

January-March 2018

Biosolids Monthly Report

Submitted By:
Biosolids Management Program Team
Wastewater Treatment Facility
1400 Brander St.
Richmond, VA 23224

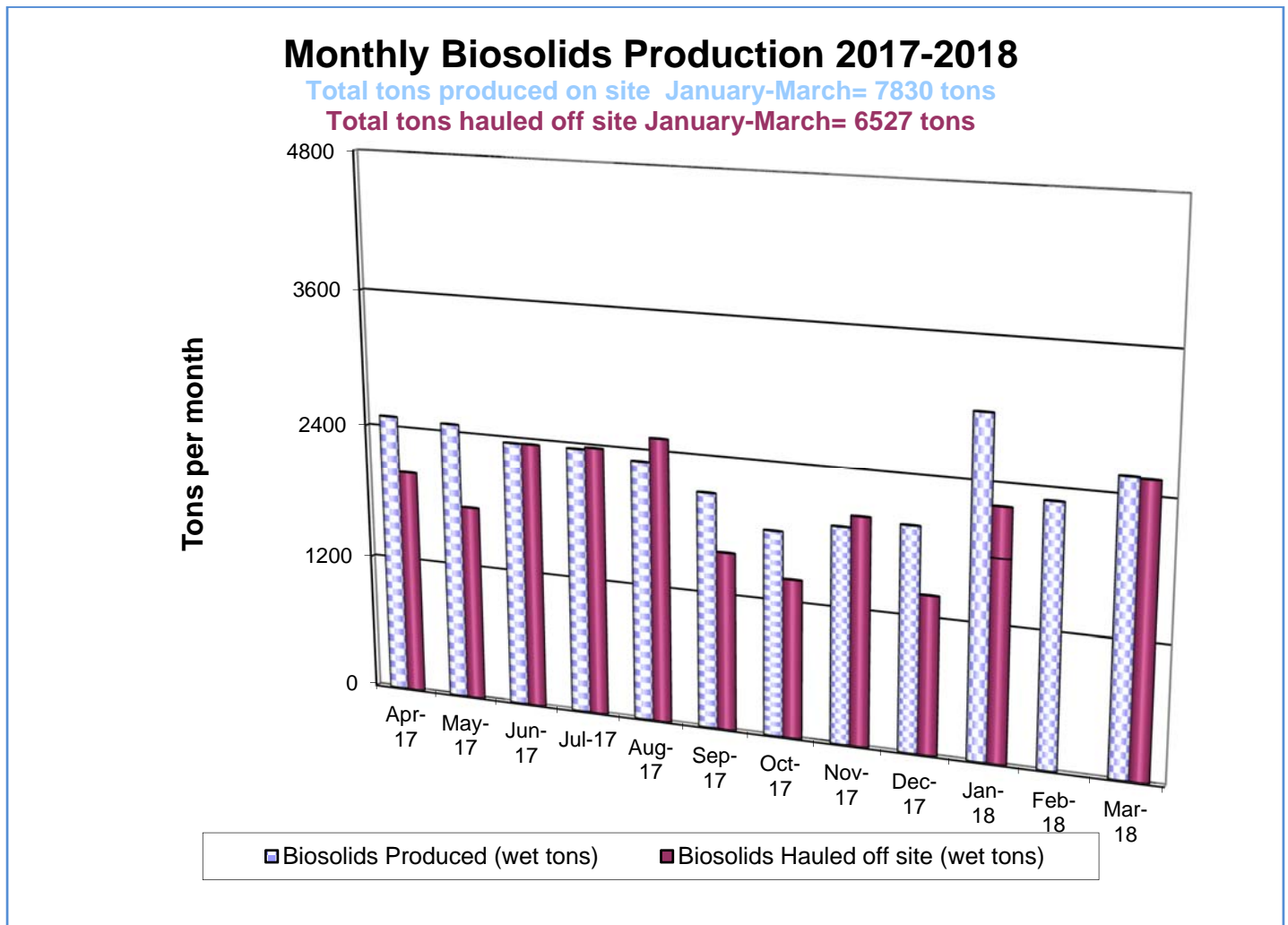
Biosolids Policy

Consistent with the City of Richmond's Environmental Policy Statement, the Richmond Wastewater Treatment Plant (WWTP) is committed to the following principles of conduct set forth in the National Biosolids Code of Good Practice. The WWTP will focus its available resources to produce Class B biosolids. Further, it shall be the position of the WWTP to promote and practice the beneficial use of biosolids and the reuse/recycling of resources. The WWTP will strive to maintain, improve and protect the environment through its treatment/production of biosolids. The WWTP will make every effort to insure that the public is not endangered or inconvenienced by the treatment/production of biosolids at the WWTP or application sites. The WWTP shall obey all applicable federal, state, county and local laws, rules and regulations.

