids organization for guidance on a decision to continue with the next phase of the audit. At that point, discussions between the biosolids organization and the audit company can take place to clarify any issues that might not have been clear during the desk audit.

### 3.3.1 Purpose of the BMP Desk Audit

The desk audit serves the following purposes.

- Determines if the biosolids organization's BMP addresses the basic requirements, as defined in the *BMP Elements*, sufficiently to warrant a full, on-site verification third party audit.
- Confirms that the organization's BMP and stated goals and objectives are aligned with the *Code of Good Practice*.
- Confirms whether or not the critical control points, operational controls, and management practices identified in the BMP materials are consistent with those in the *National Manual of Good Practice*.
- Allows the Lead Auditor to assess the amount of time that is likely to be needed for the on-site audit, based on the size and complexity of the facility (or facilities) and number and location of final use and disposal operations.
- Enables the Lead Auditor to determine where and when the technical biosolids auditor expertise may be necessary to effectively evaluate the biosolids organization, based on the types of processes and practices utilized by the biosolids organization.

### 3.3.2 Desk Audit Process

The Lead Auditor shall complete the desk audit preferably within 30 days and at a maximum within 60 days of receiving the BMP Verification Application Form and supporting documentation from the NBP.

If after examining the documentation the Lead Auditor finds that there is insufficient BMP documentation to make a determination about whether the BMP addresses the requirements of the *BMP Elements* (e.g., if required documents are missing or documents do not address all the specified topics), the Lead Auditor shall contact the representative of the organization to ascertain whether other paperwork exists that has not been supplied. If so, the local biosolids organization may supply additional documentation to the Lead Auditor for review.

Biosolids organizations have the option to ask for a short, on-site visit as part of the desk audit. In addition, the Lead Auditor may wish to do an on-site visit as part of the desk audit. The on-site visit would include an examination by the Lead Auditor of four-to-six key BMP Elements to further aid in determining BMP readiness for a full verification audit (which would cover the remaining BMP elements and all operations). The on-site visit as part of the desk audit can also help the Lead Auditor to better plan for the remaining on-site audit in terms of determining which operations and sites to observe directly and which portions of the audit require the biosolids technical auditor. This additional planning, as well as BMP readiness, can help control overall audit costs.

### 3.3.3 Desk Audit Findings

After conducting the BMP desk audit, the Lead Auditor shall contact the applicant organization's BMP representative (identified clearly on the BMP Verification Application form) and discuss the auditor's observations, including any indications that the organization's BMP does not address, or does not fully address, any of the requirements of the *BMP Elements*. This contact provides the applicant with an opportunity to understand the nature and significance of the auditor's observations. In some cases, the

applicant may be able to provide additional documentation to the auditor that demonstrates that the requirement(s) has (have) been addressed.

Based on the auditor's observations from the desk audit, additional contact with the applicant, and an on-site visit (if conducted), the Lead Auditor shall make a determination as to whether the full, on-site audit should proceed. This determination is based on the Lead Auditor's assessment of BMP readiness with respect to the requirements of the NBP's *BMP Elements*. The Lead Auditor will provide written notice of this determination to the biosolids organization and the NBP. If the Lead Auditor has determined that additional work is required before the on-site portion of the verification audit is warranted, then the paperwork shall be returned to the organization with the written notification. A biosolids organization may re-apply for BMP verification at any time in the future. If the BMP paperwork is complete and indicates that the BMP generally addresses the requirements of the *BMP Elements* and the Lead Auditor has determined that the on-site audit should proceed, the audit firm and biosolids organization shall move forward with the on-site audit.

### 3.4 Planning for the On-Site Audit

In consultation with the biosolids organization, The Lead Auditor shall determine, based on the size and complexity of the biosolids organization and location of sites, when and where to involve additional auditors to complete the on-site visit. **The Lead Auditor shall determine how many additional auditors are necessary and contact appropriately qualified people to ascertain their availability. At least one additional team member (who may be internal to the organization being audited) is required.** The amount of time needed to conduct the on-site audit can vary depending on the type and complexity of biosolids operations, the geographic location of the organization's facilities, and the number of auditors on the BMP verification audit team.

The Lead Auditor shall contact the representative of the organization to set the dates of the on-site visit and discuss the scope, agenda, and any audit requirements. These requirements include: availability of a private room and/or working area; use of a telephone; provision of lunch on site; any issues related to "rights of entry"; use of local auditors; availability of relevant personnel, including top management, for interviews; any health and safety requirements or precautions that may be relevant to the team during the audit; and any other logistical or administrative activities that need to be coordinated or planned prior to the on-site visit.

Following this contact, the Lead Auditor shall provide an audit plan and agenda to the representative of the organization. The audit plan shall identify the biosolids value chain critical control points for possible observation during the audit. In addition to the tentative audit agenda and plan, the Lead Auditor shall also provide the organization with the following information, as provided in the **NBP Audit Plan and Checklist**:

- Composition of the audit team.
- List of individuals (by generic position titles) whom the auditor would like to interview, to ensure that they have time available during the on-site visit.
- Letter from the Lead Auditor to the applicant to confirm dates and establish the process, protocol, and auditor expectations for the organization (e.g., availability of personnel and documents during the audit, provision of a private room and/or working area, use of a telephone, provision of lunch).



- List of additional materials that should be available for on-site review during the audit.

## 4 On-Site Verification Audit

This chapter addresses the various activities of the NBP third party BMP verification that occur during the on-site verification audit, including the audit scope and approach, format, types of testing, and general evaluation criteria.

### 4.1 On-Site Audit Scope and Approach

The on-site portion of the audit should emphasize examination of the effectiveness of the organization's BMP, as implemented, at delivering the organization's intended outcomes - which should be documented in the BMP Manual, biosolids management policy, and/or goals and objectives - on a consistent basis. The NBP directs auditors to include as an audit activity, emphasis on those areas of an organization's BMP that are necessary, as defined by the participating organization, to achieve the NBP's goal of promoting environmentally-sound and publicly accepted biosolids management.

#### 4.1.1 On-Site Audit Scope

During the on-site portion of the audit, auditors shall examine the organization's operations (including wastewater treatment facilities, pretreatment and collection programs, storage facilities, transportation equipment, and final use and/or disposal sites) **related to the biosolids value chain**, and review BMP records and documents that are not included in the BMP Manual and application materials.

Consistent with the *BMP Elements*, the on-site BMP audit scope shall encompass all applicable portions of the biosolids value chain. The audit emphasis should be on those activities that relate to the biosolids value chain, as opposed to all wastewater treatment activities. The scope of the organization's BMP is determined by the organization's selected critical control points throughout the biosolids value chain. Therefore, the auditor need only examine activities throughout the biosolids value chain insofar as there are critical control points that the organization relies upon to ensure that the characteristics of its biosolids material (e.g., solids content, metals, pathogens, odor, plastics, vector attraction) satisfy the regulatory, quality, and public acceptance requirements associated with the organization's handling, management, and final use or disposal of the biosolids material.

The NBP intends for all audits to include a sampling of activities for direct observation during the on-site portion of the audit. The auditor shall select a sampling of activities for direct observation, based on the organization's identified critical control points, with the following exceptions.

- The auditor shall directly observe all facilities that generate solids or biosolids during the treatment of domestic sewage in a treatment works or that derive a material from wastewater solids or biosolids, and are covered by the organization's BMP. This helps ensure NBP Program credibility, and helps achieve the NBP's goal of increased public acceptance of biosolids management activities.
- The NBP does not require direct observation of all final use and disposal sites during the verification audit. However, some specific criteria for auditors to use in selecting final use and

disposal sites for direct observation are provided in sections 4.2.4 and 4.2.5.

Auditors should note that the audit does not entail an analysis of biosolids material characteristics by the auditor, only that the organization has an effective program for ensuring that biosolids material characteristics meet all requirements associated with its intended final use and/or disposal method.

### 4.1.2 Audit Approach for Small Organizations

The NBP expects that the amount of on-site audit time should vary with the size and complexity of the organization being audited. Factors of size and complexity that should be considered in determining the length of the audit include the number of employees, capacity (e.g., million gallons per day), number of facilities, number of remote sites, number and types of end use sites, and number of contactors. The NBP is particularly focused on keeping audit costs low for smaller, less complex organizations – i.e., those that have fewer facilities, fewer employees, etc. The NBP believes that smaller organizations should be able to meet the requirements in the *BMP Elements* with less paperwork and documentation generated. The NBP expects the third party auditors to keep this in mind and use their professional judgment in determining how many days are required for auditing a smaller organization.

### 4.1.3 On-Site Audit Approach

During the desk audit, the auditor should have been able to understand the organization's management processes and the steps in the biosolids value chain that are relevant to achieving the intended final use(s) or disposal. For example, if the only final use or disposal method for the biosolids material is land application, then landfill and incineration would not be relevant value chain steps for the organization.

During the on-site audit, the auditor shall look for objective evidence at each step in the value chain that is relevant to the organization that the organization's actual practice conforms to that documented in its BMP. If the auditor has any indication that actual practices diverge from practices documented as part of the BMP, the auditor shall assess the degree to which the finding suggests a weakness in the organization's BMP. In particular, a divergence in actual practice can have important implications for the completeness and appropriateness of the critical control points, legal and other requirements, and operational controls that are included in the organization's BMP.

During the on-site audit, the auditor shall also look for objective evidence that the organization's BMP is functioning as intended. This is largely done through the use of transaction testing, described in greater detail in section 4.5.2, and examining outcomes produced by the BMP, further described in section 4.5.3.

## 4.2 On-Site Audit Format

This section summarizes the typical format of an on-site BMP verification audit. The specific structure and agenda for the on-site audit will depend on multiple factors, including the nature of the organization's operations, the final use or disposal of biosolids material, the number of treatment facilities, the location of final use and disposal facilities, relevant processes and steps in the biosolids value chain, and the presence of contractor operations. Based on the desk review of the organization's application and BMP

Manual, the Lead Auditor should have sufficient information to work with the biosolids organization to prepare a preliminary plan and agenda for the site visit. While the Lead Auditor has discretion in arranging the schedule and plan for the on-site audit, the NBP recommends that the general agenda and structure of the audit follow the format discussed below.

#### 4.2.1 Collection of Objective Evidence

The primary focus of the on-site audit is to collect objective evidence that verifies that the organization's BMP is functioning as intended, that practices and procedures are conducted as documented, and that the BMP, as implemented, is aligned with the *Code of Good Practice* and NBP program objectives.

To collect objective evidence, the auditor or audit team shall conduct interviews, review on-site documentation, and directly observe selected activities and locations that are relevant to critical control points and associated operational controls identified by the organization as being important to managing its biosolids-related operations and material. These various "modes of audit inquiry" (interviews, document review, and direct observation) enable the audit team to collect "objective evidence" that verifies whether or not the organization's BMP adequately addresses the NBP expectations and requirements as stated in the *BMP Elements*. Interviews shall assist the auditors in determining whether employees are familiar with the biosolids policy and its requirements, and their specific BMP-related responsibilities. Review of on-site documentation and records allows the auditors to determine whether required documents exist, procedures are being implemented as written, and that appropriate records are being kept. When specific questions arise that the biosolids organization representative cannot answer, or that require a review of specific areas, an auditor may need to observe activities or locations directly, accompanied by an organization representative. Such evidence might include monitoring logs, training records, posted notices, or meeting minutes. If written evidence is not available, the auditor may need to question a sample of relevant employees to determine that their answers are both consistent and support the BMP. Auditors shall use these three methods of collecting objective evidence during each phase of the on-site audit discussed below.

**Objective Evidence** – policies, ordinances, procedures, manuals, inspection checklists, operating logs, annual reports, and other documents and records; observations of practices, equipment, and facilities; and interviews with key personnel, management, or contractors that objectively demonstrate conformance with the BMP Elements requirements.

#### 4.2.2 Entrance Briefing and Document Review

The on-site visit will start with an entrance briefing, which will be led by the Lead Auditor. It is recommended that the initial meeting and document review be conducted at the organization's primary location or facility, where important BMP documents discussed below are accessible. This location is likely to vary depending on the size and structure of the organization. For example, large organizations may have a central office that is separate from its treatment facilities and other facilities, whereas smaller utilities may have administrative offices and BMP records located at the primary wastewater treatment facility.

The purpose of the entrance briefing is to:

- introduce members of the audit team to the organization’s representatives;
- brief the organization’s audit participants on the scope of the audit, audit team activities, and requirements; and
- confirm the plan and agenda for the audit.

Following the entrance briefing, the audit team will likely need to review documents and continue discussions with key representatives of the organization to confirm the specific critical control points, facilities, and locations that should be observed and/or visited during the subsequent on-site audit phases discussed below. The audit team might also review copies of previous internal and/or third party audit reports at this time to identify potential areas for exploration or follow-up. Based on this initial document review, the audit team should work with key representatives of the organization to finalize the on-site audit plan and agenda. Auditors should expect that the entrance briefing and document/records review will typically require a half-day of on-site time.

### 4.2.3 Direct Observation of Facilities and Equipment

During the on-site portion of the verification audit, at least one member of the audit team shall directly observe all facilities that generate solids or biosolids during the treatment of domestic sewage in a treatment works or that derive a material from wastewater solids or biosolids, and are covered by the organization’s BMP. For third party interim audits, the Lead Auditor shall determine if direct observation of all treatment works that produce biosolids is necessary.

The auditor shall directly observe a sampling of all other facilities and equipment covered by the organization’s BMP through selection of critical control points. The length of the on-site portion of the audit shall vary according to the scale and complexity of the biosolids management operations and the location and distance between sites.

### 4.2.4 Final Use and Disposal Operations

The NBP believes that direct observation of final use and disposal operations, whether operated by contractor or not, are necessary for program credibility. Because many final use or disposal operations are not located on or adjacent to the treatment facilities, auditors are not required to observe directly all final use or disposal operations, as the costs of such a requirement could be prohibitive. The NBP seeks to balance program credibility with audit costs by not requiring that all final use or disposal operations receive direct observation. Instead, the NBP has established the following requirements.

- The auditor shall choose a subset of final use and disposal operations to observe directly.
- If final use and disposal operations are performed by a contractor or contractors, then the auditor shall observe directly, at a minimum, one site for each contractor.
- If the organization utilizes multiple types of final use and disposal operations, then the auditor shall observe directly, at a minimum, one site for each type of final use and disposal method (for example, agricultural land application is different from forest land application or land reclamation).

Some final use and disposal operations may take place on private property not owned by the organization or its contractor (e.g., land application on a private farm). In this case, the organization or its contractor

may need to include a contract clause to provide right of entry. Additionally, the NBP believes that flexibility in the audit plan is necessary to address the intermittent and changing nature of some final use and disposal operations (e.g., land application at certain sites might be halted during winter months).

For cases where a biosolids management organization has multiple final use and/or disposal operations, the auditor shall consider, in addition to the minimum criteria identified above, which operations are scheduled for activity during the time of the audit;

- might require intensive management activity; and
- have a history of or are at higher risk of having public issues or concerns (e.g., sites in close proximity to residential/commercial areas).

However, the NBP does not require that final use and disposal sites included for direct observation have current activity at the time of the audit, as there can be some benefit to examining inactive sites, such as sites where biosolids had been previously applied or stored. Additionally, the NBP cautions auditors not to focus solely on those land application sites that have received the most public attention or are the largest, but also consider some of the smaller and more out of the way sites as the NBP believes it important that publicly accepted and environmentally sound biosolids management practices are utilized consistently at all sites, including those that otherwise might receive less intensive management.

As a result of the seasonal nature of some biosolids management activities, auditors should expect that biosolids organizations may request that the on-site portion of the audit be conducted during a specific time of year. As well, auditors may determine that they need to revisit, for direct observation, sites that had been inactive during the time of the audit to complete the audit and make a BMP verification determination.

If a final use or disposal operation is a considerable distance from the organization's wastewater treatment facility(s) or focus of operations, local or regionally-based auditors may conduct the site visits to keep audit costs lower (the Lead Auditor shall audit all operations close to the organization's main biosolids production facilities). Local auditors shall send audit findings on final use and disposal operations to the Lead Auditor. If the third party auditor finds that documentation and interviews are inadequate to satisfy the auditor that there is a healthy system throughout all final use and disposal operations, then the auditor may find it necessary to visit additional sites or take further actions to determine the health of those parts of the BMP.

