



# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
Mailing Address: 210 North Public Square  
Angola, IN 46703

**Craig A. Williams**  
**Superintendent**

Phone: 260.624.2699

Cell: 260.905.6123

Fax: 260.624.2699

[cwilliams@angolain.org](mailto:cwilliams@angolain.org)

*“Making Clean Water & Protecting Public Health.  
All Day. Every Day. Period.”*

September 15, 2014

Indiana Department of Environmental Management  
Office of Water Quality, MC 65-42  
NPDES Permits Branch  
100 North Senate Avenue  
Indianapolis IN 46204-2251

RE: City of Angola SMV Application - NPDES Permit No. IN0021296

The City of Angola hereby submits revisions to its completed application for a Streamlined Mercury Variance for Permit No. IN0021296.

Should you have any questions or need additional information regarding this application, please contact Craig Williams at 260-624-2699.

Respectfully submitted,

Craig A. Williams, Superintendent  
Angola Wastewater Treatment



**MUNICIPAL STREAMLINED  
MERCURY VARIANCE (SMV) APPLICATION**

State Form 52112 (5-05)  
Approved by State Board of Accounts, 2005  
**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**Indiana Department of Environmental Management**  
Office of Water Quality – Mail Code 65-42  
NPDES Permits Branch  
100 North Senate Avenue  
Indianapolis, Indiana 46204-2251

**PART ONE: General Information**

Name of Facility <b>City of Angola Wastewater Treatment Plant</b>		
Facility Address <b>1095 Redding Rd.</b>		
City or Town <b>Angola</b>		
State <b>IN</b>	ZIP Code <b>46703</b>	County <b>Steuben</b>
National Pollutant Discharge Elimination System (NPDES) Permit No.: <b>IN0021296</b>		
Owner or Person in Responsible Charge (i.e., Town Board President/Mayor) <b>Richard M. Hickman</b>		
Title <b>Mayor</b>		
Address <b>210 North Public Square</b>		
City or Town <b>Angola</b>		
State <b>IN</b>	ZIP Code <b>46703</b>	
Name of Primary Contact Person <b>Craig Williams</b>		
Address <b>210 North Public Square</b>		
City or Town <b>Angola</b>		
State <b>IN</b>	ZIP code <b>46703</b>	Telephone No. <b>260-624-2699</b>
E-mail Address (if available) <b>cwilliams@angolain.org</b>		
NPDES Outfall(s) Affected by Streamlined Mercury Variance Request: <b>001</b>		
Receiving Stream(s) Affected by Streamlined Mercury Variance Request: <b>Pigeon Creek via H.D. Wood Ditch</b>		
Facility Design Flow: <b>1.7 MGD</b>		
Population Served: <b>&gt;8,612</b>		
Number of Significant Industrial Users (as defined in 327 IAC 5-17-23): <b>3</b>		

**SIGNATURE BLOCK**

This application must be signed by a person in responsible charge (see 327 IAC 5-2-22) to be valid. This signature attests to the following:  
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name <b>Craig A. Williams</b>	Title <b>Wastewater Superintendent</b>
Signature 	Date Signed (month, day, year) <b>August 12, 2014</b>

Return the completed SMV application package (Parts I - V) and \$50 application fee (see IC 13-18-20-12(a)(4)) to the mailing address listed above.

**PART TWO – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) INVENTORY/IDENTIFICATION**

A. Provide a preliminary inventory of potential uses and sources of mercury in all buildings and departments, as well as a preliminary identification of known mercury-bearing equipment, wastestreams, and mercury storage sites. The following checklist\* includes many of the chemicals, equipment, locations, etc. where mercury may be present at your site. For the purpose of satisfying the requirements of this section, you may submit the completed checklist as a preliminary inventory/identification. While the checklist is intended to facilitate the inventory/identification process, it should not be considered as all-inclusive for purposes of establishing a complete inventory. (see 327 IAC 5-3.5-9(a)(1) and 327 IAC 5-3.5-9(a)(2))

**LABORATORY EQUIPMENT**

<input checked="" type="checkbox"/> Manometers	<input type="checkbox"/> Ion exchange cartridges for lab water purification system
<input type="checkbox"/> Barometers	<input type="checkbox"/> Hanging mercury drop electrodes for polarographic analyzers
<input type="checkbox"/> Thermometers	<input type="checkbox"/> Mercury Hallow Cathode lamp for AA analysis

**LABORATORY CHEMICALS**

<input type="checkbox"/> COD analysis reagent ( <i>mercuric sulfate</i> )	<input type="checkbox"/> Mercury or mercurous chloride
<input type="checkbox"/> TKN and TP analysis digestion reagents	<input type="checkbox"/> Mercury iodide
<input type="checkbox"/> Nessler reagent	<input type="checkbox"/> Mercury nitrate
<input type="checkbox"/> Mercury analytical standards	<input type="checkbox"/> Mercury (II) oxide
<input type="checkbox"/> Gas chromatograph sample interferences ( <i>elemental mercury</i> )	<input type="checkbox"/> Mercury (II) sulfate
<input checked="" type="checkbox"/> Sodium hypochlorite ( <i>Clorox</i> )	<input type="checkbox"/> Merthiolate

**BULK CHEMICALS**

<input type="checkbox"/> Phosphorus removal chemicals	<input checked="" type="checkbox"/> Chlorine
<input type="checkbox"/> Dechlorination chemicals	<input checked="" type="checkbox"/> Sodium hypochlorite
<input checked="" type="checkbox"/> Sludge thickening polymers	<input checked="" type="checkbox"/> Sulfuric acid
<input type="checkbox"/> Potassium hydroxide	<input checked="" type="checkbox"/> Nitric acid
<input checked="" type="checkbox"/> Sodium hydroxide	<input checked="" type="checkbox"/> Ferric or ferrous chloride
<input checked="" type="checkbox"/> Sodium chloride	<input type="checkbox"/> Pickling liquor ( <i>for phosphorus removal</i> )

**PROCESS CONTROL AND MEASURING EQUIPMENT**

<input type="checkbox"/> Accustats	<input type="checkbox"/> Ring balances
<input type="checkbox"/> Barometers	<input type="checkbox"/> Shunt trips
<input type="checkbox"/> Counterweights	<input type="checkbox"/> Steam flow meters
<input type="checkbox"/> Elemental mercury for refilling mercury-containing equipment	<input type="checkbox"/> Stokes gauges
<input type="checkbox"/> Flow meters	Switches and relays:
<input type="checkbox"/> Gas regulators and meters	<input type="checkbox"/> Displacement plunger relays
<input type="checkbox"/> Gyroscopes	<input type="checkbox"/> Mercoid control switches
<input type="checkbox"/> Hydrometers with thermometers	<input type="checkbox"/> Pressure control switches ( <i>mounted on bourdon tube or diaphragm</i> )
<input type="checkbox"/> Level and rotation sensors	<input type="checkbox"/> Relay switches
<input checked="" type="checkbox"/> Manometers, pressure gauges and vacuum gauges	<input type="checkbox"/> Mercury wetted relays
<input type="checkbox"/> Mercury-sealed pistons	<input type="checkbox"/> Mercury displacement relays ( <i>found in motors</i> )
<input type="checkbox"/> Perimeters	<input type="checkbox"/> Sump pump, bilge pump and other float controls
<input type="checkbox"/> Pressure-trols	<input type="checkbox"/> Tilt switches
<input checked="" type="checkbox"/> Pyrometers	<input type="checkbox"/> Thermometers ( <i>including industrial dial face thermostats with capillary tubes.</i> )
<input type="checkbox"/> Rectifiers	<input checked="" type="checkbox"/> Thermostats and thermoregulators
	<input type="checkbox"/> Transmitters

**BUILDINGS**

<input checked="" type="checkbox"/> DC watt-hour meters	Hydronic and warm air controls with tilt switches such as:
<input checked="" type="checkbox"/> Flame sensors ( <i>found in the pilot light and burner assembly on gas-fired furnaces, boilers, unit heaters and space heaters</i> )	

\* This checklist was borrowed from the Delta Institute.

**PART TWO (CONTINUED)**

**BUILDINGS (continued)**

Switches and relays:	
<input type="checkbox"/> Fire alarm box switches	<input type="checkbox"/> Mercury displacement relays ( <i>found in lighting, resistance heating and motors</i> )
<input type="checkbox"/> Silent light switches	
<input type="checkbox"/> Relay switches	<input checked="" type="checkbox"/> Sump pump, bilge pump, flow monitor, float switches, and other float controls
<input type="checkbox"/> Mercury wetted relays	
<input type="checkbox"/> Tilt switches	

Phosphorus removal chemicals:	
<input checked="" type="checkbox"/> Ferric or ferrous chloride	
<input type="checkbox"/> Pickling liquor	
<input checked="" type="checkbox"/> Thermostats	

**BEARINGS AND SEALS**

<input type="checkbox"/> Trickling filter Pivot Arm Bearings ( <i>mercury bearings/water seals</i> )
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**LAMPS**

<input checked="" type="checkbox"/> Fluorescent	<input checked="" type="checkbox"/> Mercury vapor lamps
<input checked="" type="checkbox"/> High-pressure sodium	<input checked="" type="checkbox"/> Metal halide
<input type="checkbox"/> Mercury arc	<input checked="" type="checkbox"/> Ultraviolet disinfection

**BATTERIES**

<input type="checkbox"/> Mercury-zinc ( <i>button</i> ) batteries	<input type="checkbox"/> Mercury alkaline batteries
<input type="checkbox"/> Mercury-cadmium batteries	<input type="checkbox"/> Mercury oxide batteries

**PAINT**

<input checked="" type="checkbox"/> Old latex-paint (pre-1990)	<input type="checkbox"/> Marine paint
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**FIRST AID/MEDICAL**

<input type="checkbox"/> Mercurochrome	<input type="checkbox"/> Thermometers
<input type="checkbox"/> Sphygmomanometers	<input type="checkbox"/> Thimerosal ( <i>contained in eye wash</i> )

**OTHER**

<input checked="" type="checkbox"/> Old pesticides, fungicides and herbicides	<input checked="" type="checkbox"/> Fleet vehicles may contain ABS, convenience and trunk lighting switches and HID headlamps
<input type="checkbox"/> Tree root growth control products	
<input checked="" type="checkbox"/> Computer monitors	

**COLLECTION SYSTEM**

<input checked="" type="checkbox"/> Lift station equipment	<input type="checkbox"/> Sewer lines with accumulated mercury
<input checked="" type="checkbox"/> Traps with accumulated mercury	<input type="checkbox"/> Other mercury containing equipment
<input checked="" type="checkbox"/> Sumps with accumulated mercury	<input type="checkbox"/> Mercury-containing chemicals used and/or stored on-site

**MERCURY STORAGE SITES**

<input type="checkbox"/> Elemental mercury	<input checked="" type="checkbox"/> Mercury-containing items collected for disposal
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B. Provide a plan and schedule for providing a complete inventory initiated under Section A. above. (*see 327 IAC 5-3.5-9(a)(1)*) The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.

A complete inventory should include an estimate of quantities (*i.e., volume of chemicals used annually, or numbers of mercury containing equipment*) for each item identified in Part II.A. Additionally, a complete inventory should include documentation from chemical suppliers and equipment suppliers of the mercury content in your most commonly purchased items. Mercury may not be present in a concentration great enough to appear on an MSDS, yet still contribute to the overall level of mercury in the influent.

***Section A&B: Inventory of Potential Sources of Mercury***

The Angola Wastewater Treatment Plant (WWTP) has conducted a complete inventory and assessment of the potential sources of mercury within direct control of the WWTP. The inventory of the wastewater treatment plant was conducted in October of 2013. The inventory and quantities on hand can be found in Attachment 01. An annual inventory will be completed to identify any new sources of mercury.

In addition to the completion of inventory, contact was made with all vendors of mercury bearing equipment. A mercury reduction policy letter was sent to each supplier to document the mercury materials that The City of Angola's Wastewater Treatment Plant is currently purchasing, see Attachment 02. Within this documentation, equivalent substitute products were identified for potential purchase to eliminate mercury bearing products. A copy of the letter and listing of current suppliers is found in Attachment 03. When new suppliers are used in the future, this letter will be sent to document any mercury bearing products in the WWTP.

