

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 09-21

***REPORTING REQUIREMENTS FOR SITE-SPECIFIC
EQUIVALENCY TO PROCEDURE TO FURTHER REDUCE
PATHOGENS DESIGNATION OF THE METROPOLITAN WATER
RECLAMATION DISTRICT OF GREATER CHICAGO
BIOSOLIDS PROCESSING TRAINS AT THE
STICKNEY AND CALUMET WATER RECLAMATION PLANTS
AUGUST – DECEMBER, 2008***

MARCH 2009

Metropolitan Water Reclamation District of Greater Chicago

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Louis Kollias, P.E., BCEE
Director of Research and Development

312-751-5190

March 25, 2009

Mr. Valdis Aistars
United States Environmental
Protection Agency
Region 5
77 West Jackson Boulevard, WC-15J
Chicago, IL 60604-3590

Dear Mr. Aistars:

Subject: Letter WN-16J Reporting Requirements for Site-Specific Equivalency to Procedure to Further Reduce Pathogens Designation of the Metropolitan Water Reclamation District of Greater Chicago Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants – August to December 2008

In your letter dated June 20, 2002 (Reference Number WN-16J), you informed us that the low and high solids biosolids processing trains at the Stickney and Calumet Water Reclamation Plants (WRPs) were designated on a site-specific basis, as being equivalent to Procedure to Further Reduce Pathogens (PFRP). In a letter dated July 14, 2008, you informed us that this certification was renewed for another two years, effective August 1, 2008 to August 1, 2010. The terms of the site-specific designation require us to operate the designated biosolids processing trains in full compliance with the codified operating parameters outlined in our approved petition, and to collect and analyze twelve samples for enteric viruses and helminth ova during the first year of operation (August 1, 2008 to August 1, 2009) and six samples during the second year of operation (August 1, 2009 to August 1, 2010).

We are required to submit monitoring data for 12 samples for the period August 1, 2008 through August 1, 2009, for both the Stickney and Calumet WRPs. Monitoring data for three samples are reported in the attached table for the Calumet WRP. The monitoring data for the remaining nine samples for this period will be submitted in September 2009. All of the samples in the attached table meet the Part 503 analytical standards for the Class A pathogens, including those for enteric viruses and helminth ova. For the Stickney WRP, no monitoring data are presented in this report because the biosolids generated during the period were not PFRP-compliant with respect to the digester holding time criteria in the codified operations. Failure to meet the holding time criteria was due to reduction in digester capacity, resulting from digesters being removed from service for cleaning and repairs. Therefore, all biosolids generated by the Stick-

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ney WRP during the period were tested for pathogen compliance according to 40 CFR Part 503.32a5 before being utilized as Class A, or were managed as specified in Item 10 of the certification.

We conducted an internal audit of the Metropolitan Water Reclamation District of Greater Chicago's Analytical Microbiology Laboratory on June 6, 2008, and it was found to be in full compliance with all USEPA requirements for analysis to determine compliance with the Part 503 Class A pathogen standards. In addition, the operation of the high and low solids biosolids processing trains were subjected to internal audits on June 3, 2008, at the Calumet WRP, and on June 9, 2008, for the Stickney WRP. Attached is a signed certification that the processing trains were operated in full compliance with the codified parameters.

If you have any questions, please contact Dr. Thomas Granato, Assistant Director of Monitoring and Research, at 708-588-4059.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:AC:kq
Attachments
cc: Lanyon/Jamjun/Garelli
Sharma/Conway/Stuba
Granato/O'Connor/Cox/Rijal/Lindo

MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS GENERATED BY THE
 CALUMET WRP SOLIDS PROCESSING TRAINS IN COMPLIANCE
 WITH PART 503 PFRP-EQUIVALENT REQUIREMENTS
 AUGUST THROUGH DECEMBER 2008 MONITORING PERIOD

| Date Sampled | Location | Fecal Coliform | Viable Helminth Ova | Enteric Virus |
|--------------|---------------------------|-------------------|------------------------|------------------|
| | | - No./g - | - No./4g - | - PFU/4g - |
| 12/11/08 | Calumet East ¹ | 8 | <0.0800 | <0.8000 |
| 12/11/08 | Calumet West | 14 | <0.0133 | <0.8000 |
| 12/11/08 | Calumet West | 1 | <0.0133 | <0.8000 |

¹For helminth ova analysis, sample weight = 50g. For other samples, sample weight = 300g.

CERTIFICATION

I do hereby certify that for the period from August 1, 2008 through December 31, 2008, the Low Solids Sludge Processing Train (LSSPT) and the High Solids Sludge Processing Train (HSSPT) at the Metropolitan Water Reclamation District of Greater Chicago's Stickney and Calumet Water Reclamation Plants (WRPs) were operated in full compliance with the following codified protocol, as required by the USEPA's site specific designation of equivalency to PFRPs:

1. An average detention time of 20 days at a temperature of $35 \pm 2^{\circ}\text{C}$ ($95 \pm 3.6^{\circ}\text{F}$) is maintained in the anaerobic digesters.
2. In the case of the HSSPT system, anaerobically digested sludge (at 3 to 5 percent solids), which is withdrawn daily from the digesters, is then dewatered using Sharples Model 76000 centrifuges from 20 to 30 percent solids.
3. In the case of the LSSPT system, digested sludge (at 3 to 5 percent solids) withdrawn daily from the digesters, and which is not subjected to centrifugal dewatering, is pumped into a LSSPT lagoon to achieve further stabilization, dewatering, and inactivation of pathogens.
4. The minimum sludge holding time for both the HSSPT and LSSPT lagoons is 1.5 years to ensure the aging and stabilization of sludge solids, and inactivation of pathogens.
5. Air-drying of sludge solids taken out of the HSSPT and LSSPT lagoons is carried out seasonally from April through November.
6. Air-drying is conducted such that any batch of sludge applied onto the drying areas is held without any further additions of sludge, until 60 percent total solids content is achieved.
7. Loading of drying cells is conducted such that air-drying of the sludge solids taken out of the HSSPT and LSSPT lagoons is done at no more than 410 and 230 dry tons per acre of the paved drying cells, respectively. Sludge solids taken out of the HSSPT and LSSPT lagoons are applied on the drying cells at depths of no more than 18 and 15 inches of sludge, respectively, to be consistent with the loadings of 410 and 230 dry tons per acre.
8. Agitation drying is conducted such that complete turning, aeration, and agitation of solids withdrawn from the LSSPT and HSSPT is accomplished at an

average of three times a week using equipment such as a tractor with a horizontal auger or a tiller.

9. The short circuiting of sludge through the SPTs was eliminated by ensuring that,
 - (a) No additional batches of sludge are added to the field lagoons, where sludge is undergoing aging, dewatering, and inactivation, and
 - (b) A batch of sludge undergoing air drying on the paved drying beds is not mixed with any other batches of sludge during the drying process.

10. Sludge generated by unit processes not meeting the PFRP codified parameters listed above was segregated from the certified processing trains and managed according to the appropriate requirements of 40 CFR Parts 503 or 257.

Osoth Jamjun
Director of Maintenance & Operations

Date