



# NATIONAL BIOSOLIDS PARTNERSHIP AUDIT REPORT

**King County Wastewater Treatment Division  
Seattle, Washington**

**Audit conducted by**

**NSF-International Strategic Registrations**

**William R. Hancuff, Lead Auditor  
Scott Smith, Auditor**

**References:**

**National Biosolids Partnership (NBP) EMS Elements  
NBP Third Part Verification Auditor Guidance  
NBP Approved Positions on Various Issues – April 19,2004  
NBP Code of Good Practice  
King County Wastewater Division EMS Manual  
(Latest Revisions – May 2004)**

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King County Representative (Signature)

Date

A handwritten signature in cursive script, appearing to read "S.P. Davis".

July 19, 2004

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NSF-ISR, S.P. Davis,  
Business Unit Manager, EH&S Registration Services

Date

## **INTRODUCTION**

The purpose of the Biosolids Environmental Management System (EMS) Third Party Verification audit is to verify King County's (KC) conformance to EMS requirements of the National Biosolids Partnership (NBP). The goal of the Third Party Verification audit is to collect and evaluate objective evidence that determines whether KC's biosolids EMS is functioning as intended, that practices and procedures are conducted as documented, and that the EMS as implemented conforms with the NBP's Code of Good Practice and EMS program objectives.

## **SCOPE**

In general terms, the scope of the Third Party Verification audit encompasses the entire biosolids value chain (pretreatment, collection and treatment, through final end use) with special attention on those practices and management activities that directly support biosolids-related operations, processes, and activities within the Wastewater Treatment Division.

The NSF-International Strategic Registrations, Ltd. (NSF-ISR) conducted a third party verification audit of the King County Wastewater Treatment Division's Biosolids Environmental Management System. The verification began with a desk audit substantially completed in November 2003 and presented to King County on 2 March 2004. The process continued with an on-site readiness review from 22 March to 24 March 2004 and an on-site verification audit from 19 May to 25 May 2004. The on-site audit team consisted of Dr. William R. Hancuff, Lead Auditor and Scott Smith, Team Auditor.

The physical biosolids facilities included in the audit and visited during the verification audit period included the King Street Center, West Point Treatment Plant, South Treatment Plant, Industrial Waste Pretreatment Offices, Boulder Park Soil Improvement Project, Green Valley Soil Enhancement Project, Hancock Snoqualmie Forest, Great Western Soil Conditioners, and the GroCo Compost Project.

The audit team selected four different ultimate use application sites to visit. These were selected based on the fact that each one represented a different type of process, crop, application method or geographical area. Boulder Park Soil Improvement Project applies biosolids to dry-land crops in North Central Washington; Green Valley soil Enhancement Project applies biosolids primarily to hop production areas as well as orchards, corn and hay in South Central Washington; Hancock Snoqualmie Forest Project recycles biosolids to enhance forest growth in eastern King County; and GroCo Compost Project is operated by a local King County private company that produces compost for sale after achieving Class A exceptional quality product.

## DOCUMENTATION REVIEW

Document review was conducted in three parts, the desktop audit, the operational readiness review, and the verification audit. During each of these activities various documents were reviewed to verify conformance with the NBP EMS program auditor guidance. The summary below presents the documents associated with each element that was reviewed during the above-mentioned stages.

### *Element 1. Documentation of EMS for Biosolids*

- EMS Element 1- Executive Summary
- King County DNRW Wastewater Treatment Division EMS Manual for Biosolids
- Division Director's signature on EMS manual
- Table of Content referencing procedures for each element
- Biosolids Policy (by reference)
- Table of Standard Operating Procedures for each plant
- Master list of logs, reports, and records
- Tracking for biosolids legal requirements
- Schedule of Biosolids Contracts
- Roles and Responsibilities for TARR team and contractors
- Cross references among public participation, communication and emergency response

### *Element 2. Biosolids Management Policy*

- EMS Biosolids Manual - Element 2 – background and location of web sites for references
- Table 2- cross reference for each item in code of good practice to King County Policy Documents and Codes
- List of King County Biosolids Policies
- EMS Training Manual
- Contractor Training List
- Form SF-2-1 Policy Tracking

