NATIONAL BIOSOLIDS PARTNERSHIP AUDIT REPORT

Metropolitan Water Reclamation District of Greater Chicago

Chicago, Illinois

Audit conducted by

NSF-International Strategic Registrations

William R. Hancuff, Lead Auditor
Jack McVaugh, Auditor
Alan Cassel, Auditor

References:
National Biosolids Partnership (NBP) ***EMS Elements***
NBP ***Third Party Verification Auditor Guidance – November 2001***
(Latest Revision August 2007)
NBP ***Code of Good Practice***
Metropolitan Water Reclamation District
of Greater Chicago Biosolids EMS Manual – July 2005
(Latest Revisions Approved May 16, 2008)

Final Report – June 20, 2008

INTRODUCTION

The purpose of the Biosolids Environmental Management System (EMS) Third Party Verification audit is to verify the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Biosolids Environmental Management System (EMS), Chicago, Illinois, conforms 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 the MWRDGC biosolids EMS is functioning as intended, that practices and procedures are conducted as documented, and that the EMS as implemented conforms to the NBP's EMS Elements, the Code of Good Practice and the EMS program objectives.

RECOMMENDATION

The results of the MWRDGC verification audit and review of their corrective action plans are positive, and it is the recommendation of the audit team that the District's Biosolids Environmental Management System receive "Verification" status. Verification is not the end, but rather the beginning of a continuously improving biosolids management system.

AUDIT 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 various Wastewater Treatment Plants' operations.

The NSF- International Strategic Registrations, Ltd. (NSF-ISR) conducted a third party verification audit of the MWRDGC Biosolids Environmental Management System. The verification began with a documentation desk audit and on-site readiness review (ORR) conducted from August 1 through August 5, 2005 with a letter report presented on August 5, 2005. This was supplemented with an additional ORR conducted from November 28 through November 30, 2006 with a letter report presented on November 30, 2006. The process continued with an on-site verification audit conducted from May 27 through June 5, 2008. The on-site audit team consisted of Dr. William R. Hancuff, Lead Auditor; Jack McVaugh, auditor (from May 27 through May 30, 2008) and Alan Cassel, auditor (from June 2 through June 5, 2008).

The physical biosolids facilities and land application site included in the audit and visited during the ORR and verification audits included the following facilities: MWRDGC's Headquarters Offices – 100 East Erie St., Chicago, Stickney Water Reclamation Plant and Research and Development Offices; Calumet Water Reclamation Plant and Calumet Solids Management Area (CALSMA); John E. Egan Water Reclamation Plant; Hanover Park Water Reclamation Plant and Fischer Farm; Lawndale Avenue Solids Management Area (LASMA), and land application site at a Blue Island Park Districts' park.

The following individuals were interviewed as part of the audit process:

Dick Lanyon – General Superintendent
Manju Prakash Sharma – Assistant Chief Engineer - General Division Head
Osoth Jamjun – Chief Maintenance and Operations
Jack Farnan – (former) General Superintendent
Sergio Serafino – (former) Supervising Civil Engineer – Maintenance and Operations
Dan Collins – Supervising Civil Engineer - Biosolids Manager & Biosolids EMS Coordinator
Brian Levy – Associate Civil Engineer
Tony Quintanilla – Assistant Chief Engineer – North Area
Adam Gronski – Principal Civil Engineer- Maintenance and Operations
Susan O'Connell – Supervising Civil Engineer – Maintenance and Operations
Jill B. Horist – Manager Public Affairs
Dr. Albert Cox – Soil Scientist 3 – R&D Department
Robert Podgorny – Engineer Technician V – Biosolids Handling – Hanover Park WRP
Jay Nagella – Associate Mechanical Engineer – Hanover Park WRP
Mark Johnson – Treatment Plant Operator 3 – Operations – Hanover Park WRP
John Lazicki – Assistant Engineer of Treatment Plant Operations 2 – Plant Manager – Hanover Park WRP
Sam Pappu – Electrical Engineer 2 – Hanover Park WRP
Al Eswani – Civil Engineer 3 – Hanover Park WRP
Lisa Kaufman -Treatment Plant Operator II - Hanover Park WRP
Tom Conway – Assistant Chief Engineer, Plant manager – Calumet WRP
Omar Zayyad – Assistant Engineer of Treatment Plant Operations 1 – Calumet WRP
Rafael Frost – Senior Civil Engineer – CALSMA Biosolids Handling Operations
David Hanek – Treatment Plant Operator 3 – Calumet WRP (liquids operations)
Brian Perkovich – Assistant Engineer of Treatment Plant Operations 3 – Calumet WRP
Lynn Kohlhaas – Associate Civil Engineer – Calumet WRP (liquids recordkeeping)
Brett Garelli – Deputy Chief Engineer – Stickney WRP
Neil Dorigan – Assistant Engineer of Treatment Plant Operations 3 – Stickney WRP
Mark Kwan – Operations Engineer 2 – Building Maintenance – Stickney WRP
Reed Dring – Engineer of Treatment Plant Operations 1 – Stickney WRP Operations Manager
Hank Marks – Chief Operating Engineer 3 – Stickney Supervisor of Mechanical Operations (Solids Section)
Steve Carmody – Engineer of Treatment Plant Operations 1 – Stickney WRP Maintenance Manager
Ann Ko - Principal Civil Engineer – LASMA Biosolids Handling Operations

Pedro Ortiz – Assistant Civil Engineer – LASMA lagoon area
Sanjay Patel – Assistant Engineer of Treatment Plant Operations 3 – John E. Egan WRP Plant Manager
Kathy A. Lai – Assistant Engineer of Treatment Plant Operations 1 - John E. Egan WRP Operations Manager
Syed Haq – Assistant Engineer of Treatment Plant Operations 1 – John E. Egan WRP Maintenance Manager
Jeff Hutton – Illinois EPA – Environmental Protection Specialist – Sludge Section
Rob Sulski – Illinois EPA – Desplanes Regional Office – Water Pollution Prog Mgr.
Ash Sajjad – US EPA Region V – Pretreatment Program Manager (former biosolids coordinator)
Robert Renaud – Pollution Control Officer 4 – Industrial Waste Field Surveillance – R&D Department
Wayne Wolf – Blue Island Park District – President Board of Commissioners
John Murphy – Blue Island Park Commissioner
J. Dominic Cogan – Director Blue Island Park District
Dr. Tom Voit – University of Illinois Urbana-Champaign – Assoc Prof & Extension Spec
Paul Rathnau - Mount Prospect Parks & Rec Sup. (field day attendee)
Angelo Calcagno – Proviso Township High School – Buildings and Fields Manager (field day attendee)
John McNamara - Quality Assurance Coordinator (internal auditor)
Denice E. Korcal - Assistant Director of Personnel – Human Resources

DOCUMENTATION REVIEW

Document review was conducted in three parts, two desk audit/onsite readiness reviews and the verification audit. During each of these activities various documents were reviewed to verify conformance with the National Biosolids Partnership (NBP) EMS Elements using the most current NBP Third Party Verification Auditor Guidance. Additionally interviews were conducted with various personnel to obtain supplemental objective evidence on the effectiveness of the implementation of the EMS. Attachment 1 summarizes the documents and other objective evidence associated with each element that was considered during the above mentioned audits.

DESK AUDIT/ONSITE READINESS REVIEW

A complete document review was performed as a desk audit. The principal focus was on the MWRDGC EMS Manual. The ORRs involved water reclamation plant site visits and evaluations and assessment of supplemental information such as cross referenced standard operating procedures, management review records, background reference information, training records, summary of outcomes, and various public outreach and communication materials.

The results of the desk audit/ORRs provided a number of observations and opportunities for improvement. This initial desk audit and ORR resulted in 46 observations and 7 opportunities for improvement. The second desk audit and ORR resulted in 20 observations and 13 opportunities for improvement. Detailed results from the desk audit/ORRs are provided in Attachment 2.

Essentially all the observations and opportunities for improvement identified during the desk audit/ORR were addressed to varying degrees by the time of the verification audit. Significant improvements in the EMS were made as a result of these efforts.

VERIFICATION AUDIT FINDINGS

The verification audit covered all elements of the standard in considerably greater detail than the desk audit/ORR. The verification audit included review of the latest version of the MWRDGC EMS Manual signed May 16, 2008 and employed the most recent version of the NBP Third Party Verification Auditor Guidance dated August 2007. The verification audit found no major nonconformances, 16 minor non-conformances and 20 opportunities for improvement. There were also 15 commendations or positive findings. For an environmental management system, which is more challenging than the ISO 14001 standard, this is an impressive accomplishment.

The following is a review of the positive observations made during the verification audit. Minor non-conformances and opportunities for improvement follow and are generally listed by item number, which correspond to each Element's minimum conformance requirement, in the sequence of the NBP standard elements.

Positive Observations

The MWRDGC biosolids value chain management personnel involved in the biosolids environmental management system development should be recognized for their outstanding achievements, and the exceptional features of their Biosolids EMS. The following is a summary of those positive items observed during the audits.

Commendations:

- MWRDGC has set an example in the NBP program by obtaining top management support through involving the General Superintendent, all the Division Heads and the Director of Research and Development in the management and administration of the District's biosolids EMS program through involvement in Quarterly EMS meetings.