#### 4.2.5 Contractors

The NBP considers relevant biosolids organization contractors to be those that have identified roles and responsibilities for biosolids management activities associated with the critical control points of an organization's biosolids value chain. The NBP acknowledges that organizations may have contractors performing functions outside the biosolids value chain and are therefore not included in the requirements of the NBP BMP or third party verification. The following are examples of contractors that would *likely* be covered by the BMP because of their roles and responsibilities for biosolids management along the value chain: haulers/transporters, land appliers, laboratories, and composters. Examples of contractors that would probably not have biosolids management roles and responsibilities connected to critical control points on the value chain, and therefore not covered by the NBP BMP, include offsite IT contractors and document management and payroll services.

The NBP expects all contractors with roles and responsibilities for biosolids management activities to have contracts that recognize the conditions imposed by the organization's BMP, regardless of the extent of responsibilities or involvement of the contractor with the organization's BMP.

During the desk and on-site audits, auditors are expected to examine contract documents and conduct interviews with contractors to determine if contractor roles and responsibilities are defined, as consistent with the *BMP Elements*. In cases where contractors are used by the organization to manage key critical control points and associated operational controls, the audit team shall audit these operations in a manner identical to operations at the biosolids organization (see also sections 4.2.3 and 4.2.4). During the audit, full BMP documentation shall be made available from contractors and a contractor representative is expected to attend portions of the on-site audit, where appropriate.

#### 4.2.6 Follow-Up

In some cases, the audit team may need to spend additional time prior to the close of the on-site audit to return to the organization's facilities and/or administrative offices to follow-up on unresolved areas of audit inquiry or questions that arose during the course of audit activities. For example, auditors may find it appropriate to examine the organization's communications processes (Element 9) or other BMP processes (see Elements 14 through 17) following the review of the treatment works, final use, and disposal operations, since the auditors may be aware of potential BMP weaknesses that need to be more thoroughly explored and tested.

#### 4.2.7 Exit Briefing

An exit briefing shall be held with representatives of the organization where the Lead Auditor will present the findings of the audit. This meeting can provide the opportunity for the organization to present additional information that may not have been available during previous audit activities. The tentative outcome of the audit shall be discussed at the exit briefing.

During the exit briefing, the biosolids organization and Lead Auditor shall discuss the organization's plans for ongoing interim and internal audits based on the desired level of NBP recognition it has chosen to pursue (see section 1.4 for more information on NBP recognition levels). After the verification audit is complete, if the biosolids organization is planning to have interim third-party audits, the biosolids organization and the Lead Auditor shall develop an agreed-upon interim audit plan, including the BMP elements that will be reviewed in the interim audits during the ensuing four years of the five-year audit cycle. In the plan, the biosolids organization should indicate its intent to substitute internal audits in eligible years (see Chapter 5). Thus, the organization shall always know in advance if a third party interim audit shall need to be conducted during the coming year. During these discussions, the biosolids organization and the Lead Auditor should also cover any changes to operations anticipated in the coming year that could affect the BMP. Changes to operations that should be discussed include those that would require changes to the identified critical control points or environmental impacts associated with the critical control points. Significant changes to operations may require a change in the interim audit plan.

#### 4.2.8 Recording Nonconformances

During the audit, the audit team shall work closely with the representative of the biosolids organization

and shall keep this representative informed of any findings and potential findings as they are discovered. This allows the organization to provide additional information as available to assist the auditors in assessing the BMP appropriately.

Audit team members shall meet independently of representatives of the organization to discuss any questions and findings resulting from the interviews and document review and determine exactly where nonconformances exist.

Prior to the exit briefing, BMP strengths, weaknesses, and all nonconformances identified during the audit shall be recorded on an audit findings sheet. The Lead Auditor will then present and discuss these findings with the representative of the audited biosolids organization at the exit briefing.

#### 4.2.9 Peer Involvement

The NBP believes that the participation of peer organizations can have a variety of benefits, such as technical assistance, feedback, advice, and peer audits. As a result, organizations may choose to have peers participate in the development and implementation of their BMP. Peers may also observe the independent third party audit and serve as a resource for the organization (e.g., by providing technical assistance, conducting audit readiness assessments, providing advice on corrective actions). Peers may be part of the third party audit team verifying the BMP for NBP Gold-level Recognition or Platinum-level Certification.

### 4.3 Methods of Collecting Objective Evidence

There are three primary methods of collecting objective evidence available to auditors during the on-site verification audit to determine an organization's conformance with regard to the *BMP Elements* and requirements. These methods include document review, interviews, and direct observation of operations. Whenever possible, the audit team should utilize more than one of these methods to ensure that findings are consistent and cross-checked. Each of these methods of collecting objective evidence is discussed in greater detail below.

#### 4.3.1 Document and Records Review

Document and records review provides one method of collecting objective evidence for auditors. In some cases, the *BMP Elements* identify specific requirements regarding documents or records that an organization must have (e.g., Emergency Preparedness and Response Plan). In this case, document and records review enables the auditor to determine both that the document or record exists and that it addresses any required topics or information. In other cases, document and records review may provide evidence that an organization has a particular system in place or is following a required procedure. For example, tracking logs may indicate that regular monitoring procedures are being followed. Typical documents or records reviewed during a BMP verification audit include written policies, procedures, manuals, reports, brochures, action plans, forms, operating records, and logs.

### 4.3.2 Interviews

Interviewing is another useful tool for collecting objective evidence during an audit. By asking questions of employees and contractors who work with a biosolids organization, auditors can gain a better understanding of how management systems and practices actually work. Interviews also provide information about the degree to which aspects of the BMP are understood and implemented.

### 4.3.3 Direct Observation

Direct observation is the third method of collecting objective evidence available to auditors. During the on-site audit, an auditor might observe if an employee is following a procedure or operating a piece of equipment in light of expectations from the BMP or the *National Manual of Good Practice*. Direct observation provides a useful means for verifying that an organization is actually implementing procedures and controls prescribed in the BMP and other relevant documentation.

## 4.4 Evaluation Criteria: System Nonconformances

For each of the BMP testing approaches described above and all of the NBP BMP requirements, the auditor must understand the applicable criteria for evaluating whether or not the organization's BMP satisfactorily addresses the requirement. In other words, the auditor must understand what the "hurdle", or "bar", is for each requirement and test. Performance above this threshold indicates that the organization's BMP sufficiently addresses the particular BMP requirement. Performance below the bar indicates that the organization's BMP does not sufficiently address the particular BMP requirement. This latter case results in a "nonconformance". In this case, the auditor must then distinguish whether the nonconformance constitutes a minor nonconformance or a major nonconformance. Definitions of major and minor nonconformances are the following.

- **A minor nonconformance** is one that, when taken by itself, does not indicate a systemic problem with the BMP. It is typically a random or isolated incident. Minor nonconformances involve discrepancies within an element of the *BMP Elements* that do not significantly affect the implementation of the BMP and commitment to conform to the *Code of Good Practice* – a systemic problem is not indicated.
- **A major nonconformance** occurs when one of the elements in the *BMP Elements* has not been addressed or has not been addressed adequately. Major nonconformances can occur when an organization has documented a process or procedure, but has not implemented it or cannot demonstrate effective implementation. A major nonconformance can also occur if a number of minor nonconformances in a given activity or against a given element point to a systemic failure. Major nonconformances also exist if an element is being disregarded sufficiently during organization operations that it is having a noticeable effect on the organization's environmental compliance, environmental impacts, or the quality of the material being produced – there is a gap or problem that could lead to a systemic failure.

Auditors may also identify opportunities for improvement that point out areas where an organization's BMP could be strengthened, but that do not rise to the level of a minor nonconformance.



- **An opportunity for improvement** is a program element that conforms to the requirements outlined in the *BMP Elements*, but which may be improved by following suggestions, examples or benchmarks cited by the auditor.

The NBP recognizes that not all BMP will be perfect, if any. The NBP also understands that a BMP does not need to be perfect to be effective. Minor nonconformances are expected as program participants adapt to address diverse changes and challenges. It is essential, however, that an organization's BMP actively engages a process of continual improvement to identify, learn from, and respond to nonconformances so that they are addressed in ways that prevent recurrence.

When the auditor has identified a minor nonconformance during the on-site audit, the organization shall resolve the nonconformance and provide documentation to the auditor within 30 days of the audit, unless the auditor and biosolids organization have made mutually agreeable alternative arrangements in the context of an action plan. The NBP acknowledges that biosolids organizations may not be able to fully correct some minor nonconformances within 30 days. The NBP requires that the audited organization develop an action plan, with time frames approved by the Lead Auditor, for correcting minor nonconformances. The action plan shall be developed and shared with the Lead Auditor within 30 days of the audit completion. The Lead Auditor must review and approve the action plan, including proposed timeframes, for correcting minor nonconformances. The Lead Auditor will review the effectiveness of action taken to correct minor nonconformances, and will expect that nonconformances have been corrected, no later than at the next third party interim audit. Only the third party NBP auditor may close out – or verify the correction of - nonconformances identified during a third party verification or third party interim audit. Individual findings of minor nonconformances shall not prevent an organization from successfully completing a verification or interim audit.

When the third party auditor has identified a major nonconformance during the on-site audit, the organization must resolve the nonconformance and have the auditor verify that the nonconformance has been corrected. Failure to correct a major nonconformance identified during an on-site audit shall prevent an organization from successfully completing a verification or interim audit. The NBP recommends that organizations correct any major nonconformances within 90 days, but the required time frame is subject to agreement with the Lead Auditor. If a major nonconformance is corrected within the 90-day time period or other mutually agreed-upon time frame, the auditor is only required to verify that the specific nonconformance has been corrected. Failure to correct a major nonconformance during within the 90-day period or other mutually agreed-upon time frame shall result in the organization having its certified program participation status revoked, or not achieving certified participant status, until another full verification audit has been completed successfully. The Lead Auditor shall determine if an on-site visit is required to verify that the major nonconformance has been corrected, or if the verification can be made off site via document review.

Opportunities for improvement do not require correction by the organization within any given timeframe as they are not nonconformances. The organization may choose whether or not to address the opportunity for improvement cited by the auditor.

## 5 Verification and Interim Audits

This chapter describes those activities that occur after the initial verification audit has been completed.

### 5.1 Post-Audit Activities and Reporting

#### 5.1.1 Draft Audit Report Review

Within two weeks of completing the audit, the Lead Auditor shall make a BMP verification recommendation and prepare working draft audit summary and detailed findings reports. The audit summary report shall reflect the results of the audit, including areas of strength and weakness, any nonconformances identified, and the auditor's draft verification recommendation. The Lead Auditor shall not make any compliance determinations. All findings of major and minor nonconformance in the draft audit report shall explicitly cite the relevant element in the *BMP Elements*. The format and contents of the detailed audit findings report are below. The auditor shall provide the document labeled consistent with local public disclosure protections (e.g., deliberative or working draft) to ensure that the organization can hold it as confidential as desired. This review allows the organization to ensure the technical accuracy of audit findings and develop observations for inclusion in the final summary and detailed audit reports.

After the organization has reviewed the draft reports and prepared any observations, the auditor shall prepare final audit summary and detailed audit reports, attach the organization's observations, and submit all of the documents simultaneously to the audited biosolids organization and the NBP.

#### 5.1.2 Developing an Interim Audit Plan

During the exit briefing at the end of the verification audit (and any subsequent interim audits), the Lead Auditor and the biosolids organization shall discuss the organization's plans for pursuing NBP Gold-level Recognition or Platinum-level Certification and the related requirements for ongoing interim and internal BMP audits. After the verification audit is complete, the organization and the Lead Auditor shall develop an agreed-upon interim and internal audit plan that is consistent with the organization's desired level of NBP recognition or certification. The audit plan shall include the BMP elements that will be reviewed in the interim audits as well as the organization's plans to substitute internal audits during the ensuing four years of the five-year audit cycle (eligible in years 2 and 4 for first five-year verification cycle). Thus, the organization shall always know in advance if a third party interim audit shall need to be conducted during the coming year. During these discussions, the biosolids organization and the Lead Auditor should also cover any changes to operations anticipated in the coming year that could affect the BMP. Changes to operations that should be discussed include those that would require changes to the identified critical control points or environmental impacts associated with the critical control points.

#### 5.1.3 Correcting Minor Nonconformances

The NBP expects that the audited organization will make a commitment to correcting minor nonconformances in a timely fashion. The NBP defines timely as 30 days. However, the NBP acknowledges that biosolids organizations may not be able to fully correct some minor nonconformances within 30 days. For example, if a minor nonconformance was cited for failure to include the BMP policy in the training program, the organization could make changes to the training program materials right away. However, actually conducting all of the required trainings in the program

with the new information could take several months. As such, the NBP requires that the organization to develop an action plan and agreed-upon time frame with the Lead Auditor for correcting minor nonconformances. The action plan must be developed within 30 days of the audit in which the minor nonconformances were identified. The Lead Auditor must review and approve the action plan, including proposed timeframes, for correcting minor nonconformances. The Lead Auditor will review the effectiveness of action taken to correct minor nonconformances, and will expect that nonconformances have been corrected, no later than at the next interim audit.

Only an NBP third party auditor may close out - or verify correction of - a minor nonconformance identified during a third party verification or third party interim audit. The third party auditor does not necessarily need to come on-site to close out all minor nonconformances. Auditors are encouraged to close out minor nonconformances via a desk review whenever possible. When an on-site examination is required to verify that a minor nonconformance has been corrected, auditors are encouraged to verify the corrective action during the next, planned on-site visit and avoid an additional on-site trip at additional cost to the biosolids organization. When on-site examination is required sooner than the next planned visit, the auditor may conduct a short, on-site visit. This visit does not need to be part of an interim audit. An auditor can close out minor nonconformances via a short visit in a year when an organization chooses to substitute an internal audit for the third party interim audit. Thus, the auditor visit does not prevent a biosolids organization from substituting with the internal audit.

#### 5.1.4 Audit Report Contents Template

The audit report shall contain the following information (all sections are provided in the **Audit Report Summary Template**)

- Type of Audit (Interim or Verification):
- Date:
- Organization:
- Lead Auditor:
- Lead Auditor Signature:
- Summary of Audit Findings
- Recommendations
- Organization's Observations
- Appendix (**NBP Audit Plan and Checklist** spreadsheet)
  - Appraisal Plan and Checklist Spreadsheet including:
  - Organization's name and address
  - Audit team members' names and roles
  - Element Audit Checklist indicating
    - areas of strengths and weaknesses,
    - outcomes examined,
    - any nonconformances with the requirements as identified in the BMP Elements, including a description of the nonconformance and if major or minor.
    - Overall Comment on each Element Reviewed
  - Attendance sheets for entrance and exit briefings
  - List of any final use and disposal operations included in the audit
  - References to relevant organization documents that meet each of the requirements
  - List of documents reviewed citing any strengths and weaknesses

### 5.1.5 Maintaining Program Status

To retain NBP Silver-level Recognition, Gold-level Recognition, or Platinum-level Certification, an organization must complete Interim Audits every two years.

## 5.2 Interim Audits

Interim audits focus on ensuring BMP “health” (i.e., that the BMP is doing what it is supposed to) in between verification audits. BMP recognized organizations must complete either an internal audit, a third-party interim audit or verification audit every year.

- **Internal audit** – An internal audit is performed for process improvement in years without interim or verification audits. The scope of the internal audit is at the organization’s discretion
- **Interim audit** – An interim audit is conducted every 2 years by a third party auditor to cover a subset of the 17 elements. All 17 elements shall be covered over the span of 3 consecutive interim audits. Interim audits will utilize the same planning and reporting templates as verification audits. The Lead Auditor shall determine if direct observation of all treatment works that produce biosolids is necessary during the third party interim audit.

## 5.3 Appeals Process

The NBP provides an independent appeals process for those organizations that would like to question auditor findings of BMP major nonconformance. The appeals process involves the NBP focus group of the RBC appointing a volunteer Appeals Board representing a balance of biosolids management interested parties and wastewater industry professionals. The Appeals Board will be appointed only for the duration of the review of the specific appeal. The Board will examine the facts, interview parties involved, deliberate the case, and then make a determination as to whether a major nonconformance does or does not exist.

## 6 BMP Verification Audit Guidance - Policy

Chapter 6 describes the requirements for elements related to BMP documentation and the biosolids management policy.