### *Element 3. Critical Control Points*

- EMS Biosolids Manual - Table 3-A and Table 3-B
- Procedure SP-3-1
- Spot check of records at West Point and South Plant to verify Table 3-A

### *Element 4. Legal and Other Requirements*

- EMS Biosolids Manual – Element 4
- NPDES permit – January 1, 2002
- Biosolids Permit – GroCo – BT9903
- Pretreatment Categorical Standards Update-Centralized Waste Treatment Facility

- Pretreatment Categorical Standards Update -Transportation Equipment Cleaning
- Computer system update to address new dischargers
- Publications on dental office pretreatment changes
- Mailing list of dentist offices
- Monitoring program for amalgam control
- Local regulations for Yakima County and Pierce County
- Pending Statewide Biosolids General Permit
- Spot check changes to EMS Table 4 – legal requirements

*Element 5. Goals and Objectives for Continual Improvement*

- EMS Biosolids Manual - Table 5 – Action Plan for Goals and Objectives
- Monthly EMS team meeting records
- Review of milestone records

*Element 6. Public Participation in Planning*

- EMS Biosolids Manual - Element 6
- Table 9-I presents extensive list of interested parties
- Yearly customer meetings – farming communities
- Review of program brochures created for the public
- Intranet cross correlation of King Co. Policy and NBP Code of Good Practice
- Earth Day Open house at treatment plant – mailing list of 100 locals and interested parties
- Completed questionnaires prepared by public

*Element 7. Roles and Responsibilities*

- EMS Biosolids Manual – Element 7
- Procedure SP-7-1 – Operation and Maintenance Roles and Responsibilities
- Procedure SP-7-2 – Biosolids Roles and Responsibilities
- Roles Matrix – SD7-1-4
- EMS Table 7A
- EMS Table 3A
- Reviewed four contracts – GroCo, Great Western, Boulder Park, and Forestry Project
- Land Application plan for each project

*Element 8. Training*

- EMS Biosolids Manual – Element 8
- EMS Training Manual – March 2002
- Contract technical specifications regarding training – Green Valley, Forestry Project, Boulder Park

*Element 9. Communications*

- EMS Biosolids Manual – Element 9
- Procedure SP 9-3-3 and SP 9-1-3
- EMS Table SD 7-1-4
- EMS Table 7A – TARR and item 9 – contractors
- EMS Training Program – March 2002
- Training Records for March, June, October 2003 and April 2004

*Element 10. Operational Control of Critical Control Points*

- EMS Biosolids Manual – Element 10
- Standard Operating procedures – on-line
- Training packages – on-line
- West Point Wastewater Information Management System – area logs, checklists, records (kept at ACC control)
- Spreadsheets of “solids weekly update” (summary, guidelines, goals, and recommended changes)
- Operations records data
- Daily briefing sheets - thickening, dewatering and anaerobic digestion results
- Operations Plan for GroCo
- GroCo annual Report - 2003
- Daily microbiological diversity records
- Records of Solids Retention Time vs. stabilization – trend analyses
- Table 3B – King County operational practices and National Manual of Good Practices
- Spot checked pretreatment program
- Spot checked West Point TP dewatering and thickening records
- Spot checked Green Valley and Boulder Park land application records
- Spot checked process controls – primaries, secondaries, digesters, thickeners, dewatering, trucking, and loading

*Element 11. Emergency Preparedness and Response*

- EMS Biosolids Manual – Element 11
- Biosolids Grit Hauling Drivers Handbook – June 2000
- Overflow Manual
- Spill Record – None – 15 years.