- Both Brian Levy and Dan Collins have demonstrated exceptional leadership in developing and implementing, with the help of the entire biosolids staff, a strong EMS program.

- The Biosolids EMS Manual is extremely well written and organized.

- All the wastewater treatment operational staff as well as the other professional staff involved in the biosolids EMS demonstrated exceptional qualifications and appeared to be strongly motivated.

- All water reclamation plants visited had excellent permit compliance records, were well operated and maintained, and produced a well-stabilized biosolids product.

- Personnel involved in biosolids within the Research and Development Department conduct an excellent biosolids marketing effort, the results of which should improve the overall beneficial use of biosolids products.

- John E. Egan Water Reclamation Plant personnel should be recognized for developing concise biosolids value chain standard operating procedures that are used for training and are specific to the EMS program.

- Dewatered biosolids cake at the Calumet and Stickney water reclamation plants is high quality. The aesthetic value of the biosolids product is due to multiple screenings of wastewater and biosolids to remove visible contaminants.

- The computerized maintenance management system is one of the best the audit team has seen. It is user friendly and very effective in managing maintenance. Maintenance personnel make use of appropriate predictive techniques and work to improve the ratio of preventive maintenance to corrective maintenance.

- Hanover Park WRP and LASMA have established exemplary sampling procedures and assured quality control through internal auditing of those procedures by the Quality Assurance Coordinator.

- Hanover Park WRP should be recognized for placing the regulatory compliance consequence of deviating from standard operating procedures directly into the SOP itself.

- LASMA personnel have proactively addressed challenging odor complaints from local citizens through operational changes that minimize odor producing conditions at critical times.

- The industrial waste program has developed an outstanding system for tracking and investigating situations when heavy metals exceed target levels. Additionally this group has a very strong training program for the industrial waste field surveillance group.

- The District supports an extremely dynamic public participation and communication program operated by the public affairs section through its exceptionally enthusiastic public affairs section head.

- Within the EMS manual certain sections related to critical control points contain excellent descriptions of detailed regulatory requirements. The District's site specific conditions for its process to further reduce pathogens (PFRP) for biosolids produced at LASMA and CALSMA is an excellent example.

While attainment of EMS verification is obviously a team effort the leadership and guidance provided by the General Superintendent to ensure accomplishment of this goal must be recognized. And finally, the hard work and dedication of all those individuals who contributed to the development and attainment of the biosolids EMS goals and objectives must also be acknowledged.

Minor Nonconformances

Multiple Elements – Minor nonconformance. Each of the following elements have requirements related to contractor service agreements: 7.4, 8.4, 9.4, 10.4, 11.4, 12.4 and 13.3. The utilization of the biosolids/landfill contract service agreement does not address some of these requirements.

Item 3.3 – Minor nonconformance. The list of critical control points for Stickney and Calumet does not presently include the pre-digestion biosolids screens.

Item 5.3 – Minor nonconformance. There was no objective evidence available to demonstrate that input from interested parties developed through a proactive biosolids public participation program was considered in developing program goals and objectives.

Item 5.7 – Minor nonconformance. Various goals and objectives action and tracking plans were found to not contain schedules and milestones for achieving biosolids program goals and objectives and other than reporting on the final outcome of the goal it was difficult to determine how periodic progress reports were prepared to demonstrate interim improvements were being monitored.

Item 7.1 – Minor nonconformance. NBP requires that records be available that define and document roles and responsibilities of employees for performing biosolid management activities. In the listing of CCP's, the District has defined those positions responsible for certain operating activities. However, the actual, detailed duties are not necessarily spelled out in individual position descriptions. The District's personnel have identified alternative ways to incorporate those duties in some formal document. Discussions to date have identified two possible methods. One is to document the responsibilities in the Position Content Questionnaire. The other is to use the performance appraisal process and set key elements for each employee assigned functions in the biosolids value chain. Presently, there is no formal documentation created and incorporated into this procedure to meet this requirement.

Item 8.1 – Minor nonconformance. There was no objective evidence found to demonstrate the EMS field representative at LASMA, responsible for most Critical Control Points, had received formal Biosolids EMS Awareness Training. There were also

other incidents throughout the District in which individuals responsible for management of biosolids critical control points were not adequately aware of the EMS policy.

Item 9.5 – Minor nonconformance. Relevant information regarding biosolids management activities must be communicated to employees. Procedure number 2 within the core element 9 procedure indicates that the Biosolids EMS Annual Report will be summarized in the District's Employee Newsletter. No summary of the 2006 annual report appeared in the newsletter.

Item 10.1 – Minor nonconformance. A review of several standard operating procedures at different wastewater treatment plants found that the SOPs were very general, very short, and not all inclusive on the operations of facilities (except for the John E Egan WRP).

Item 10.2 – Minor nonconformance. All legal requirements must be incorporated into operational controls of critical control points. Of all the standard operating procedures (SOPs) for digester operations reviewed only the John E. Egan WRP had the specific regulatory requirements associated with its appropriate pathogen reduction standards correctly identified and referenced in the SOP. The Calumet facilities had the correct regulatory requirements for the MWRDGC's site specific PFRP identified but had an incorrect footnote reference to the specific regulations. Also, Stickney did not identify within its digester SOP both the specific details of the regulatory operational criteria for meeting PFRP and the backup alternative regulatory requirements for producing class B biosolids, if and when the PFRP requirements could not be met.

Item 11.1 – Minor nonconformance. Not all of the wastewater treatment plant Emergency Procedure Manuals had step by step procedures for containment and cleanup of biosolid spills or releases. An excellent example of a short concise procedure appears in The Emergency Procedures Manual for John E. Egan WRP rev 12/18/07 Appendix A – Biosolids Emergency Preparedness and Response.

Item 12.2 – Minor nonconformance. It was noted in several EMS standard operating procedures that the controlled documents were not marked with the version number, effective date(s), and references to replaced or superseded versions. In some instances it was not possible to determine if printed copies of procedures were current or obsolete versions. This was observed for the Biosolids EMS manual, SOPs at various wastewater treatment plants and the industrial waste field surveillance SOP manual – "Guidelines." Other SOPs may also have shortcomings but were not reviewed. Other examples of nonconformance with document control requirements included revision dates in the headers of the Hanover Park Operating Procedures Manual, Sections A, B and C did not agree with the revision history page. Also, a superseded version of the Emergency Procedures Manual was found in the operating Procedures Manual.

Item 14.1 – Minor nonconformance. Regarding reviews of three Corrective Action Plans (CAP's) from the internal audit, relating to Elements 7, 8 and 9, two of the three did not identify responsible individuals, and none of the three identified actions and resources to prevent recurrence. Also, consider performing root cause analyses.

Item 14.5 – Minor nonconformance. Although all were reported to have been closed. there was no objective evidence found for completion and closure of 7 out of 16 internal audit corrective action plans (CAP's). The method used to verify that CAPs are closed is a memo from the reviewer stating the finding is "closed." Additionally, the core element procedure does not specifically identify this is the documentation that is used to validate closure.

Elements 15 – Minor nonconformance. Each of the EMS core element procedures identifies an excellent approach of providing in the Biosolids EMS Annual Report a summary of changes associated with most of the EMS elements. Providing a summary of these type changes is an excellent idea. However, in the most recent Biosolids EMS Annual Report not all of these summaries were presented.

Item 16.1 – Minor nonconformance. Very limited objective evidence was found in the Internal Audit report dated 11/7/07 to demonstrate that activities performed by contractors, including new and existing contracts, were audited.

Item 16.3 – Minor nonconformance – No objective evidence was found to demonstrate that a scope and schedule were prepared for the internal audit conducted in 2007.

Opportunities for Improvement

Multiple Elements – Opportunity for improvement. Each of the following elements have requirements related to contractor service agreements: 1.7, 2.2, 7.4, 8.4, 9.4,10.4, 11.4, 12.4 and 13.3. Although the contract for pelletizing biosolids by Metropolitan Biosolids Management has not formally commenced the contract service agreement does not address all of the above requirements.

Element 2 – Opportunity for improvement. Procedure #4 within core element 02 – Biosolids Management Policy indicates a list of all biosolids contracts is on file with the EMS Coordinator. Consider including the spreadsheet form used to list all contracts and related details as a document in this procedure.

Element 4 – Opportunity for improvement. Consider revisiting the industrial waste pretreatment program to establish appropriate metal target levels to specifically minimize potential violations for land-applied biosolids, and using these target levels for triggering an investigation into a potential discharge of non-permitted substances. Consider selecting sampling points so that samples taken can be analyzed and the results reported before the biosolids product is removed from the digester. Consider the storage time of discrete samples taken at selected interceptor sewer locations to ensure it is at least equal to the sampling and analytical time for the biosolids samples recognizing that if times and parameters are set properly, it can aid in the investigation to track down the source of the problem. And finally, consider developing contingency plans for any biosolids affected and adopting a formal procedure to implement corrective actions.

Element 5 – Opportunity for improvement. Consider establishing site specific goals and objectives at each of the wastewater treatment plants, as well as R&D biosolids research and marketing, public affairs, engineering, and industrial waste regulatory requirements. When establishing these goals and objectives each operation should consider fulfilling the four principle outcome areas. Consider also developing district wide goals and objectives.

Element 5 – Opportunity for improvement. The core element procedure for goals and objectives does not specifically reference as a procedural step that Document 05.1 – Goals and Objectives Guidance is used in the development of goals and objectives.