### 6.1 Element 1. BMP Manual

Element 1 describes the requirements for preparing and maintaining a BMP Manual. The BMP Manual is a framework for documenting and organizing the pieces of a BMP. The BMP Manual *need not be a compilation of all the BMP documents*. The BMP Manual is a “road map” linking the biosolids policy with BMP procedures, plans, and other key documents defining the BMP. The BMP Manual defines how all 17 Elements of the BMP link together. If it is easier to maintain the BMP Manual as a stand-alone set of policies and procedures, this is also an acceptable approach. The BMP Manual can be kept simple by cross-referencing more dynamic BMP documents, such as those describing monitoring requirements and operating procedures. While it will not change as often as other documents, such as SOPs or records, the BMP Manual should be flexible enough to accommodate changes to the BMP and biosolids operations, and should be easy to update as needed.

#### 6.1.1 Minimum Conformance Requirements

- 1.1 Document the Biosolids Management Program in a BMP Manual or equivalent set of program documents that describe, at least at a general level, the applicable policies, programs, plans, procedures, and management practices in the BMP.
- 1.2 Approve the BMP Manual by a level of the organization's management with the authority to commit people and resources to biosolids management activities.
- 1.3 Contain, in the BMP Manual, the organization's biosolids management policy and procedures required by the *BMP Elements*.
- 1.4 Contain or cross-reference, in the BMP Manual, public participation, communications, and emergency preparedness and response programs and plans required by the *BMP Elements*.
- 1.5 Cover, in the BMP Manual, all applicable, relevant, and selected critical control points for biosolids management activities throughout the biosolids value chain.
- 1.6 In the BMP Manual, include or cross-reference all operational controls, procedures, processes, and other management methods used to achieve and maintain compliance with legal and other requirements.
- 1.7 In the BMP Manual, describe those biosolids management activities assigned to and performed by contractors.

## 6.1.2 Key Areas of Interpretation

Auditors shall interpret the requirements to “document the BMP in a BMP Manual or equivalent set of program documents” and to “contain, in the BMP Manual, the organization's Biosolids Management Policy and BMP Procedures required by the BMP Elements” to mean that organizations must have written documentation of their biosolids management policy and BMP procedures. However, organizations have flexibility in how they organize and arrange these documents. For example, organizations are not required to have one chapter in the BMP Manual for each element. Organizations may choose to combine related elements, such as Elements 3 and 10, or Elements 6 and 9 together.

## 6.2 Element 2. Biosolids Management Policy

Element 2 addresses the importance for an organization to articulate and communicate clearly its vision for how the organization will conduct its biosolids management activities. An organization’s biosolids management policy establishes the guiding principles for the organization’s BMP and biosolids operations. The organization’s BMP goals and objectives, procedures and work practices, monitoring and measurement, internal auditing, and performance reporting should all align to support the organization’s efforts to meet the commitments and apply the principles established in its biosolids management policy.

Organizations seeking NBP recognition must commit to following the 10 principles of conduct set forth in the *Code of Good Practice*. In the Biosolids Management Policy, an organization must include an explicit statement of commitment to the 10 principles of the *Code of Good Practice* and may include other biosolids commitments that the organization voluntarily chooses to adopt.

### 6.2.1 Minimum Conformance Requirements

- 2.1 Establish a Biosolids Management Policy that commits the organization to following the principles of conduct set forth in the *Code of Good Practice* and may include other biosolids commitments the organization voluntarily chooses to adopt.
- 2.2 Communicate the policy to employees, contractors, and all interested parties.
- 2.3 Incorporate the policy into the organization's biosolids programs, procedures, and practices.

### 6.2.2 Key Areas of Interpretation

The definition of a biosolids management policy is a “statement by an organization committing it to the principles set forth in the *Code of Good Practice* with respect to biosolids management and any other overall environmental goals voluntarily adopted by the organization.” Auditors should interpret the requirement of Element 2 to “commit” to the *Code of Good Practice* to mean that the biosolids management policy statement must explicitly or by reference incorporate the 10 principles of the *Code of Good Practice*.

In verifying that the policy has been communicated to employees, contractors, and all interested parties, auditors should note that the policy need not be memorized by employees and contractors word-for-word; it is important that the main message gets across.

Public organizations have specific processes for approving policies, which can affect their ability (and timing) for making changes to policy statements. Some biosolids organizations seeking verification may be committed to policies that are broader than the biosolids management policy statements required by the NBP. In the case where the biosolids management policy is embedded in a broader set of organizational policies, the organization must clearly define which statements constitute the biosolids management policy commitments. These statements are subject to audit for consistency with what is actually happening.

Because the biosolids management policy statement establishes a commitment by the organization to the principles of conduct set forth in the *Code of Good Practice* – the core commitments for participating in the NBP program - auditors must be able to clearly identify objective evidence that the policy statement belongs to the organization being audited and has been adopted by a level of the organization able to make such a commitment. Organizations can demonstrate objective evidence that the policy statement commits the organization to the policy through a variety of methods including: a signature on the policy of the appropriate level, such as the chairman of the board, commission or council with the Board, Commission or Council's name; printing the policy on organizational letterhead; and/or a reference to the name of the organization in the text of the policy.

## 7 BMP Verification Audit Guidance - Planning

Chapter 7 includes the auditor guidance associated with the BMP planning elements. Element 3 addresses requirements related to the identification of critical control points in the biosolids value chain. Element 4 focuses on the legal and other requirements that govern various activities along the biosolids value chain. Element 5 outlines requirements for establishing goals and objectives to ensure that an organization's biosolids management activities continually improve. Element 6 discusses requirements associated with public participation in an organization's BMP planning process. Requirements under each of these elements help to ensure that an organization is proactive and thorough in its biosolids management activities. Proper planning enables an organization to anticipate and manage potential and actual environmental, health, and safety impacts that may be associated with biosolids management activities.

### 7.1 Element 3. Critical Control Points

The identification of critical control points along an organization's biosolids value chain is fundamental to the effective operations of a BMP. By identifying critical control points, and associated environmental impacts, an organization can plan and implement proactive steps - operational controls - to assure that desired biosolids material characteristics are consistent with intended/actual final use and/or disposal and to manage or mitigate the environmental impacts associated with these locations or activities.

Requirements under Element 3 ensure that an organization has processes in place to identify and document information related to its critical control points for biosolids management.

### 7.1.1 Minimum Conformance Requirements

- 3.1 Identify and document the critical control points of the organization's biosolids management activities throughout the biosolids value chain, consistent with those identified in the *National Manual of Good Practice* and other authoritative sources.
- 3.2 Identify potential or actual environmental impacts at each critical control point.
- 3.3 Keep up to date information on the organization's critical control points.
- 3.4 Maintain records that link each critical control point and its potential environmental impacts with the corresponding operational controls.
- 3.5 For organizations that have successfully completed a third-party verification audit and are pursuing NBP Platinum-level Certification, provide notification to the third-party verification auditor after any operational change that requires a change to the identified critical control points or to environmental impacts associated with the critical control points.

### 7.1.2 Key Areas of Interpretation

Element requirement 3.1 states that critical control points identified by biosolids organizations shall be “consistent with those identified in the *National Manual of Good Practice* and other authoritative sources.” Auditors should interpret “consistent” to mean two things. First, this means that the critical control points identified by the organization should be *similar in scope and scale* to those identified in Appendix F of the *National Manual of Good Practice*. For example, if an organization were to identify Wastewater Treatment as a critical control point, this classification would be too broad in scale and scope to allow for effective mapping and management of environmental impacts and operational controls. Wastewater Treatment refers to an entire link in the biosolids value chain or a broad category of critical control points. To be consistent with the *National Manual of Good Practice*, the organization would instead need to dig deeper within Wastewater Treatment to identify specific locations or activities - such as anaerobic digestion, air drying systems, or solids dewatering.

Second, this requires that the biosolids organization identify and document *all* applicable critical control points in the organization's biosolids management activities and value chain. Failure to identify a complete range of critical control points may result in a failure to institute appropriate operational controls that are important for meeting legal, quality, and public acceptance requirements of the organization's biosolids.

Auditors need to understand, however, that biosolids management activities and operations vary from one organization to another and NBP program participants will need to tailor the list of critical control points throughout the biosolids value chain (pretreatment and collection through final use or disposal) to include those that are relevant to their specific operations. Thus, auditors should expect that the identified critical control points will vary from one organization to another and that not all critical control points identified in Appendix F of the *National Manual of Good Practice* will be applicable to each organization. For example, biosolids organizations throughout the country employ a variety of methods



for stabilizing biosolids, such as aerobic digestion, anaerobic digestion, or chemical stabilization. Likely, only one of these critical control points applies to a single facility (although participating organizations may have more than one facility and possibly of different types). Similarly, the NBP has identified a number of Critical Control Points for land application. It is expected that a typical land application program would be managing these critical control points. However, some of the land application critical control points will likely not be applicable to all biosolids organizations. The biosolids organizations are expected to be able to explain to the auditor as to why certain critical control points have not been included (e.g., they are not applicable to the organization's operations).

To assess critical control point completeness, auditors should consider:

- the intended/actual final use or disposal of biosolids and associated legal requirements;
- the organization's desired biosolids material characteristics;
- the organization's span of control; and
- the nature of the processes utilized to produce biosolids material.

While the NBP expects that participating organizations will identify critical control points that are consistent with those defined in the *National Manual of Good Practice*, an organization may have good reason due to local circumstances for identifying critical control points that are either not addressed in the *National Manual of Good Practice* or not wholly consistent with the Manual's specification of critical control points. The NBP expects the organization to provide the auditor with the rationale for diverging from the critical control points identified in the Manual. For example, a biosolids organization then sends its biosolids to a contracted land fill for final disposal could explain that the land fill operations are not under the organization's direct control or influence. However, the organization could also choose to identify the land fill operation as a critical control point and define the operational controls as the local utility agreements with the landfill operator, (bi-)annual calls to the regulators to check land fill operations are in compliance, and direct observation of landfill operations. Based on the rationale and using the auditor's best judgment, the auditor will then need to determine whether the critical control points identified by the organization are adequate to ensure that the biosolids management activities meet legal, quality, and public acceptance requirements and do not have undesirable environmental impacts.

Auditors should ask if the *National Manual of Good Practice* was consulted during the identification of critical control points and operational controls. However, auditors should recognize that each organization and biosolids management program is unique. Consequently operating procedures will be unique as will the selection of critical control points and operational controls. Auditors should recognize and allow for the possibility that a critical control point for one organization may be listed as an operational control (or monitoring/measurement) by another organization.

The NBP believes that in selecting critical control points to ensure that the biosolids management activities meet public acceptance requirements, organizations should be attentive to interested party input. This attentiveness to interested party input may, at times, drive an organization to select critical control points beyond those that they associate strictly with the biosolids value chain. For example, an organization that generates untreated solids at one site and trucks them to another facility for processing into biosolids may select, based on regulatory and quality requirements, critical control points associated with trucking and solids testing. However, based on public acceptance requirements and input from interested parties, they organization may also select critical control points associated with odor control.

The NBP expects that biosolids organizations may identify critical control points (and associated operational controls) that are not specifically addressed in the *National Manual of Good Practice*, but are instead drawn from “other authoritative sources”. For example, an organization may choose to experiment with new technology or equipment, not covered in the *National Manual of Good Practice*. Examples of other authoritative sources include publications and guidance manuals from the U.S. Environmental Protection Agency and Water Environment Federation.

Element requirement 3.5 states that organizations that have successfully completed a third-party verification audit and are pursuing NBP Platinum-level Certification, provide notification to the third-party verification auditor after any operational change that requires a change to the identified critical control points or to environmental impacts associated with the critical control points. An indication that such a notification is likely warranted would include changes to an NPDES permit or changes to operations that require notification of a regulatory agency.

## 7.2 Element 4. Legal and Other Requirements

To ensure that it is operating in compliance with all applicable legal and other requirements, the NBP believes that an organization must have an effective process for identifying, tracking, and updating applicable regulatory and other requirements. Applicable requirements help define the boundaries that govern an organization’s activities, while the organization’s BMP provides a systematic mechanism for ensuring that the behaviors and activities operate within these boundaries.

While Element 4 ensures that an organization has appropriate processes to understand its applicable requirements, other elements require the organization to implement controls to maintain and measure compliance with these requirements. Compliance with applicable legal and other requirements is a central component of the *Code of Good Practice* (“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.”), which all organizations seeking NBP BMP verification must commit to in their biosolids management policy, and is consistent with the NBP belief that “outcomes matter.”

### 7.2.1 Minimum Conformance Requirements

- 4.1 Establish a procedure for identifying and tracking legal (federal, state, and local) and other requirements applicable to its biosolids management activities.
- 4.2 Establish and maintain records of applicable legal and other requirements.
- 4.3 Include a management process for incorporating changes and new requirements into the BMP Elements.

### 7.2.2 Key Areas of Interpretation

The implementation aspect of “establish” should be interpreted to mean that the procedure for

identifying and tracking requirements should be in place and operating effectively as intended (e.g., all applicable requirements are identified and documented). This means that the auditor will need to investigate whether the activities described in the procedure are actually occurring. To assess implementation of the procedure, the auditor will need to be familiar with the important legal and other requirements that are likely to affect biosolids operations.

Legal requirements refer to “federal, state, and local environmental laws and regulations that are applicable to an organization’s BMP activities.” Auditors should be very familiar with the major legal requirements that affect various activities in the biosolids value chain. Auditors should note, however, that wastewater treatment operations are subject to a wide array of regulatory requirements, many of which do not apply to biosolids material production. Although biosolids organizations may choose to incorporate or reference such requirements in their BMP, the NBP does not require or expect this to take place. Typically, legal and other requirements applicable to biosolids management in the wastewater/solids treatment process will involve ensuring the material reflects characteristics consistent with the intended final use or disposal (e.g., digester time/temperature requirements for pathogen levels). Auditors should refer to the *National Manual of Good Practice* for summary information on regulatory requirements specifically associated with biosolids management. For example, Chapter 3 summarizes the requirements for land application associated with the 40 CFR Part 503 Rule.

Other requirements may include local ordinances governing transportation of biosolids, voluntary policies, informal or formal agreements with neighbors, other goals mandated by relevant political entities, industry guidelines or best practices, performance standards, municipal by-laws, or other commitments related to biosolids management made by the organization. Auditors should note that the procedures and the roles/responsibilities for committing to voluntary agreements are often not the same as those involved with legal requirements. For example, persons responsible for tracking and incorporating changes to federal requirements for an NPDES permit may not be the same persons who establish voluntary commitments with other local jurisdictions regarding biosolids transportation routes. Auditors should expect to find procedures established for identifying legal and other requirements and for incorporating these requirements into the BMP and that these procedures are being followed.

## 7.3 Element 5. Goals and Objectives

The periodic establishment and review of BMP goals and objectives drives and guides an organization’s continual improvement efforts by defining the specific aspects of the organization’s BMP performance that the organization and its various interested parties desire to target. Goals and objectives enable the organization to align resources and efforts to maximize the beneficial results. The NBP *BMP Guidance Manual* provides extensive detail to guide biosolids organizations in the establishment and tracking of goals and objectives for biosolids management.

### 7.3.1 Minimum Conformance Requirements

- 5.1 Establish and periodically review measurable biosolids program goals and objectives for biosolids management activities, including measurable goals and objectives for each of the four NBP outcome areas: environmental performance, regulatory compliance, relations with interested parties, and quality biosolids management practices.
- 5.2 Reflect, in program goals and objectives, identified priorities for improving environmental performance of biosolids management activities based on critical control points, identified or potential environmental impacts, legal and other requirements, and applicable best

management practices as defined in the *National Manual of Good Practice* and various authoritative sources on biosolids management (e.g., Water Environment Federation Manuals of Practice).

- 5.3 Consider, in developing program goals and objectives, input from interested parties developed through proactive public participation.
- 5.4 Integrate goals and objectives with other BMP Elements and biosolids management activities.
- 5.5 Develop program goals and objectives using SMART criteria (i.e., be Specific, Measurable, Achievable, Relevant, and Time-bounded).
- 5.6 Update program goals and objectives on a regular basis.
- 5.7 Establish an action plan that describes those improvement activities it is pursuing to achieve biosolids program goals and objectives. Designate, in the action plan, schedules, milestones, resources, and responsibilities for achieving biosolids program goals and objectives.

### 7.3.2 Key Areas of Interpretation

Biosolids Program Goals are defined as “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 may include but are not limited to compliance with specific regulatory requirements, expanding beneficial use, improving biosolids quality, improving public acceptance and reducing or eliminating direct/indirect negative environmental impacts.” The easiest way for a biosolids organization to “reflect” priorities for improving environmental performance (Element requirement 5.2) is to establish specific, measurable goals and objectives for environmental impacts, legal and other requirements, and best management practices. Demonstrated progress towards established goals and objectives in the areas of environmental performance and regulatory compliance would also demonstrate meeting the NBP expectations for those outcomes areas.