*Element 12. EMS Documentation and Document Control*

- EMS Biosolids Manual – Element 12
- Procedure SP-12-1 – document management
- Procedure SP-12-2 – Records management
- Procedure SP-12-3 – Change management
- Table 10 – Master List of SOPs

- Table 13 – Master List of Records

*Element 13. Monitoring and Measurement*

- EMS Biosolids Manual – Element 13
- Operator logs both plants – solids lab
- Operator logs both plants – digesters
- On-line operation control monitoring
- Operator sample collection logs
- Laboratory analyses logs
- Green Valley logs on final solids measurements – verification
- Boulder Park monitoring and measurements
- Great Western Annual Report
- Forestry Project Annual Report
- Forestry Project – Land application plans – October 24, 2002
- Green Valley Project Report – 2003
- Green Valley Annual EPA Report - 2003

*Element 14. Nonconformances: Preventive and Corrective Action*

- EMS Biosolids Manual – Element 14
- Procedure SP – 14-1-2
- Forms SF-14-1-2
- Forms SF-14-5-2
- Forms SF 12-2
- Forms SF 14-2

*Element 15. Periodic Biosolids Program and EMS Performance Report*

- EMS Biosolids Manual -Element 15
- EMS Procedure SP 15-1
- Biosolids EMS performance Report
- Biosolids evaluation report March 2004 (web site)

*Element 16. Internal EMS Audit*

- EMS Biosolids Manual -Element 16
- Tetra Tech - 22 November 2002 - EMS interim internal audit results
- Biosolids EMS status review – self assessment checklist
- Procedure SP-16-1-2
- Forms SF-14-6

*Element 17. Periodic Management Review of Performance*

- EMS Biosolids Manual - Element 17
- EMS Procedure SP-17-1

- Division Director Signature document
- Management review minutes March 5, 2003
- Waste Treatment Division Management Team meeting – February 18, 2003
- 2004 Management Team Schedule

## **DESK AUDIT**

A desktop audit was conducted to complete the document review. The principal focus was on King County's EMS manual and supplemental information supplied with that document, such as handbooks and operations manuals. The results of the document review provided a number of findings that were divided into four categories: major nonconformances, minor nonconformances, opportunities for improvement and positive observations. The results are summarized below:

### **Major Nonconformances**

Item 2.1 There was no single policy statement. The biosolids policy background description suggests the biosolids policies are encompassed within several council-approved ordinances, but does not state which parts of those ordinances apply. The organization did not articulate and communicate clearly its vision for how the organization would conduct all of its biosolids activities. Another reference in the background section indicated that the policy was encompassed in its letter of understanding to the NBP, but this was not a policy statement either - only a reference. According to the standard the goals and objectives, biosolids management program, 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 policy. There was no stand-alone explicit policy statement that identifies the above.

Item 5.1.1 None of the goals and objectives identified priorities for improving environmental performance of biosolids management activities based on 1) critical control points, 2) identified or potential environmental impacts, 3) legal and other requirements, and 4) applicable best management practices as defined in the National Manual of Good Practice.

Item 5.1.2 It was not clear how input from interested parties developed through proactive public participation was considered in developing program goals and objectives.

Item 5.1.3 None of the goals and objectives met all of the SMART criteria (Specific, Measurable, Achievable, Relevant and Time-bound)

Item 5.1.4 While the action plans contained schedules, milestones, and responsibilities for achieving biosolids program goals and objectives, they did not address resources.

Item 6.2 It was not clear that the proactive public participation approach reflected the agency's commitment to the ten principles in the Code of Good Practice. None of the public participation activities listed in the tracking record (SF-6-1-2) identify that interested parties had been provided meaningful opportunities to express views and perspectives relative to biosolids management activities, including concerns about environmental impacts, biosolids program performance, and potential for improvement. Additionally, there was no objective evidence that input from interested parties was considered in developing program goals and objectives.

Item 14.2 The organization had not effectively implemented a procedure to take action to correct nonconformances. At least two findings identified in the internal audit had not been adequately corrected. Those two internal findings were determined to be major nonconformances in the desk audit.

### **Minor Nonconformances**

Item 3.1 In two locations in the Background section of element 3, the current list of critical control points was identified as being in Element 10, SD-10-1. SD-10-1 was not located in Element 10.

Item 3.1 In table 3-B the cross-references of the critical control points with the National Manual of Good Practices did not reflect the current version of the Manual.

Item 4.1 Table 4 identified several permits that had expired. This could be considered a lack of commitment to comply with regulations, which is one of the principle tenets of the Code of Good Practice.

Item 8.2 Procedures SP-8-1 and SP-8-2 did not address how new or reassigned employees are included in the training program.