During the period of January-March 2018, the Richmond wastewater plant produced 7830 wet tons of biosolids and contractors hauled 6527 wet tons off-site.

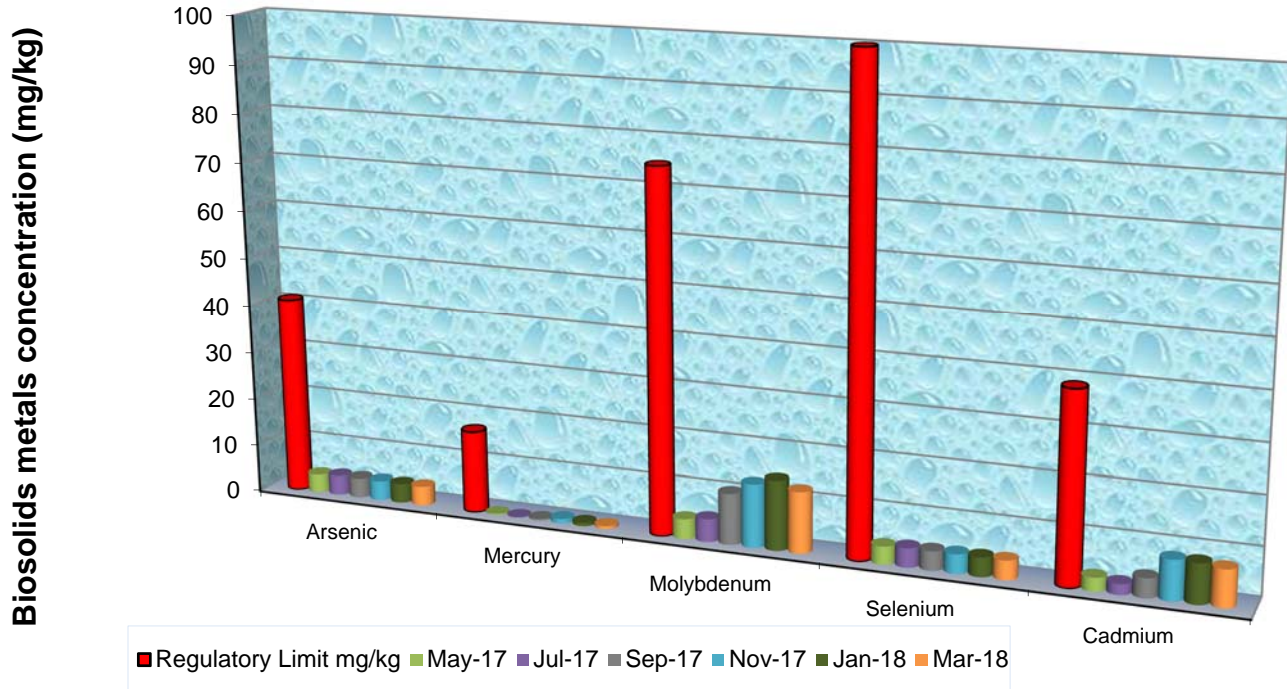
The chart below shows the amount of biosolids produced and the amount hauled off-site.

The City of Richmond ensures the biosolids produced are safe for the public and environment. Biosolids are monitored regularly to ensure they meet and/or exceed the EPA Exceptional Quality Standards.