Further clarification on NBP expectations for what it means for an organization to “consider input from interested parties” (Element requirement 5.3) is provided under Element 6 Public Participation in Planning.

## 7.4 Element 6. Public Participation in Planning

Element 6 addresses the public participation requirements of the NBP BMP, including specific areas that must be included in the public participation approach, such as the commitment to the ten principles in the *Code of Good Practice*, as well as specific requirements for when public participation ought to happen, such as during development of BMP goals and objectives. The requirements in Element 6 are highly related to Element 9, which covers requirements for a proactive communications and public outreach program. Auditors and organizations being audited may want to consider some parts of Elements 6 and 9 together. Auditors must also note that the NBP has established certain specific expectations for how public participation outcomes (i.e., relations with interested parties) should act as an indicator of BMP health. A discussion of these expectations is provided in Chapter 4, Section 4.5.6.

### 7.4.1 Minimum Conformance Requirements

- 6.1 Select and implement a proactive public participation approach to involve interested parties in its Biosolids Management Program planning process.
- 6.2 Reflect, in the selected approach, the organization's commitments to the ten principles in the NBP *Code of Good Practice*, including plans for independent third-party verification of conformance with the *BMP Elements*.
- 6.3 Select an approach that is consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances.
- 6.4 Provide interested parties with meaningful opportunities to express views and perspectives relative to biosolids management activities, including concerns about environmental impacts, biosolids program performance, and potential areas for improvement.
- 6.5 Consider input from interested parties in initially developing program goals and objectives during BMP implementation and in updating them as part of periodic review of BMP performance.

### 7.4.2 Key Areas of Interpretation

Auditors should interpret a “proactive public participation approach” as one that creates avenues for interested parties, as identified by the organization, to communicate their perceptions and concerns regarding biosolids management activities near the beginning of the organization’s BMP planning process (specifically in identifying environmental impacts and setting performance goals and objectives for the biosolids program) and during the periodic review of BMP program goals and objectives. A “proactive” participation approach also enables the organization to understand the needs, concerns, and perspectives of interested parties before problems arise or incidents occur.

The NBP does not require or expect that organizations will necessarily develop public participation efforts solely dedicated to BMP planning and implementation. The NBP believes it is fully acceptable that organizations utilize existing methods (e.g., existing community advisory groups) and/or leverage already planned events (e.g., a meeting relating to planned treatment plant upgrades) to discuss their BMP planning efforts and collect information on interested party perspectives. Similarly, the NBP believes that already existing public participation initiatives can provide organizations with the awareness of interested party perspectives sufficient to develop a responsive and effective BMP. The NBP does not require public meetings or hearings. Thus, organizations have multiple options for how they demonstrate public participation efforts have provided them with the understanding to prepare their BMP. The auditor should expect that the biosolids organization has documented its approach for involving interested parties in its BMP planning process. The NBP expects that records of public participation activities (such as attendee lists) should exist, at a minimum, since the BMP was put in place. At the time of the first verification audit, this would be at least six months. The NBP understands that not all organizations have had a formal public participation program and records of its implementation prior to implementation of the BMP.

In addition to verifying that the organization has selected and documented a public involvement approach, the auditor will need to make a determination as to whether this approach is adequate to ensure that the organization reasonably understands the perceptions and concerns of interested parties before problem situations arise. As well, auditors shall verify that the selected public participation approach reflects the organization's plan for independent third-party verification of conformance with the *BMP Elements* (Element requirement 6.2). Auditors shall verify that biosolids organizations have notified interested parties about their intent to receive an independent third party audit and have built into their BMP planning a discussion with interested parties about approaches for observing the third

party audit.

The NBP expects appropriate state and federal regulators to be identified among an organization's interested parties and regulators should be invited to participate in the BMP planning and audit process. The NBP understands that this invitation may not be accepted, but recognizes that regulatory participation as interested parties is desired to the extent possible.

The NBP believes that providing notice of their intent to receive a third party audit and having a discussion with interested parties about approaches for observation would provide the organization the best opportunity to manage expectations about audit results, articulate any constraints needed on audit observation, and understand how best to conduct the audit to gain maximum public acceptance of biosolids management activities. Auditors should note, however, that the NBP does not require a biosolids organization to have interested parties observe or otherwise participate directly in the independent, third party audit.

Biosolids organizations are granted significant flexibility in how they involve interested parties in their BMP planning activities. The auditor shall be familiar with NBP guidance on public participation in planning that is contained in the *BMP Guidance Manual* and the *National Manual of Good Practice* (Chapter 1, Public Acceptance). These publications provide specific methods, techniques, questions, and examples that can assist biosolids organizations in developing appropriate and effective public participation approaches. As implied by Element requirement 6.3, the auditor shall keep in mind that what constitutes an appropriate approach may vary significantly across locations, and Element requirement 6.3 states that the organization's approach shall be "consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances."

The auditor shall note that the organization's public participation requirements extend over all applicable portions of the biosolids value chain, including those biosolids management activities implemented by contractors. This means that the organization's documented public participation approach shall include information that addresses how input from interested parties is solicited and considered for activities that may be performed by contractors. In some cases, the biosolids organization may opt to have an integrated public participation process that covers public participation activities performed by contractors. If any of the organization's contractors maintain their own public participation plan(s), it is acceptable for the biosolids organization to reference the contractors' plans.

To ensure the organization's public participation approach is "consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances," the auditor shall look to see whether the organization has:

- considered the history of local support for or opposition to biosolids management practices;
- examined previous public participation methods and their effectiveness;
- considered any current interests, issues, or concerns;
- considered who is impacted or potentially impacted by the organization's biosolids management practices;
- identified who is concerned or whose opinions might be important for successful operations of the organization's biosolids management practices; and
- selected and implemented an approach consistent with the above.

Auditors shall consider that, at a minimum, the following aspects of a public participation approach may change based on local conditions.

- Format. For example, where there is substantial public interest, the organization may need to provide a large venue forum where many members of the public can participate. On the other hand, organizations that find there is interest among only some specific parties may want to provide more focused opportunities for public participation, such as advisory or focus groups. Multiple formats and opportunities are likely to be appropriate for many organizations. The *BMP Guidance Manual* provides examples of various public participation mechanisms.
- Frequency. Where there is significant public interest, the organization would likely have public involvement activities more frequently than where there is not. Where there is low public concern or interest, the organization may want to have open ended opportunities available on a regular basis (e.g., site tours and public complain/inquiry hotlines), and less frequent, formal public participation events.
- Public Involvement. In instances where there is broad-based public interest or concern, the organization could provide opportunities to involve the public at large. Where there is concern or interest among specific parties and less among the broader public, the organization could sponsor public participation activities that involve those specific parties (e.g., farmers whose fields have biosolids applied, communities potentially impacted by truck traffic). The NBP does not require organizations to hold public meetings or hearings

If a less active public participation approach has been selected (e.g., one where the organization is proactively prepared, but engages only as needed), the organization must provide evidence that other approaches were considered and that all interested parties and potential concerns/perspectives have been identified. Selection of a less active public participation approach will not necessitate a finding of a nonconformance, however, the organization shall be prepared to document for the auditor why a less active approach was selected.

The auditor shall interpret “meaningful opportunities” to mean that the organization has established mechanisms (more than one) that allow for interested parties to communicate their perspectives, views, and concerns regarding biosolids management activities to the organization. To be considered a “meaningful opportunity,” the method must meet the following criteria:

- identified interested parties have been provided a method for input consistent with their location and capacity to comment;
- efforts have been made to alert potential interested parties about the opportunity to provide comment;
- time has been provided to enable interested parties to participate, formulate, and deliver substantive input; and
- background information (e.g., information on the organization’s general BMP implementation plans, commitment to the *Code of Good Practice* and third party verification process) has been provided to interested parties to enable them to understand the BMP planning process and formulate substantive input.

“Input from interested parties” shall be interpreted to include both written comments (e.g., letters, completed surveys) from the public and interested parties as well as verbal comments made during NBP Third Party Auditor Guidance - Sept 2024

meetings and other methods organized by or on behalf of the biosolids organization such as one-on-one private meetings with interested parties. As stated earlier, the organization can obtain this input either through public participation efforts dedicated to BMP planning and implementation or through other existing or newly developed efforts that can include as a component discussion of the BMP.

The auditor shall interpret “consider” to mean that the organization has acknowledged and responded to all interested party input. Consistent with the NBP assertion that “outcomes matter,” there are three acceptable responses to public comments.

1. The organization may decide to directly address public input by implementing measures designed to resolve issues related to an area of public comment. For example, the organization might modify practices or alter equipment or processes.
2. The organization may decide to establish goals and objectives that focus organizational attention on addressing identified issues over a defined time horizon.
3. The organization may decide not to directly address a certain issue raised by public input due to technical, financial, or other constraints. In such cases, the organization is expected to document, and communicate to interested parties, its rationale for making this determination, and, where possible, to suggest alternate steps to address (or partially address) the interested party input.

Although the NBP considers this third option for response to interested party comments acceptable, a pattern of not addressing concerns or issues raised by interested parties should be viewed by an auditor as a potential failure to achieve NBP public acceptance objectives and the organization’s commitment to continual improvement. As such, auditors should consider that such patterns may be an indicator of BMP health problems. In this context, however, the NBP requires auditors to remain attentive to the possibility that prior efforts that have addressed interested party input may leave a biosolids organization with a pattern of on-going, residual concerns. In such cases, auditors should factor the organization’s prior attentiveness to interested party input into their BMP health evaluation. Auditors should expect, however, that biosolids organizations will continue to have ongoing, two-way communications with interested parties about such residual concerns. Meeting the requirements of Element 6 demonstrates to the third party auditor that the organization is meeting the NBP expectations for the outcome area of Relations with Interested Parties.

The NBP expects that the organization can demonstrate that it actually acknowledges and responds to the interested party input. At a minimum, “consider input” means that:

- views and perspectives have been captured by a process that ensures management is fully aware of interests, needs, and concerns of interested parties as critical control points are identified and objectives and goals are set; and
- responses to public comments have been formulated, documented, and communicated back to relevant interested parties by the biosolids organization.

Auditors shall recognize that the biosolids organization retains full control over management and decision making, and it is not obligated to implement measures to resolve all public concerns. Auditors shall factor into their assessment that there can always be some parties who are not satisfied that their concerns have been addressed or parties who are fundamentally opposed to certain biosolids management practices, regardless of the organization’s performance or how active and meaningful the public participation effort has been.



When contractors are responsible for implementing some or all of the public participation approach, the NBP expects that the organization has included in its BMP a process for obtaining the information gathered by contractors. This process is fundamental to the organization being able to “consider” input from interested parties.

## 8 BMP Verification Audit Guidance - Implementation

This chapter focuses on the implementation elements of the BMP. . It describes roles/responsibilities (Element 7), training needed to provide necessary skills and knowledge of BMP standards (Element 8), communication tools (Element 9), standard procedures (Element 10), and practices for normal and abnormal situations (Element 11&12).

### 8.1 Element 7. Roles and Responsibilities

Element 7 describes requirements with respect to employee roles and responsibilities for performing biosolids management activities and BMP functions. Element 7 does not dictate what those roles and responsibilities are, but rather that they be defined and documented, and that management provide the resources necessary to implement them.

#### 8.1.1 Minimum Conformance Requirements

- 7.1 Establish and maintain records of the assigned roles and responsibilities for the BMP and biosolids management activities. These records shall define and document roles and responsibilities of employees for performing biosolids management activities and BMP functions.
- 7.2 Appoint an individual with overall responsibility for ensuring that the BMP is implemented and maintained.
- 7.3 Provide the human, technical, and financial resources necessary to effectively execute these responsibilities.
- 7.4 Define and document the roles and responsibilities of contractors retained to perform various biosolids management activities and BMP functions through contracts or service agreements.

#### 8.1.2 Key Areas of Interpretation

In Element requirement 7.3 “human resources necessary” means that training and qualifications are commensurate and consistent with the assigned roles and responsibilities of employees, as reflected in their job descriptions.

“Technical resources necessary” means that the necessary equipment and tools are provided.

“Financial resources necessary” means that funds are allocated, consistent with the outcome of an

evaluative process to ascertain the resources necessary to support effective BMP implementation. The auditor will not verify whether or not allocated funds are deemed sufficient, but will verify that the organization used an evaluative process to determine the resources necessary and then provided a level of financial resources consistent with that evaluation. “Effectively execute” means that biosolids management activities are producing biosolids materials that are in compliance with all legal and other requirements and meet other identified, desirable characteristics (e.g., an organization might identify “no visible plastics” as a desirable characteristic based on customer requirements or selected final use). It also means that the BMP has been implemented and updated as necessary.

For Element requirement 7.4, the NBP considers relevant contractors to be those that have roles and responsibilities for biosolids management activities associated with the critical control points of the biosolids organization’s biosolids value chain. The NBP acknowledges that organizations may have contractors performing functions outside the biosolids value chain and are therefore not included in the requirements of the NBP BMP or third party verification. The NBP expects all contractors with roles and responsibilities for biosolids management activities to have contracts and/or service agreements that recognize the conditions imposed by the BMP, regardless of the extent of responsibilities or involvement of the contractor with the biosolids organization’s BMP.

## 8.2 Element 8. Training

Element 8 describes training requirements to ensure that biosolids management activities are being performed by competent and qualified employees and contractors.

### 8.2.1 Minimum Conformance Requirements

- 8.1 Establish and maintain a training program to ensure that employees responsible for specific biosolids management activities and for the implementation of various BMP functions are competent in performing their assigned tasks and duties. The training program shall provide general awareness of the BMP and how each employee's assigned roles and responsibilities relate to the entire biosolids value chain.
- 8.2 Include in the training program new or reassigned employees.
- 8.3 Maintain records of individual employee training delivered and completed.
- 8.4 Require that contractors establish their own training programs consistent with their roles and responsibilities in biosolids management activities as defined through service agreements.

### 8.2.2 Key Areas of Interpretation

To satisfy Element requirement 8.4, the biosolids organization may require that contractors develop their own training program, or that they participate in the organization’s own training programs. In either case, the biosolids organization being audited is responsible for ensuring contractors receive training that is consistent with their roles and responsibilities in biosolids management activities.

## 8.3 Element 9. Communications

The NBP believes that publicly accepted biosolids management hinges upon the presence of effective

information flows between the biosolids organization and interested parties. Access to information about biosolids management activities can significantly reduce public perceptions of risk. At the same time, employees and contractors need certain information to perform their jobs in a safe and environmentally sound manner. Element 9 defines the BMP requirements for internal communications to employees and contractors, as well as external communications to interested parties.

### 8.3.1 Minimum Conformance Requirements

- 9.1 Establish and maintain a proactive Communications Program that provides ongoing information about the BMP to interested parties and the public, consistent with local circumstances, the method of biosolids management, public communications history, and degree of current interest in its biosolids management activities.
- 9.2 Include a procedure for receiving inquiries and requests for information from interested parties about the organization's biosolids management activities and BMP. The procedure shall define a process for assuring a timely and complete response to inquiries by interested parties.
- 9.3 At a minimum, make the following information about the organization's biosolids management program and activities available to interested parties:
  - a) the Biosolids Management Policy;
  - b) applicable legal and other requirements;
  - c) biosolids program goals and objectives for continual improvement;
  - d) the periodic BMP Performance Report; and
  - e) a detailed report of the independent, third party verification audit results of the BMP.
- 9.4 Define roles and responsibilities of outside contractors in the Communications Program.
- 9.5 Communicate relevant information about biosolids management activities and all 17 BMP elements to employees and outside contractors, consistent with assigned roles and responsibilities.

### 8.3.2 Key Areas of Interpretation

A “proactive Communications Program” is one that creates avenues for the public and interested parties to receive and/or access information about the organization's BMP, its biosolids management activities, and its biosolids management and BMP-related performance. The auditor should expect that the Communications Program establishes quality, two-way flows of information, which allows interested parties to communicate their perceptions and concerns regarding biosolids management activities. Such a “proactive” Communications Program establishes a foundation for communication with interested parties before problems arise or incidents occur. In developing a “proactive Communications Program” that provides a “timely response” to inquiries or requests for information, the NBP expects that the organization would have identified and contacted the people or organizations who are likely to receive inquiries or complaints from interested parties. For example, in some cases, interested parties might direct inquiries or complaints about the organization's biosolids management activities or operations to other organizations or government agencies (e.g., local departments of health, transportation, or police).