## PART TWO (CONTINUED)

- C. Provide the results of a preliminary evaluation of possible mercury sources in the facility's influent. The preliminary evaluation must include an initial list identifying all potential sources of mercury in the POTW's influent by name and address. The preliminary evaluation shall take into consideration, at a minimum, the following: (see 327 IAC 5-3.5-9(b)(1))
1. Medical facilities, for example, the following:
    - a. Hospitals.
    - b. Clinics.
    - c. Nursing homes.
    - d. Veterinary facilities.
  2. Dental clinics.
  3. Public and private educational laboratories.
  4. General industry and all SIU's.
  5. Significant sources of residential and retail contributions of mercury, for example, the following:
    - a. Heating, ventilation, and air conditioning contractors.
    - b. Automobile and appliance repair.
    - c. Veterinarians.
    - d. Others specific to the community served.
  6. An identification of the responsibilities under P.L.225-2001 (*also known as House Enrolled Act 1901 of the 2001 legislative session*) for the significant industrial users for the POTW. P.L.225-2001 outlines the restrictions on the sale or supply of mercury-added novelties, mercury-added products, and mercury commodities, and on the use or purchase of mercury commodities, compounds, or mercury-added instructional equipment and materials by public and non-public schools. In order to satisfy the requirement of this part, include a written statement that attests to the fact that an identification of the responsibilities under P.L.225-2001 has been undertaken.

### **Section C: Evaluation of Potential Dischargers**

Attachment 04 contains a current inventory of the facilities identified to potentially have mercury bearing materials. Each facility has received a letter about the importance of proper mercury disposal as well as alternatives to common mercury bearing products. Additional documentation as well as personal visits to dental facilities has been conducted to further reduce any mercury entering into the sanitary collection system. As part of the identification of facilities that could discharge mercury, collection sampling was conducted at various points in our collection system. This was completed to assist in identifying areas where additional monitoring and a stronger educational program may be necessary. Results of the collection system sampling can be found in Attachment 05.

The Angola WWTP is aware of their responsibilities under Public Law (P.L.) 225-2001 (also known as the House Enrolled Act 1901 of the 2001 legislative session and codified at IC 13-20-17.5), though it is not applicable due to the nature of their business. The Angola WWTP does not sell or supply novelties, products, commodities, or instructional equipment and materials and therefore would not be applicable with respect to the restrictions of the mercury content of these materials.

- D. Provide a plan and schedule for completion of the evaluation initiated under Section C. above. A complete evaluation should include a list identifying all confirmed sources of mercury in the POTW's influent by name and address. The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application. (see 327 IAC 5-3.5-9(b)(1))

### **Section D: Evaluation Timeline for Future Potential Dischargers**

As new industries or businesses that may discharge mercury open within the city limits, the pretreatment group will make contact with the business and conduct an inspection within the first three (3) months of operation. This inspection, among other things, will include the identification of potential mercury bearing sources. The business will also receive educational materials that can be used to minimize the possibility of discharging mercury into the sanitary sewer collection system. In addition to identifying new potential mercury dischargers, further inspection of previously identified mercury dischargers will be conducted. This will ensure that the proper education and awareness of potential mercury sources is being followed.

## PART THREE - POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) PLANNED ACTIVITIES

- A. Provide a list of planned activities to be conducted to eliminate or minimize the release of mercury to waters of the state. The list of planned activities may consider technical and economic feasibility and must include, at a minimum: (see 327 IAC 5-3.5-9(a)(3))
1. A review of purchasing policies and procedures.
  2. Necessary training and awareness for facility staff including an education program.
  3. An education program for the public within the service area of the facility.
  4. Evaluation of alternatives to the use of any mercury-containing equipment or materials.
  5. Other specific activities designed to reduce or eliminate mercury loadings.
  6. An identification of the facility's responsibilities under P.L.225-2001 (*also known as House Enrolled Act 1901 of the 2001 legislative session*). Under P.L.225-2001, a municipality may, in cooperation and with the support of IDEM, implement education programs for the public regarding the reuse and recycling of, or independently implement collection programs for, mercury commodities and mercury-added products. In order to satisfy the requirement of this part, include a written statement that attests to the fact that an identification of the responsibilities under P.L.225-2001 has been undertaken.
- B. For each planned activity identified under section A. above, include the following: (see 327 IAC 5-3.5-9(a)(4))
1. The goal to be accomplished.
  2. A measure of performance.
  3. A schedule for action. The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.
- C. Provide a list of planned activities designed to reduce or eliminate mercury loadings from each sector identified in Part II.C. of the application, including the goal to be accomplished, a measure of performance, and a schedule for action. (see 327 IAC 5-3.5-9(b)(2)) The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application. An example of planned activities, goals, measures of performance and schedules for action for the sectors identified in Part II.C. is provided in Attachment A.
- D. Provide an identification of the resources and staff necessary to implement the Pollutant Minimization Program Plan (PMPP). (see 327 IAC 5-3.5-9(a)(6)) The identification should indicate the source and amount of funding available to implement the PMPP, as well as the number and position of employees that will be devoted to PMPP implementation.

### **Section A, B, C: Planned Activities**

The Angola WWTP has developed a preliminary plan to work with residents, businesses and public/quasi-public sources of mercury to the POTW. These activities have been developed in accordance to 327 IAC 5-3.5-9(b)(2). A complete description of these activities, goals, measures of performance and schedules are identified below.

Sector	Planned Activity	Goal	Measure of Performance	Schedule of Action/Completion Date
<b>POTW</b>	Complete facility inventory of mercury containing substances	Awareness of mercury in treatment equipment and supplies	Completion of inventory	Annually Last Completion (Sept. 2013)
	Development of SOP to include trace mercury data with purchase requests	Awareness and opportunity to purchase alternate chemicals & supplies	SOP Written, Suppliers contacted as items ordered	Completed (Sept. 2013). Trace Mercury Data document mailed with new supplier purchase requests

<b>POTW</b>	Revise list of potential sources of mercury into the POTW	Identify & target highest priority mercury reduction areas	List revised	Completed (Sept. 2013). To be revised Annually
	Collection system sampling	Identify & target highest priority mercury reduction areas	Number of Sites Sampled	Completed (Sept. 2013 & July 2014) To be resampled annually
	Training for WWTP staff	Education/Awareness	Participation	Conduct annually
	Public education and outreach	Education/Awareness	Date Published and Content	Complete annually
	Evaluation of alternative equipment	Minimize Mercury Discharged	Replace Failed Parts with Low/No mercury equipment	As parts fail, as new feasible equipment is purchased
	Battery collection point for public	Minimize mercury discharged	Participation	Ongoing
	Bulb recycling for city departments	Minimize mercury discharged	Participation	Ongoing
<b>Medical Facilities</b>	Mail AHA BMP Literature	Education/Awareness	Date Mailed and Content	12 months after SMV Incorporation Completed (Feb. 2014)
	Follow-up letter to primary medical facilities	Promote BMP Implementation	Date mailed and content	18 months after SMV Incorporation Last Completed (June 2014)
<b>Dental Facilities</b>	Mail appropriate BMP literature	Education/Awareness	Date mailed and content	3 months after SMV Incorporation Last Completed (Feb. 2013)
	Follow-up letter to facilities	Promote BMP Implementation	Date mailed and content	15 months after SMV Incorporation Last Completed (Nov. 2013)
<b>Public and Private Educational Laboratory</b>	Mail BMP literature	Education/Awareness	Date mailed and content	12 months after SMV Incorporation
	Follow-up letter to facilities	Promote BMP implementation	Date mailed and content	24 months after SMV Incorporation
<b>General Industry and all SIU's</b>	Mail education & outreach information	Education/Awareness	Date mailed and content	12 months after SMB Incorporation Last Completed (Feb. 2014)
	On site visit during pretreatment inspection for SIU's	Ensure permit compliance/Education and awareness	Sites Inspected	To coincide with annual pretreatment inspection
	Application of local limits, as applicable	Mercury reduction	BMP's incorporated into permit	To coincide with SIU permit renewal

<b>Significant sources of residential and retail contribution of mercury</b>	Mail appropriate education & outreach literature	Education/Awareness	Date mailed and content	12 months after SMV Incorporation
	Trade association coordination, where appropriate	Education/Awareness	Participation	As available

**Section D: Resources & Staffing for Implementation**

The Angola Wastewater Utility is wholly funded by rates and charges by sanitary and stormwater users within the City of Angola and extra-territorial jurisdictions. Rates and charges are evaluated annually by the utility’s financial consultant, and adjustments are recommended to the City Council for near and long term funding. Currently, the annual operation and maintenance budget of the WWTP is approximately \$1.2 million. It is unknown what the net costs to implement the PMPP are, but we fully anticipate the existing budget will be sufficient for implementation of the activities defined herein.

The implementation of the controls and activities listed herein will be completed by existing positions funded through the wastewater utility. This includes:

- Wastewater Superintendent (1)
- Pretreatment Coordinator (1)
- Wastewater Operators (6)
- Wastewater Laboratory Technician (1)
- Other part-time/contract resources, as needed.

The City of Angola works closely with the Northeast Indiana Solid Waste Management District (NISWMD), and actively sponsors a number of programs that are designed to reduce the improper disposal of household hazardous waste and consumer electronics. These programs are synergistic with the efforts that the WWTP has made and is planning to make. Some of the activities that have already been implemented include:

- Battery collection point at City Hall for all city residents. Batteries are picked up on an as needed basis by the NISWMD.
- Annual Citywide Cleanup days, in cooperation with the City’s contract refuse collection company.
- Free electronics collection for the general public annually;
- The WWTP provides a collection point for discarded mercury-containing bulbs from all municipal departments funded and operated by the city. These bulbs are safely transported to the NISWMD on an as needed basis.
- The WWTP provides a collection point for major electronics items generated from all municipal departments. This equipment is safely transported to the NISWMD on an as needed basis.
- The WWTP works with the water utility to collect and safely store mercury containing devices found in old water meters and in other operations of the water treatment utility. All collected mercury devices are safely transported to the NISWMD on an as needed basis.

**PART FOUR – MERCURY MONITORING DATA**

Provide all available influent and effluent mercury data for the two-year period preceding submittal of this application. Additionally, provide any information on mercury in biosolids for the two-year period preceding submittal of this application, if available. The data may be supplied on a separate form, but must include results for each individual sample (*including unit of measurement and U.S. EPA method*), the date the sample was taken, and the analytical laboratory where the analysis was performed. (see 327 IAC 5-3.5-9(a)(5))

**Influent**

Date (month, day, year)	Result	ng/l	U.S. EPA Method	Analytical Laboratory
8/8/2012	88.9	ng/L	1631E	Mercury 1 LTD
9/5/2012	59.0	ng/L	1631E	Mercury 1 LTD
10/17/2012	76.4	ng/L	1631E	Mercury 1 LTD
11/6/2012	123.0	ng/L	1631E	Mercury 1 LTD
12/3/2012	21.6	ng/L	1631E	Mercury 1 LTD
1/2/2013	40.5	ng/L	1631E	Mercury 1 LTD
2/6/2013	39.9	ng/L	1631E	Mercury 1 LTD
3/18/2013	10.9	ng/L	1631E	Mercury 1 LTD
4/8/2013	40.3	ng/L	1631E	Mercury 1 LTD
5/1/2013	185.0	ng/L	1631E	Mercury 1 LTD
6/17/2013	166.0	ng/L	1631E	Mercury 1 LTD
7/10/2013	68.6	ng/L	1631E	Mercury 1 LTD
8/5/2013	84.6	ng/L	1631E	Mercury 1 LTD
9/11/2013	55.1	ng/L	1631E	Mercury 1 LTD
10/3/2013	58.5	ng/L	1631E	Mercury 1 LTD
11/5/2013	71.4	ng/L	1631E	Mercury 1 LTD
12/4/2013	12.4	ng/L	1631E	Mercury 1 LTD
1/13/2014	121.0	ng/L	1631E	Mercury 1 LTD
2/3/2014	46.8	ng/L	1631E	Mercury 1 LTD
3/5/2014	35.3	ng/L	1631E	Mercury 1 LTD
4/4/2014	26.8	ng/L	1631E	Mercury 1 LTD
5/5/2014	205.0	ng/L	1631E	Mercury 1 LTD
6/2/2014	68.4	ng/L	1631E	Mercury 1 LTD
7/1/2014	91.5	ng/L	1631E	Mercury 1 LTD