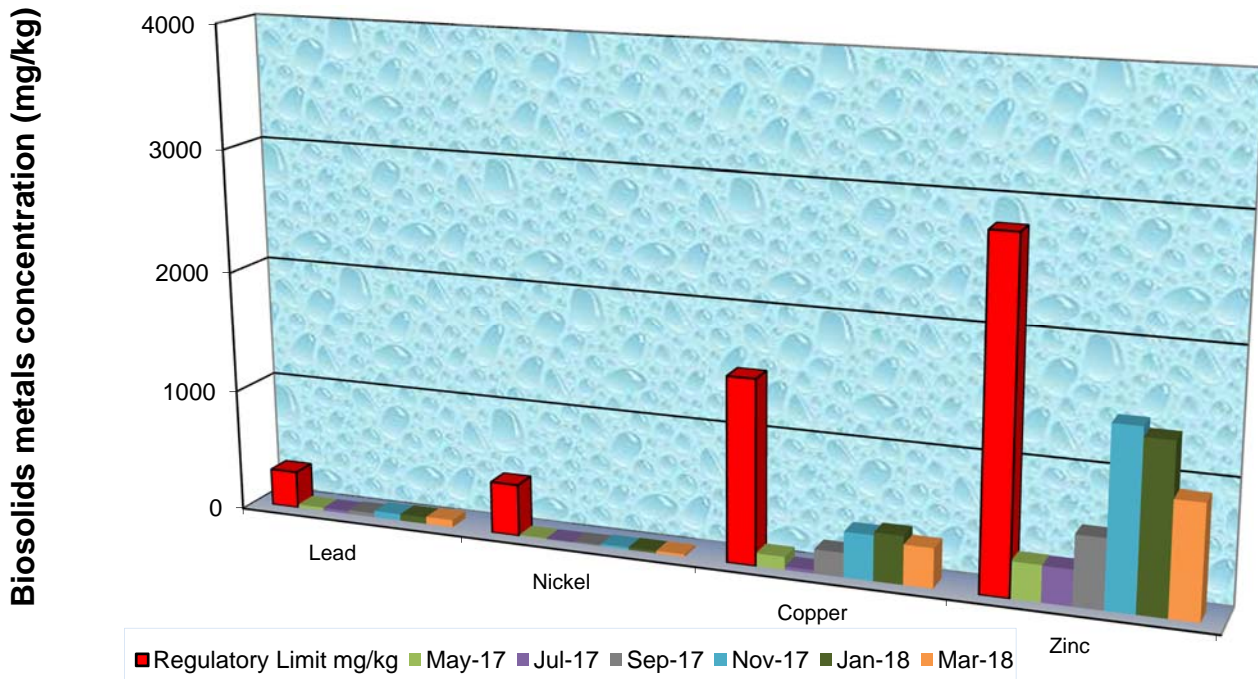


The graphs below show results for EPA regulated heavy metals for Richmond's biosolids for 2018.