The NBP's expectations for ensuring that the communications program is “consistent with local circumstances, the method of biosolids management, public communications history, and degree of current interest in its biosolids management activities” are identical to those under Element 6, Public

## Participation in Planning.

The NBP expects that the definition of a “timely response” to inquiries will depend on whether the public inquiry or request is part of an emergency situation or an inquiry pertaining to routine biosolids management activities. For emergency situations, a “timely response” could mean immediately. For routine inquiries, the NBP suggests that a “timely response” be interpreted to mean that an organization acknowledges the receipt of the request or inquiry to the originator within two business days of its receipt by the organization. The organization has flexibility to determine the most appropriate means of acknowledgment (e.g., mail, email, phone, fax). In addition, the NBP suggests that a “timely response” be interpreted to mean that a response to the inquiry or the requested information is sent to the originator within two weeks of initial request or inquiry. If the organization is unable to meet the suggested time frames for response, then the NBP suggests that the organization inform the request originator of this within the two week period and provide a new time frame for conveying the information requested. To the extent that an auditor observes a consistent pattern of responses outside of what is generally considered to be timely, the auditor should view this as a potential failure to establish quality flows of information with interested parties, as described under outcomes matter, and further examine the organization’s BMP for potential systemic problems.

The auditor should consider a response “complete” if all requested information is provided. If the organization is unable to provide all or part of the requested information, the auditor shall expect the organization to indicate so in its response to the request originator and provide an explanation of why the information cannot be made available. The auditor should note that the organization is required to make biosolids management information addressed under Element requirement 9.3 available upon request.

For Element requirement 9.4, the auditor shall expect the biosolids organization to define roles and responsibilities of outside contractors in the Communications Program, to the extent that contractors have responsibilities that involve actual or potential engagement with the public / interested parties. The NBP acknowledges that not all contractors have such roles and responsibilities.

## 8.4 Element 10. Operational Control of Critical Control Points

Element 10 describes requirements associated with operational controls of critical control points. (See Element 3 for more information on critical control points.) Operational controls regulate biosolids management activities to ensure that critical control points are managed within acceptable parameters. By establishing standard operating procedures (SOPs), work practices, instrumentation and process controls, monitoring programs, and other operational controls, a biosolids organization can ensure that operations consistently, efficiently, and effectively meet applicable legal and other requirements. Most importantly, operational controls enable an organization to eliminate or minimize negative environmental impacts and maximize the benefits delivered to the community from the biosolids program.

### 8.4.1 Minimum Conformance Requirements

- 10.1 Develop and implement standard operating procedures, work management practices or other appropriate methods at all critical control points throughout the biosolids value chain to effectively manage potential environmental impacts.
- 10.2 Incorporate all legal and other adopted requirements in the operational controls of critical control points.
- 10.3 Consider applicable best management practices as defined in various authoritative sources on

biosolids management (e.g., the *National Manual of Good Practice*, Water Environment Federation Manuals of Practice).

- 10.4 Include appropriate preventative maintenance procedures and work management systems for maintaining equipment, instrumentation, vehicles, and other treatment technology and process control systems associated with its biosolids management activities.
- 10.5 Require that contractors establish their own operational controls consistent with their roles and responsibilities in biosolids management activities.

### 8.4.2 Key Areas of Interpretation

Element 10 requires that the “organization shall develop and implement standard operating procedures, work management practices, or other appropriate methods” to manage potential environmental impacts at all critical control points throughout the biosolids value chain. The *BMP Elements* do not specifically require that SOPs and work management practices be written down. However, one way to demonstrate to an auditor that SOPs have been “developed and implemented” is to have them written down and clearly available to those who need them (e.g., at work stations). Biosolids organizations could also write them down in a remote manual or not write them down at all. To ensure consistent implementation of operational control, the auditor should find that in the absence of written SOPs at work stations, employees are able to cite procedures the same way all the time.

Merely having written SOPs does not demonstrate that critical controls points are being effectively controlled. Auditors will also look for records, logs, and other objective evidence that demonstrate SOPs and other operational controls are actually being implemented. Also, while written SOPs are important, they are not the only form of operational control. Operational controls can also include permits, ordinances, process controls, monitoring activities, and checklists, among others.

The auditor should interpret “all” to mean that one or more operational controls have been developed for each identified critical control point.

For Element requirement 10.2, there are multiple ways that objective evidence can be provided to the auditor to demonstrate that legal and other requirements have been “incorporated” in the operational controls of critical control points. Auditors should not interpret Element requirement 10.2 as requiring that legal and other adopted requirements be specifically cited in written SOPs. While this is one method of providing objective evidence to the auditor that all legal and other adopted requirements have been incorporated in the operational controls of critical control points, it is not the only method. Other options are acceptable, such as providing tables in BMP Manual that link critical control points, operational controls, and monitoring/measurement requirements. Organizations have the flexibility to determine how applicable legal and other requirements are incorporated into operational controls.

For Element requirement 10.3, the auditor shall interpret “consider” to mean more than that the organization has merely thought about the adoption of applicable management practices. The auditor shall expect that the organization has *actually adopted*, as applicable, management practices outlined in the *National Manual of Good Practice*, the Water Environment Federation Manuals of Practice, and/or other authoritative sources. If the organization has not adopted applicable management practices, then the organization must be able to provide a rationale for why it has selected an alternative approach for managing the relevant critical control point. As discussed under Element requirement 3.1, the organization may have good reasons due to local conditions or circumstances that make a certain

operational control inappropriate or impractical, or that make another approach more effective. Based on this rationale and using the auditor’s best judgment, the auditor will then need to determine whether the operational controls selected by the organization are adequate to assure the biosolids management activities meet the legal, quality, and public acceptance requirements.

To satisfy Element requirement 10.5, a biosolids organization must require its contractors to establish operational controls or to adopt and implement the operational controls developed by the biosolids organization for those biosolids management activities consistent with the contractors’ roles and responsibilities. In Element requirement 10.5, however, “require” should be interpreted to mean that the organization has done more than just contractually required a contractor to establish operational controls. The organization should also periodically check to verify that contractors have established appropriate operational controls if the contractors have developed their own operational controls, or to verify that contractors are effectively implementing the biosolids organization’s operational controls. This interpretation is based on requirements in Element 16 which require the organization to periodically audit biosolids management activities performed by contractors. Ultimately, under the NBP’s program, it is the organization, not the contractor, who is responsible for ensuring that operational controls with respect to contractor activities have been identified, documented, and implemented.

Meeting the requirements of Element 10 to “consider biosolids management practices consistent with the *National Manual of Good Practice*” also demonstrates that the organization is meeting the NBP expectations for the outcome area of Quality Biosolids Management Practices.

## 8.5 Element 11. Emergency Preparedness and Response

Element 11 defines the NBP’s requirements for establishing Emergency Preparedness and Response Plans and Procedures.

### 8.5.1 Minimum Conformance Requirements

- 11.1 Establish and maintain Emergency Preparedness and Response Plans and Procedures to assure effective response to accidents and emergency situations associated with biosolids management activities.
- 11.2 Review and evaluate the effectiveness of emergency preparedness and response procedures, including communications systems, and revise them as necessary.
- 11.3 Have all emergency response equipment on site or readily available within a minimum response time.
- 11.4 Require contractors to establish and maintain Emergency Preparedness and Response Plans and Procedures to assure effective response to accidents and emergency situations associated with biosolids management activities.

### 8.5.2 Key Areas of Interpretation

Auditors should interpret “effective response” to mean that plans have been built around response to “worst case” scenarios with no ecological or human consequences. This would include, for example, having a contingency plan for biosolids final use and disposal (e.g., landfill options available in the case land application options are lost).

The NBP defines “minimum response time” to mean that equipment can be utilized in an emergency situation to avoid or minimize the effect on human health and the environment. As well, the NBP expects that organizations shall consider public acceptance considerations (such as biosolids spills on local roadways) in determining response times for emergency equipment. The NBP expects that organizations would have personal safety equipment (such as fire prevention or eyewash capability) located on the job site. Equipment that might be maintained off-site would include larger equipment, such as tractors required to clean up a biosolids spill on the roadway. The NBP expects that some organizations might have contracts in place for use of equipment in emergency situations.

For requirement 11.4, the biosolids organization may require contractors to establish and maintain their own Emergency Preparedness and Response Plans and Procedures, or the organization may require contractors to be incorporated into and formally adopt the organization’s own Emergency Preparedness and Response Plans and Procedures.

## 8.6 Element 12. BMP Documentation and Document Control

Documentation plays an important role in an organization’s BMP, helping to ensure that an organization’s activities are performed in an appropriate and consistent manner. BMP documentation can also strengthen institutional memory, enabling an organization to weather staff turnover. Element 12 addresses the NBP’s requirements and expectations regarding BMP documentation and document control.

### 8.6.1 Minimum Conformance Requirements

- 12.1 Establish and maintain documentation, documents, and records for the Biosolids Management program including the 17 BMP elements.
- 12.2 Establish and maintain document control procedures and practices to ensure that its Biosolids Management program documentation and documents are:
  - a) available and can be easily located,
  - b) created following established document creation protocols,
  - c) kept up to date through periodic reviews and revision (if applicable),
  - d) properly marked with version number, effective date(s), and references to replaced or superseded versions, and
  - e) approved by authorized personnel.
- 12.3 Establish and maintain records of biosolids management activities and ensure that they are:
  - a) available and can be easily located, and
  - b) retained for the specified period of time.
- 12.4 Establish documentation, document control and record requirements for biosolids management activities conducted by its contractors in Service Agreements, and incorporate these requirements into its BMP.

### 8.6.2 Key Areas of Interpretation

Auditors should interpret requirement 12.4, “establish documentation, document control and record

requirements for biosolids management activities conducted by its contractors in Service Agreements, and incorporate these requirements into its BMP” to mean that organizations must have written agreements as to how relevant documents and records generated by contractors are to be controlled consistent with the organization’s BMP procedures. The NBP does not expect that organizations will require contractors to establish their own document control systems.

## 9 BMP Verification Audit Guidance - Measurement and Corrective Action

This chapter discusses the BMP requirements associated with measurement and corrective action. Elements in this chapter ensure that the results of an organization’s activities and performance are tracked, and that the information is used to inform and guide future activities, supporting the organization’s continual improvement efforts. Elements addressed in this chapter include Monitoring and Measurement (Element 13), Nonconformances: Preventive and Corrective Action (Element 14), Biosolids Management Program Performance Report (Element 15), and Internal BMP Audit (Element 16).

### 9.1 Element 13. Monitoring and Measurement

Monitoring and measurement activities provide important feedback to an organization about the status of its operations and activities. When provided with appropriate data at the right time and frequency, personnel can make better informed decisions that affect biosolids management operations. In some cases, organizations are required to perform monitoring and measurement activities to satisfy regulatory or other requirements. Monitoring and measurement help organizations to ensure that performance remains within acceptable bounds, and to assess where effort and resources should be targeted.

#### 9.1.1 Minimum Conformance Requirements

- 13.1 Establish and maintain regular monitoring and measurement procedures and practices for all biosolids management activities to assure compliance with applicable legal and other requirements, measure biosolids program performance at critical control points, and track progress toward achieving program goals and objectives.
- 13.2 Record monitoring and measurement results and maintain records as established in the record keeping procedures under Element 12.
- 13.3 Require contractors to establish and maintain regular monitoring and measurement procedures and practices for all their assigned biosolids management activities, as defined in their service agreement.

#### 9.1.2 Key Areas of Interpretation

For Element requirement 13.3, the biosolids organization has the flexibility to determine if it will require contractors to establish their own monitoring and measure procedures and practices or require the contractor to adopt and implement the organization’s own monitoring and measurement procedures and practices.



## 9.2 Element 14. Nonconformances: Preventive and Corrective Action

The establishment of systematic processes for preventing and responding to nonconformances is crucial to the effectiveness of an organization's BMP. Such systems drive continual improvement and prevent problem situations from occurring and recurring. Element 14 outlines the requirements necessary to ensure that organizations are successful at preventing and correcting nonconformance situations.

### 9.2.1 Minimum Conformance Requirements

- 14.1 Develop and implement a procedure to investigate any noncompliance with applicable regulatory requirements and/or nonconformance with internal BMP procedures identified during routine monitoring and measurement or periodic internal BMP audits.
- 14.2 Develop and implement a procedure to identify the cause and take actions to correct the nonconformance.
- 14.3 Develop and implement a procedure to document the necessary corrective actions taken to prevent a recurrence.
- 14.4 Develop corrective action plans to address nonconformances identified during routine monitoring and measurement and identify the nonconformance, the root cause(s), and the corrective action being taken. In the corrective action plans, identify changes to policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances.
- 14.5 Establish formal corrective action plans to address finding of internal BMP audits and audits conducted by third parties. Document corrective action plans and describe what actions will be taken to address the audit findings, the individuals responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action. Include recommended changes to policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances. Document these changes in the corrective action plan and in the BMP Manual and other relevant BMP documentation.
- 14.6 Track progress in completing the corrective actions and periodically update to reflect completion.

## 9.3 Element 15. Biosolids Management Program Report

The periodic BMP Report is intended to provide interested parties with periodic information regarding the focus and status of the organization's BMP activities as well as its BMP performance.

### 9.3.1 Minimum Conformance Requirements

- 15.1 Complete a periodic written Biosolids Management Program Performance Report (at least annually), summarizing the performance of the biosolids management program. The report shall contain appropriate summaries of monitoring, measurements and other results that demonstrate the performance of the biosolids program relative to its goals, objectives and legal requirements, including those biosolids management activities conducted by contractors. The report shall also provide summaries of performance relative to other voluntary adopted requirements, the organization's progress toward achieving its biosolids program goals and

objectives, and a summary of its independent third party verification audit results and internal BMP audit results.

- 15.2 Make the periodic Biosolids Management Program Report available to the public. The organization shall have the flexibility of using other methods, including electronic methods such as a biosolids program web page, in addition to or in lieu of a written periodic performance report.

### 9.3.2 Key Areas of Interpretation

Auditors should interpret the requirement for “a periodic written Biosolids Management Program Performance report (at least annually)”, to mean that organizations should prepare and make publicly available such a report at least every 12 months. Organizations that have not yet received an initial, independent third party BMP verification audit are not required to complete the Biosolids Management Program Report and make it available to the public until after the third party audit has been completed so that a summary of the third party verification audit may be included, as required in element 15. Organizations may prepare and make publicly available a Biosolids Management Program Performance Report without the audit summary prior to the third party audit. However, this is not required. Failure to prepare the Biosolids Management Program Performance report and make it available to the public would not constitute a finding of nonconformance during the initial verification audit only. Failure to prepare the Biosolids Management Program Performance report and make it available to the public at least annually would constitute a finding of nonconformance for all other third party interim and re-verification audits.

Auditors should interpret the requirements for the annual performance report to “include a summary of the BMP verification audit results” to mean that the annual performance report should include a summary of the most recent third party audit results, whether that audit was an interim audit or a full verification audit.

## 9.4 Element 16. Internal BMP Audit

Self-audits of the organization’s BMP provide important feedback that supports continual improvement. The internal audits are intended to enable organizations to periodically identify and address weaknesses in their BMP.

### 9.4.1 Minimum Conformance Requirements

- 16.1 Establish and maintain an internal audit program to periodically analyze the BMP and determine whether it is effectively meeting its biosolids management policy, program requirements and biosolids program goals and objectives. The internal BMP audit program shall define the scope, frequency, and methodology of the audits, assign responsibility for conducting the audits and communicating their findings, and designate individuals to whom these findings are to be conveyed. The internal audit shall also evaluate the organization’s performance relative to established biosolids program goals, objectives and performance measures. The internal BMP audit program shall cover all the organization’s biosolids management program activities including those performed by contractors.
- 16.2 Report internal BMP audit results to the organization's management in a way that they can take

action to make necessary modifications to the BMP. The person responsible for the Biosolids Management Program shall develop, or delegate the development of, a comprehensive corrective action plan addressing each nonconformance identified by the internal audit.

16.3 Maintain, at a minimum, the following documents and records, as applicable, relating to its audit program:

- a) description of audit methodology, protocol, scope, and schedule;
- b) identification of lead auditor(s), qualifications, and description of roles and responsibilities of auditors, management representatives, and others that may participate in, review, or be expected to act upon the audit; and
- c) corrective and/or preventive action plans prepared resulting from an audit, and any related changes made to policies, plans, procedures, and work practices that occur as a result of an audit's findings, evaluation, or follow-up actions.