**PART FOUR (CONTINUED)**

**Effluent**

Date (month, day, year)	Result	ng/l	U.S. EPA Method	Analytical Laboratory
8/8/2012	5.4	ng/L	1631E	Mercury 1 LTD
9/5/2012	3.4	ng/L	1631E	Mercury 1 LTD
10/17/2012	6.9	ng/L	1631E	Mercury 1 LTD
11/6/2012	2.7	ng/L	1631E	Mercury 1 LTD
12/3/2012	8.8	ng/L	1631E	Mercury 1 LTD
1/2/2013	5.9	ng/L	1631E	Mercury 1 LTD
2/6/2013	3.7	ng/L	1631E	Mercury 1 LTD
3/18/2013	4.6	ng/L	1631E	Mercury 1 LTD
4/8/2013	3.0	ng/L	1631E	Mercury 1 LTD
5/1/2013	2.0	ng/L	1631E	Mercury 1 LTD
6/17/2013	2.2	ng/L	1631E	Mercury 1 LTD
7/10/2013	3.9	ng/L	1631E	Mercury 1 LTD
8/5/2013	3.0	ng/L	1631E	Mercury 1 LTD
9/11/2013	3.4	ng/L	1631E	Mercury 1 LTD
10/3/2013	2.7	ng/L	1631E	Mercury 1 LTD
11/5/2013	2.3	ng/L	1631E	Mercury 1 LTD
12/4/2013	1.6	ng/L	1631E	Mercury 1 LTD
1/13/2014	9.0	ng/L	1631E	Mercury 1 LTD
2/3/2014	1.3	ng/L	1631E	Mercury 1 LTD
3/5/2014	4.9	ng/L	1631E	Mercury 1 LTD
4/4/2014	1.2	ng/L	1631E	Mercury 1 LTD
5/5/2014	4.9	ng/L	1631E	Mercury 1 LTD
6/2/2014	4.6	ng/L	1631E	Mercury 1 LTD
7/1/2014	4.2	ng/L	1631E	Mercury 1 LTD

**Biosolids**

Date (month, day, year)	Result	Unit	U.S. EPA Method	Analytical Laboratory
3/21/2012	<0.622	mg/kg	SW 6020	Sherry Laboratories
4/5/2012	0.721	mg/kg	SW 6020	Sherry Laboratories
8/15/2012	0.58	mg/kg	SW 6020	Sherry Laboratories
11/7/2012	0.995	mg/kg	SW 6020	Sherry Laboratories
2/20/2013	0.775	mg/kg	SW 6020	Sherry Laboratories
4/3/2013	<0.49	mg/kg	SW 6020	Sherry Laboratories
9/25/2013	0.598	mg/kg	SW 6020	Sherry Laboratories
3/19/2014	<0.780	mg/kg	SW 6020	Sherry Laboratories
3/26/2014	<0.275	mg/kg	SW 6020	Sherry Laboratories
5/17/2014	<0.587	mg/kg	SW 6020	Sherry Laboratories

## PART FIVE – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) ADDITIONAL REQUIREMENTS

- A. Proof of Public Notice Activities:** Provide proof of the public notice activities identified below: (see 327 IAC 5-3.5-9(c)) For the notice of availability required under Section A.1. provide a copy of the notice as it appears in the newspaper. For the posting requirements under Section A.2. attest to that fact that the information was posted as required in a written statement.
1. Publish notice of the availability of the draft pollutant minimization program plan (PMPP) in a daily or weekly newspaper of general circulation throughout the area affected by the discharge.
  2. Post a copy of the information required by this section at the following:
    - a. Principal office of the municipality or political subdivision affected by the facility or discharge.
    - b. The United States post office.
    - c. If one is available, the library serving those premises.
  3. All notices published under this section shall contain the following information: (see 327 IAC 5-3.5-9(d))
    - a. The name and address of the applicant that prepared the PMPP.
    - b. A general description of the elements of the PMPP.
    - c. A brief description of the activities or operations that result in the discharge for which an SMV is being requested.
    - d. A brief description of the purpose of this notice and the comment procedures.
    - e. The name of a contact person, a mailing address, an Internet address, if available, and a telephone number where interested persons may obtain additional information and a copy of the PMPP.
  4. The applicant shall do the following: (see 327 IAC 5-3.5-9(e))
    - a. Provide a minimum comment period of thirty (30) days.
    - b. Include a copy of the comments received and the applicant's responses to those comments in the SMV application submitted to the department.

### ***Part 5, Section A: Public Notice***

The PMPP was public noticed on August 14, and was available at the required locations through September 15. The legal notice was run in the Herald Republican newspaper on August 14, 2014. A copy of the legal notice is included as Attachment 06. No comments were received during this public notice period. A copy of the PMPP is included as Attachment 07. A copy of the Publishers Claim is included as Attachment 08.

- B. Annual Reports:** Provide a schedule for the submission of the annual reports required under 327 IAC 5-3.5-9(a)(8). Generally, the annual reports should be submitted each year on the anniversary of the effective date of the NPDES permit that incorporates the approved SMV. A proposed schedule with an alternative submittal date is subject to IDEM's approval. The annual reports shall include a description of the facility's progress toward fulfilling each PMPP requirement, mercury monitoring results, and steps taken to implement each planned activity developed under the PMPP.

### ***Part 5, Section B: Annual Report***

The City of Angola will submit an annual report no later than April 1 of each year that the variance is in effect. This report will provide a complete summary of PMPP elements and related activities from the previous calendar year.

### ***Part 6: Report of Implementation of PMPP Provisions***

The most recent annual report (CY 2013 Report) is included as Attachment 09.

ANGOLA WWTP

Oct. 2013

Mercury Inventory	
Chemicals	
Item	Quantity
Ferrous Chloride Solution	0
Nitric Acid	1 gallon
Sewer Tracing Dye	15 gal. on hand/ 5 gal. a year
Sulfuric Acid	2 gal. on hand/ 1 gal. a year
Acetic Acid	0
Chloride	0
Ammonium Reagent	2 Bottles
Buffers	3 gallons
Calibration kits	0
Diluents	0
sodium hypochlorite	1 Quart
Acetate	0
Nessler Reagent	0
Phosphorus Removal Chemicals	0
Dechlorination Chemicals	0
Sludge Thickening Polymers	140 gal. on hand/ 400 gal. a year
Potassium Hydroxide	0
Sodium Hydroxide	2 gallons
Sodium Chloride	500 grams
Chlorine	67.5 grams
COD analysis Reagent	0
TKN and TP analysis digestion Reagents	0
Mercury Analytical Standards	0
Elemental Mercury	0
Mercury or Mercurous Chloride	0
Mercury Iodide	0
Mercury Nitrate	0
Mercury (II) Oxide	0
Mercury (II) Sulfate	0
Merthiolate	0
Pesticides/ Fungicides/ Herbicides	5 gallons on hand
Tree Root Growth Control	0

Mercury Inventory	
Building Materials	
Item	Quantity
Paints	75 gallons on hand
Generators	5
Fire alarms	0
building security systems	6
Laptop computer screens	2
Monitors	9
Printers	4
DC Watt-Hour meters	3
Flame Sensors	3
Aquastats	0
Pressurestats	20
Firestats	2
Silent Light switches	2
Relay switches	12
Trickling filter Pivot Arm Bearing	0
Fluorescent Lamps	180 on hand/ 75 in a year
High-Pressure sodium lamps	0
Mercury arc lamps	0
Mercury vapor lamps	0
metal halide lamps	0
Ultraviolet disinfection Lamps	60 on hand/ 60 in a year
Mercury-zinc batteries	0
Mercury-cadmium batteries	0
Mercury alkaline batteries	0
Mercury oxide batteries	0
Fleet Vehicles	10
Lift Station Equipment	20
Traps with accumulated mercury	25*
Sumps with accumulated mercury	3*
sewer lines with accumulated mercury	2*
Mercury items collect for disposal	200
Polymers	140 gal. on hand/ 400 gal. a year

Items marked with an asterisk (\*) imply that each of the items on hand may contain accumulated mercury. The number value represents how many items are present at this time.

Mercury Inventory	
Equipment	
Item	Quantity
Manometers	1
Barometers	0
Thermometers	0
Ion exchange cartridges	0
Hanging Mercury Drops	0
Mercury Hollow Cathode Lamp	0
Accustats	0
Counterweights	0
Flow Meters	0
Gas Regulators	0
Gyroscopes	0
Hydrometers with thermometers	0
Level and Rotation Sensors	0
Pressure Gauges and Vacuum Gauges	2
Mercury-Sealed Pistons	0
Perimeters	0
Pressure-trols	0
Pyrometers	1
Rectifiers	0
Ring Balances	0
Shunt Trips	0
Steam flow meters	0
stokes gauges	0
Switches and Relays	0
Displacement Plunger relays	0
Mercoïd control switches	0
pressure control switches	0
relay switches	0
Mercury wetted relays	0
Mercury displacement relays	0
Sump pump	0
Tilt switches	0
Thermostats and Thermoregulators	7
Transmitters	0
air flow limit control	0
Temperature Control	7



<b>Standard Operating Procedure</b> <b>City of Angola Wastewater Treatment</b> <i>Making Clean Water &amp; Protecting Public Health.</i> <i>All Day. Every Day. Period.</i>	<b>Document No:</b>	PT -003
	<b>Original Date:</b>	8/12/2013
	<b>Date Modified:</b>	
<b>Subject:</b>	<b>Request for Trace Mercury Content</b>	
<b>Approved By:</b>	C. Williams	

### Purpose

This SOP is developed to aid the user in the proper procedure for requesting trace mercury data from suppliers. This SOP is in conjunction with the Streamlined Mercury Variance Application & Proposed Pollutant Minimization Program Plan. As part of the plan an SOP is to be developed to request information and data from suppliers that may contain mercury.

### Scope

A letter requesting trace mercury content will be sent out to suppliers as items are ordered. Responses regarding mercury content will be documented and retained. If viable, alternative or substitute goods may be purchased that do not have trace amounts of mercury.

### Procedure

- Investigation of current vendors has resulted in the following list of vendors that supply products which may contain trace amounts of mercury.

Vendor	Address	Typical Product	Estimated Annual Volume/Amount
BioChem	PO Box 5312 Evansville, IN 47716	Cationic Polymer	660 gallons-for BFP, Treatment Ops
USA BB	3781 Burwood Dr Waukegan, IL 60085	Lab reagents, chemicals, Bioaugmentation	30-50 gallons (estimated)
International Steel Service	Foster Plaza No. 7 661 Anderson Dr. Pittsburgh, PA 15220	Ferrous Chloride	22,000 gallons
CA Nedele	313 Mechanic St. Angola, IN 46703	Delimer, Car Wash	30 gallons
NCL of Wisconsin	PO Box 8 Biramwood, WI 54414	Lab reagents & chemicals	30-50 gallons (estimated)
EMD Millipore	25760 Network Place Chicago, IL 60673	Water Treatment Supplies	
UV Doctor	4082 Bead Lake Rd Newport, WA 99156	UV Bulbs	
HP Thompson	101 Main St. Milford, OH 45150	UV Bulbs	
First Light	PO Box 191 Poultney, VT 05764	UV Bulbs	
Advanced UV Systems	19210 Van Ness Ave. Torrance, CA 90501	UV Bulbs	
Radiant Source Technology	PO Box 1515 Brighton, MI 48116	UV Bulbs	

- When purchasing goods from one of the above vendors or, when purchasing a product from an alternate vendor that may have trace mercury content, a Trace Mercury Content Request letter shall be sent out as items are ordered. The responses will be documented and retained for records.
- If a new vendor of products that may contain trace amounts of mercury is selected, the Trace Mercury Content Request letter shall also be sent out as items are ordered. The responses will be documented and retained for records. An attempt should be made to purchase goods from vendors that do not have trace amounts of mercury in their products.
- The Trace Mercury Content Letter will be provided once annually per product, per vendor.

## References

"Mercury\_Letter\_to\_Vendors.doc"

Streamlined Mercury Variance PMPP, Part 3, Section C, 6-Month Activities



# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
 Mailing Address: 210 North Public Square  
 Angola, IN 46703

**Craig A. Williams**  
**Superintendent**  
 Phone: 260.624.2699  
 Cell: 260.905.6123  
 Fax: 260.624.2699  
*cwilliams@angolain.org*

February 28, 2014

Re: Trace Mercury Content Request

To Whom It May Concern:

Mercury is increasingly becoming a concern as an environmental pollutant. Mercury released from air and water sources is transformed into methylmercury in lakes or rivers. Methylmercury bioaccumulates in the aquatic food chain, making consumption of fish hazardous to those organisms high on the food chain. As a result, regulations on mercury in solid waste, air emissions and wastewater are becoming increasingly stringent.