2017-2018 Biosolids Metals



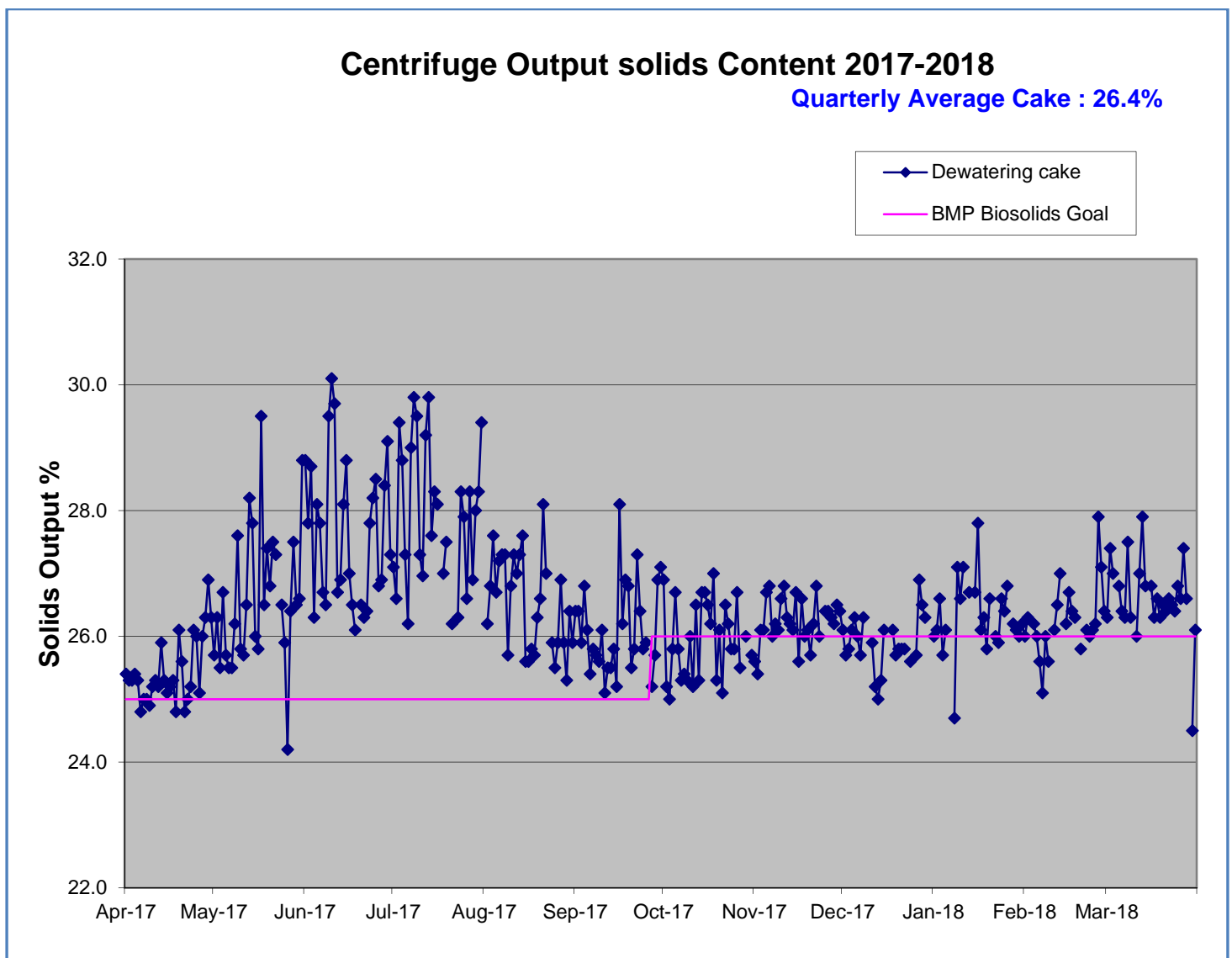
2017-2018 Biosolids Metals

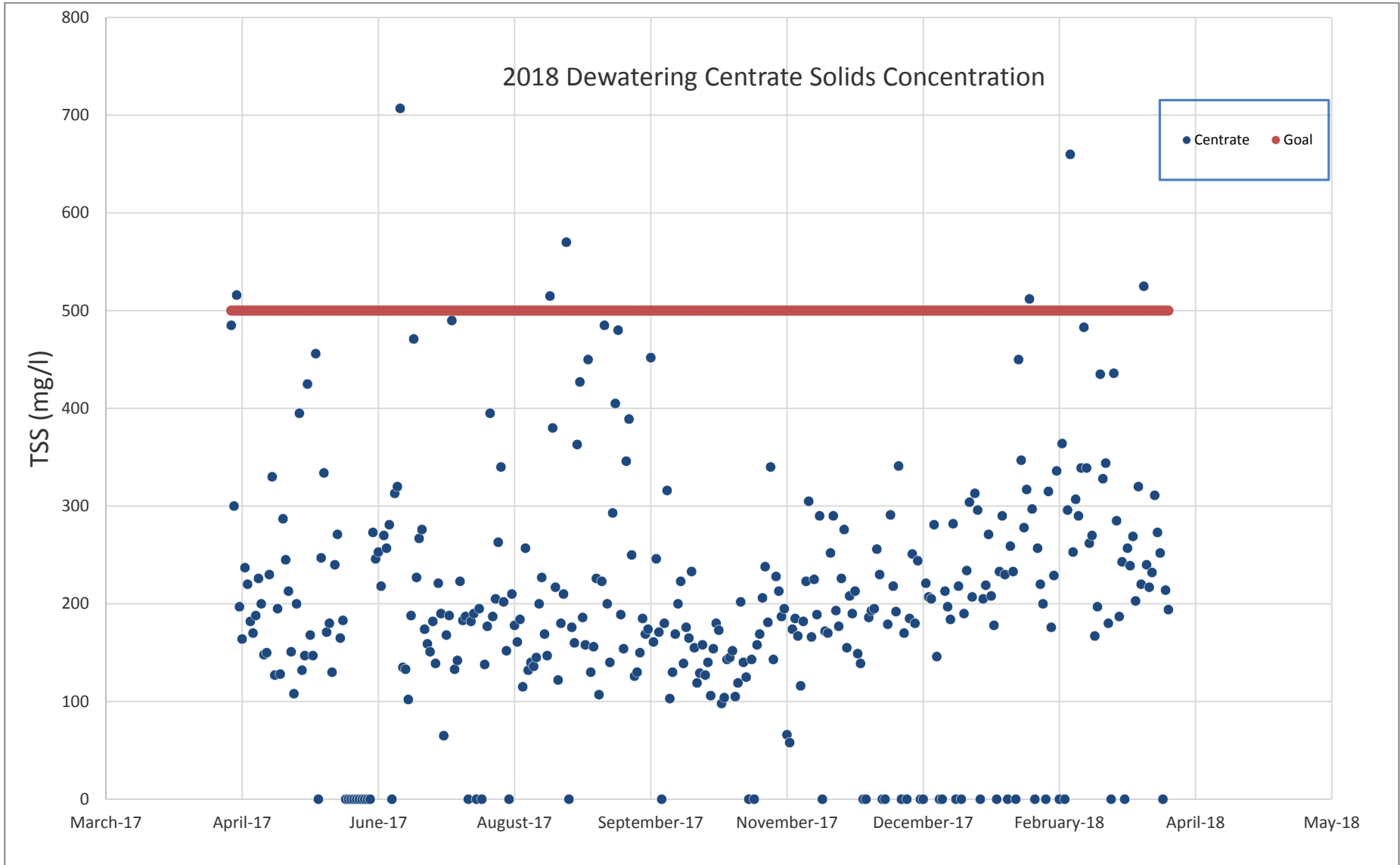


The graph below shows the centrifuges output solids content and the centrate's concentration in Total Suspended Solids TSS for 2018.

Beginning of September 2017, the Biosolids team has set 26% as a new goal for the % cake. The average solids content for this period is 26.4%.

The centrate quality has been improved and consistent during this year, and the centrate chart shows that all TSS results are below the goal limit. During this period, there was only 1 excursion with high centrate TSS.





In this section we discuss the results and the methods used for vector attraction reduction and pathogens control.

1- PATHOGEN CONTROL METHOD

1-A. STATEMENT OF METHOD

The City of Richmond has elected to employ Alternative B2 [40 CFR 503.32(b)(3)], a process to significantly reduce pathogens (PSRP). This method requires that sludge be anaerobically digested between 35-55 °C (95-131) for a period of at least 15 days or at 20 °C (68F) for 60 days.

1-B. PROCEDURES

Readings for temperatures and flows are taken by plant operators. Temperatures are taken in °F (usually at least four times per 24 hour period). Laboratory personnel typically read the digester temperatures once a day as an additional check. Flow readings are taken at midnight each day. Detention times are calculated as follows:

$$\text{Detention time (in days)} = (A \times 1.6) / B$$

Where:

A= the number of digesters in service