### 9.4.2 Key Areas of Interpretation

The biosolids organization has the flexibility to define for itself what “periodically” analyzing the BMP means, though this schedule should be reviewed with the Lead Auditor during the verification audit for organizations that are pursuing NBP Platinum-level certification. The timing for internal audit activities should be coordinated with the management review and periodic Biosolids Management Program Report, such that the results of the internal BMP audit might inform the management review (especially information about performance relative to established biosolids program goals and objectives) and the creation of the periodic Biosolids Management Program Report.

The internal audit program should include an examination of the organization’s commitment and implementation of the *Code of Good Practice*, as part of analyzing the BMP and determining whether it is “effectively meeting its biosolids management policy.” Per the requirements of Element 2, the biosolids management policy must “commit the organization to following the principles of conduct set forth in the *Code of Good Practice*”. Therefore, in examining whether or not it is meeting the biosolids management policy, the organization should review its commitment and implementation of the *Code of Good Practice* as part of the internal audit program.

Biosolids organizations may choose to have the internal audits conducted by biosolids organization personnel or by an independent party (for example, paid audit consultants or a peer organization). If an audit consultant is utilized, the internal audit report must have the biosolids organization’s name and not refer to a consultant’s document or recommendation.

The NBP does not require that all 17 BMP elements be covered by internal audits individually or collectively through the five-year verification cycle. Minimum requirements for internal auditing when the internal audit will substitute for a third party interim audit are described in Chapter 5, section 5.2.2.

## 10BMP Verification Audit Guidance - Management Review

This chapter addresses requirements associated with periodic management reviews of progress and performance related to an organization’s BMP. The management review provides a mechanism for incorporating feedback related to the organization’s BMP and outcomes performance into periodic BMP planning activities.

## 10.1 Element 17. Management Review

Element 17 describes the requirements for conducting and documenting periodic management reviews of the BMP and its performance relative to the organization's policy commitments, goals, objectives and established performance measures.

### 10.1.1 Minimum Conformance Requirements

- 17.1 At intervals the management determines appropriate, review the BMP and its performance relative to policy commitments, goals, objectives and established performance measures to ensure its continuing stability, adequacy and effectiveness. The management review shall address the possible need for changes to policy, the goals and objectives, the biosolids management activities and other BMP Elements based on internal BMP audit results, external verification audits by third parties, changing circumstances, and the commitment to continual improvement. The management review shall be documented. Any changes to policies, plans, procedures and work practices that are made as a result of the review shall also be documented.
- 17.2 Maintain, at a minimum, the following related to its management reviews:
  - a) schedule and scope for review;
  - b) documentation of findings, evaluation, and follow-up actions; and
  - c) documentation of changes to policies, plans, procedures, practices and other BMP elements that occur as a result of the management review findings, evaluation, or follow-up actions.
- 17.3 Assign a lead person or persons to be responsible for organizing and conducting the review.

# 11 Auditor Support Information

This Chapter includes two sections: Potential Methods for Review of Objective Evidence and Examples of nonconformance.

## 11.1 Potential Methods for Review of Objective Evidence

There are three complementary approaches to testing that auditors shall employ to evaluate whether an organization’s BMP meets the expectations and requirements identified by the NBP. These testing approaches are “requirement verification”, “transaction testing,” and “examining outcomes”. Requirement verification ensures that the organization’s BMP meets the basic requirements of the *BMP Elements*. Transaction testing and outcomes examination ensure that the organization’s BMP is functioning as intended and producing desired outcomes.

### 11.1.1 Requirement Verification

Requirement verification looks at specific NBP BMP elements to determine if the organization’s BMP satisfies the associated requirements, as defined in the *BMP Elements*. There are specific requirements associated with each BMP element that can be individually evaluated or tested. Failure of an organization to completely or adequately address the minimum requirements associated with each BMP element shall likely constitute a finding of major nonconformance by the auditor. Many of the requirements of the *BMP Elements* can be tested by determining if there is a particular process or system in place, or if a document or procedure exists. Many of the required, documented procedures and plans can be examined during the desk audit review. Additional collection of objective evidence during the on-site audit can demonstrate or document that the required process, procedure or document does exist and/or that it operates consistently with BMP expectations. Objective evidence typically includes some form of physical evidence, such as written policies, procedures, manuals, reports, brochures, action plans, forms, records, information systems, or equipment. Objective evidence can also include interview results (e.g., employee awareness of a procedure), planning meetings, meetings with interested parties, and other evidence that provides indications that a requirement is being met or not met. An example of the requirement verification approach is presented below.

**Requirement Verification** looks at specific NBP BMP Elements to determine if the organization’s BMP satisfies the associated requirements, as defined in BMP Elements.

#### **Element 1: BMP Manual**

To assess if an organization’s BMP meets the requirements of Element 1, the auditor would look to answer affirmatively the following questions through the collection of objective evidence.

- Does the organization have a BMP Manual?
- Was the BMP Manual approved by a level of the organization’s management with the authority to commit people and resources to biosolids management activities?
- Does the BMP Manual contain the organization’s Biosolids Management Policy and BMP procedures required by the BMP Elements?
- Does the BMP Manual contain or cross-reference Public Participation, Communications and Emergency Preparedness and/or Response Programs and Plans required by the BMP Elements?

- Does the BMP Manual cover all critical control points for its biosolids management activities throughout the biosolids value chain?
- Does the BMP Manual include or cross-reference all operational controls, procedures, processes and other management methods used to achieve and maintain compliance with legal and other requirements?
- Does the BMP Manual describe those biosolids management activities assigned to and performed by contractors?

## 11.1.2 Transaction Testing

The NBP believes that it is also important to verify that required processes and procedures actually work as documented and intended. Transaction testing provides a useful approach for investigating overall system health. Transaction testing enables auditors to assess how well various components of an organization's BMP function in practice and how well they work together.

**Transaction Testing** enables auditors to assess how well various components of an organization's BMP function in practice and how well they work together from a broader systems perspective.

Far too often, organizations' efforts to develop management systems become paper pushing exercises that result in a set of binders on the shelf, rather than in changes in the ways an organization operates. Documentation of policies, procedures, and BMP activities is important for supporting BMP implementation, creating institutional memory, and demonstrating the existence of the BMP required elements. However, documentation does not ensure that the policies and procedures are followed or that the BMP works as intended. Transaction testing provides a means for ensuring that an organization is working actively to implement and continually improve its BMP. The concept behind transaction testing is that, just as an organization's activities are linked throughout the entire biosolids value chain, the elements of the BMP are linked. Transaction testing ensures that various elements of the BMP are functioning in coordination. For example, if internal audits are being conducted (as required in Element 16), have the associated identified corrective actions been implemented (as required in Element 14)? The *BMP Elements* include a number of linkages such as this.

Another way of looking at transaction testing of the linkages between BMP elements is to examine certain changes or events that should trigger a response from the BMP. By tracing how an organization's BMP responds to a transaction or triggering event, the auditor can better identify and assess gaps or weaknesses. Examples of transactions and triggering events include the enactment of a new regulation or requirement, the installation of new equipment, a change in personnel, a spill of biosolids material, or an odor complaint by a local resident.

Auditors have substantial latitude in selecting when and how they use transaction testing. In most cases, the auditor would use a transaction test to confirm that the organization's documented system or procedure is operating as intended and documented in the BMP. The auditor might select a particular transaction or triggering event (e.g., a change in biosolids land application personnel, a complaint documented in the organization's complaint log, a past compliance violation), and track it through the organization to see how the various components of the BMP responded. In particular, the auditor should be interested to discern answers to the following questions.

- Did the transaction or triggering event cause all relevant management activities to occur as intended in the organization’s BMP?
- If the triggering event was associated with an undesirable outcome (e.g., public complaint, compliance violation, adverse environmental impact), was the incident responded to as intended by the BMP, and, did the BMP prompt appropriate actions to prevent recurrence of the undesirable outcome?

Further examples transaction tests are provided in the table following.

<b>Transaction Test</b>	<b>Potential BMP Interactions</b>
<p><u>Existing regulatory requirement</u>            - Identify an applicable regulatory requirement and determine if it has been incorporated into various elements of the BMP. Auditors may wish to give particular emphasis to requirements that result in frequent violations. If the organization had a past compliance violation, it may be appropriate to target that requirement.</p> <p>[The auditor should also try to understand what factors caused any past violations, so they can transaction test areas where the BMP failed in the past.]</p>	<ul style="list-style-type: none"> <li>• Has the applicability of the requirement been identified and documented? (Element 4)</li> <li>• Have roles and responsibilities for addressing the requirement been assigned and communicated? (Element 7)</li> <li>• Have procedures and practices for addressing the requirement been developed and implemented? (Elements 10 and 13)</li> <li>• Are records related to the requirement complete and organized? (Element 12)</li> </ul>

Transaction Test	Potential BMP Interactions
<p><u>New or modified regulation</u> - Identify a recent or modified regulation or requirement applicable to the organization. Track that new or changed requirement through the system to determine if the BMP elements have been adjusted accordingly.</p>	<ul style="list-style-type: none"> <li>• Has the organization identified a new or changed requirement? (Element 4)</li> <li>• Has the organization evaluated and documented the applicability or non-applicability of the regulation or requirement? (Element 4)</li> <li>• Have operational controls been developed, documented, and implemented to address the newly applicable requirement? (Element 10)</li> <li>• Have the BMP Manual and related documents been updated to address the new requirement? (Element 1)</li> <li>• Have roles and responsibilities for implementing the procedure/ addressing the requirement been assigned and communicated? (Element 7)</li> <li>• Have appropriate monitoring and measurement activities been instituted to address the requirement, if appropriate? (Element 13)</li> <li>• Have record keeping requirements been followed? (Element 12)</li> <li>• Has the facility satisfied its compliance obligations related to the requirement?</li> <li>• Has the organization made information on the applicability of this requirement available to the public? (Element 9)</li> </ul>
<p><u>Equipment or process change</u> - Investigate how a new piece of equipment or process line was integrated into biosolids operations and the BMP.</p>	<ul style="list-style-type: none"> <li>• Has the BMP Manual and other documentation of critical control points and operational controls, been updated to address the equipment or process change? (Elements 1, 3, and 10)</li> <li>• Has the organization identified potential and actual environmental impacts associated with the equipment or process change? (Element 3)</li> <li>• Have SOPs been prepared or revised to address the equipment or process change? (Element 10)</li> <li>• Have appropriate personnel been trained on the equipment or process and associated biosolids management responsibilities? (Element 8)</li> <li>• Have emergency response plans and procedures been modified (if necessary) to address the equipment or process change? (Element 11)</li> </ul>
<p><u>Contractor Operations</u> - Identify existing contractor operations and track them through the system. (Note: a similar transaction test could be conducted for new or changed contractor operations.)</p>	<ul style="list-style-type: none"> <li>• Are biosolids management roles and responsibilities assigned and communicated to contractors? (Element 7)</li> <li>• Are contractors appropriately trained to perform their responsibilities? (Element 8)</li> <li>• Is this training documented and tracked? (Element 8)</li> <li>• Does the contractor sufficiently understand its responsibilities to perform its tasks in a manner consistent with the BMP and <i>Code of Good Practice</i>? (Element 8)</li> </ul>



Transaction Test	Potential BMP Interactions
<p><u>Accidental spill or release</u> – Track an accident spill or release to see how the BMP responded.</p>	<ul style="list-style-type: none"> <li>• Did the organization respond to the spill or release according to its procedures? Were emergency response plans followed?</li> <li>• Were response actions appropriate to the type and scale of incident? (Element 11)</li> <li>• Were personnel appropriately trained for response? (Element 8)</li> <li>• Was the appropriate response equipment available? (Element 11)</li> <li>• Were regulatory notification, reporting and record keeping requirements followed? (Element 12)</li> <li>• Did the organization engage a root cause analysis and/or continuous improvement process to learn from the incident and prevent future occurrences?</li> <li>• Have any associated process upset or equipment failure conditions been documented in appropriate logs and addressed through corrective actions to prevent recurrence? (Element 14)</li> </ul>
<p><u>Public inquiry or complaint</u> - Track a public complaint or inquiry through the BMP.</p>	<ul style="list-style-type: none"> <li>• Did the organization process the inquiry or complaint in accordance with its documented procedure? (Element 9)</li> <li>• Did the organization acknowledge receipt of the inquiry or complaint and/or respond in a timely manner? (Element 9)</li> <li>• Were appropriate personnel sufficiently trained to respond to the inquiry or complaint? (Element 8)</li> <li>• Was the inquiry or complaint documented or recorded appropriately?</li> <li>• Is management sufficiently aware of potential public concerns raised by the inquiry or complaint?</li> <li>• Has the inquiry or complaint been considered (along with others) in the organization's periodic review of BMP goals and objectives?</li> </ul>

### 11.1.3 Examining Outcomes

The third method of testing available to auditors is examining outcomes, which allows an auditor to verify that an organization’s BMP is functioning as intended and producing desired outcomes.

The NBP *Code of Good Practice* is a broad framework of goals and commitments to guide biosolids management activities. Those who embrace the Code and participate in the NBP Biosolids Management Program commit to “do the right thing.” Code subscribers and NBP Program participants pledge to uphold the 10 principles in the Code, which are focused on a commitment to quality practices and operations, as well as quality outcomes.

Although this is a systems-based program, the NBP believes that public acceptance will ultimately depend on the ability of the NBP and individual program participants to demonstrate that the BMP produces better compliance, better environmental performance, good management practices, and improved relations with interested parties. Therefore, the NBP has identified four areas where it has

defined specific, auditable expectations for examining outcomes as important indicators of BMP health (e.g., “outcomes matter”). These four areas include:

- environmental performance;
- regulatory compliance;
- relations with interested parties; and
- quality biosolids management practices.

Performance outcomes relate to the commitment to continual improvement in all aspects of biosolids management. The *BMP Elements* require that performance goals and objectives must be established and evaluated to identify potential areas for improvement. Regulatory compliance outcomes are important to assure that biosolids organizations are attentive to and successful in their efforts to meet compliance obligations. To achieve the outcome of improved relations with interested parties, and ultimately public acceptance of biosolids management practices, a biosolids organization must be seeking and creating meaningful opportunities for public participation in the planning, implementation, and auditing of the BMP. Finally, a biosolids organization must demonstrate a strong commitment to the utilization of quality biosolids management practices as dictated by the *Code of Good Practice* and captured in the *National Manual of Good Practice*.

The *BMP Elements* (Element 5) require that goals and objectives reflect identified priorities for improving environmental performance of biosolids management activities based on critical control points, identified or potential environmental impacts, legal and other requirement, and applicable best management practices as defined in the *National Manual of Good Practice* and various authoritative sources on biosolids management.

To demonstrate continual improvement in each of the four outcome areas and meet the requirements for Element 5, a biosolids organization should establish measurable goals and objectives that document the improvement in each of the four outcome areas. An organization’s progress in meeting these goals and objectives should then be evaluated by auditors as part of the interim audits that take place to ensure that the organization's BMP continues to meet all the elements of the NBP program.

For example, in the area of relations with interested parties, an organization might agree to expand the range of interested parties that it involves in its BMP, over and above those parties that were involved as the BMP was initially developed. In the area of regulatory compliance, an organization that had regulatory violations in the past would commit to reduce and ultimately eliminate these violations. Another way to demonstrate a commitment to regulatory compliance could involve reducing the amount of regulated pollutants in its biosolids, over and above those amounts currently used to demonstrate compliance with applicable Federal or State regulatory requirements. In the area of best practices for biosolids management, an organization might set a goal to adopt a new practice for detecting and reducing odors. An example of an environmental performance goal could be to reduce energy consumption.

The NBP believes that these four outcomes are critical indicators of the that degree an organization’s BMP is functioning as intended and conforms to the NBP ’s expectations and goals defined by the *Code of Good Practice*. **Auditors must note, however, that failure to achieve desired outcomes does not necessitate nor in and of itself constitute a finding of system nonconformance.** Rather, the NBP has determined that past and current outcomes related to environmental performance, regulatory compliance, relations with interested parties, and quality biosolids management practices shall be used by auditors to identify potential areas of weakness in an organization’s BMP. For example, the presence

of past compliance violations or public complaints shall prompt the audit team to explore how the organization and its BMP responded to the performance outcome. The NBP does not expect that an organization would never have performance problems. However, the NBP expects (and auditors shall base verification determinations on the evidence) that organizations respond actively to such performance problems and seek to prevent the performance problem from recurring. The NBP expects that audit reports will explicitly identify the outcomes examined and the relationship they have to system health or deficiencies.

