E Environment Committee

Item: 2009-454

For the Metropolitan Council meeting of January 13, 2010

ADVISORY INFORMATION

Date Prepared: December 16, 2009

Subject: Authorization to Execute Purchase Order Change with Polydyne for Polymer at Empire

Proposed Action:

That the Metropolitan Council authorize its Regional Administrator to execute a purchase order change to increase the amount of the polymer purchase order by $200,000 to cover polymer purchases at the Empire Wastewater Treatment Plant through September 2010.

Summary of Committee Discussion / Questions:

Staff explained that the purpose of polymer is to thicken the solids so it can be hauled from the plant.

Council Member Bowles asked for a comparison of the cost of the polymer versus the decreased operating costs resulting from the use of polymer.

Biosolids from the Empire Plant are land applied during the spring pre-planting season and the fall post-harvest season. Between the spring and fall applications, the solids are stored in long rows (called windrows) on 8 acres of asphalt at the Empire facility. Due to an increase in the sludge quantity, additional polymer is used to produce a drier sludge cake, increasing the storage capacity of the asphalt pads by stacking the sludge cake windrows higher.

Due to a decrease in anaerobic digester performance, sludge volumes at Empire have increased by about 24%. In response, operations staff have evaluated and optimized the dewatering system to increase biosolids concentrations from 10% to 12% total solids.

Increasing solids concentration from 10% to 12% reduces the amount of biosolids needing to be stored and applied by one-sixth or, said another way, increases storage volume by 17%. Land application of biosolids is very cost-effective as well as producing a reusable product.

Running out of storage pad space would have required using another disposal method, most likely transportation to the Metro Plant. There is no mechanism for accepting dewatered sludge at the plant, so liquid sludge, prior to dewatering, would be transported. Liquid sludge is typically 2.5% solids, requiring transporting almost five times the volume of material as is stored on the pad. In addition, the biosolids would then need to be processed along with the biosolids at the plant.

It is estimated that about 600 dry tons of biosolids would have to be transported and re-processed at the Metro Plant if additional polymer was not used at Empire to concentrate the biosolids. This would result in an annual increase of $180,000 versus $100,000/year for additional polymer.

Council Member Leppik asked if the higher content of polymer affects the use of the sludge as a fertilizer. Staff said that it does not.

Council Member Bowles asked about the market value of the fertilizer product. Staff responded that while farmers will use the sludge, they aren't willing to pay for it at this time. MCES sees it as an opportunity to remove the sludge from plant grounds.

Motion to approve the proposed action was made, seconded, and passed unanimously.

Business Item
Item: 2009-454

E Environment Committee

Meeting date: December 8, 2009

ADVISORY INFORMATION	
Date:	November 30, 2009
Subject:	Authorization to Execute Purchase Order Change with Polydyne for Polymer at Empire
District(s), Member(s):	All
Policy/Legal Reference:	Council Policy 3-3 Expenditures – Procurement of Goods and Services over $250,000
Staff Prepared/Presented:	Micky Gutzmann 651-602-1741; Pat Oates 651-602-4911
Division/Department:	MCES c/o William G. Moore 651-602-1162

Proposed Action

That the Metropolitan Council authorize its Regional Administrator to execute a purchase order change to increase the amount of the polymer purchase order by $200,000 to cover polymer purchases at the Empire Wastewater Treatment Plant through September 2010.

Background

A purchase order (PO) was awarded to Polydyne for the purchase of polymer beginning 10/9/08. The term of the PO is two years ending September 30, 2010, with three one-year options to extend. Each extension will be brought before the Environment Committee and Council for approval.

During the summer of 2008, a polymer trial was conducted at the Empire WWTP. This was the first polymer trial since the plant was expanded in 2005. Three vendors participated in the trial. Based on the testing, polymer use at Empire was estimated at 200,000 pounds. This estimation has proven to be low as an additional 192,397 pounds of polymer are expected to be used by the end of September 2010.

Rationale

Analyzing polymer use and solids process performance for 2009 has identified three reasons for the need for additional polymer:

Solids production: The annual sludge production at Empire was estimated to be 2,600 tons based on the previous year's records. The first nine months of 2009 show solids production at 3,237 tons or 24% above the amount estimated.

Increasing cake percent solids: Drier cake solids equal lower operating costs. In a concerted effort to achieve drier cake solids, a higher dose of polymer is needed. An increase in cake solids of 2.5% has been observed. The actual polymer dosage has been 33% greater than the dose used in the trial.

Sludge thickening: The polymer trial did not quantify dosage for thickening. This process accounts for an additional 13% of polymer use and was excluded in the original contract estimate.

The increased utilization of polymer has necessitated the increase in dollar amount on the purchase order.

Funding

Funds are available in the Empire Plant's Annual Operating Budget.

Known Support / Opposition

None.