Element 6 – Opportunity for improvement. The core element 6 procedure for public participation in planning does not adequately capture proactive public solicitation of input to be used in formulating objectives and targets. Proactive programs require various methods of actively drawing out the concerns of the public or interested parties through a variety of specific techniques developed to obtain information. Both the public affairs section and the biosolids section of the R&D department have used these proactive approaches but the biosolids EMS procedure has not captured them in the element 6 procedure. Also consider using public affairs section to develop a campaign to solicit input on biosolids goals and objectives through the Public Affairs Strategic Planning Committee prior to the goals and objectives development.

Element 7 – Opportunity for improvement. In each of the biosolids manual elements the responsibilities are well defined for that element. However, there are several positions with responsibilities that are repeated for several key management roles. Consider establishing an EMS Management Team and presenting the membership in core element 7 procedure along with a summary of the team's responsibilities, such as reviewing EMS manual changes, objectives and targets establishment and tracking, annual report review, etc. The team may include: the EMS coordinator, Division Heads, Director of R&D, Field EMS representatives plus any other positions deemed to be able to provide valuable input into the higher level elements of the system.

Elements 6 and 9 – Opportunity for improvement. Have the public affairs section head and the biosolids section within R&D review elements 6 and 9 procedures to determine what additional procedure improvements might be made in these procedures to increase communication and public participation.

Item 8.1 – Opportunity for improvement. Because several plants have a wealth of experienced operators, they have not seen the need to develop and use SOP's for training. Training of new employees to an area is done by the lead operators. This appears to be effective for the present. Consider the use of more developed SOPs for training, especially for processes in the biosolids value train. Additionally, consider an effort to educate other operating personnel in the EMS, for example the next level of operator and the Operating Engineer II's.

Element 8 and 9 – Opportunity for improvement. Consider providing all employees whose roles and responsibilities are related to the biosolids EMS training on the four outcome areas that are required for goals and objectives. These are a main focus of the biosolids policy and the District's EMS continual improvement.

Element 10.1 Opportunity for improvement. Consider that operations could improve by involving all operating personnel in the use of data and the meaning of setpoints.

Item 11.1 – Opportunity for improvement. Consider modifying Section XVIII Biosolids Spill Procedures, in the Hanover Park Emergency Procedures Manual dated 1/8/08, to require the Plant Manager to notify the Technical Projects Group in the event of a lagoon overflow, or a biosolids spill on Fischer Farm.

Item 12.2 – Opportunity for improvement. Document 00.6 – District Biosolids Contracts is not up to date.

Item 13.2 – Opportunity for improvement. Consider developing a District-wide formal documented program of inspections by District staff to ensure that all contractors comply with the EMS requirements of the contract.

Element 14 – Opportunity for improvement. The EMS coordinator uses an excellent corrective action approach for addressing all opportunities for improvements identified in both internal and external audits. This procedure is the same as used for major and minor nonconformances, going beyond the basic requirements and demonstrating a clear interest in continual improvement of the system. Presently the Element 14 procedure does not capture this excellent approach.

Item 14.1 – Opportunity for improvement. It is not clear how non-conformances (e.g. contractors deviating from a contract requirement), that are not a result of audit, routine monitoring and measurement or regulatory noncompliance, are addressed by procedures.

Item 14.6 – Opportunity for improvement. The EMS coordinator uses a corrective action spread sheet to track progress of completion of corrective actions. Presently core element 14 procedure does not capture the use of this form.

Item 15.1 – Opportunity for improvement. It was noted there were some inconsistencies in the use of the terms "Biosolids EMS Performance Report" and "Biosolids EMS Annual Report."

Item 16.1 – Opportunity for improvement. Transparency in annual reporting, and internal audit effectiveness, could be facilitated if internal audit findings were summarized, or at least highlighted in the audit report.

Item 16.3 – Opportunity for improvement. The internal audit procedure and schedule indicates that the District does not intend to conduct internal audits during years in which third party interim audits are conducted.

Item 17.1 – Opportunity for improvement. The Internal Audit Report dated 11/7/07 was not available for review during the 10/30/07 Management Review meeting, However, it was extensively reviewed during the 11/30/07 Quarterly EMS meeting.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO COMMENTS

The thrid party audit provided clarification to all parties interviewed on how to set proper goals and objectives. The EMS has helped standardize the SOP's in biosolids processing/drying operations at the various sites, ie. CALSMA and LASMA. The EMS provides a good training aid for new employees through the CCP's and the SOP's, which will aid in holding new/promoted employees who are "persons responsible" accountable for their work.

OUTCOMES MATTER

The MWRDGC Biosolids Environmental Management System established Eight (8) biosolids EMS goals and objectives. The goals and objectives were established through requests to the Division Heads and Field EMS representative inputs. Subsequent to the development and approval the EMS coordinator distributes the goals and objectives to a list of interested parties and requests input on future goals. The MWRDGC Biosolids goals for its EMS were established cognizant of 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.

While it is not a requirement to attain all the objectives established, it is a critical component of the system to make progress towards accomplishing the overall goals. The MWRDGC has established eight goals and objectives for 2007 and seven for 2008. The goals have been established using Specific, Measurable, Achievable, Relevant, and Time Bound (SMART) criteria. Progress has been made in attaining the goals and objectives through 2007 and the goals and objectives for 2008 are being tracked. The facility's performance relative to each of the above outcome areas is addressed below.

In the Environmental Performance outcome area there were seven goals and objectives established. The first goal for 2007 was one of reducing odors at the Lawndale Avenue Solids Management Area (LASMA). Biosolids are aged in lagoons at LASMA for a minimum of 18 months to produce Class A product, so the timing of product availability can be accurately predicted. In order to meet the process to further reduce pathogens (PFRP) the site specific regulatory requirements for Chicago allows air drying

the biosolids from April through November of each year. The air drying is conducted until 60 percent total solids content is achieved. Agitation drying is conducted such that complete turning, aeration, and agitation of solids is accomplished at an average of three times a week. Typical drying periods are six to eight weeks depending on initial percent total solids and various weather conditions. Any biosolids that are produced without an outlet (receiving site) are stockpiled. This stockpiling of biosolids increases the likelihood of odor generation. Therefore it is highly advantageous to schedule drying operations to coincide with outlet availability thereby eliminating stockpiling and reducing the probability of creating odors. The primary objective is to synchronize the drying operations with availability of outlets. This orchestration enhances the environmental performance of the biosolids stabilization and beneficial use through reducing the generation of odors and meeting customer expectations. Due to unforeseen circumstances LASMA was forced to stockpile dried biosolids for a considerable period of time. In 2007 approximately 97,805 tons of biosolids were produced and 74,735 tons were beneficially used. The remaining 23,070 tons of biosolids were unfortunately stockpiled for use in 2008. This goal also satisfies the outcome requirements of better relations with interested parties and quality management practices.

A second LASMA goal for 2007 was to improve the environmental performance of the biosolids drying process through optimizing the operation of biosolids drying equipment based on weather conditions and other various site operations. This was accomplished through maximizing the use of drying equipment during hot and dry periods and minimizing equipment use on days and weeks when weather conditions were less than ideal, cool and/or humid. Additionally, improvements in performance were attained through employing the most efficient equipment for specific tasks associated with drying the biosolids to 65% total solids. The measurement of the improved environmental performance was through cost reduction. A cost reduction goal of 10% was established for this objective. LASMA was able to reduce their operational costs by 15%, through new management practices, more efficient equipment and the standardization of biosolids drying processes at the drying sites.

A third goal for 2007 was associated with the Stickney Water Reclamation Plant and LASMA; namely to utilize 100% of the 105,000 tons of biosolids produced at those facilities in 2007. This goal is very similar to the second goal discussed above and the maximum beneficial utilization of biosolids was accomplished through similar approaches to the first two goals discussed above. And as was mentioned previously of the 97,805 dry tons of biosolids produced 74,735 (76%) were beneficially used.

A fourth goal for 2007 in this outcome area was for the Calumet Water Reclamation Plant and was very similar to the first goal identified above for the LASMA facility. That is, the goal was to synchronize the production schedule of the biosolids final product with the outlets (application sites) so that the retention time on the drying beds is reduced and the potential for generating odors is minimized. The approach of coordinating the marketing and production is critical to accomplishing this goal. The ultimate objective was, as with LASMA, the reduction in odor complaints. The goal for 2007 for this facility was to have zero odor complaints and this was accomplished.

A fifth goal for 2007 in the environmental performance outcome area was the utilization of 100% of the 41,000 tons of biosolids available at the Calumet Solids Management Area (CALSMA). Improved environmental performance would allow the District to maximize the proportion of biosolids beneficially utilized through land application and the District's Controlled Solids Distribution (CSD) Program. From the data available in the annual report and Appendix A to that report the extent to which Calumet attained its goal cannot be determined. It appears that approximately 13,000 dry tons of biosolids from Calumet were co-disposed or used as final cover at a landfill and that some unidentified distribution of approximately 5,000 dry tons of biosolids from Stickney and Calumet were distributed to various farmland application sites through the District's CSD program.