Item 9.5 The communications procedures did not clearly define the roles and responsibilities of outside contractors in the communication program.

Item 12.1 No information was found to verify that the agency had established documentation, document control and record requirements for biosolids management activities conducted by its contractors in service agreements, and incorporated these into its EMS for biosolids.

Item 13.1 There was no objective evidence that contractors had been required to establish and maintain regular monitoring and measurement procedures and practices for all their assigned biosolids management activities, as defined in their service agreements.

Item 14.1 SF-14-4-2: Nonconformance Tracking did not track progress in completing the corrective actions, nor periodically update the status to reflect completion.

Item 15.1 Procedure SP-15-1-1 did not specify that the annual report would 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.

### **Opportunities for Improvement**

Item 1.1 It was not clear from the description what the treatment processes are at the Vashon wastewater treatment plant and what happens to the biosolids generated.

Item 2.2 Delegation of signatory authority by top management for key documents, such as the letter of commitment with the National Biosolids Partnership, did not demonstrate the highest level of commitment to the program.

Item 3.2 Tables 3 A and B appear to provide an adequate list of value chain categories and critical control points associated with them, however it was noted in a spot check of odor control management, that the toxicity of H<sub>2</sub>S gas was not listed as an environmental or health impact. In addition, the environmental corrosivity of such gases was not addressed.

Item 7.1 The audit team was unable to verify that service agreements define and document the roles and responsibilities of contractors retained to perform various biosolids management activities and EMS functions.

Item 7.2 While several organization charts were presented for the wastewater treatment division, there was no organization chart presented that described the interactions and relationships of the positions involved in the EMS.

Item 8.1 Procedures SP-8-1 and SP-8-2 did not address the frequency of training on EMS and biosolids activities.

Item 8.3 The audit team was unable to verify that contractor service agreements require contractors to establish their own training programs consistent with their roles and responsibilities in biosolids management activities.

Item 9.2 In procedure SP-9-1-2 item 7, it refers to an EMS Communications Effectiveness Report (SR-9-1) and an Annual Biosolids EMS Performance Report (SP-15-1). The audit team was unable to locate either report for 2002.

Item 9.3 In procedure SP-9-2-2 item 7, it referred to a Biosolids Communications Effectiveness Report (SR-9-2). The audit team was unable to locate 2002 report.

Item 9.4 It does not appear that inquiries from government regulators are addressed in the communications procedure SP-9-3.

Item 9.5 Although addressed in the communications plans, it did not appear that procedure SP-9-3 referenced a process for assuring a timely and complete response to inquiries by interested parties.

Item 11.1 In procedure SP-11-1-2 item 2, it referred to SD-11-1, which referenced "plans" and not "procedures" as stated in SP-11-1-2.

Item 11.2 There was no objective evidence available to demonstrate that emergency response plans cover all critical control points throughout the value chain as referenced in procedure SP-11-1.

Item 15.2 A copy of the 2002 annual report was not found in the documents provided for the desk audit, therefore conformance with the required contents of this report were not verifiable.

Item 16.1 The background section of EMS Procedure 16-1 stated that the WTD's internal audits were designed to verify the entire biosolids value chain is prepared for the third party audit. The goal of most audits is not to prepare for other audits, but rather improve the system. Additionally, the fact that King County was part of NBPs demonstration project is not a critical part of this procedure in the long run.

Item 16.2 According to Procedure SP-16-1-1 item 2, the lead auditor(s) are required to complete auditor training consistent with the NBP auditor qualifications prior to conducting an audit. It was not clear if the Tetra Tech auditors who conducted the internal audit met these requirements.

Item 16.3 According to Procedure SP-16-1-1 item 7, the EMS audit team shall include a list of findings in the audit report and shall describe and classify any nonconformances as "major" or "minor". None of the findings of the internal audit performed by Tetra Tech classify the findings as major or minor. Although it could be "assumed" that all findings were minor because the cover letter indicates there were no major findings, the audit report did not meet the procedure requirements.

Item 16.4 The audit team was unable to locate SR-16-1 in the EMS manual

Item 17.1 The audit team was unable to locate SD-17-1 in the EMS manual

Item 17.2 A copy of the 2002 annual biosolids management review was not found in the documents provided for the desk audit, therefore conformance with the required contents of this review were not verifiable.