Because of this, and our concern for the environment, our company has instituted a mercury reduction policy that requires the elimination or minimization of mercury in all our purchases. In order for our purchasing department to be able to make an informed choice on mercury content in the products that it buys, we are requesting that all vendors identify which of the following statements applies to your facility. Failure to complete and return this survey or knowingly falsifying your response may disqualify your company from future purchases from the City of Angola.

Which of the following statements is the most accurate representation for any chemicals, cleaners, solvents or process equipment purchased that may come in contact with wastewater:

Vendor Name: \_\_\_\_\_

Product supplied by vendor: \_\_\_\_\_

- All goods delivered have no known traces of mercury.
- Some of the goods delivered may have trace amounts of mercury, however an equivalent substitute product is not available for purchase by this vendor.
- Some of the goods delivered may have trace amounts of mercury and an equivalent substitute product is available for purchase by this vendor. Please list product and equivalent substitute:  
 \_\_\_\_\_
- Not Applicable

I certify that, to the best of my knowledge and belief, the statements provided here are true and correct. I understand that in the event that I have knowingly and willfully made any false statements, I will be liable in accordance with all applicable laws and statutes

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

\_\_\_\_\_  
 Position

\_\_\_\_\_  
 Date

Thank-you for your time in filling out this form. Please return this to our office and if you have any questions call the Angola Wastewater Treatment Plant at 665-6806.

<b>Sector</b>	<b>Name</b>	<b>Address</b>
<b>Hospital</b>	Cameron Memorial Hospital	416 E. Maumee St.
<b>Medical Clinics</b>	Allen County Cardiology & Physicians	424 Williams St.
	Angola Physical Therapy	3270 Intertech Dr.
	Elmhurst Clinic	909 W Maumee St.
	Faith Community Health Clinic	909 S. Darling St
	Family Physicians Inc	1109 W Maumee St.
	Jonathon Alley	424 Williams St.
	Lab Corp	3250 Intertech Dr. Ste C
	Land-Lakes Family Health Service	317 S. Wayne St. #3B
	Maplewood Family Medicine	3270 Intertech Dr.
	Mattox Family Practice & Physicians	3250 Intertech Dr. Ste A
	Todd Brandon Women's Health Advantage	150 Growth Pkwy
	Urgent Care	1381 N Wayne St.
<b>Nursing Homes</b>	Lakeland Nursing Center	500 Williams St.
	Northern Lakes Nursing and Rehabilitation Center	516 Williams St.
<b>Veterinary Facilities</b>	All Paws & Claw	2107 N Wayne St.
	Grandview Veterinary Clinic	200 Growth Parkway
	Pokagon Veterinary Hospital	2650 W Maumee St.
<b>Dental Clinics</b>	Angola Dental Center	205 E Harcourt Rd.
	Bradley S. Igney DDS	224 N Wayne St.
	ELD	610 N Wayne St.
	Galen R. Williams DDS	901 Williams St.
	Healthy Smiles Family Dentistry	101 N Terrace Blvd.
<b>Public and Private Laboratories</b>	Trine University	1 University Ave.
	Angola High School	350 John McBride Ave.

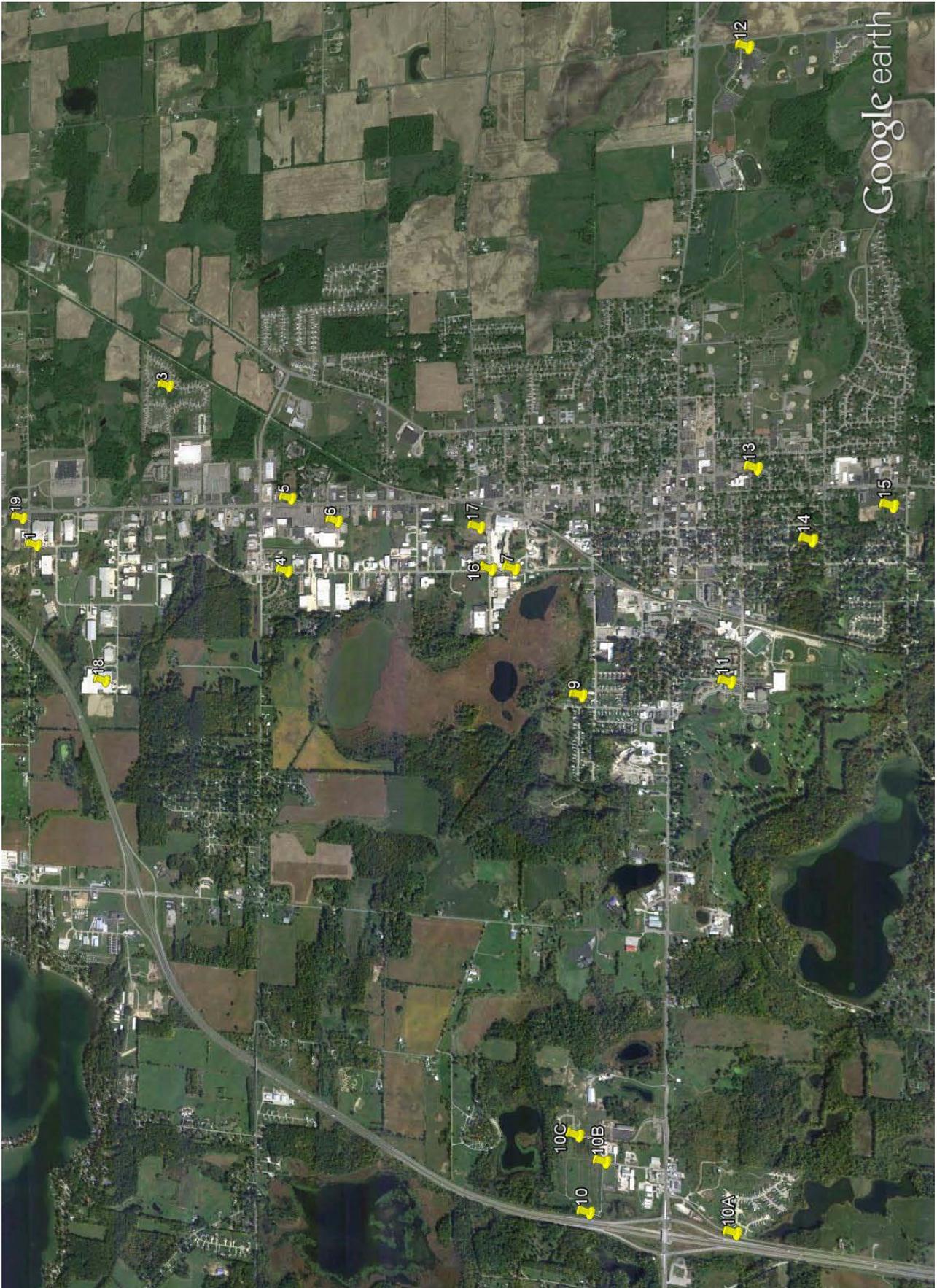
Sector	Name	Address
<b>Significant Industrial Users</b>	Angola Wire	502 Weatherhead St.
	T&S	900 Growth Parkway
	Univertical	203 Weatherhead St.
<b>Industrial Users</b>	Autoform & Manufacturing	1501 Wohlert St
	AW Manufacturing	1300 Wohlert St
	Baril Coatings USA	401 Growth Parkway
	C&K	240 Growth Parkway
	Chapman Brewery	300 Industrial Dr
	Cintas	1720 Wohlert St
	Double Envelope Company	100 Woodhull Dr
	EJ Brooks dba Tyden Brooks	409 Hoosier Dr
	Emf Corp	505 Pokagon Trail
	Finishing Brands	1910 N Wayne St
	Friskney	1105 Williams St
	G&S	1601 Wohlert St
	General Products	1411 Wohlert St
	Gettig	910 Wohlert St
	Hanna Brothers Drywall	1400 Wohlert St
	Hi Pro	1410 Wohlert St
	Highland Computer	1510 Wohlert St
	Hudson Aquatic Systems	1100 Wohlert St
Illuminated Images	1825 W Maumee St	

Sector	Name	Address
<b>Industrial Users</b>	Indiana Marine Products	409 Growth Parkway
	Innovation in Motion	201 Growth Parkway
	Jim Ingledue Construction	319 Pokagon Trail
	Kirk Enterprises	333 Hoosier Dr
	McLatcher Fridge	113 Industrial Dr
	Metal Spinners	800 Growth Parkway
	Metal Spinners	914 Wohlert St
	Mid-West Refractories	200 Industrial Dr
	Purity Cylinder Gases	2801 Woodhull Dr
	Rise inc	1600 Wohlert St
	Rockwell American	1304 Wohlert St
	Special Cutting Tools	1305 Wohlert St
	Sphinx	405 Pokagon Trail
	Star Crane & Hoist	1500 Wohlert St
	Steffy Wood Products	701 W Mill St
	Tenneco	503 Weatherhead St
	Titan Metal Spinning	301 Growth Parkway
	Ventra	3000 Woodhull Dr
	Vestil	2999 N Wayne St
	Wrengineering Inc.	498 E. Harcourt Rd

<b>Sector</b>	<b>Name</b>	<b>Address</b>
<b>HVAC</b>	McLatcher Fridge	113 Industrial Dr.
	Armstrong Heating & Air Conditioning	304 Calvary Ln
	Masters Heating & Cooling Inc	101 W Fox Lake Road
	Preferred Maintenance	1920 Westwood Dr
<b>Auto Repair</b>	Angola Collision Services	340 Hoosier Dr.
	Angola Ford Mercury Inc	830 E. Maumee St.
	Angola Muffler & Brake	1319 Hammel Dr.
	Best 1 Tire of Angola	1101 N. Wayne St.
	Cole Cyle Sales	100 S Gerald Lett Ave
	Countryside Repair	1301 Wohlert St.
	Cueno's Car Care Center	207 Jackson St.
	Dave's Diesel	1201 Wohlert St.
	Dunham Chrysler Dodge Jeep and Dodge Truck	1006 S Wayne St.
	Gatchells Mufflers & Brakes	1013 N. Wayne St.
	Harold Chevrolet	824 N. Wayne St.
	Jiffy Lube	640 N. Wayne St.
	Lounsbury Garage	208 Mechanic St.
	Midas Auto Service Experts	2401 N. Wayne St.
	Panterra Coach & RV	101 Industrial Dr.
	Rapid Rebuilding	100 Industrial Dr.
	S&T Autobody Inc.	125 N. McKinley St.
	Smith Enterprise	101 McKinley St.
	Southtown Auto Repair	114 Lange Ln.
	Walmart	2016 N. Wayne St.

Sector	Name	Address
<b>Appliance Repair</b>	Sanborn Service Center	1990 W. Maumee St.
<b>Multi-family Residential</b>	Angola Gardens	201 S. Shoup St.
	Crosswait Estates	2208 N. Wayne St.
	Darling Street Apartments	700 S. Darling St.
	Elliot Manor	617 Williams St
	Lakeland Apartments	201 W. Fox Lake Rd.
	North Lake Manor	300 Bittersweet Court
	Northcrest Apartments	810 Regency Ct.
	Village Green Apartments	1700 N. Wayne St.
	Williams Street Apartments	520 Williams St.