The sixth goal that results in an environmental performance outcome is associated with the John E. Egan Water Reclamation Plant's maximizing the beneficial use of biosolids produced at that facility. The specific objective was to maximize the amount of digested biosolids processed through the centrifuges thereby minimizing the amount of biosolids which would have to be pumped to the North Side Water Reclamation Plant (NSWRP). The end result is that the biosolids produced in the centrifuge cake would be utilized for land application instead of double processing the biosolids through downstream water reclamation plants. The plant established as its goal to pump no more than 15% of total solids processed to the NSWRP. This goal was accomplished by improved preventive maintenance on the centrifuges to keep them operational at all times and increasing the digester capacity for storage to function as a backup should the centrifuges suffer outages. Although it has been a few years since the plant has had to pump over 15% of its total solids to the NSWRP, Egan exceeded expectations by pumping no biosolids to the former facility. All of the 8,420 dry tons were centrifuged resulting in 8,067 dry tons of biosolids cake that were either directly land applied or stored for later land application. The remaining solids were contained in the centrate and were pumped to NSWRP for treatment. The Egan plant has established this goal again for 2008, and to date has had no transfer of biosolids to the NSWRP.

The seventh goal resulting in an environmental performance outcome is associated with Hanover Park Water Reclamation Plant improvements to the distribution system used to apply lagoon supernatant to the Fischer Farm fields. Presently the supernatant is applied to only three of the seven fields due to damaged piping and valves. This distribution has the effect of overloading those fields that receive the supernatant and could impair groundwater quality in the long term. Replacement of damaged equipment will allow a more even distribution among all seven fields and improve environmental performance. This is a longer term goal that spreads over 2007 and 2008 and considerable progress has been made to part of the system and fields.

In the Regulatory Compliance outcome area, the District established a Goal in 2007 (and repeated it for 2008) of meeting regulatory requirements for metal limits in the District's biosolids and continue to produce exceptional quality biosolids. The objective is to achieve zero exceedances in 2007 for the metal limits concentration in The

Standards for the use or Disposal of Sewage Sludge (40 Code of Federal Regulations Part 503). The approach used to attain this goal was to continue administration of the Sewer and Waste Control Ordinance, surveillance of industrial users, field inspections, and waste pollution analyses.

The District met its goal of having zero exceedances for the metal limits in 2007; however it was reported that the District has not had an exceedance in this area in over a decade and maintains an award winning pretreatment program. The control of metals in the District's wastewater is highly effective as a result of this mature program. Therefore, for this goal, as stated, it may be difficult to demonstrate continual measurable improvement through a management action plan that identifies strategic milestones along a defined timeline or schedule.

In the Relations with Interested Parties outcome area, the District has established two goals and objectives. The first goal was that of reducing odors and thereby reducing odor complaints at the Lawndale Avenue Solids Management Area (LASMA). This objective was described in detail previously under the Environmental Performance outcome area. The primary goal as it relates to relations with interested parties was to have zero odor complaints for 2007. Although LASMA received two odor complaints it was verified that these complaints were not a result of the stockpiled biosolids. Both complaints originated from the same citizen and were caused by conducting drying operations in unfavorable weather conditions. Actions were taken to prevent any further odors.

The second goal in this outcome area was similar to the first but was established for a separate facility. It was the objective for 2007 to have zero odor complaints from the Calumet Water Reclamation Plant associated with biosolids stabilization. The actions taken were basically the same and the Calumet facility met its objective of zero odor complaints.

In the Quality Biosolids Management Practices outcomes area, the District established six goals and objectives.

The first goal was one that was already discussed in the regulatory compliance outcome and was established as a Goal in 2007 (and repeated it for 2008). It was for meeting the metal limits in the District's biosolids, which effectively produce exceptional quality biosolids. This goal was attained and it is expected to continue to be met due to the District's mature industrial waste program.

The second goal was one related to improving the biosolids management at LASMA with the intention of reducing the stockpiling of dry solids and odor complaints. This outcome was discussed previously in both the better relations with interested parties and environmental performance outcomes.

The third goal was to improve the management practices of the biosolids drying process through optimizing the operation of biosolids drying equipment based on weather conditions and other various site operations. The accomplishment of this goal is

discussed in detail in the environmental performance outcome section. The bottom line improvements in management practices reduced the cost of LASMA operations by 15% far exceeding the goal of 10% established for 2007.

The forth goal within this outcome area is for the Calumet Water Reclamation Plant and is identical to the second goal listed above for the LASMA facility; i.e., to improve the biosolids quality management practices associated with dry biosolids stockpiling to prevent to the maximum extent possible odors and therefore odor complaints. The plant accomplished its goal of having zero odor complaints in 2007.

The fifth goal associated with quality biosolids management practices was established at the John E. Egan Water Reclamation Plant and discussed in greater detail in the environmental performance outcome section. This goal was to improve the management of the biosolids value chain operations to ensure that the maximum amount of beneficially re-useable biosolids produced at Egan did not have to be transported to the North Side Water Reclamation Plant for further treatment or handling. The plant has once again established this goal for 2008 and is on track to meet the objective.

The sixth goal resulting in an biosolids quality management outcome is associated with Hanover Park Water Reclamation Plant improvements to the distribution system used to apply lagoon supernatant to the Fischer Farm fields. This is a two year goal for 2007 and 2008, and is discussed in greater detail in the environmental performance outcome section. Considerable progress has been made on this objective.

CONCLUSIONS AND RECOMMENDATIONS

The results of the verification audit show the Metropolitan Water Reclamation District of Greater Chicago has a very strong Environmental Management System.

The NSF lead auditor reviewed and approved the corrective action plans for each of the minor non-conformances identified during the verification audit.

Therefore the “Verification” recommendation for the MWRDGC Environmental Management System (EMS), Chicago, Illinois is made to the NBP. The full implementation of the corrective actions for the minor findings will be accomplished according to the schedule proposed in the corrective actions plans.

As was mentioned previously, an EMS is a continuous 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. And yet, while no single audit identifies all of the areas for improvement the results of each audit provide an additional incremental step in the overall system’s improvement.

Based on discussions between the Facility's Biosolids EMS Coordinator and the third party auditor the following tentative interim audit schedule is proposed for the next four years.

All interim audits include, as a minimum, a review of the organization's progress toward goals and objectives; EMS outcomes (environmental performance; regulatory compliance; interested party relations; quality practices); actions taken to correct minor nonconformances; the management review process; corrective action requests and responses; and preventive actions. The review of this progress generally encompasses the effectiveness of elements 5, 6, 14, 15 and 17 and is included in each of the interim audits.

Based on discussions between the Facility's Biosolids EMS Coordinator and the third party auditor the following tentative interim audit schedule is proposed for the next four years:

Year 1 (third party) – Elements 1, 5, 6, 8, 14, 15, 16 and 17

Year 2 (internal or third party) – Elements 2, 4, 5, 6, 9, 14, 15 and 17

Year 3 (third party) – Elements 3, 5, 6, 10, 13, 14, 15, and 17

Year 4 (internal or third party) – Elements 5, 6, 7, 11, 12, 14, 15, and 17.

Attachment 1

Documents and Other Object Evidence
Reviewed During the Desk Audit/Operational Readiness Review
And Verification Audit

Element 1. Documentation of EMS for Biosolids

- Document 00.1 – EMS Manual Document Control Summary
- Document 00.2 – Overview of the MWRDGC – Ver 0, 7/28/05
- Document 00.3 – List of Abbreviations – Ver 0, 7/28/05
- Document 00.4 – Definitions – Ver 2, 1/11/08
- Document 00.5 – District Organization Chart – Ver 1, 10/31/05
- Document 00.6 – Biosolids Contracts – Ver 1, 1/30/07
- EMS Manual Element 01 – Biosolids EMS Manual – Ver 1, 11/7/05
- Interviews with Dan Collins – Supervising Civil Engineer - Biosolids Manager & Biosolids EMS Coordinator and Brian Levy – Associate Civil Engineer
- Reviewed all EMS Manual Elements for general conformity to standard
- Management Review minutes dated 11/2/07 from 10/30/07 meeting
- Spreadsheet listing MWRDGC's biosolids contracts printout of 5/30/2008

Element 2. Biosolids Management Policy

- EMS Manual Element 02 – Biosolids Management Policy – Ver 3, 5/9/08
- Document 02.1 – MWRDGC Biosolids Policy – Ver 1, 2/20/07
- Interview with Dick Lanyon – General Superintendent
- Interviews with various personnel with biosolids value chain responsibilities

Element 3. Critical Control Points

- EMS Manual Element 03 – Critical Control Points – Ver 1, 3/19/07
- Documents 03.1 through 03.7 versions 3 & 4 with latest updates Feb 2008.
- Field review of critical control points at Hanover Park WRP, LASMA, Stickney WRP, Calumet WRP and John E. Egan WRP
- Interviews with the following:
    - Dan Collins – Supervising Civil Engineer - Biosolids Manager & Biosolids EMS Coordinator
    - Robert Podgorny – Engineer Technician V – Biosolids Handling – Hanover Park WRP
    - Jay Nagella – Associate Mechanical Engineer – Hanover Park WRP
    - Mark Johnson – Treatment Plant Operator 3 – Operations – Hanover Park WRP
    - John Lazicki – Assistant Engineer of Treatment Plant Operations 2 – Plant Manager – Hanover Park WRP