### **Positive Observations**

Item 2.3 The Biosolids Policy Background section of element 2 showed a strong commitment to codes beyond the NBP Code of Good Practice.

Item 6.1 King County WTD appears to have identified a proactive public participation approach to involve interested parties in its Biosolids Management Program and EMS planning process.

Item 9.1 It appeared based on a cursory review of the communications plans that the agency has a strong fundamental program.

All of the above major and minor nonconformances and opportunities for improvement were either resolved or addressed adequately by King County EMS Corrective Action Plans.

## **VERIFICATION AUDIT FINDINGS**

As was mentioned, an EMS is a continual improvement process, and verification is not the end -- it is the beginning. The results of this and future audits will provide value added to the system and should be viewed as an overall opportunity to improve. Every audit is a snapshot in time, and does not, or cannot, identify each and every area for improvement. While no single audit identifies all of the areas for improvement, the results of each audit provide an additional incremental step in the system's improvement.

There have been significant improvements in the King County Biosolids EMS over the past few months as reflected in the number of findings identified in the desk top audit and operational readiness review, when compared to the number of findings of the verification audit. The combination of the desktop audit and the operational readiness review had 6 major non-conformances, 10 minor non-conformances along with 28 opportunities for improvement, for a total of 44 findings.

The verification audit covered all elements of the standard in considerably greater detail than the previous audits, being performed by two auditors over a period of five days. The results demonstrate a considerable improvement in the system. The verification audit found no major non-conformances, 7 minor non-conformances and 4 opportunities for improvement for a total of 11 findings. For a system that is considerably more complex than the ISO 14001 standard, that is impressive.

The following is a review of non-conformances and opportunities for improvement listed in the sequence of the NBP standard elements.

### **Minor Nonconformances**

Item 3.3 –A review of Table 3-A entitled “Critical Control Points and Operational Controls for Biosolids Value Chain” found several omissions and inaccuracies in the contents of the table.

Item 5.5 –Not all of the goals and objectives meet all of the SMART criteria (specific, measurable, achievable, relevant and time bound). Specifically, some objectives or milestones are not time-bound (i.e. they are “ongoing”).

Item 8.4 – Not all contractors have established their own training programs as defined through service agreements (for example Boulder Park and Green Valley).

Item 14.1 –No corrective action procedure was found (similar to SP14-1) to investigate any noncompliance with applicable regulatory requirements.

Item 14.5 –No formal corrective action plans were developed using SF-14-5-2 to address the findings of the external third party desktop audit.

Item 14.6 –Tracking of long term corrective action implementation using SF-14-2 is not fully implemented; for example the corrective action initiated by WO # 03-008, relating to training is not being tracked.

Item 16.2 –Not all corrective action forms SF-14-5 were signed and dated on completion of the corrective actions.

Corrective action plans (CAPs) were prepared for each of the above minor non-conformances and submitted to NSF on 17 June 2004. All CAPs and the time for implementation were reviewed and accepted on 24 June 2004.

### **Opportunities for Improvement**

Item 2.1 –Consider preparing a concise policy statement that explicitly or by reference incorporates the principles of the Code of Good Practice, as opposed to a complex cross-reference table.

Item 2.2 –A continuing challenge is to provide the required policy communication to employees, contractors and interested parties. The lack of a simple and specific policy statement related to the Code of Good Practice makes this more challenging and presents an opportunity for improvement, i.e. many individuals were not familiar with the policy, nor the elements contained in the Code of Good Practice.

Item 3.3 Table 3-A has a number of inaccuracies and omissions, perhaps because it addresses both treatment plants in single table. There are sufficient differences between the unit operations, processes and operating procedures to warrant considering that each plant be addressed independently in separate tables.

Item 4.1 –A King County work group holds periodic (quarterly) meetings to discuss regulatory updates. The county is not taking credit for this activity by listing it in SP 4-1.

In addition to the CAPs prepared to address the minor non-conformances, King County also prepared Corrective and Preventive Action Requests (CARs) according to their EMS requirements to provide continual improvements to their biosolids program.