Mercury Collection Sampling Locations



Site ID	Site Location	Test Date	Test Result (ng/L)
1	Woodhull Dr Sanitary Sewer Manhole (Industrial Area)	8/17/13	35.6
3	Northcrest Lift Station (Residential Subdivision)	8/17/13	90.5
4	Wohlert Sanitary Sewer Manhole	8/17/13	167
5	Village Green Lift Station (Residential Subdivision)	8/17/13	12.3
6	Pizza Hut Lift Station (Commercial Area)	8/17/13	19.9
7	Kings Lift Station, Wohlert St (Industrial Area)	8/17/13	47.5
9	Mill St. Lift Station (Residential Area)	8/17/13	289
10	Buck Lake Lift Station (Commercial & Residential)	8/17/13 10/23/13	1790 140
10A	Angola Gardens Lift Station (Residential Mobile Home Park)	10/23/13	14.6
10B	Hetzler Ct Sanitary Sewer (Commercial Area)	10/23/13	16.7
10C	Terrace Blvd Sanitary Sewer (Residential/Commercial Area)	10/23/13	2110
11	Tri-State Lift Station (Residential/University Area)	8/17/13	564
12	MSD Lift Station (School Area)	8/17/13	25.9
13	Prospect & Martha Sanitary Sewer Manhole (Residential Area)	8/17/13	20.8
14	Felicity & Superior Sanitary Sewer Manhole (Residential Area)	8/17/13	1830
15	Fox Lake Rd Lift Station (Residential Area)	8/26/13	28.2
16	Angola Wire (SIU)	1/15/13 5/7/13 8/21/13 12/11/13	6.95 4.21 4.20 6.36
17	Univertical (SIU)	2/27/13 6/12/13 9/11/13	570 0.623 6.48
18	T&S (SIU)	2/20/13 6/19/13 8/7/13 12/4/13	5.14 1.96 34.9 1.29
19	Vestil Manufacturing (Industrial)	3/26/13 5/8/13 7/17/13	50.9 44.8 862

**PUBLIC NOTICE OF AVAILABILITY AND COMMENT:  
CITY OF ANGOLA, INDIANA  
WASTEWATER TREATMENT PLANT  
NPDES PERMIT NO: IN0021296  
POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP)  
STREAMLINED MERCURY VARIANCE APPLICATION**

The City of Angola Wastewater Treatment Plant (WWTP), 1095 Redding Road, Angola, Indiana submits for public comment, the Pollutant Minimization Program Plan (PMPP) submitted as part of its Streamlined Mercury Variance Application, as required by 327 IAC 5-3.5-9(c).

The Angola WWTP operates a Class 3 Activated Sludge Treatment Facility which discharges an average of 1.2 million gallons per day of treated effluent to Lake Michigan via the St. Joseph River via the Pigeon River via the H. D. Wood Ditch.

The WWTP is submitting a Streamlined Mercury Variance Application to the Indiana Department of Environmental Management (IDEM) to provide statutory relief from Water Quality Based Effluent Limits (WQBEL's) for mercury. As part of this application, a PMPP has been developed to help implement controls that will reduce mercury loading into the WWTP, subsequently reducing mercury discharges.

The proposed PMPP provides a structured method to identify and reduce sources of mercury discharge to the WWTP. The PMPP includes mercury-bearing chemical and mechanical inventories, evaluations of potential mercury sources, planned activities to address mercury-bearing chemicals and equipment and public education and outreach methods.

The proposed PMPP is available for public review and comment in accordance to 327 IAC 5-3.5-9(c). This office will receive written comments regarding the proposed PMPP for 30 days after the first day of publication in The Herald Republican. Comments will be considered as the final PMPP is prepared, and will be submitted to IDEM as part of the variance request. Comments may be submitted to:

Angola WWTP, PMPP Comments  
c/o Craig Williams, Superintendent  
210 N. Public Square  
Angola, IN 46703-1960

The PMPP may be viewed in person for thirty (30) days after publication at the following locations: 1) United States Post Office, Angola Branch, 110 Harcourt Road; 2) Carnegie Public Library, 322 South Wayne Street, Angola City Hall, 3) 210 North Public Square, and 4) at the Wastewater Treatment Plant, 1095 Redding Road. Copies of the proposed PMPP may be obtained at the Angola City Hall for a fee. Questions regarding this public notice or PMPP may be addressed to Superintendent Craig Williams at (260) 624-2699, Monday – Friday, 7:00 a.m. to 3:30 p.m.

Opportunity for Public Comment and Review  
Comment Period Opens: August 14, 2014  
Closes: September 15, 2014

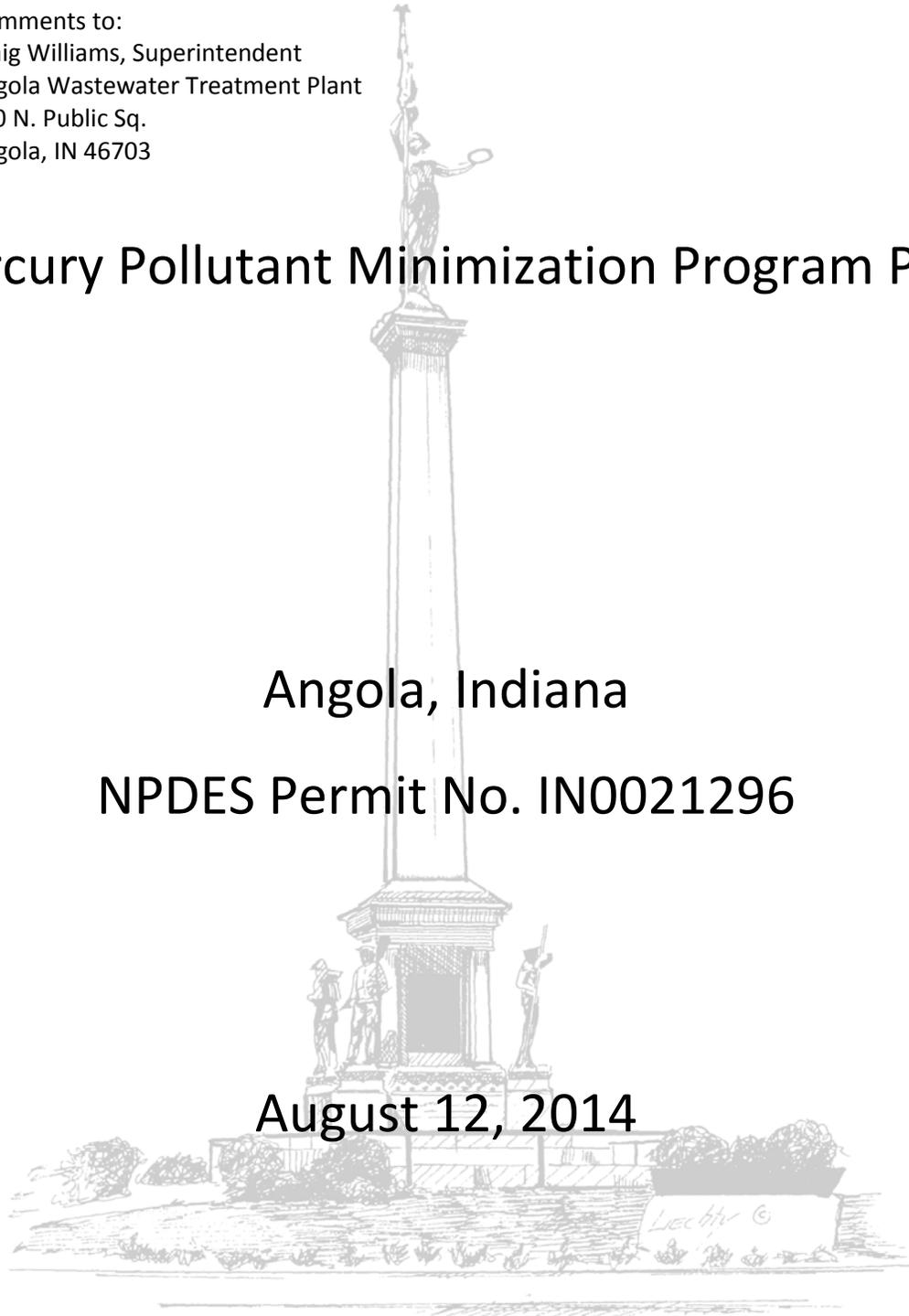
Address comments to:  
Craig Williams, Superintendent  
Angola Wastewater Treatment Plant  
210 N. Public Sq.  
Angola, IN 46703

# Mercury Pollutant Minimization Program Plan

Angola, Indiana

NPDES Permit No. IN0021296

August 12, 2014





# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
Mailing Address: 210 North Public Square  
Angola, IN 46703

**Craig A. Williams**  
**Superintendent**  
Phone: 260.624.2699  
Fax: 260.624.2699  
[wntp@angolain.org](mailto:wntp@angolain.org)

*“Making Clean Water & Protecting Public Health.  
All Day. Every Day. Period.”*

August 12, 2014

RE: Submission of mercury variance application to the Indiana Department of Environmental Management

The Angola Wastewater Treatment Plant recycles an average of 1.2 million gallons of water every day from thousands of residential, commercial and industrial customers. The finished water that ultimately flows to Lake Michigan meets strict requirements imposed by the Indiana Department of Environmental Management (IDEM) and the US Environmental Protection Agency (EPA).

Elevated mercury in the tissue of many Midwestern fish has prompted officials to figure out where this mercury is coming from. Atmospheric deposition (from dust, rain, etc) is the primary source of mercury in our waters, but treated water from wastewater treatment plants are often a source of mercury, as well. Mercury sources to the treatment plant include typical residential wastewater, auto repair shops, industries, medical and dental facilities and laboratories.

The Angola WWTP removes almost 98% of the mercury that it receives, but this is not sufficient to meet the water quality goals of IDEM. IDEM has implemented limits for the amount of mercury the Angola WWTP can discharge. These limits are extremely low and since mercury comes from so many different places, IDEM developed a process that allows WWTP's to use public education and outreach and other measures to reduce the amount of mercury that gets sent into the treatment plant.

Reducing what comes into the WWTP will help reduce the amount of mercury leaving the WWTP in finished water. The Angola WWTP is submitting a Streamlined Mercury Variance application to IDEM to help the WWTP meet these stringent limits.

In order to provide an opportunity for citizens to express concerns about this variance application, the Mercury Pollution Minimization Program Plan is being made available for review and comment. Questions about this plan can be directed to Craig Williams at the phone number or email address listed above. Formal comments should be legibly written and mailed or hand delivered to: *SMV Comments, c/o Craig Williams, 210 N. Public Sq., Angola, IN 46703.*

## Angola Wastewater Treatment Plant

### Mercury and Water Quality

#### What is the problem?

- Mercury has been found in most Midwestern freshwater fish in levels high enough to require fish consumption advisories. This mercury is primarily from air deposition (from coal-fired power plants), but is also typically found in the treated water (effluent) from wastewater treatment plants.

#### Where does the mercury that ends up in a wastewater treatment plant come from?

- Residential wastewater and dental facility discharges are the primary sources of mercury discharged to the WWTP. Residential sources include: human waste (ingested mercury can pass through the gut & go down the toilet), direct mercury discharges (dumping mercury from a broken thermostat down a drain, etc), and household cleaners. Dental sources of mercury primarily come from improperly discarded amalgam, which is approximately 45% mercury. Other sources of mercury include medical facilities, auto repair shops, industries and laboratories.

#### Why can't the wastewater treatment plant remove this mercury?

- Actually, the Angola WWTP removes a vast majority of mercury through the treatment process; almost 98% was removed over the last three years. Installing equipment at the treatment plant to remove mercury beyond this level is unrealistic. Removing/reducing mercury at the source is much more practical and cost effective.

#### What is being done to reduce mercury going into the treatment plant?

- Treatment plants must meet extremely stringent requirements for mercury levels in treated effluent. If they cannot meet these limits (few can), they are required to implement a Pollution Minimization Program to help educate citizens, businesses and industries about mercury and how they can reduce the amount of mercury that they discharge to the treatment plant.
- The proposed variance includes a number of specific tasks that should reduce mercury discharges to the sewer system and treatment plant. Tasks include:
  - Completing internal inventories of mercury containing devices and chemicals;
  - Developing internal policies and programs for mercury management;
  - Conducting regular sewer analysis to characterize mercury discharges; and,
  - Completing specific public education and outreach tasks for residents and targeted industries and businesses.

#### Just how much mercury are we talking about, anyway?

- The amount of mercury that comes in & out of the treatment plant is almost too small for most of us to imagine.
  - On average, the WWTP receives 0.0013 pounds of mercury each day. If you were to divide the head of a sewing pin into *100 equal pieces*, 0.0013 pounds would be approximately 4 of those pieces.
  - On average, the amount of mercury that leaves the treatment plant in treated water each day is 0.000029 pounds. If you divided that pin head into *1000 equal pieces*, this is the equivalent of 1 of those pieces.
  - The value that IDEM wants us to get below is 0.000013 pounds per day, which is less than  $\frac{1}{2}$  of the average amount currently leaving the WWTP.
  - For comparison:
    - A 4' Fluorescent Light Bulb contains 0.04 grams of Mercury – *3 times what is in our treated effluent!*
    - A typical Fever Thermometer contains 0.7 grams of Mercury – *53 times what is in our treated effluent!*



#### What can I do?

Properly dispose of household items that may contain mercury. The Northeast Indiana Solid Waste Management District (check out <http://www.niswmd.org/>) can help you with this. Some household items that have mercury include: older thermostats and thermometers, irons or space heaters designed to shut off if they fall over, sump pumps with float a float switch, any light bulb requiring a ballast to operate (all florescent light bulbs), to name a few. The Indiana Department of Environmental Management has additional information on mercury in our environment – go to: <http://www.in.gov/idem/4246.htm>.

## POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) INVENTORY/IDENTIFICATION

### *Inventory of Potential Sources of Mercury*

The Angola Wastewater Treatment Plant (WWTP) has conducted a complete inventory and assessment of the potential sources of mercury within direct control of the WWTP. The inventory of the wastewater treatment plant was conducted in October of 2013. An annual inventory will be completed to identify any new sources of mercury.

In addition to the completion of inventory, contact was made with all vendors of mercury bearing equipment. A mercury reduction policy letter was sent to each supplier to document the mercury materials that The City of Angola's Wastewater Treatment Plant is currently purchasing. Within this documentation, equivalent substitute products were identified for potential purchase to eliminate mercury bearing products. When new suppliers are used in the future, this letter will be sent to document any mercury bearing products in the WWTP.

### *Evaluation of Potential Dischargers*

The Angola WWTP has identified facilities within the sewer service area that are potential sources of mercury. Each facility has received a letter about the importance of proper mercury disposal as well as alternatives to common mercury bearing products. Additional documentation as well as personal visits to dental facilities has been conducted to further reduce any mercury entering into the sanitary collection system. As part of the identification of mercury causing facilities, collection sampling was conducted at various points in our collection system. This was completed to assist in identifying areas where additional monitoring and a stronger educational program would be necessary. The Angola WWTP will continue to conduct mercury sampling at various locations in the collection system.

The Angola WWTP is aware of their responsibilities under Public Law (P.L.) 225-2001 (also known as the House Enrolled Act 1901 of the 2001 legislative session and codified at IC 13-20-17.5), though it is not applicable due to the nature of their business. The Angola WWTP does not sell or supply novelties, products, commodities, or instructional equipment and materials and therefore would not be applicable with respect to the restrictions of the mercury content of these materials.

### *Evaluation Timeline for Future Potential Dischargers*

As new industries or businesses open within the city limits, the pretreatment group will make contact with the business and conduct an inspection within the first three (3) months of operation. This inspection, among other things, will include the identification of potential mercury bearing sources. The business will also receive educational materials that can be used to minimize the possibility of discharging mercury into the sanitary sewer collection system. In addition to identifying new potential mercury dischargers, further inspection of previously identified mercury dischargers will be conducted. This will ensure that the proper education and awareness of potential mercury sources is being followed.

## POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) PLANNED ACTIVITIES

### *Planned Activities*

The Angola WWTP has developed a preliminary plan to work with residents, businesses and public/quasi-public sources of mercury to the POTW. These activities have been developed in accordance to 327 IAC 5-3.5-9(b)(2). A complete description of these activities, goals, measures of performance and schedules are identified on the following page.

Sector	Planned Activity	Goal	Measure of Performance	Schedule of Action/Completion Date
<b>POTW</b>	Complete facility inventory of mercury containing substances	Awareness of mercury in treatment equipment and supplies	Completion of inventory	Annually Last Completion (Sept. 2013)
	Development of SOP to include trace mercury data with purchase requests	Awareness and opportunity to purchase alternate chemicals & supplies	SOP Written, Suppliers contacted as items ordered	Completed (Sept. 2013). Trace Mercury Data document mailed with new supplier purchase requests
	Revise list of potential sources of mercury into the POTW	Identify & target highest priority mercury reduction areas	List revised	Completed (Sept. 2013). To be revised Annually
	Collection system sampling	Identify & target highest priority mercury reduction areas	Number of Sites Sampled	Completed (Sept. 2013 & July 2014) To be resampled annually
	Training for WWTP staff	Education/Awareness	Participation	Conduct annually
	Public education and outreach	Education/Awareness	Date Published and Content	Complete annually
	Evaluation of alternative equipment	Minimize Mercury Discharged	Replace Failed Parts with Low/No mercury equipment	As parts fail, as new feasible equipment is purchased
	Battery collection point for public	Minimize mercury discharged	Participation	Ongoing
	Bulb recycling for city departments	Minimize mercury discharged	Participation	Ongoing
<b>Medical Facilities</b>	Mail AHA BMP Literature	Education/Awareness	Date Mailed and Content	12 months after SMV Incorporation Completed (Feb. 2014)
	Follow-up letter to primary medical facilities	Promote BMP Implementation	Date mailed and content	18 months after SMV Incorporation Last Completed (June 2014)
<b>Dental Facilities</b>	Mail appropriate BMP literature	Education/Awareness	Date mailed and content	3 months after SMV Incorporation Last Completed (Feb. 2013)
	Follow-up letter to facilities	Promote BMP Implementation	Date mailed and content	15 months after SMV Incorporation Last Completed (Nov. 2013)
<b>Public and Private Educational</b>	Mail BMP literature	Education/Awareness	Date mailed and content	12 months after SMV Incorporation

<b>Laboratory</b>	Follow-up letter to facilities	Promote BMP implementation	Date mailed and content	24 months after SMV Incorporation
<b>General Industry and all SIU's</b>	Mail education & outreach information	Education/Awareness	Date mailed and content	12 months after SMB Incorporation Last Completed (Feb. 2014)
	On site visit during pretreatment inspection for SIU's	Ensure permit compliance/Education and awareness	Sites Inspected	To coincide with annual pretreatment inspection
	Application of local limits, as applicable	Mercury reduction	BMP's incorporated into permit	To coincide with SIU permit renewal
<b>Significant sources of residential and retail contribution of mercury</b>	Mail appropriate education & outreach literature	Education/Awareness	Date mailed and content	12 months after SMV Incorporation
	Trade association coordination, where appropriate	Education/Awareness	Participation	As available

### ***Resources & Staffing for Implementation***

The Angola Wastewater Utility is wholly funded by rates and charges by sanitary and stormwater users within the City of Angola and extra-territorial jurisdictions. Rates and charges are evaluated annually by the utility's financial consultant, and adjustments are recommended to the City Council for near and long term funding. Currently, the annual wastewater utility operation and maintenance budget is approximately \$1.2 million. It is unknown what the net costs to implement the PMPP are, but we fully anticipate the existing operations and maintenance budget will be sufficient for implementation of the activities defined herein.

The implementation of the controls and activities listed herein will be completed by existing positions funded through the wastewater utility. This includes:

- Wastewater Superintendent (1)
- Pretreatment Coordinator (1)
- Wastewater Operators (6)
- Wastewater Laboratory Technician (1)
- Other part-time/contract resources, as needed.

The City of Angola works closely with the Northeast Indiana Solid Waste Management District (NISWMD), and actively sponsors a number of programs that are designed to reduce the improper disposal of household hazardous waste and consumer electronics. These programs are synergistic with the efforts that the WWTP has made and is planning to make. Some of the activities that have already been implemented include:

- Battery collection point at City Hall for all city residents. Batteries are picked up on an as needed basis by the NISWMD.
- Annual Citywide Cleanup days, in cooperation with the City's contract refuse collection company.
- Free electronics collection for the general public annually;
- The WWTP provides a collection point for discarded mercury-containing bulbs from all municipal departments funded and operated by the city. These bulbs are safely transported to the NISWMD on an as needed basis.

- The WWTP provides a collection point for major electronics items generated from all municipal departments. This equipment is safely transported to the NISWMD on an as needed basis.
- The WWTP works with the water utility to collect and safely store mercury containing devices found in old water meters and in other operations of the water treatment utility. All collected mercury devices are safely transported to the NISWMD on an as needed basis.

### MERCURY MONITORING DATA

The Angola WWTP has historically conducted influent/effluent monitoring of mercury on a monthly basis, as opposed to a bi-monthly basis as required by our NPDES Permit. Analysis of mercury in our stabilized biosolids is conducted in compliance with our Class A Marketing & Distribution Permit and our Class B Land Application Permit. Various points in the collection system are sampled periodically for mercury to help identify mercury loading sources. When elevated mercury levels are found, the WWTP will work to identify the source/cause and will work with the discharger to implement a plan that will reduce mercury discharge to the collection system.

### POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) ADDITIONAL REQUIREMENTS

#### ***Public Notice of PMPP***

In accordance with 327 IAC 5-3.5-(c), this PMPP will be made available at the Angola branch of the United States Post Office, the Carnegie Public Library, the front desk of the City of Angola Utility Clerk's office and at the office of the Wastewater Superintendent. A notice of public comment will be published in the Herald Republican newspaper on Thursday, August 12, 2014. The public comment period will be open from August 14 through September 15, 2014. The Angola WWTP will respond to any comments received during this period, and the comments and their responses will be forwarded to IDEM for incorporation into their variance response.

#### ***Scheduling of Annual Reports***

The City of Angola will submit an annual report of progress in PMPP implementation no later than April 1 of each year the SMV is in effect. The annual report will provide a complete summary of PMPP elements and related activities from the previous calendar year.





Claim No. \_\_\_\_\_ Warrant No. \_\_\_\_\_

I have examined the within claim and hereby certify as follows:

That it is in proper form.

That it is duly authenticated as required by law.

That it is based upon statutory authority.

That it is apparently  correct  incorrect

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The Garrett Clipper  
Garrett, Indiana

\$ \_\_\_\_\_

ON ACCOUNT OF APPROPRIATION FOR

Appropriation No. \_\_\_\_\_

ALLOWED \_\_\_\_\_  
IN THE SUM OF \$ \_\_\_\_\_

See table of legal rates in the applicable State Board of Accounts Bulletin

LEGAL ADVERTISING

**PUBLIC NOTICE OF AVAILABILITY AND COMMENT:**  
**CITY OF ANGOLA, INDIANA WASTEWATER TREATMENT PLANT**  
NPDES PERMIT NO: IN0021296  
POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP)  
STREAMLINED MERCURY VARIANCE APPLICATION

The City of Angola Wastewater Treatment Plant (WWTP), 1095 Redding Road, Angola, Indiana submits for public comment, the Pollutant Minimization Program Plan (PMPP) submitted as part of its Streamlined Mercury Variance Application, as required by 327 IAC 5-3.5-9(c).

The Angola WWTP operates a Class 3 Activated Sludge Treatment Facility which discharges an average of 1.2 million gallons per day of treated effluent to Lake Michigan via the St. Joseph River via the Pigeon River via the H. D. Wood Ditch.

The WWTP is submitting a Streamlined Mercury Variance Application to the Indiana Department of Environmental Management (IDEM) to provide statutory relief from Water Quality Based Effluent Limits (WQBEL's) for mercury. As part of this application, a PMPP has been developed to help implement controls that will reduce mercury loading into the WWTP, subsequently reducing mercury discharges.

The proposed PMPP provides a structured method to identify and reduce sources of mercury discharge to the WWTP. The PMPP includes mercury-bearing chemical and mechanical inventories, evaluations of potential mercury sources, planned activities to address mercury-bearing chemicals and equipment and public education and outreach methods.

The proposed PMPP is available for public review and comment in accordance to 327 IAC 5-3.5-9(c). This office will receive written comments regarding the proposed PMPP for 30 days after the first day of publication in The Herald Republican. Comments will be considered as the final PMPP is prepared, and will be submitted to IDEM as part of the variance request. Comments may be submitted to:

Angola WWTP, PMPP Comments, c/o Craig Williams, Superintendent, 210 N. Public Square, Angola, IN 46703-1960.

The PMPP may be viewed in person for thirty (30) days after publication at the following locations: 1) United States Post Office, Angola Branch, 110 Harcourt Road; 2) Carnegie Public Library, 322 South Wayne Street, Angola City Hall, 3) 210 North Public Square, and 4) at the Wastewater Treatment Plant, 1095 Redding Road. Copies of the proposed PMPP may be obtained at the Angola City Hall for a fee. Questions regarding this public notice or PMPP may be addressed to Superintendent Craig Williams at (260) 624-2699, Monday - Friday, 7:00 a.m. to 3:30 p.m.



# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
Mailing Address: 210 North Public Square  
Angola, IN 46703

**Craig A. Williams**

**Superintendent**

Phone: 260.624.2699

Cell: 260.905.6123

Fax: 260.624.2699

[cwilliams@angolain.org](mailto:cwilliams@angolain.org)

***“Making Clean Water & Protecting Public Health.  
All Day. Every Day. Period.”***

March 4, 2014

Indiana Department of Environmental Management  
Office of Water Quality, MC 65-42  
Municipal Permits Section  
100 North Senate Avenue  
Indianapolis IN 46204-2251

RE: NPDES Permit No. IN0021296

### City of Angola Streamlined Mercury Variance Annual Report

The City of Angola hereby submits its CY 2013 Streamlined Mercury Variance Annual Report, pursuant to the requirements set forth within NPDES Permit No. IN0021296, Attachment B.III, Annual Reports.

It is anticipated that the included report and additional documentation will illustrate the efforts of the City of Angola Wastewater Department staff to meet and exceed the requirements of the Streamlined Mercury Variance and Pollutant Minimization Program Plan.

Should you have any questions or need additional information regarding this report, please contact Craig Williams at 260-624-2699.

Respectfully submitted,

Craig A. Williams, Superintendent

Angola Wastewater Treatment

## 2013 PMPP Activity Timeline

<b>Description of Activity:</b>	<b>Goal of Activity</b>	<b>Activity Started:</b>	<b>Attachment Number:</b>
Mail ADA BMP guide to dental Facilities	Education & Awareness	February 2013	1
Article in Herald Republican	Education & Awareness	February 2013	2
Newsletter sent to residents, businesses	Residential, Commercial & Industrial Education & Awareness	April 2013	3
Create SOP for requesting trace mercury data from suppliers	Awareness/Opportunity to consider alternate chemicals & supplies	August 2013	4
Send trace mercury letter to suppliers	Awareness/Opportunity to consider alternate chemicals & supplies	September 2013	5
Train Wastewater Treatment Plant staff about mercury	Education & Awareness	April 2013	NA
Update facility inventory of mercury-bearing items	Awareness of mercury in treatment equipment and supplies	October 2013	6
Update list of potential commercial & industrial contributors of mercury	Identify & target highest priority mercury reduction areas	September 2013	7
Collection system sampling to determine mercury loading	Identify & target highest priority mercury reduction areas	August 2013	8
Influent and effluent mercury sampling at POTW	Monitor mercury loading to POTW	Monthly	9

**Attachment 1**  
**ADA Best Management Practice**  
**Information Sent to Dentists**  
**Served by the Angola POTW**



# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
Mailing Address: 210 North Public Square  
Angola, IN 46703

Attachment 09

**Amanda R. Cope, P.E.**

**Pretreatment Coordinator**

Phone: 260.665.6806

Fax: 260.624.2699

[acope@angolain.org](mailto:acope@angolain.org)

February 13, 2013

Address

To Whom It May Concern:

On behalf of the City of Angola and the Angola Wastewater Treatment Plant we would like to give you some information about mercury and the proper disposal of mercury regarding wastewater. Mercury has been found in most Midwestern freshwater fish in high enough levels to require fish consumption advisories. Mercury can build up in fish and cause health problems in humans and other animals that eat fish. The Angola Wastewater Treatment Plant has made great strides to remove mercury before it is discharged back into local streams. The treatment process currently in place removed almost 98% of the mercury in the last three years.

To better improve the mercury levels we are contacting industries that typically contain mercury in their wastewaters. Residential wastewater and dental facility discharges are the primary sources of mercury discharged to the wastewater treatment plants. Dental sources of mercury primarily come from improperly discarded amalgam, which is approximately 45% mercury. We have included Best Management Practices for Amalgam Waste as a guide on how your office can help minimize the amount of mercury traveling to the wastewater treatment plant. Some of these best management practices include the use of chair-side traps, vacuum pump filters, and amalgam separators.

Please take the time to look through the included literature. We will be glad to answer any questions you may have regarding mercury and how your office can help reduce mercury in our community. We can also come in and talk with you or your staff to promote safe practices of mercury disposal and recycling. We can be contacted during the week from 7am-3:30pm at (260) 665-6806.

Thank-you for your time,

Sincerely,

Amanda R. Cope, P.E.  
Pretreatment Coordinator  
City of Angola  
Wastewater Treatment

### **What is the problem?**

- Mercury has been found in most Midwestern freshwater fish in levels high enough to require fish consumption advisories. This mercury is primarily from air deposition (from coal-fired power plants), but is also typically found in the treated water (effluent) from wastewater treatment plants.

### **Where does the mercury that ends up in a wastewater treatment plant come from?**

- Residential wastewater and dental facility discharges are the primary sources of mercury discharged to the WWTP. Residential sources include: human waste (ingested mercury can pass through the gut & go down the toilet), direct mercury discharges (dumping mercury from a broken thermostat down a drain, etc), and household cleaners. Dental sources of mercury primarily come from improperly discarded amalgam, which is approximately 45% mercury. Other sources of mercury include medical facilities, auto repair shops, industries and laboratories.

### **Why can't the wastewater treatment plant remove this mercury?**

- Actually, the Angola WWTP removes a vast majority of mercury through the treatment process; almost 98% was removed over the last three years. Installing equipment at the treatment plant to remove mercury beyond this level is unrealistic. Removing/reducing mercury at the source is much more practical and cost effective.

### **What is being done to reduce mercury going into the treatment plant?**

- Treatment plants must meet extremely stringent requirements for mercury levels in treated effluent. If they cannot meet these limits (few can), they are required to implement a Pollution Minimization Program to help educate citizens, businesses and industries about mercury and how they can reduce the amount of mercury that they discharge to the treatment plant.
- The proposed variance includes a number of specific tasks that should reduce mercury discharges to the sewer system and treatment plant. Tasks include:
  - Completing internal inventories of mercury containing devices and chemicals;
  - Developing internal policies and programs for mercury management;
  - Conducting regular sewer analysis to characterize mercury discharges; and,
  - Completing specific public education and outreach tasks for residents and targeted industries and businesses.

### **Just how much mercury are we talking about, anyway?**

- The amount of mercury that comes in & out of the treatment plant is almost too small for most of us to imagine.
  - On average, the WWTP receives 0.0013 pounds of mercury each day. If you were to divide the head of a sewing pin into *100 equal pieces*, 0.0013 pounds would be approximately 4 of those pieces.
  - On average, the amount of mercury that leaves the treatment plant in treated water each day is 0.000029 pounds. If you divided that pin head into *1000 equal pieces*, this is the equivalent of 1 of those pieces.
  - The value that IDEM wants us to get below is 0.000013 pounds per day, which is less than ½ of the average amount currently leaving the WWTP.
  - For comparison:
    - A 4' Fluorescent Light Bulb contains 0.04 grams of Mercury – *3 times what is in our treated effluent!*
    - A typical Fever Thermometer contains 0.7 grams of Mercury – *53 times what is in our treated effluent!*



### **What can I do?**

Properly dispose of household items that may contain mercury. The Northeast Indiana Solid Waste Management District (check out <http://www.niswmd.org/>) can help you with this. Some household items that have mercury include: older thermostats and thermometers, irons or space heaters designed to shut off if they fall over, sump pumps with float a float switch, any light bulb requiring a ballast to operate (all florescent light bulbs), to name a few. The Indiana Department of Environmental Management has additional information on mercury in our environment – go to: <http://www.in.gov/idem/4246.htm>.

# Best Management Practices for Amalgam Waste

Attachment 09



American Dental Association • October 2007

**ADA** American Dental Association®

America's leading advocate for oral health

The following information demonstrates how to manage and recycle dental amalgam waste to help protect the environment.

## Glossary of Amalgam Waste Terms

- **Amalgam capture device** is an apparatus such as a chair side trap, vacuum pump filter or amalgam separator that collects amalgam particles.
- Amalgam sludge is a mixture of liquid and solid material that collects within vacuum pump filters, amalgam separators or other amalgam capture devices that may be used.
- **Contact amalgam** is amalgam that has been in contact with the patient. Examples are extracted teeth with amalgam restorations, carving scrap collected at chair side, and amalgam captured by chair side traps, filters, or screens.
- **Dental Best Management Practices** are a series of amalgam waste handling and disposal practices that include, but are not limited to, initiating bulk mercury collection programs, using chair side traps, amalgam separators compliant with ISO 11143<sup>1</sup> and vacuum collection, inspecting and cleaning traps, and recycling or using a commercial waste disposal service to dispose of the amalgam collected.
- **Empty amalgam capsules** are the individually dosed containers left over after mixing precapsulated dental amalgam.
- **Non-contact amalgam** (scrap) is excess mix leftover at the end of a dental procedure.

The ADA recommends against the use of bulk elemental mercury, also referred to as liquid or raw mercury, for use in the dental office. Since 1984, the ADA has recommended use of precapsulated amalgam alloy.

If you still have bulk elemental mercury in the office, you should recycle it. Check with a licensed recycler to determine whether they will accept bulk mercury. *Do not* pour bulk elemental mercury waste in the garbage, red bag or down the drain. You also should check with your state regulatory agency and municipality to find out if a bulk mercury collection program is available. Such bulk mercury collection programs provide an easy way to dispose of bulk mercury.

## Steps for Recycling Amalgam Waste

Attachment 09

1. Stock amalgam capsules in a variety of sizes to minimize the amount of amalgam waste generated.
2. Amalgam waste may be mixed with body fluids, such as saliva, or other potentially infectious material, so use personal protective equipment such as utility gloves, masks, and protective eyewear when handling it.
3. Contact an amalgam waste recycler about any special requirements that may exist in your area for collecting, storing and transporting amalgam waste.

If you need to find a recycler, check with your city, county or local waste authority to see whether they have an amalgam waste recycling program.

4. Store amalgam waste in a covered plastic container labeled "Amalgam for Recycling" or as directed by your recycler. Your recycler may have its own requirements, so ask your recycler about containers and what may be placed in them.
5. Look for recyclers who comply with the ADA-ANSI standard. This standard is meant to encourage recycling.

## Questions to Ask Your Amalgam Waste Recycler

Below is a list of questions you may want to ask your amalgam waste recycler. Note that not all recycling companies accept every type of amalgam waste, and the services offered by recyclers vary widely. The ADA recommends that you contact a recycler before recovering amalgam and ask about any specific handling instructions the recycler may have. Importantly, select a reputable company that complies with applicable federal and state law and provides adequate indemnification for its acts and omissions. Look for recyclers who comply with ANSI/ADA Specification 109: Procedures for Storing Dental Amalgam Waste and Requirements for Amalgam Waste Storage/Shipment Containers.<sup>1</sup> This standard is meant to encourage recycling.

## Ask Your Recycler ...

- What kind of amalgam waste do you accept?
- Do your services include pick up of amalgam waste from dental offices? If not, can amalgam waste be shipped to you?
- Do you provide packaging for storage, pick up or shipping of amalgam waste?
- If packaging is not provided, how should the waste be packaged?
- What types of waste can be packaged together?
- Do you accept whole filters from the vacuum pump for recycling?
- Is disinfection required for amalgam waste?
- How much do your services cost?
- Do you pay for clean non-contact amalgam (scrap)?
- Do you accept extracted teeth with amalgam restorations?
- Does your company have an EPA or applicable state license?
- Does the company use the proper forms required by the EPA and state agencies?
- Do your procedures comply with ANSI/ADA Specification 109: Procedures for Storing Dental Amalgam Waste and Requirements for Amalgam Waste Storage/Shipment Containers?<sup>2</sup>

### Best Management Practices for Amalgam Waste

DO	DON'T
<i>Do</i> use precapsulated alloys and stock a variety of capsule sizes	<i>Don't</i> use bulk mercury
<i>Do</i> recycle used disposable amalgam capsules	<i>Don't</i> put used disposable amalgam capsules in biohazard containers, infectious waste containers (red bags) or regular garbage
<i>Do</i> salvage, store and recycle non-contact amalgam (scrap amalgam)	<i>Don't</i> put non-contact amalgam waste in biohazard containers, infectious waste containers (red bags) or regular garbage
<i>Do</i> salvage (contact) amalgam pieces from restorations after removal and recycle the amalgam waste	<i>Don't</i> put contact amalgam waste in biohazard containers, infectious waste containers (red bags) or regular garbage
<i>Do</i> use chair-side traps, vacuum pump filters and amalgam separators to retain amalgam and recycle their contents.	<i>Don't</i> rinse devices containing amalgam over drains or sinks
<i>Do</i> recycle teeth that contain amalgam restorations. (Note: Ask your recycler whether or not extracted teeth with amalgam restorations require disinfection)	<i>Don't</i> dispose of extracted teeth that contain amalgam restorations in biohazard containers, infectious waste containers (red bags), sharps containers or regular garbage
<i>Do</i> manage amalgam waste through recycling as much as possible	<i>Don't</i> flush amalgam waste down the drain or toilet
<i>Do</i> use line cleaners that minimize dissolution of amalgam	<i>Don't</i> use bleach or chlorine-containing cleaners to flush wastewater lines

<sup>1</sup>International Standards Organization 11143:1999. Dental Equipment – Amalgam Separators.