- Sam Pappu – Electrical Engineer 2 – Hanover Park WRP
- Al Eswani – Civil Engineer 3 – Hanover Park WRP
- Lisa Kaufman -Treatment Plant Operator II - Hanover Park WRP
- Tom Conway – Assistant Chief Engineer, Plant manager – Calumet WRP
- Omar Zayyad – Assistant Engineer of Treatment Plant Operations 1 – Calumet WRP
- Rafael Frost – Senior Civil Engineer – CALSMA Biosolids Handling Operations
- David Hanek – Treatment Plant Operator 3 – Calumet WRP (liquids operations)
- Brian Perkovich – Assistant Engineer of Treatment Plant Operations 3 – Calumet WRP
- Lynn Kohlhaas – Associate Civil Engineer – Calumet WRP (liquids recordkeeping)
- Brett Garelli – Deputy Chief Engineer – Stickney WRP
- Neil Dorigan – Assistant Engineer of Treatment Plant Operations 3 – Stickney WRP
- Mark Kwan – Operations Engineer 2 – Building Maintenance – Stickney WRP
- Reed Dring – Engineer of Treatment Plant Operations 1 – Stickney WRP Operations Manager
- Hank Marks – Chief Operating Engineer 3 – Stickney Supervisor of Mechanical Operations (Solids Section)
- Steve Carmody – Engineer of Treatment Plant Operations 1 – Stickney WRP Maintenance Manager
- Ann Ko - Principal Civil Engineer – LASMA Biosolids Handling Operations
- Pedro Ortiz – Assistant Civil Engineer – LASMA lagoon area
- Sanjay Patel – Assistant Engineer of Treatment Plant Operations 3 – John E. Egan WRP Plant Manager
- Kathy A. Lai – Assistant Engineer of Treatment Plant Operations 1 - John E. Egan WRP Operations Manager
- Syed Haq – Assistant Engineer of Treatment Plant Operations 1 – John E. Egan WRP Maintenance Manager

Element 4. Legal and Other Requirements

- EMS Manual Element 04 – Legal and Other Requirements – Ver 1, 3/19/07
- Document 04.1 – Biosolids Regulations and Other Requirement – Ver 1, 3/26/07
- Document 04.2 – Current Biosolids Operating Permits – Ver 2, 3/26/07
- Documents 04.3.1 through 04.3.15 presenting various reporting requirements for discharge permits, Farm Operating Permits, Solids Drying Areas Operating Permits, Controlled Solids Distribution Program Operating Permits, and Land Application Operating Permits – versions 1 & 2 updated Feb & March 2007.
- Document 04.4 – Biosolids Products/Compliance Parameters – Ver 0, 11/7/05

- Document 04.5 – Biosolids Products and Legal Requirements/Vehicles – Ver 1, 3.26/07
- Request to USEPA Region V for Site Specific Process to Further Reduce Pathogens (PFRP) Equivalency Designation for MWRDGC dated November 30, 2001
- Letter of approval of PFRP request from MWRDGC to USEPA Region V dated June 20, 2002.
- EPA letter of approval of MWRDGC's request for renewal of Site-Specific Equivalency to PFRP Designation of MWRDGC Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants dated September 6, 2006
- EPA Region V Renewal of PFRP Certification for August 1, 2006 to July 31, 2008 dated September 9, 2006
- Report No. 08-17 – Reporting Requirements for Site-Specific Equivalency to PFRP Designation of MWRDGC Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants – August – December 2007.
- Report on PFRP compliance for Calumet WRP and Stickney compliance with 40 CFR 503.32(a)(5) pathogen reduction dated March 14, 2008 (including Certification of Compliance signed by Osoth Jamjun – Chief Maintenance and Operations)
- NPDES Permit No. IL0028061 Effluent Limitations, Monitoring and Reporting Requirements.
- Review of CAP for Major Nonconformance associated with item 10.2 related to not incorporating legal requirements into standard operating procedures.
- Interview with Adam Gronski – Principal Civil Engineer- Maintenance and Operations
- Review of summary of NACWA legislative alerts for months of March and April 2008.
- Target level exceedance alert associated with copper in North Side wastewater – no industrial waste dischargers anomalies found
- Interview with Jeff Hutton – Illinois EPA – Environmental Protection Specialist – Sludge Section
- Interview with Rob Sulski – Illinois EPA – Desplanes Regional Office – Water Pollution Prog Mgr.
- Interview with Ash Sajjad – US EPA Region V – Pretreatment Program Manager (former biosolids coordinator)
- Interview with Robert Renaud – Pollution Control Officer 4 – Industrial Waste Field Surveillance – R&D Department

Element 5. Goals and Objectives for Continual Improvement

- EMS Manual Element 05 – Goals and Objectives – Ver 2, 3/19/07
- Document 05.1 – Goals and Objectives Guidance – Ver 0, 7/28/05
- Summary of MWRDGC's Biosolids EMS Goals and Objectives for 2007
- Summary of MWRDGC's Biosolids EMS Goals and Objectives for 2008

- Internal request from Chief of Maintenance and Operations to Assistant Chief Engineer and Director of Research and Development for establishment of biosolids EMS 2008 goals and objectives dated Jan 10, 2008.

Element 6. Public Participation in Planning

- EMS Manual Element 06 – Public Participation in Planning – Ver 3, 3/19/07
- Document 06.1 – Public Input Opportunities – Ver 2, 3/6/07
- Document 06.2 – Public Relations Program for Farmland Application – Ver 0, 3/6/07
- Letter dated April 26, 2007 to interested parties presenting the MWRDGC's biosolids EMS goals and objectives for 2007.
- Letter dated April 25, 2008 to interested parties presenting the MWRDGC's biosolids EMS goals and objectives for 2008
- Interview with Jill B. Horist – Manager Public Affairs
- Contract requirements for public relations program and communications for Stewart Spreading Contract for biosolids land application associated with Stickney and Calumet WRPs.
- Biosolids Public Relations Report prepared by Synagro for Calumet and Stickney December 2007, Vol 5 Issue 12
- Interested parties notification of an independent third party verification audit of the MWRDGC's environmental management system for biosolids dated May 16, 2008.
- Blue Island Park District invitation to all superintendents, athletic directors, turf managers and field staff to a demonstration of biosolids fertilization of grass at Memorial Park in Blue Island Illinois dated May 16, 2008
- Blue Island Park District biosolids fertilization demonstration sign-in sheet documenting attendance of 40 persons at event held on May 29, 2008.
- Interviews with
- Wayne Wolf – Blue Island Park District – President Board of Commissioners
- John Murphy – Blue Island Park Commissioner
- J. Dominic Cogan – Director Blue Island Park District
- Dr. Tom Voit – University of Illinois Urbana-Champaign – Assoc Prof & Extension Spec
- Paul Rathnau - Mount Prospect Parks & Rec Sup. (field day attendee)
- Angelo Calcagno – Proviso Township High School – Buildings and Fields Manager (field day attendee)
- Interview with Dr. Albert Cox – Soil Scientist 3 – R&D Department
- Review spreadsheet of MWRDGC's interested parties list
- Documentation of Public Officials tour of John E. Egan water reclamation plant held on July 27, 2007.

Element 7. Roles and Responsibilities

- EMS Manual Element 07 – Roles and Responsibilities, Vers 3, 5/9/08

- Document 7.1 – EMS Coordinator Responsibilities, Vers 1, 1/11/08, containing Tasks by element and a Task Calendar
- Document 7.2 – Field Division EMS responsibilities, Vers 0, 7/28/05
- Critical Control Points Table Doc. 03.1, Hanover Park, Rev 4, 2/26/08, Primary Persons' roles and responsibilities
- Critical Control Points Table Doc. 03.5, Stickney (for LASMA), Rev 4, 2/26/08, Primary Persons' roles and responsibilities
- Appointment Letter – Dan Collins to EMS Coordinator dated 2/22/08
- Contract Summary 2008 spreadsheet dated 1/7/08
- Memo dated 12/3/07 to Mike Groko, Contract Administrator. Subject: review of Documents for Contract 08-691-11 "Services for Beneficial Reuse of Biosolids from Stickney & Calument Service Areas"
- Interview with Denice E. Korcal - Assistant Director of Personnel – Human Resources

Element 8. Training

- EMS Manual Element 08 – Training, Vers 4, 5/9/08
- Document 08.1 – Typed of Training, Vers 1, 5/9/08
- Document 08.2 – Employees Required to Attend EMS Awareness Training, Vers 1, 1/30/07

Element 9. Communications

- EMS Manual Element 09 – EMS Communications, Vers 5, 5/9/08
- Interview with Jill B. Horist – Manager Public Affairs
- Contract requirements for public relations program and communications for Stewart Spreading Contract for biosolids land application associated with Stickney and Calumet WRPs.
- Biosolids Public Relations Report prepared by Synagro for Calumet and Stickney December 2007, Vol 5 Issue 12
- Interested parties notification of an independent third party verification audit of the MWRDGC's environmental management system for biosolids dated May 16, 2008.
- Documentation of Public Officials tour of John E. Egan water reclamation plant held on July 27, 2007.
- Interview with Dr. Albert Cox – Soil Scientist 3 – R&D Department
- Interview with Jeff Hutton – Illinois EPA – Environmental Protection Specialist – Sludge Section
- Interview with Rob Sulski – Illinois EPA – Desplanes Regional Office – Water Pollution Prog Mgr.
- Interview with Ash Sajjad – US EPA Region V – Pretreatment Program Manager (former biosolids coordinator)
- Interviews with
- Wayne Wolf – Blue Island Park District – President Board of Commissioners