B= total flow to the digesters (MGD)

(Volume of each digester is 1.6 MG)

1-C. DATA SUMMARY

Digester temperatures and detention times periodically fall below 95 ° F and 15 days respectively. However, the biosolids produced meet standards (i.e. all above 95°F and 15 days detention time) and are land applied.

2- VECTOR CONTROL METHOD

2-A. STATEMENT OF METHOD

1. The City has elected to employ alternative #1 [40 CFR 503.33(b)(1)/(10)] as a method of vector attraction reduction. This process requires that the mass of volatile solids be reduced by 38%. When a 38% reduction is not achieved, sludge is incorporated into the ground (land application) within six hours.

2-B. PROCEDURES

Sampling and Analysis: In an effort to ensure that a sampling protocol is followed, six hour composites are collected from the thickener, thickening centrifuges and digester flow streams. Samples are collected and analyzed onsite. Samples are taken bimonthly.

Volatile Reduction Equation: As outlined in the section "process description," there are two major sludge flow streams discharged to the anaerobic digesters. To accurately calculate volatile solids concentration going to the digester (i.e. raw feed) the two flows must be weighted.

DATA SUMMARY:

Volatile Reduction Summary table

<i>Sample Period</i>	<i>Gravity Thickeners % volatiles</i>	<i>Thickening Centrifuges % volatiles</i>	<i>Digester Overflow % volatiles</i>	<i>Overall Volatile Reduction (%)</i>
January February	78.9	73.1	59	58.3
March April	80.6	71.2	58.5	61.9