

*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

***RESEARCH AND DEVELOPMENT  
DEPARTMENT***

*REPORT NO. 07-11*

**REPORTING REQUIREMENTS FOR SITE SPECIFIC  
EQUIVALENCY TO PFRP DESIGNATION OF MWRDGC  
BIOSOLIDS PROCESSING TRAINS AT THE STICKNEY AND  
CALUMET WATER RECLAMATION PLANTS  
AUGUST – DECEMBER 2006**

***MARCH 2007***

**Metropolitan Water Reclamation District of Greater Chicago**

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

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

312-751-5190

March 22, 2007

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 (PFRP) Designation of Metropolitan Water Reclamation District of Greater Chicago (District) Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants (WRP) – August to December, 2006

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 WRPs were designated on a site-specific basis as being equivalent to PFRP. In a letter dated September 9, 2006, you informed us that this certification was renewed for another two years, effective August 1, 2006 to July 31, 2008. 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, 2006 to July 31, 2007) and six samples during the second year of operation (August 1, 2007 to July 31, 2008).

We are required to submit monitoring data for six samples for the period August 1, 2006 through December 31, 2006, for both the Stickney and Calumet WRPs. Monitoring data for six samples are attached in Table 1 for the Calumet WRP. All of the samples 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 Stickney WRP during the period were not utilized as Class A, but were managed as specified in Item 10 of the certification.

Subject: Letter WN-16J Reporting Requirements for Site-Specific Equivalency to Procedure to Further Reduce Pathogens (PFRP) Designation of Metropolitan Water Reclamation District of Greater Chicago (District) Biosolids Processing Trains at the Stickney and Calumet Water Reclamation Plants (WRP) – August to December, 2006

We conducted an internal audit of the District's Analytical Microbiology Laboratory on April 6, 2006, 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 April 5, 2006, at the Calumet WRP, and on April 7, 2006, 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 Research and Development, at 708-588-4059.

Very truly yours,

Louis Kollias  
Director  
Research and Development

LK:TCG:AC:spy

Attachments

cc: Lanyon/Jamjun/Levy  
Sharma/Quintanilla/Stuba  
Granato/O'Connor/Cox/Lindo

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

MICROBIOLOGICAL ANALYSIS OF BIOSOLIDS GENERATED BY THE  
CALUMET WRP SOLIDS PROCESSING TRAINS IN COMPLIANCE  
WITH PART 503 PFRP-EQUIVALENT REQUIREMENTS  
AUGUST THROUGH DECEMBER 2006 MONITORING PERIOD

Date Sampled	Location	Fecal Coliform	Viable Helminth Ova	Enteric Virus
		- No./g -	- No./4g -	- PFU/4g -
10/19/06	Calumet West	87	<0.0800	<0.8000
10/19/06	Calumet East <sup>1</sup>	120	<0.0133	<0.8000
10/31/06	Calumet West	58	<0.0800	<0.8000
11/07/06	Calumet West	35	<0.0800	<0.8000
11/14/06	Calumet West	3,000 <sup>2</sup>	<0.0800	<0.8000
11/14/06	Calumet East	2,800 <sup>2</sup>	<0.0800	<0.8000
11/29/06	Calumet West	40 <sup>3</sup>	-	-
11/29/06	Calumet East	36 <sup>3</sup>	-	-

<sup>1</sup>For helminth ova analysis, sample weight = 300 g. For all other samples, sample weight = 50 g.

<sup>2</sup>Samples exceeded Part 503 requirement of <1,000 MPN/g for fecal coliform.

<sup>3</sup>Originally sampled biosolids were re-sampled and analyzed for fecal coliform prior to shipment to final utilization site. Re-sampled biosolids met the Part 503 fecal coliform requirement.

## CERTIFICATION

I do hereby certify that for the period from August 1, 2006 through December 31, 2006, 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  
Chief of Maintenance & Operations

---

Date