- John Murphy – Blue Island Park Commissioner
- J. Dominic Cogan – Director Blue Island Park District
- Dr. Tom Voit – University of Illinois Urbana-Champaign – Assoc Prof & Extension Spec
- Paul Rathnau - Mount Prospect Parks & Rec Sup. (field day attendee)
- Angelo Calcagno – Proviso Township High School – Buildings and Fields Manager (field day attendee)

• Interview with Dr. Albert Cox – Soil Scientist 3 – R&D Department

Element 10. Operational Control of Critical Control Points

- EMS Manual Element 10 – Operational Control of Critical Control Points, Vers 4, 5/9/08
- Document 10.1 – Operational Control Guidance, Vers 0, 12/12/06
- Review of CAP for Major Nonconformance associated with item 10.2 related to not incorporating legal requirements into standard operating procedures.
- Field review of critical control points at Hanover Park WRP, LASMA, Stickney WRP, Calumet WRP and John E. Egan WRP
- Interviews with the following:

- Dan Collins – Supervising Civil Engineer - Biosolids Manager & Biosolids EMS Coordinator
- Robert Podgorny – Engineer Technician V – Biosolids Handling – Hanover Park WRP
- Jay Nagella – Associate Mechanical Engineer – Hanover Park WRP
- Mark Johnson – Treatment Plant Operator 3 – Operations – Hanover Park WRP
- John Lazicki – Assistant Engineer of Treatment Plant Operations 2 – Plant Manager – Hanover Park WRP
- Sam Pappu – Electrical Engineer 2 – Hanover Park WRP
- Al Eswani – Civil Engineer 3 – Hanover Park WRP
- Lisa Kaufman -Treatment Plant Operator II - Hanover Park WRP
- Tom Conway – Assistant Chief Engineer, Plant manager – Calumet WRP
- Omar Zayyad – Assistant Engineer of Treatment Plant Operations 1 – Calumet WRP
- Rafael Frost – Senior Civil Engineer – CALSMA Biosolids Handling Operations
- David Hanek – Treatment Plant Operator 3 – Calumet WRP (liquids operations)
- Brian Perkovich – Assistant Engineer of Treatment Plant Operations 3 – Calumet WRP
- Lynn Kohlhaas – Associate Civil Engineer – Calumet WRP (liquids recordkeeping)
- Brett Garelli – Deputy Chief Engineer – Stickney WRP
- Neil Dorigan – Assistant Engineer of Treatment Plant Operations 3 – Stickney WRP
- Mark Kwan – Operations Engineer 2 – Building Maintenance – Stickney WRP
- Reed Dring – Engineer of Treatment Plant Operations 1 – Stickney WRP Operations Manager
- Hank Marks – Chief Operating Engineer 3 – Stickney Supervisor of Mechanical Operations (Solids Section)

- Steve Carmody – Engineer of Treatment Plant Operations 1 – Stickney WRP Maintenance Manager
- Ann Ko - Principal Civil Engineer – LASMA Biosolids Handling Operations
- Pedro Ortiz – Assistant Civil Engineer – LASMA lagoon area
- Sanjay Patel – Assistant Engineer of Treatment Plant Operations 3 – John E. Egan WRP Plant Manager
- Kathy A. Lai – Assistant Engineer of Treatment Plant Operations 1 - John E. Egan WRP Operations Manager
- Syed Haq – Assistant Engineer of Treatment Plant Operations 1 – John E. Egan WRP Maintenance Manager

- Hanover Park 5/28/08, Gas Production/Digester Gas Utilized/Wasted
- Hanover Park 5/28/08 Digester Solids Report
- Hanover Park Operating Procedures, Section C – Solids Processing, Rev 5/24/07
- Consequence of Deviation: Violation of IEPA Fischer Farm Biosolids Recycling Permit
- Hanover Park Operating Procedures, Section B – Treatment, Rev 5/24/07
- c) Primary Sludge Waste System – sludge depths taken Mon, Wed & Fri, 2'- 4'
- Emergency Procedures Manual, 1/8/08, Section XVIII Biosolids Spill Procedure
- Hanover Park Operating Procedures, Section E – Sampling & Handling Procedures, Rev 5/24/07
- Stewart Spreading Inc. Emergency Action Plan, undated.
- Critical Control Points Table Doc. 03.1, Hanover Park, Rev 4, 2/26/08
- Critical Control Points Table Doc. 03.5, Stickney (for LASMA), Rev 4, 2/26/08
- LASMA Docs & records:

- IEPA 2005-AO-4283, 12/17/04, Expires 11/30/09
- LASMA SOP – Sampling, Vers 1, 2/29/08
- Pedro Ortiz & Rich Kosminski qualified to take PFRP and NANI samples
- Chain of Custody for Microbial Samples 5/7/08, Sampled by R Kosminski
- Custody Transfer record 5/29/08
- SOP – Odor Control, Vers 1, 3/6/08
- Odor Survey Form
- Odor Complaint Form
- Daily Odor Patrol – Harlem 5/19-24/08, Vulcan 5/12-16/08
- SOP – Exercising Pump Valves, Vers 1, 3/6/08
- Lagoon Valve & Sluice Gate Exercise Check List 4/22-24/08
- SOP – Spills, Vers 1, 3/6/08
- Spill & Accident Site Log 12/6/07, Probable cause – turnbuckle
- Spill & Accident Site Log 12/11-12/07, Probable cause – turnbuckle. Same driver as 12/6/07. Driver barred from site.
- Spill & Accident Site Log 11/5/07, Lo-solids spilled on ramp. Driver instructed to use greater caution when hauling Lo-solids
- Daily Lagoon Report, 5/25/08, 5/30/08

Element 11. Emergency Preparedness and Response

- EMS Manual Element 11 – Emergency Preparedness & Response, Vers 3, 5/9/08

- Document 11.1 – Emergency Procedures Manuals Table of Contents, Vers 0, 7/28/05
- Element 11, # 1 Annual review of plans w/EMSC reminder, & # 2 Plant staff initiates review when EP Manual is used in an actual emergency
- Hanover Park Emergency Procedures Manual, 1/8/08, Section XVIII Biosolids Spill Procedure
- Stewart Spreading Inc. Emergency Action Plan, undated
- SOP – Spills, Vers 1, 3/6/08
- Spill & Accident Site Log 12/6/07, Probable cause – turnbuckle
- Spill & Accident Site Log 12/11-12/07, Probable cause – turnbuckle. Same driver as 12/6/07. Driver barred from site.
- Spill & Accident Site Log 11/5/07, Lo-solids spilled on ramp. Driver instructed to use greater caution when hauling Lo-solids

Element 12. EMS Documentation and Document Control

- EMS Manual Element 12 – Documentation, Document Control and Recordkeeping, Vers 4, 5/9/08
- Document 12.1 – Types of Documents, Vers 0, 7/28/05

Element 13. Monitoring and Measurement

- EMS Manual Element 13 – Monitoring and Measurement, Vers 3, 5/9/08
- Report No. 08-17 – Reporting Requirements for Site-Specific Equivalency to PFRP Designation of MWRDGC Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants – August – December 2007.
- NPDES Permit No. IL0028061 Effluent Limitations, Monitoring and Reporting Requirements.
- Utilization Site Submittals for Stewart Spreading Contract for biosolids land application associated with Stickney and Calumet WRPs.
- MWRDGC Performance, Planning and Development Form, Ver 5, 5/28/01
- Field review of critical control points at Hanover Park WRP, LASMA, Stickney WRP, Calumet WRP and John E. Egan WRP
- Interviews with the following:
- Dan Collins – Supervising Civil Engineer - Biosolids Manager & Biosolids EMS Coordinator
- Robert Podgorny – Engineer Technician V – Biosolids Handling – Hanover Park WRP
- Jay Nagella – Associate Mechanical Engineer – Hanover Park WRP
- Mark Johnson – Treatment Plant Operator 3 – Operations – Hanover Park WRP
- John Lazicki – Assistant Engineer of Treatment Plant Operations 2 – Plant Manager – Hanover Park WRP
- Sam Pappu – Electrical Engineer 2 – Hanover Park WRP
- Al Eswani – Civil Engineer 3 – Hanover Park WRP
- Lisa Kaufman -Treatment Plant Operator II - Hanover Park WRP

- Tom Conway – Assistant Chief Engineer, Plant manager – Calumet WRP
- Omar Zayyad – Assistant Engineer of Treatment Plant Operations 1 – Calumet WRP
- Rafael Frost – Senior Civil Engineer – CALSMA Biosolids Handling Operations
- David Hanek – Treatment Plant Operator 3 – Calumet WRP (liquids operations)
- Brian Perkovich – Assistant Engineer of Treatment Plant Operations 3 – Calumet WRP
- Lynn Kohlhaas – Associate Civil Engineer – Calumet WRP (liquids recordkeeping)
- Brett Garelli – Deputy Chief Engineer – Stickney WRP
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- Syed Haq – Assistant Engineer of Treatment Plant Operations 1 – John E. Egan WRP Maintenance Manager

Element 14. Nonconformances: Preventive and Corrective Action

- EMS Manual Element 14 – Non-conformances: Preventive and Corrective Action, Vers 3, 3/6/07
- Document 14.1 – Corrective Action Plan Guidance, Vers 1, 12/12/06
- Non-conformances Identified During the Internal Audit 2007 (Spreadsheet printed 5/27/08)
- Corrective Action Plans (CAP's) for Elements 7, 8(1) and 9, from internal audit reviewed for conformance with requirements
- Non-conformances Identified During the Phase I Onsite Readiness Review of November 28-30, 2006 (Spreadsheet)
- Review of CAP for Major Nonconformance associated with item 10.2 related to not incorporating legal requirements into standard operating procedures.
- Review of CAP closure memos documenting closure of Major nonconformances identified in internal audit of November 2007 – closure memo dated Jan 18, 2008
- Documents reviewed for changes from internal audit CAPs:
  Element 10, Vers 5/9/08
  Element 11, Vers 1/9/08

Element 12, Vers 1/9/08

Element 15. Biosolids Program and EMS Performance Report

- EMS Manual Element 15 – Biosolids Program Report, Vers 2, 3/19/07
- Document 15.1 – Biosolids EMS Annual Report Guidance, Vers 2, 10/26/06
- MWRDGC 2007 Biosolids Program and Environmental Management System (EMS) Performance Report.