#### 11.1.4 Environmental Performance

Consistent with the principle that “outcomes matter,” NBP BMP auditors shall examine the organization’s progress towards identified priorities for improving environmental performance, as reflected in the biosolids organization’s established goals and objectives, as one potential indicator of BMP health.

Through the *BMP Elements*, an organization is required to identify biosolids program goals and objectives. The NBP defines biosolids program goals as “performance improvement goals that are consistent with the organization’s biosolids management policy to assure biosolids management 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.” The NBP defines biosolids program objectives as “detailed performance improvement requirements, based on a biosolids program goal.”

The NBP believes that an auditable commitment to performance is critical to fostering credibility with interested parties and to achieving the ultimate goal of publicly accepted biosolids management practices. The NBP believes strongly that the ability of the NBP and individual program participants to demonstrate that the BMP produces meaningful environmental performance improvements is critically linked to the program’s public acceptance objectives. The NBP’s approach builds on the *Code of Good Practice* commitment to continual improvement - “To seek continual improvement in all aspects of biosolids management” - and looks to ensure that NBP participants focus not just on BMP processes and procedures, but on environmental outcomes as well.

##### 11.1.4.1 Examining Environmental Performance Outcomes

Auditors shall examine the organization’s progress towards identified priorities for improving environmental performance, as reflected in established goals and objectives, as one potential indicator of BMP health. If an auditor detects a pattern of lack of improvement with respect to those environmental performance-related goals and objectives, the auditor shall interpret this as an indicator that the organization’s BMP is potentially failing to meet the NBP Program expectations to promote environmentally sound biosolids management practices and the organization’s commitment to continual improvement. The auditor shall examine the organization’s BMP to determine if the cause for lack of continual improvement constitutes a nonconformance with one or more of the elements. For example, the cause may be that certain operational controls tied to those environmental improvements have not been implemented or that management reviews are not taking place as necessary to address the possible need for changes to the policy, the goals and objectives, or other BMP elements.

Auditors shall recognize that some performance goals and objectives may require long-term planning and investment of resources. Auditors shall also recognize that organizations may focus goals and

objectives only on certain environmental impacts at one time, while environmental performance objectives for others may be to maintain current performance levels (assuming that regulatory and public acceptance requirements for biosolids are being met).

In examining environmental performance outcomes, an auditor shall expect that an organization has:

- Identified potential or actual environmental impacts associated with the organization's identified critical control points, with respect to the entire biosolids value chain (Element requirements 3.1 and 3.2);
- Established environmental performance goals and objectives that reflect the organization's identified environmental impacts and related critical control points (Element requirements 5.1 and 5.2);
- Provided interested parties with meaningful opportunities to express views and perspectives relative to biosolids management activities, including concerns about environmental impacts, biosolids program performance, and potential areas for improvement (Element requirement 6.4)
- Considered input from interested parties in initially developing program goals and objectives during BMP implementation and in updating them as part of periodic review of BMP performance (Element requirement 6.5);
- Developed and implemented standard operating procedures, work management practices or other appropriate methods at all critical control points throughout the biosolids value chain to effectively manage potential environmental impacts (Element requirement 10.1);
- Established and maintained regular monitoring and measurement procedures and practices for all biosolids management activities to measure biosolids program performance at critical control points and track progress toward achieving program goals and objectives (Element requirement 13.1);
- Completed a periodic written Biosolids Management Program Performance Report (at least annually), summarizing the organization's progress toward achieving its biosolids program goals and objectives (Element requirement 15.1);
- Established and maintained an internal audit program to periodically analyze the BMP and determine whether it is effectively meeting its biosolids management policy, program requirements and biosolids program goals and objectives (Element requirement 16.1); and
- Reviewed the BMP and its performance relative to policy commitments, goals, objectives and established performance measures to ensure its continuing stability, adequacy and effectiveness and addressed the possible need for changes to policy, the goals and objectives, the biosolids management program and other BMP elements based on internal BMP audit results, external BMP verification audits by third parties, changing circumstances, and the commitment to continual improvement (Element requirement 17.1).

### 11.1.5 Regulatory Compliance

Consistent with the principle that “outcomes matter”, NBP auditors shall examine the organization's performance in meeting legal requirements (regulatory compliance) as one potential indicator of BMP health.

The third party BMP verification audits are not intended to be regulatory compliance audits that verify whether or not an organization is complying with all applicable regulatory and legal requirements. The

NBP believes that a systems audit, which verifies the existence of a robust BMP, provides an equal, and potentially better, indication of an organization's commitment to meeting and going beyond regulatory compliance obligations on an ongoing basis than a regulatory compliance audit, which looks only at a given point in time. However, the NBP believes that the compliance status of an organization can provide an indication of how well the organization's BMP enables it to manage operations within established parameters.

The NBP recognizes the importance of improving public confidence in regulatory compliance assuredness. Through the *Code of Good Practice*, organizations are required to pledge "To commit to compliance with all applicable federal, state, and local requirements." Consistent with a systems audit approach, auditors should determine that a robust compliance management system is in place that effectively identifies and tracks regulatory compliance obligations, proactively identifies potential regulatory compliance issues, assures effective implementation of applicable compliance activities, quickly detects regulatory compliance problems, and addresses regulatory compliance problems in a timely fashion. The NBP expects biosolids organizations to establish a procedure for identifying and tracking legal (federal, state, and local) and other requirements applicable to the organization's biosolids management activities to provide the basis for the NBP, auditors, and individual program participants to assure interested parties that the BMP is effectively complying with regulatory requirements. The procedure shall include a management process to incorporate changes and new requirements into the organization's BMP.

#### *11.1.5.1 Examining Regulatory Compliance Outcomes*

NBP auditors shall examine the organization's performance in meeting legal requirements (regulatory compliance) and regulatory compliance-based goals and objectives as potential indicators of BMP health.

Auditors shall review documentation containing regulatory compliance information, such as recent regulatory inspection reports and annual biosolids reports, and gather other objective evidence about selected regulatory compliance endpoints. Auditors are encouraged to contact biosolids regulators as part of the process of gathering compliance information, keeping in mind that the BMP audit will not contain a statement of compliance status. Auditors shall review BMP documentation to verify that the organization has established a procedure for identifying and tracking legal (federal, state, and local) and other requirements applicable to the organization's biosolids management activities. The procedure shall include a management process for incorporating changes and new requirements into the organization's BMP. Auditors shall record in the audit report, that the organization has established and maintained records of applicable legal and other requirements (assuming that this has in fact been done). As well, auditors shall provide in their audit report a statement, based on the review of documentation and direct observation of selected regulatory compliance endpoints, as to the adequacy of the management system in meeting the organization's commitment to regulatory compliance. If an auditor detects a pattern of the organization failing to meet compliance obligations, or failing to make continual improvement toward compliance-based goals and objectives, the auditor shall examine the organization's BMP to determine if the cause is a nonconformance with one or more of the elements. For example, the cause may be that certain measuring and monitoring activities have not been implemented or that roles and responsibilities for key activities related to meeting compliance have not been clearly assigned.

Areas of past noncompliance can point to places that an auditor should examine during a BMP verification audit. Through transaction testing, auditors can explore how well the organization's BMP,

through its corrective and preventive action plan, has responded to the noncompliance situations. In the presence of a well-functioning BMP, the auditor should detect the implementation of controls and practices to prevent recurrence of noncompliance situations.

Auditors shall recognize that even the most well run organization may occasionally experience conditions that result in a noncompliant situation and that what the NBP believes is important is if the organization responds in a timely and appropriate manner to instances of potential regulatory noncompliance.

In examining regulatory compliance outcomes, the auditor shall expect that the organization has:

- Established a procedure for identifying and tracking legal (federal, state, and local) and other requirements applicable to its biosolids management activities (Element requirement 4.1);
- Established measurable program goals and objectives for regulatory compliance (Element requirement 5.1);
- Incorporated all legal and other adopted requirements in the operational controls of critical control points (Element requirement 10.2);
- Established and maintained regular monitoring and measurement procedures and practices for all biosolids management activities to assure compliance with applicable legal and other requirements (Element requirement 13.1);
- Developed and implemented a procedure to investigate any noncompliance with applicable regulatory requirements identified during routine monitoring and measurement or periodic internal audits (Element requirement 14.1);
- Developed and implemented a procedure to document the necessary corrective actions taken to prevent a recurrence (Element requirement 14.3);
- Established formal corrective action plans to address findings of internal BMP audits and audits conducted by third parties, and documented corrective action plans describing what actions will be taken to address the audit findings, the individuals responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action (Element requirement 14.5); and
- Established and maintained an internal audit program to periodically analyze the BMP and determine whether it is effectively meeting its biosolids management policy, program requirements with and biosolids program goals and objectives (Element requirement 16.1).

### 11.1.6 Relations with Interested Parties

Consistent with the principle that “outcomes matter,” auditors shall examine the state of the organization’s relationships with interested parties as one potential indicator of BMP health.

The NBP does not expect that an organization’s relationships with interested parties will be positive all of the time. Organizations are not required, as a basis for program participation, to resolve the concerns of all interested parties. The NBP acknowledges that there can always be parties who are not satisfied that their concerns have been addressed or parties who are fundamentally opposed to certain biosolids management practices, regardless of the organization’s performance or how active and meaningful the public participation effort has been.

Rather, the NBP believes that setting up quality, two-way flows of information between interested parties and participating organizations is critical to the program's goal of publicly accepted biosolids management practices. "Two-way flows of information" means that information flows from interested parties in to the participating organization such that the organization has the capacity to understand the concerns and perspectives of interested parties. Requirements for how participating organizations must establish information flows into the organization from interested parties are primarily covered under Element 6, Public Participation in Planning, and Element 9, Communications. As well, two-way flows of information means that information on the organization's BMP flows to interested parties. Requirements for how participating organizations must establish information flows out from the organization to interested parties are primarily covered under Element 9 Communications. In addition, the *Code of Good Practice* commits organizations to "provide methods of effective communications with gatekeepers, stakeholders, and interested citizens regarding the key elements of each environmental management system, including information relative to system performance."

The NBP expects that there will be substantial local tailoring of public participation plans and that organizations will remain fully in control of the decisions they make once interested party perspectives are understood. Organizations have the flexibility to choose a set of public participation and communication activities that best meet their local needs. Most biosolids organizations employ a variety of successful public participation and communication mechanisms, and the NBP believes that many of those mechanisms are sufficient to meet program requirements.

#### *11.1.6.1 Examining Relations with Interested Parties*

Auditors shall examine the state of the organization's relationships with interested parties as one indicator of BMP health. For example, if, during BMP document review, an auditor encounters a pattern of repeated written public complaints, the auditor shall interpret this pattern as an indicator that the organization's BMP is failing to support the NBP Program goal of promoting publicly accepted biosolids management practices. The auditor should examine the organization's BMP to determine if the cause of the pattern of consistent complaints derives from a nonconformance with one or more of the elements. It could be that the failure to resolve complaints resulted from the organization's corrective action system functioning inadequately. In this context, however, auditors shall not judge the validity of interested party perspectives, nor shall they expect an organization to have accommodated all perspectives.

Auditors shall recognize that some organizations are implementing public participation programs for the first time, as part of participation in the NBP program. Where this is the case, it is possible that the state of relationships with interested parties may actually appear to worsen as the public participation program is implemented. For example, this can be reflected by the number of negative comments actually rising, as opportunities for comments may not have been provided in the past. It is also possible that the lack of past negative comments was the result of interested parties not knowing about the organization's biosolids management practices (e.g., lack of negative comment does not necessarily equal public acceptance), and thus negative comments appear to rise as the program is implemented.

Auditors shall also take into consideration the maturity of the organization's biosolids management program. For example, a well established and accepted program may, at its outset, have conducted substantial public education and involvement efforts, but now is maintaining ongoing, targeted relationships with individual community members or groups.

In examining the state of relationships with interested parties, the auditor shall expect that the organization has:

- Selected an implemented a proactive public participation approach to involve interested parties in its BMP planning process (Element requirement 6.1);
- Reflected, in the selected approach, the organization’s commitments to the ten principles of the *Code of Good Practice*, including a plan for independent third-party verification of conformance with the *BMP Elements* (Element requirement 6.2);
- Selected an approached that is consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances (Element requirement 6.3);
- Provided interested parties with meaningful opportunities to express views and perspectives relative to biosolids management activities, including concerns about environmental impacts, biosolids program performance, and potential areas for improvement (Element requirement 6.4);
- Considered input from interested parties in initially developing program goals and objectives during BMP implementation and in updating them as part of periodic review of biosolids management program performance (Element requirement 6.5);
- Established measurable program goals and objectives for relations with interested parties (Element requirement 5.1);
- Established and maintained a proactive communications program that provides ongoing information about the Biosolids Management Program to interested parties and the public (Element requirement 9.1);
- Developed and followed a procedure for receiving and responding to inquiries and requests for information from interested parties (Element requirement 9.2); and
- Made information about the biosolids management program activities available to interested parties (Element requirement 9.3).

In conducting the audit, the auditor shall primarily rely on BMP documentation and interviews with employees to verify public participation and communications actions. However, the auditor, after consultation with the organization, can interview interested parties as necessary to verify the adequacy of an organization’s actions.

## 11.1.7 Quality Biosolids Management Practices

The NBP believes that an auditable commitment to best practices is a key link to credibility with interested parties and achieving the NBP’s goal of publicly accepted and environmentally sound biosolids management practices. The *Code of Good Practice* commits organizations to: implement “good housekeeping practices for biosolids production, processing, transport, and storage, and during final use or disposal operations”; and to “sustainable, environmentally acceptable biosolids management practices and operations.” As such, the NBP requires that, in selecting biosolids management practices, an organization has considered and, to the extent applicable and practicable, utilized the best practices identified in the *National Manual of Good Practice* and other recognized sources as identified by the organization (Element requirement 10.3).

### 11.1.7.1 Examining Quality Biosolids Management Practices

Auditors shall examine biosolids management practice selection in the following manner.

- The auditor shall examine identified critical control points and associated operation controls in



light of the National Manual of Good Practice, operating under the presumption that the organization knows best which practices to select for its operation. (required by Elements 3 and 10)

- The National Manual of Good Practice intends to be “practice neutral”: it provides management practices for all wastewater solids and biosolids management alternatives. Thus, auditors shall look only at those critical control points and associated operational controls that are relevant to the given organization and its biosolids final use or disposal.
- The auditor shall presume that choices on practice selection are not made “in a vacuum” and can be influenced by local political and economic situations. Thus, local tailoring of practice selection is necessary and appropriate.
- If an organization adopts practices that appear inconsistent with the National Manual of Good Practice, the auditor shall ask the organization to explain if the practices are inconsistent and why. Inconsistencies with the National Manual of Good Practice would not necessarily prevent verification if a suitable explanation is provided. However, an auditor could, if they believed the organization’s choices did not adequately reflect the NBP’s expectations for promoting environmentally sound and publicly accepted biosolids management practices and that the organization’s explanation for inconsistencies with the *National Manual of Good Practice* were not suitable, identify this as a nonconformance.

## 11.2 Examples of Nonconformance

The following examples provide guidance on how audit findings, supported by objective evidence, should be evaluated with respect to conformance and non-conformance. As stated in Chapter 4, failure to completely or adequately address the minimum requirements associated with each *BMP Element* shall likely constitute a finding by the auditor of a major nonconformance (see Chapters 6-10 for a list of minimum conformance requirements). In determining if a nonconformance should be categorized as major or minor, auditors shall to draw on: the key interpretation sections of the *Auditor Guidance* that provide clarity on the NBP’s expectations; the details and context of the particular situation; and their experience in BMP auditing and wastewater treatment and/or biosolids management.

These examples of nonconformance, by design, do not comprise an exhaustive list of potential nonconformance situations and are not intended to serve as a checklist for auditors or biosolids organizations. As described in Chapter 4, the auditor shall conduct transaction tests and examine outcomes to determine that the BMP is functioning and producing desired outcomes as intended, in addition to examining that a BMP has satisfied the minimum requirements of the *BMP Elements*.