### **Positive Observations**

The King County personnel involved in biosolids management should be recognized for their outstanding achievements, and the exceptional features of their Biosolids Management System. The following is a summary of those positive items observed during the audit.

- Excellent, well organized Environmental Management System (EMS) Manual – the key to having a successful program.
- Process analysts at the West Plant are exceptionally knowledgeable individuals, who routinely think in terms of critical control points of process operations. Additionally, process analysts provide outstanding leadership at the South Plant wastewater treatment works and the requisite encouragement and support at the plant operating level, which facilitates acceptance of the new EMS program. The dedication of these individuals will assure optimum management of critical control points at both plants.
- The pretreatment program is outstanding and an excellent example of management of this critical control point. The leaders of the program are extremely knowledgeable and manage an efficient operation.
- The County has an outstanding pro-active and aggressive public participation program, and has established a standard for other agencies to emulate.
- The critical control point signs posted throughout both plants provide visibility and support to the EMS – an excellent idea.
- Odor control accomplishments at both wastewater treatment plants increase the level of public acceptance of all related programs.
- The contractors who team with King County are dedicated, knowledgeable, enthusiastic, and supportive of the EMS initiative. The efforts to involve contractors in the EMS program are already paying dividends.
- The expertise of the agricultural application personnel is impressive and their dedication is reflected in increased crop quality and yields.
- Landscaping at the West Point Treatment plant has increased the level of public acceptance of this necessary, but not always appreciated field.
- To make a program like this successful, there needs leadership to constantly push the program and continuously improve the process. The leader of this program should be recognized as having orchestrated all of the talent necessary to get King

County where it is in the verification process. This is obviously a team effort and could not have been accomplished without the support and cooperation of all involved, however the leadership deserves recognition as the focal point of this effort and providing the glue to hold the team together.

## **KING COUNTY COMMENTS**

King County had only editorial comments to the draft report, which were incorporated into the final report.

## **OUTCOMES MATTER**

King County goals and objectives were established by the biosolids working group with input from all organizations within the County structure having any responsibilities for biosolids, as well as input from biosolids contractors and the public. The County goals for its EMS were established using each of the four outcome focal points of the NBP program as identified below:

1. Environmental Performance,
2. Regulatory Compliance,
3. Relations with Interested Parties, and
4. Quality Biosolids Management Practices.

King County's performance relative to each is addressed below.

In the Environmental Performance area, King County (KC) has established goals and objectives for improving environmental performance of biosolids management activities based on critical control points, identified or potential environmental impacts, regulatory requirements, best management practices; as well as input from interested parties. These goals and objectives include:

- Dewatering process improvements at the South Plant
- Change to high solids centrifuges at the South Plant
- Improvements at treatment plants (screening and maceration) for the elimination/reduction of plastics and debris at the West Point plant.

The improvements in solids dewatering at the South Plant will be accomplished soon with the addition of new centrifuges (construction 75% complete). The goal of reducing objectionable debris from the final biosolids product has been partially accomplished through the installation of supplemental grinding pumps; while the long-term solution, installing finer influent screens, is in the design phase.

In the Regulatory Compliance area, KC has addressed many compliance items through tracking compliance obligations, and incorporating legal and other requirements into the monitoring and measurement procedures. Examples include:

- No NPDES permit violations at the treatment plants in 2002
- Adoption and enforcement of new ordinance to require installation of amalgam separators at dental offices

The goal of reducing mercury in the biosolids through the implementation of controls at dental offices is substantially complete and the evaluation of the effectiveness is underway through conducting inspections of between 50 and 100 dental offices.

In the Relations with Interested Parties area, KC has established two-way communication flows with interested parties through brochures, advisory groups, an Internet Web site, tours, and other public educational tools. Interested parties are provided with information about biosolids activities and invited to express their views on the KC programs. Reactions by KC to interested parties inquiries and comments include key activities such as:

- A web site which includes links to several informational areas such as State and local agencies, as well as links for comments and emailing KC directly to provide a Q & A format, with timely responses.
- Regular surveys for public opinion
- Timely responses to complaints, with positive results pertaining to the complaints.