Element 16. Internal EMS Audit

- EMS Manual Element 16 – Biosolids EMS Internal Audit, Vers 2, 7/20/07
- Document 16.1 – Biosolids EMS Internal Audit Guidance, Vers 2, 7/20/07
- Document 16.2 – Biosolids EMS Audit Schedule, Vers 0, 12/12/05
- Internal Audit Report of Biosolids EMS – Parts 1 and 2 dated 11/7/07
- Telephone interview with John McNamara, Quality Assurance Coordinator (QAC)
- Personnel minimum qualification requirements for QAC (auditor)

Element 17. Periodic Management Review of Performance

- Interviews with Dick Lanyon – General Superintendent and Manju Prakash Sharma – Assistant Chief Engineer - General Division Head
- EMS Manual Element 17 – Management Review, Vers 3, 319/07
- Document 17.1 – Management Review Guidance, Vers 0, 7/28/05
- MWRDGC 2007 Biosolids Program and Environmental Management System (EMS) Performance Report, April 28, 2008
- Management Review minutes dated 11/2/07 from 10/30/07 meeting
- EMS Quarterly Meeting, 11/30/07 minutes

Attachment 2

Detailed Findings Resulting From Desk Audit/Operational Readiness Review Conducted August 1 though August 5, 2005

Observations

- Item 1.2 – There is no objective evidence that the EMS manual has been approved by a level of the organization's management with the authority to commit people and resources to biosolids management activities.

- Item 1.6 – The legal and other requirements element presents a table of general broad regulations and permits. The information given does clearly include or cross-reference what specific standards, limits, reports, records, etc. the District must meet in order to be in compliance, or the operational controls, procedures, processes, and other management methods used to achieve and maintain compliance.

- Item 1.7 – The EMS manual and its elements do not clearly and uniformly describe those biosolids management activities performed by contractors.

- Item 2.2 – There is no specific approach identified in the Element 2 procedure on how the policy will be communicated to contractors and all interested parties. Also the policy has not yet been communicated to all contractors.

- Item 3.2 – Some of the potential/actual environmental impacts identified in the document tables associated with element 3 are not truly environmental impacts associated with the critical control points listed.

- Item 4.2 – Documents 4.1 and 4.2 present general lists, which identify broad sweeping regulations without reference to how they apply to the District, or what specifically is required. There is no specific list of detailed requirements referenced, which the District must follow; such as NPDES pretreatment program specifics, various solids permits' details, Biosolids reporting and record keeping requirements, Land Application Plan monitoring and measurements and application rates, etc.

- Element 5 – The 2005 goals and objectives were not developed in accordance with the procedures.

- Item 5.1 – Element 5 procedure 1 references the use of an *Annual Biosolids EMS Tasks* memo to establish goals and objectives. The contents of this memo have not been defined, nor has it been implemented.

- Item 5.2 – Documents 5.2 through 5.7 do not specifically identify for which year the annual goals and objectives were established.

- Item 5.3 – The goals and objectives do not reflect input from interested parties developed through proactive public participation. The goals associated with odor controls were developed as a result of reactive public participation resulting from numerous complaints logged from the general public. A proactive public participation program has not yet been fully implemented to specifically solicit input from interested parties.

- Item 5.5 – Several of the Goals and Objectives identified in Documents 5.2 though 5.8 do not meet all of the SMART criteria, namely some are not time-bound (have no specific target date) and some are not measurable.

- Item 5.7 – Missing action plans for goals and objectives that are described in Item 9 of Document 5.1. The action plan must describe those improvement activities being pursued to achieve biosolids program goals and objectives, including schedules, milestones, resources, and responsibilities for achievement.

- Item 6.1 – The EMS has not demonstrated that it has "proactive" public participation as explained in Key Areas of Interpretation identified on pages 51 though 55 of the NBP Third Party Verification Auditor Guidance. (Reference is made to Public Participation in Planning in the Biosolids EMS Guidance Manual.)

- Item 6.1 – The list of interested parties identified to receive the notification of an independent third party verification audit does not include any public interest groups, only one citizen representative and none of the potentially interested parties identified by land application contractors, such as neighbors and farm owners/operators.

- Item 6.2 – Element 6 procedure does not address the organization's method for notifying interested parties about their intent to receive an independent third party audit or included a discussion of approaches for observing the audit.

- Item 6.4 – There is no evidence available to demonstrate that interested parties have been provided 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. There is no objective evidence available to demonstrate that efforts have been made by the District to alert potential interested parties about the opportunities to provide comment, or that time has been provided to enable interested parties to participate, formulate and deliver substantive input; or that background information (e.g. information on the organization's general EMS 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 EMS planning process and formulate substantive input.

- Item 7.2 – There is no official appointment of an individual with overall responsibility for ensuring that the biosolids management program and EMS are implemented and maintained.

- Item 7.4 – The roles and responsibilities of contractors retained to perform biosolids management activities and EMS functions are not clearly defined for all contractors or documented in all service agreements. Those EMS activities related to contractors which must be addressed are included in several elements:

- Element 7.4 – Contractor's roles and responsibilities retained to perform various biosolids management activities must have those activities (technical scope of services) defined and documented in service agreements.
- Element 8.4 – contractors must establish their own training programs consistent with their roles and responsibilities in biosolids management activities.
- Element 9.4 – contractors must have their communication program roles and responsibilities defined.
- Element 10.5 – contractors are required to establish their own operational controls consistent with their roles and responsibilities.
- Element 11.4 – contractors are required 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.
- Element 12.4 – contractors are required to establish documentation, document control and record keeping requirements for biosolids activities in service agreements and incorporate these into the EMS for biosolids.
- Element 13.3 – contractors are 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 8.1 – The EMS general awareness training material does not presently include how each employee's roles and responsibilities (associated with critical control points) relate to the entire biosolids value chain.

- Item 8.4 – There is no evidence that contractors have established their own training programs consistent with their roles and responsibilities in biosolids management activities as defined through Service Agreements.

- Item 9.1 – The current public education program (communication) does not include information about the District's EMS.

- Item 9.2 – The procedure does not define the process used for assuring a timely and complete response to inquiries by interested parties.

- Item 9.3 – The biosolids EMS page has not been fully implemented on the District's Website.

- Item 9.3 – The minimum information to be made available to interested parties (listed in the guidance) has not yet been made available.

- Item 10.1 – Missing standard operating procedures at LASMA for sample collection and analyses associated with operating permits for solids drying areas; missing division of responsibilities for operating permits associated with the Controlled Solids Distribution program; missing division of responsibility for operating permits associated with land application of sewage sludge; and missing standard operating procedures for controlled solids disposal such as field inspections, logs, reports and corrective measures.

- Item 11.2 – The emergency preparedness and response procedure references the use of an *Annual Biosolids EMS Tasks* memo for review of emergency procedures. The contents of this memo have not been defined nor has it been implemented.

- Item 11.4 – The individual contractors emergency response plans are not cross-referenced in the references section.

- Item 12.2 – Element 12 procedure is missing a description of how EMS procedure documents are created. The revision history is not explained in the procedure. There is no reference to replaced or superceded versions. There is no reference to the document approval authority. And management has not officially approved the manual.

- Item 12.3 – The procedure does not identify the specified period of time for which records of biosolids management activities must be retained.

- Item 13.1 – The procedural steps do not address the monitoring and measurement performed associated with regulatory compliance.

- Item 13.1 – The monitoring and measurement associated with tracking progress toward achieving program goals and objectives has not yet been implemented and this tracking is not specifically defined or cross-referenced in the procedural steps.

- Item 13.2 – The procedure does not address recording the monitoring and measurement results and maintaining records in accordance with element 12 for legal requirements and goals and objectives.

- Item 13.3 – The procedure does not clearly identify that contractors will establish and maintain regular monitoring and measurement procedures and practices for all their assigned biosolids management activities in their service agreements.

- Element 14 – No corrective action procedures have been implemented.

- Element 14 – Procedure does not define major and minor nonconformances.