### 11.2.1 Element 1. Documentation of BMP for Biosolids

- The auditor may find that an organization’s BMP Manual does not contain or cross-reference all operational controls, procedures, processes and other management methods used to achieve and maintain compliance with legal and other requirements (Requirement 1.6 states that “all” should be included or cross-referenced).

The severity of this nonconformance will vary depending on the number and importance of those operational controls, procedures, processes and other management methods that are not included or cross-referenced in the BMP Manual. For example, an auditor may consider the absence or lack of cross

reference of certain SOPs (such as procedures for tracking digester temperature and retention time) as more important than others (such as procedures for hand washing), depending on how fundamental they are to achieve and maintaining compliance with legal and other requirements. Therefore, the auditor shall examine the details of the situation to determine if the nonconformance rises to the level of major or minor.

### 11.2.2 Element 2. Biosolids Management Policy

- Some employees or contractors associated with the organization's biosolids-related operations, processes, and activities are not aware of the organization's Biosolids Management Policy or the principles or commitments identified in the policy, despite the organization's efforts to communicate the policy. This might indicate that the organization's policy communication efforts are not effective.

### 11.2.3 Element 3. Critical Control Points

- The organization has identified most, but not all of the relevant critical control points in the biosolids value chain. The auditor will reference the *National Manual of Good Practice* and utilize their understanding of the organization's biosolids management activities to discern if the missing critical control point(s) (and thus the associated environmental impacts and operational controls) are significant enough to warrant a major nonconformance under this element.
- While some actual and potential environmental impacts have been identified for each critical control point, not all environmental impacts have been sufficiently identified and documented.
- In the BMP documentation, some operational controls are not linked to critical control points.
- No rationale has been provided, verbally or in writing, to the auditor explaining why critical control points have been selected that are not consistent with the *National Manual of Good Practice* and other authoritative sources.

### 11.2.4 Element 4. Legal and Other Requirements

- Documented procedures for identifying and tracking legal and other requirements have not been fully implemented. For example, the auditor may find evidence that not all responsible individuals understand their roles or properly follow the procedure.
- The auditor observes instances of potential noncompliance that are unaddressed by the BMP either through lack of identification of a requirement or implementation of a procedure to maintain compliance and or respond to potential noncompliance.
- Gaps exist in the documentation and/or record keeping associated with one or more applicable regulatory requirements (e.g., a requirement has not been identified, no documentation exists for a requirement, or legally required records cannot be located).
- Tracking procedures do not cover other requirements, such as voluntary programs or other commitments relevant to biosolids management.

### 11.2.5 Element 5. Goals and Objectives for Continual Improvement

- The goals and/or objectives do not fully support the organization’s Biosolids Management Policy, the NBP *Code of Good Practice*, or another authoritative biosolids document.
- Goals and/or objectives have not been established to support continual improvement in each of the four outcomes areas.
- Some of the organization’s goals and objectives fail to meet the SMART criteria.
- The organization’s action plan has not been recently updated, or it does not contain all required information (e.g., milestones, resources, responsibilities).

### 11.2.6 Element 6. Public Participation in Planning

- Some parts of the public participation plan, or specific activities conducted, have not been fully documented.
- The public participation approach has not been fully implemented as documented.
- Some of the opportunities for public participation were not meaningful, as defined in Chapter 7, or were not appropriate for all interested parties.
- Public participation activities did not provide an opportunity to provide views and perspectives on certain required areas (e.g., program performance, environmental impacts, potential areas for improvement).
- The public participation approach is not fully consistent with the degree of current public interest, history of public involvement, method of biosolids management, and related local circumstances.

### 11.2.7 Element 7. Roles and Responsibilities

- Defined roles and responsibilities, for both employees and contractors, do not fully cover the scope of biosolids management activities and BMP functions reflected in the BMP Manual.
- The organization has provided some, but not all, of the human, technical, and financial resources necessary to effectively execute these defined responsibilities.
- Documentation of roles and responsibilities of employees or contractors is incomplete.
- Some employees or contractors are not fully aware of or do not understand their BMP roles and responsibilities indicating that roles and responsibilities have not been clearly defined and/or assigned.

### 11.2.8 Element 8. Training

- Training program content does not match the skills, knowledge, and awareness required to support employees’ roles and responsibilities. For example, some employees may not be receiving appropriate training given their assigned roles and responsibilities, indicating that the process for tracking employee training may be deficient or that the training program is not entirely consistent with employees’ assigned roles and responsibilities.
- Records of individual training are incomplete or inaccurate.
- An employee or contractor is not fully aware of assigned roles and responsibilities or with biosolids management practices or operational procedures, indicating that training has been inadequate to assure employees are competent in performing their assigned tasks and duties.

### 11.2.9 Element 9. Communications

- The Communications Program is not fully consistent with local circumstances, the method of biosolids management, the organization’s public communications history, and the degree of current interest in its biosolids management activities.
- The organization’s Communications Program is not being fully implemented as documented or intended.
- Records for receiving, tracking, and responding to inquiries and requests for information from interested parties are incomplete or do not include sufficient information to ensure that the responses are timely and complete (e.g., tracking logs do not include dates that inquiries were received or responded to).
- Records, or the lack thereof, indicate that the organization’s Communications Program fails to respond, or to respond in a timely manner, to inquiries and requests for information.

### 11.2.10 Element 10. Operational Control of Critical Control Points

- It appears that operational controls may not be sufficient to manage the actual or potential environmental or health impacts associated with *all* critical control point (Element requirement 10.1 states that operational controls must be developed for “all” critical control points).
- The auditor finds evidence that, occasionally, procedures have not routinely been followed as documented.
- Some operational controls are outdated and need revision.
- An employee or contractor is occasionally not fully aware of the requirements outlined in an operational control, indicating that operational controls have not been fully implemented.

### 11.2.11 Element 11. Emergency Preparedness and Response

- Documented emergency preparedness response plans and procedures have not been fully implemented by the organization (e.g., lack of required equipment, inadequacy of training programs, absence of job site postings and procedures, lack of warning and hazard signs).
- Contractors’ emergency preparedness and response plans and procedures have been established, but they have not been fully implemented.
- Some emergency response equipment is not on site or readily available.

### 11.2.12 Element 12. BMP Documentation and Document Control

- Standard operating procedures are not formatted consistently with version numbers, effective dates, and other required information, indicating the document control procedures have not been fully implemented.
- Some procedures have not been documented or that some records have not been maintained.

### 11.2.13 Element 13. Monitoring and Measurement

- Some monitoring and measurement procedures and practices have not been documented.
- Some monitoring and measurement procedures and practices have not been fully implemented. For example, inadequate monitoring and/or measurement practices are in place around some critical control points, or monitoring and measurement practices have not been fully implemented to track progress towards all biosolids goals and objectives.

### 11.2.14 Element 14. Nonconformances: Preventive and Corrective Action

- Some corrective action plans do not include sufficient or appropriate information to prevent future nonconformances (e.g., identify changes to policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances).
- Some corrective action plans have not been updated or closed out.
- Some nonconformance investigations have not been conducted as required by the organization's procedure.
- The corrective action plans developed to address BMP audit findings do not follow the requirements established in Element requirement 14.5 (i.e., Document corrective action plans and describe what actions will be taken to address the audit findings, the individuals responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action. Include recommended changes to policies, programs, plans, operational controls and monitoring/measurement procedures to prevent future nonconformances. Document these changes in the corrective action plan and in the BMP Manual and other relevant BMP documentation.).

### 11.2.15 Element 15. Periodic Biosolids Program Performance Report

- The BMP performance report does not include all required information describing progress toward goals, objectives, and legal and other requirements, as well as how that progress is measured and a summary of the most recent third-party verification or interim audit (if applicable).
- Summaries of monitoring, measuring, and other results are not sufficient to demonstrate performance of the biosolids program.
- The periodic Biosolids Management Program Report has not been made available to interested parties.

### 11.2.16 Element 16. Internal BMP Audit

- Required documents and records of the internal audit program are missing; for example, there is no description of the audit methodology, protocol, scope and schedule, or the lead auditors and their qualifications have not been identified.
- Corrective action plans have not been developed for all nonconformances identified during an internal BMP audit.
- Corrective or preventative action plans are incomplete.

## 11.2.17 Element 17. Periodic Management Review of Performance

- Periodic management reviews of the BMP and its performance have deviated from the planned procedure, schedule, or scope.
- The necessary changes to policies, plans, procedures, and work practices identified by the management review have not been fully made or documented.
- The assigned leader of the management review is not fully aware of the assigned responsibilities or the procedure for implementing the management reviews.

## 12 Glossary

**Audit Criteria** - Policies, practices, procedures, or requirements against which the auditor compares collected audit evidence about the subject matter.

**Audit Findings** - Results of the evaluation of the collected audit evidence compared with the agreed audit criteria.

**Biosolids** –The nutrient-rich organic materials resulting from the treatment of domestic sewage at a wastewater treatment facility. Through biosolids management, solid residue from wastewater treatment is processed to reduce or eliminate pathogens and minimize odors, forming a safe, beneficial agricultural product.

**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 (BMP)** – A comprehensive program covering all aspects of the organization’s biosolids activities throughout the biosolids value chain, including management processes for all critical control points in order to mitigate environmental impacts, meet quality and public acceptance requirements, meet legal and other requirements, and execute action plans to achieve biosolids program goals and objectives. A BMP meets requirements of the *BMP Elements* for developing a biosolids management policy and for developing, implementing, reviewing, and maintaining effective biosolids programs, procedures, and practices.

**Biosolids Management Program Audit** - A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization’s BMP conforms to the requirements of the NBP *Code of Good Practice*, the organization’s biosolids management policy, and the 17 *BMP Elements*. BMP audits may be conducted by internal audit teams and/or qualified independent third-party auditors.

**Biosolids Management Program Coordinator** – The person with overall responsibility and authority to organize and lead the group that will develop and play a key role in implementing the BMP.

**Biosolids Management Program Documents** – Various documents that collectively compose the BMP documentation, including the biosolids management policy, BMP manual, procedures, practices,

operating instructions, and other supporting documents required by the BMP and applicable biosolids laws and regulations.

**Biosolids Management Program Guidance Manual** – A detailed manual with useful step-by-step guidance on how to implement the *BMP Elements*.

**Biosolids Management Program Implementation Plan** - Plan that outlines action items necessary to close any gaps, strengthen weaker procedures, reinforce good practices, and develop new procedures where necessary — all to establish the Elements of the organization’s BMP.

**Biosolids Management Program Records** – Various records or reports of biosolids management activities required by the BMP and applicable biosolids laws and regulations, including but not limited to records or 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, or period of time.

**Biosolids Management Program Team** - Group representing all major operational and decision-making areas related to biosolids, tasked with developing, implementing, and maintaining the BMP.

**Biosolids Program Action Plans** – Action plans designating schedules, milestones, resources, and responsibilities for achieving biosolids program goals and objectives.

**Biosolids Program Goal(s)** – Performance improvement goals that are consistent with an organization’s biosolids management policy to ensure 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, improving 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 usually must be met 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 to achieve public acceptance of the organization’s selected biosolids management method(s).

**Biosolids Quality Requirements** – Biosolids physical, chemical, biological, and aesthetic characteristics that must be met consistently and reliably 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 use of biosolids that impact the quality and stability of biosolids and their suitability for the selected management method.

**Changing Circumstances** – Internal and external changes that affect the organization’s BMP, including changes in legislation, varying expectations of interested parties, changes in the organization’s products or activities, technological advances, consumer interests, and feedback from environmental incidents.

**Continual Improvement** – 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 *NBP Code of Good Practice*.

**Corrective Action** – Specific actions and steps taken to correct an organization’s nonconformance(s) to policies, procedures, and other legal, quality, and public-acceptance requirements, and to mitigate any resulting negative impacts on the environment.

**Critical Control Points** – Those locations, unit processes, events, and activities throughout the biosolids value chain under the organization’s direct control or influence that require effective policies, programs, procedures, practices, monitoring, and measurements to ensure the biosolids activities meet legal, quality, and public acceptance requirements and do not have undesirable environmental impacts. Critical control points include all biosolids management activities that are covered under applicable legal and other requirements.

**Document Control** – Procedures and practices to ensure that BMP documentation and documents are available and can be located easily, created following established document creation protocols, kept up to date through periodic reviews and revisions, properly marked with version number, effective date(s), and references to replaced or superseded versions; and approved by authorized personnel.

**Elements of a Biosolids Management Program (BMP Elements)** – These Elements are the standards or benchmarks by which your BMP should be developed and by which your program will be judged.

**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 have been 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 to minimize environmental impacts.

**Environmental Impacts** – Any change to the environment (positive or negative), including public health, public nuisances, and odor problems, that wholly or partially result directly or indirectly from the organization’s activities, products, or services, including those activities associated with biosolids management, and those activities that alter (positively or negatively) the acceptable disposal or use method or create public nuisance and public health risks.

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

**Legal Requirements** – The federal, state, and local laws and regulations that are applicable to an organization’s BMP activities.

**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.

**National Manual of Good Practice** – Provides detailed guidance on identifying critical control points and selecting appropriate management practices.

**Noncompliance** – A deviation from federal, state, or local laws, regulations or other compliance



requirements applicable to the organization's biosolids management activities.

**Nonconformance** – A deviation in an organization's established biosolids management policy or BMP from the NBP *Code of Good Practice* principles or the requirements of the *BMP Elements*.

Nonconformances include circumstances that have the potential to create a noncompliance situation or significant environmental impacts.

**Objective Evidence** – Policies, ordinances, procedures, manuals, inspection checklists, operating logs, annual reports, various other documents, and various records, such as monitoring, inspection, enforcement, and training records, that objectively document conformance with the *BMP Elements* requirements.

**Operational Controls** – Ordinances, regulations, standard operating procedures, 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, including conformance with biosolids management policy requirements, and achievement of biosolids program goals and objectives.

**Opportunity for Improvement** - a program element that conforms to the minimum requirements outlined in the BMP Elements, but which may be improved by following suggestions, examples or benchmarks cited by the auditor.

**Organization** – Enterprise, authority, or institution, or part thereof, responsible for individual or a combination of, biosolids management activities.

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

**Outcomes Areas** – For specific outcomes areas where the NBP has defined specific expectations for the BMP to support performance improvement: 1) environmental performance; 2) regulatory compliance; 3) relations with interested parties; and 4) quality biosolids management practices.

**Preparer**- Organization who generates solids or biosolids during the treatment of domestic sewage in a treatment works or the organization that derives a material from wastewater solids or biosolids. Examples of preparers would be a public wastewater treatment plant or a private company that manages a compost facility or drying facility that changes the quality of the solids or biosolids to produce a product that meets federal regulations (CFR part 503) for use or disposal.

**Preventive Action** – 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.

**Procedure** – Documented protocol for meeting the requirements of a BMP Element that defines the purpose, terms, detailed actions, responsible persons, and supporting documentation relevant to that Element.

**Public (Interested Parties)** – Same as the definition of interested parties.

**Public Education** – Systematic public communication program for educating interested parties and other stakeholders on an organization's biosolids management activities.

**Public Participation** – Specific approach(es) and action(s) taken by an organization to involve interested parties and the general public in its BMP, including establishing improvement goals and

objectives.

**Requirement Verification** -looks at specific BMP elements to determine if the organization’s BMP satisfies the associated requirements, as defined in the *BMP Elements*.

**Responsibility(ies)** – The specific task(s) a group or individual carries out in a lead or supporting role that accomplishes or supports operational or strategic goals and objectives.

**Role(s)** – The purpose(s) of the activity(ies) a group or individual performs with respect to the biosolids value chain, biosolids operations, and the BMP.

**Service Agreement(s)** – Contractual or other legally binding agreements that define the roles and responsibilities of contractors and other groups in supporting the organization’s BMP.

**S.M.A.R.T. Criteria** - Specific, Measurable, Achievable, Relevant, and Time-bounded criteria used to develop biosolids program goals and objectives.

**Training** – Teaching to make fit, qualified, or proficient; preparation for a test of skill or knowledge; instruction in disciplines and techniques.

**Transaction Testing** - Enables auditors to assess how well various components of an organization’s BMP function in practice - and how well they work together - from a broader systems perspective.

**Third-Party Verification** – The process of having a BMP verified by an independent, qualified auditor.

## 13 Document Control Log

Name / Title	Approved By	Approval Date
Third Party Verification Auditor Guidance	NBP Focus Group of RBC	October 2024 PENDING

### Revision Log

Revision Number	Description of Revision	Date
2.0	Major Reissue – All previous changes can be found in the 2011 Version in the archives	September 10, 2024