Input from interested parties has been used in the development of specific goals and objectives such as the removal or reduction of plastics and papers as well as the local public interest in carcinogens and endocrine disrupters.

The end users' concern over plastics and paper contained in the final biosolids products prompted King County to implement controls at critical control points to reduce and then eliminate the source of the concerns. The initial phase of controls is complete while the second phase is underway. With respect to the public concern with carcinogens and endocrine disrupters in the water, it is planned to conduct between 100 to 200 source control inspections in the Lower Dumwamish waterway study area to identify and control sources of phthalates and PCBs. An additional goal of implementing a proactive public participation and communication program is fully implemented.

In the Quality Biosolids Management Practices area, KC has verified the Critical Control Points and associated Operational Controls, which are consistent with the National Code of Good Practice. Examples include:

- Maintaining 150% capacity for recycling the biosolids, which is also part of the Division-wide "Balanced Scorecard" goals.
- A commitment to long-term research on biosolids odors at end use sites
- Using a "Prediction Model for Biosolids Quality" which predicts biosolids quality prior to distribution, based on influent information.

Goals and objectives have been established for improvement of biosolids quality through improved dewatering and installation of new equipment at selected critical

control points, such as the headworks screens, improved macerating pumps, and new centrifuge dewatering equipment. One of the objectives associated with the long-term objective of reducing odors at the end use sites is tied in with the investigation of two or three options to produce Class A biosolids. This objective is being investigated using the services of a consultant and progress is being made. Additionally, the Prediction Model for Biosolids Quality is being tested for effectiveness by checking key biosolids parameters monthly to determine the predictability and correlation of data outliers with final biosolids product quality.

## **CONCLUSIONS AND RECOMMENDATIONS**

The results of the verification audit are positive. The review and approval of the corrective action plans for each of the non-conformances, and it is the recommendation of the audit team that the County receive “Verification” status. Verification is not the end, but rather the beginning of a continuously improving biosolids management system.

## Attachment 1

### National Biosolids Partnership Appeals Process

Biosolids organizations that participate in the National Biosolids Partnership (NBP) Environmental Management System (EMS) Program are required to undergo an EMS verification audit by an independent, third party auditor assigned by the NBP and yearly interim audits. The purpose of the EMS audit is to determine whether or not the organization's EMS conforms with -- that is, meets the requirements of -- the NBP program, as defined in the *EMS Elements*<sup>1</sup>. The spirit of these requirements includes a well-documented program and meaningful opportunities for interested party involvement.

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the findings of a third party EMS audit. The verification appeals process involves an Appeals Board; representing a balance of biosolids management interested parties, including an environmental advocacy group, and wastewater industry professionals. *An appeal must be submitted within 30 days of the audit company's official verification decision or interim audit decision.*

To submit an appeal before the Appeals Board, the petitioner must set forth the specific EMS element(s) and requirement(s) that are believed to have not been evaluated and/or implemented consistent with NBP requirements as reflected in the *EMS Elements*, along with the objective evidence to support that claim. For example, a petitioner may believe that a major nonconformance exists but was not found by the auditor. In this case, the petitioner would need to identify in the petition the specific EMS element believed to be out of conformance and why.

To submit an appeal, petitioners must fill out and submit the standardized appeals petition form that is available on the NBP website at <http://www.biosolids.org>. A formal appeal must be submitted within 30 days of the verification decision or interim audit decision by the audit company.

The Board's Administrative Officer receives all appeals petitions on behalf of the Board and conducts a basic completeness check. Upon completion of this check, the petition is either forwarded to Appeals Board members or back to the petitioner with incomplete areas documented. Petitions should be sent via certified, return receipt requested mail to:

The NBP EMS Appeals Board, Attention: Board Administrative Officer, c/o  
Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314

The Appeals 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. Appeals cases vary in complexity. As a result, the time required for the Board

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<sup>1</sup> The *EMS Elements* and other program materials are available on the NBP website at <http://www.biosolids.org>.

*Final*



to evaluate a case and make a decision might vary. However, the overall Board target for processing an appeal is approximately four months.



**Attachment 2**

**Attendance Sheets for Entrance and Exit Meetings**

**(Attendance sheets are kept on file at NSF-ISR)**