- Item 14.1 – Incomplete procedure for investigation of noncompliance with regulatory requirements for other than reporting requirements. Additionally, preventive and corrective actions for noncompliance with biosolids regulations and landfilling permits are not addressed in the procedure.

- Item 14.4 – The procedure does not address development of corrective action plans to address nonconformances identified during routine monitoring and measurements.

- Item 15.1 – The Biosolids EMS Annual Report Guidance contained in Document 15.1 does not include reporting biosolids management activities conducted by contractors.

- Element 16 – The division heads and department heads are not aware of their responsibilities in the corrective action program and this element of the EMS has not been implemented.

- Element 16 – A thourough biosolids EMS internal audit has not been completed in accordance with the procedures.

- Item 16.1 – The procedure for the internal EMS audit program does not include all of the organization's biosolids management program activities including those performed by contractors.

- Item 16.1 – The procedure does not include auditing the performance of the biosolids program relative to goals, objectives and legal requirements, including those biosolids activities conducted by contractors.

- Item 16.2 – Tthe procedure does not identify specifically when corrective action plans are to be prepared.

- Item 16.3 – Document 16.1 does not address identification of lead auditor(s) or their qualifications.

- Element 17 – Management Review procedure has not been implemented.

- Item 17.2 – The procedure does not adequately address maintaining a schedule and scope of the management review; documentation of findings, evaluation, and follow-up actions; and documentation of changes to policies, plans, procedures, practices and other EMS elements that occur as a result of the management review findings, evaluations, or follow-up actions.

Opportunities for Improvement

- Item 3.1 – Consider streamlining the biosolids value chain by reviewing the critical control points to ensure they play a role in biosolids management. (See appendix F of the Manual of Good Practice.)

- Item 4.2 – Clarify the division of responsibilities relative to reporting requirements for DMR's, Pretreatment, Sludge Management Reports, etc.

- Item 5.1 – The procedure for Element 5 does not specifically identify when (date or month) the annual goals and objectives are to be established other than annually.

- Item 6.5 – The primary goals and objectives that considered input from interested parties were associated "passive" public participation programs resulting from telephone and website complaints associated with odors. Consider proactive public participation methods to obtain other goals and objectives from public input.

- Item 7.1 – Not all of the roles and responsibilities associated with the critical control points identified in Documents 3.1 through 3.7 have specific primary persons identified in the roles and responsibility column of the tables.

- Item 8.2 – Consider providing annual refresher awareness training at the same time EMS training is provided to new employees.

- Item 17.1 – Consider a narrative cross-reference between the procedure and Document 17.1.

Detailed Findings Resulting From
Desk Audit/Operational Readiness Review
Conducted November 28 through November 30, 2006

Observations

- Item 1.2 – The MWRDGC Biosolids EMS policy has not be approved by the current management of the District. Both the General Superintendent and Chief of Maintenance and Operation have changed since the original policy was signed.

- Item 2.2 – The approach identified in the Element 2 procedure on how the policy will be communicated to contractors indicates it will be included in contracts in the detailed specifications. Only half of the contracts have been renewed, therefore approximately 10 contractors have not had the biosolids EMS policy communicated to them.

- Element 5 –The 2006 goals and objectives were not developed in accordance with the procedures. Additionally, the goals and objectives do not reflect identified priorities for improving environmental performance based on legal and other requirements [i.e., there is (are) no goal(s)s for regulatory compliance outcomes]. This procedure has not been fully implemented.

- Item 5.5 – Several of the Goals and Objectives identified do not meet all of the SMART criteria, namely a few are not specific and others are not measurable. Some of the goals do not set a specific numerically measurable objective and some of the goals do not provide units of measure, such as tons, gallons, days, etc.

- Item 6.2 – Element 6 procedure does not included a discussion of approaches for interested parties to observe the third party independent audit and the letters recently sent to interested parties notifying them of the audit does not clearly provide information on how they may observe the verification audit.

- Item 6.4 – Over the past year the District has developed and implemented several meaningful opportunities for the public to express views and perspectives relative to biosolids management activities, however the procedure for Element 06 does not address all these methods.

- Item 7.4 – The roles and responsibilities of contractors retained to perform biosolids management activities and EMS functions are not defined for all contractors or documented in all service agreements. Those EMS activities related to contractors which must be addressed are included in several elements: Element 8.4 related to training; Element 9.4 related to EMS communications; Element 10.5 related to operational control of critical control points; Element 11.4 related to Emergency Preparedness and Response; Element 12.4 related to documentation, document control and record keeping; and Element 13.3 related to monitoring and

measurements. Each one of these procedures is addressed in the corresponding element of Chicago's EMS manual as follows: "The EMS coordinator will be responsible for reviewing the Contract Administration's monthly contract status report for biosolids contracts that are due to expire within the next six months. The EMS Coordinator will work with the Resident Engineer of the respective contract to ensure that the detail specifications meet the requirements of the EMS." The District has 20 contracts related to biosolids. Ten of those 20 have had the contract specifications modified to address the EMS requirements. Two contracts with modifications are pending and it has not been determined if the remaining eight contracts have addressed the above requirements. This part of the EMS has not been fully implemented.

- Item 9.1 – The current public education program (communication) does not include information about the District's biosolids/EMS in the standard presentations.

- Item 9.2 – The procedure does not define the process used for assuring a timely and complete response to inquiries by interested parties.

- Item 10.2 – The standard requires that all legal and other adopted requirements be incorporated into the operational controls of critical control points. A spot check of SOPs at Stickney found that the specific regulatory requirements were not incorporated into the SOP for the digesters (i.e., specific regulatory choices for attaining pathogen elimination and vector attraction reduction were not cited). Also the procedures at LASMA related to the Process to Further Reduce Pathogens (PFRP) did not reference the regulatory requirement. All other SOPs at these and other wastewater plants need to be reviewed to ensure regulatory and other requirements have been incorporated and implemented.

- Item 12.3 – The procedure does not identify the specified period of time for which records of biosolids management activities must be retained.

- Element 14 – No corrective action procedures have been implemented, therefore this part of the EMS has not been fully implemented.

- Element 14 – The division heads and department heads are not aware of their responsibilities in the corrective action program and this element of the EMS has not been implemented.

- Item 14.1 – Incomplete procedure for investigation of noncompliance with biosolids regulations and landfilling permits. Additionally, preventive and corrective action for noncompliance with the above is not addressed in the procedure.

- Item 14.1 – Procedure 2 of Element 14 does not capture the responsibilities of the EMS coordinator in addressing nonconformances.

- Element 16 – A thorough biosolids EMS internal audit has not been completed in accordance with the procedures. An internal audit must be performed on a fully implemented biosolids EMS.

- Item 16.1 – The procedure for the internal EMS audit program does not include all of the organization's biosolids management program activities including those performed by contractors.

- Item 16.1 – The procedure does not include auditing the performance of the biosolids program relative to goals, objectives and performance measures (outcomes).

- Item 16.2 – The procedure does not identify specifically when corrective action plans are to be prepared.

- Item 16.3 – Document 16.1 does not address documents and records (audit plan) related to its audit program including: description of audit methodology, protocol, scope, schedule, identification of lead auditor(s), qualifications, and description of roles and responsibilities of auditors.

Opportunities for Improvement

- Overall program – Consider establishing a district-wide position for Biosolids Program Manager at a sufficiently high level to manage all district biosolids production and coordinate marketing efforts for the variety of biosolids products produced by the District.

- Item 2.0 – Consider rewording procedure 6 in Element 2.0 to present it as a procedure instead of an historic fact.

- Item 3.2 – Consider reviewing the potential/actual environmental impacts identified in the document tables associated with element 3 to ensure they are truly environmental impacts associated with the critical control points listed, for example permit violations and spills (i.e. water, soil, surface contamination). Also, consider reviewing the contents of the operational controls column to ensure all items listed are truly operational controls.

- Item 4.2 – Consider cross-referencing the specific products produced as identified in Document 04.4 for each facility described in Document 00.2.

- Item 4.2 – Review the contents of the due date column in Document 04.3.1 through 04.3.15 to determine if the dates are required to be updated or deleted, as appropriate.

- Element 5 – In addition to the M&O division heads consider expanding the opportunities to prepare biosolids goals and objectives to include Public Information and Research and Development, making the program a more comprehensive District-wide biosolids EMS.

- Item 5.1 – The procedure for Element 5 does not specifically identify when (date or month) the annual goals and objectives are to be established, other than annually.

- Item 6.1 – Consider including the name and address of the interested parties on correspondence sent to individuals on mailing lists, replacing "Dear interested party." Other wastewater agencies have experience mail not being delivered because of this situation.

- Item 6.5 – The primary goals and objectives that considered input from interested parties were associated "passive" public participation programs resulting from telephone and website complaints associated with odors. Consider proactive public participation methods to obtain other goals and objectives from public input.

- Item 8.2 – Consider requiring annual refresher awareness training at the same time EMS training is provided to new employees. Presently the procedure encourages EMS refresher training but does not require it.

- Item 12.2 – It is not clear in Element 12 procedures that the reference to replaced or superceded versions appears at the end of each element procedure.

- Item 14.1 – Review form 14.1 and consider developing a form for those items contained in procedure 2(c) of Element 14.

- Item 16.1 – Review Document 16.1 to determine the applicability the guidelines presented.

Attachment 3

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[1]. 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 requirements that is 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

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

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