<sup>2</sup>American Dental Association Council on Scientific Affairs. American National Standard/American Dental Association Specification No. 109. Procedures for storing dental amalgam waste and requirements for amalgam waste storage/shipment containers, 2006.

### Non-contact (scrap) amalgam

- Place non-contact, scrap amalgam in wide-mouthed, container that is marked "Non-contact Amalgam Waste for Recycling."
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.

### Amalgam capsules

- Stock amalgam capsules in a variety of sizes.
- After mixing amalgam, place the empty capsules in a wide-mouthed, airtight container that is marked "Amalgam Capsule Waste for Recycling."
- Capsules that cannot be emptied should likewise be placed in a wide-mouthed, airtight container that is marked "Amalgam Capsule Waste for Recycling."
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.

### Disposable chair-side traps

- Open the chair-side unit to expose the trap.
- Remove the trap and place it directly into a wide-mouthed, airtight container that is marked "Contact Amalgam Waste for Recycling."
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.
- Traps from dental units dedicated strictly to hygiene may be placed in with the regular garbage.

### Reusable chair-side traps

- Open the chair-side unit to expose the trap.
- Remove the trap and empty the contents into a wide-mouthed, airtight container that is marked "Contact Amalgam Waste for Recycling."

- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.
- Replace the trap into the chair-side unit (Do not rinse the trap under running water as this could introduce dental amalgam into the waste stream.

### Vacuum pump filters

- Change the filter according to the manufacturer's recommended schedule. Note: The following instructions assume that your recycler will accept whole filters; some recyclers require different handling of this material, so check with your recycler first.
- Remove the filter.
- Put the lid on the filter and place the sealed container in the box in which it was originally shipped. When the box is full, the filters should be recycled.

### Amalgam separators

- Select an amalgam separator that complies with ISO 11143.
- Follow the manufacturer's recommendations for maintenance and recycling procedures.

### Line cleaners

- Use non-bleach, non-chlorine-containing line cleaners, which will minimize amalgam dissolution, such as those listed in the Additional Resources section of this document.

## Additional Resources

The following articles published in the *Journal of the American Dental Association* are available through the ADA Division of Science and also are available to ADA members online.

For information on proper mercury hygiene practices see "Dental Mercury Hygiene Recommendations" 2003:134(11);1498-9.

For information on choosing line cleaners that minimize the dissolution of mercury from amalgam see: "The effect of disinfectants and line cleaners on the release of mercury from amalgam" 2006:137(10);1419-25.

For information on amalgam separators see:

- "Laboratory evaluation of amalgam separators" 2002:133;577-89.
- "Evaluating amalgam separators using an international standard" 2006:137;999-1005.
- "Purchasing, installing and operating dental amalgam separators: Practical issues" 2003 134: 1054-65.

**Attachment 2**  
**Article in Herald Republican Newspaper**  
**Public Education & Outreach**

# Residents help stop mercury contamination

BY JENNIFER DECKER

jdecker@kpcnews.net

ANGOLA — Angola's wastewater superintendent is trying to get the word out about mercury.

Mercury poses a health threat when released into wastewater. There are ways to properly dispose of household items containing the element.

Angola waste water superintendent Craig Williams said he wants to make the public aware.

"It's our streams and lakes," he said. "We're trying to minimize what goes in and out of our treatment plant."

Mercury is carcinogenic.

Williams said mercury is found in most Midwestern fresh water fish in levels high enough to require consumption advisories. Mercury is primarily found in air from coal-fired power plants and is also typically found in treated wastewater.

"The primary driving force is to reduce mercury in fish," he said. "The issue is a lot of Indiana streams are impaired by mercury."

Williams said the amount of mercury that comes in and out of the wastewater treatment plant is almost too small to imagine. If a pin head is divided into 1,000 equal pieces, that amount of mercury is equivalent to one of the pieces. The idea, Williams said, is to minimize the amount of mercury that goes into and out of the wastewater treatment plant.

Williams said residential wastewater, dental and medical facility discharges

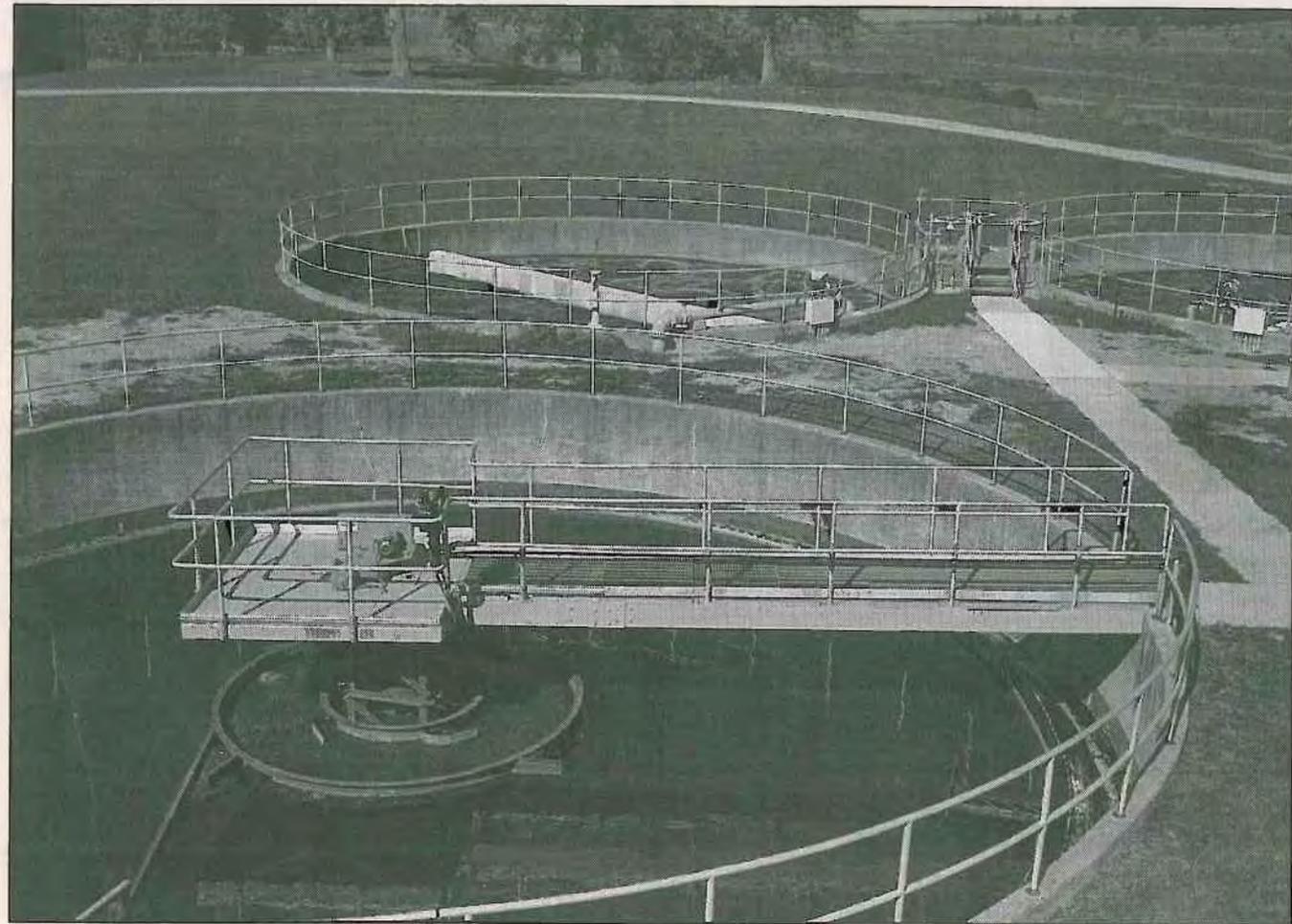


PHOTO CONTRIBUTED

The aeration area of Angola's treatment plant helps process storm water for the city.

are the primary sources of mercury going into the wastewater treatment plant. Residential sources can include human waste and direct mercury discharges.

Angola's wastewater treatment plant has the ability to remove a vast majority of mercury through the treatment process, with nearly 98 percent removed the last three years. Williams cautioned installing equipment at the treatment

plant to remove mercury beyond that level is unrealistic, as he said removing and reducing mercury at the source is much more practical and cost effective.

Williams said wastewater treatment plants are required to implement a pollution minimization program if requirements of treated mercury limits aren't met. Part of that program is educating the public about mercury and ways to reduce

its discharges in the sewer system and treatment plant.

"The problem is when it's released," Williams said. "It's not a problem as long as it's contained."

To dispose of mercury, Williams said the Northeast Indiana Solid Waste Management District, headquartered in Ashley, can help. For information, its website is [niswmd.org](http://niswmd.org). Williams said mercury is also present in electronics,

cellphones and batteries.

Some household items containing mercury include older thermostats and thermometers, irons or space heaters designed to shut off if they fall over, sump pumps with a float switch and florescent light bulbs.

For more information on mercury, visit the Indiana Department of Environmental Management's website at [in.gov/ideam/4246.hm](http://in.gov/ideam/4246.hm).

**Attachment 3**  
**Newsletter Article Sent to**  
**Angola Water and Wastewater**  
**Utility Customers**  
**Public Education & Outreach**

## Angola Wastewater Treatment Plant Mercury and Water Quality

### What is the problem?

- Mercury has been found in most Midwestern freshwater fish in levels high enough to require fish consumption advisories. This mercury is primarily from air deposition (from coal-fired power plants), but is also typically found in the treated water (effluent) from wastewater treatment plants.

### Where does the mercury that ends up in a wastewater treatment plant come from?

- Residential wastewater and dental facility discharges are the primary sources of mercury discharged to the WWTP. Residential sources include: human waste (ingested mercury can pass through the gut & go down the toilet), direct mercury discharges (dumping mercury from a broken thermostat down a drain, etc), and household cleaners. Dental sources of mercury primarily come from improperly discarded amalgam, which is approximately 45% mercury. Other sources of mercury include medical facilities, auto repair shops, industries and laboratories.

### Why can't the wastewater treatment plant remove this mercury?

- Actually, the Angola WWTP removes a vast majority of mercury through the treatment process; almost 98% was removed over the last three years. Installing equipment at the treatment plant to remove mercury beyond this level is unrealistic. Removing/reducing mercury at the source is much more practical and cost effective.

### What is being done to reduce mercury going into the treatment plant?

- Treatment plants must meet extremely stringent requirements for mercury levels in treated effluent. If they cannot meet these limits (few can), they are required to implement a Pollution Minimization Program to help educate citizens, businesses and industries about mercury and how they can reduce the amount of mercury that they discharge to the treatment plant.
- The proposed variance includes a number of specific tasks that should reduce mercury discharges to the sewer system and treatment plant. Tasks include:
  - Completing internal inventories of mercury containing devices and chemicals;
  - Developing internal policies and programs for mercury management;
  - Conducting regular sewer analysis to characterize mercury discharges; and,
  - Completing specific public education and outreach tasks for residents and targeted industries and businesses.

### Just how much mercury are we talking about, anyway?

- The amount of mercury that comes in & out of the treatment plant is almost too small for most of us to imagine.
  - On average, the WWTP receives 0.0013 pounds of mercury each day. If you were to divide the head of a sewing pin into *100 equal pieces*, 0.0013 pounds would be approximately 4 of those pieces.
  - On average, the amount of mercury that leaves the treatment plant in treated water each day is 0.000029 pounds. If you divided that pin head into *1000 equal pieces*, this is the equivalent of 1 of those pieces.
  - The value that IDEM wants us to get below is 0.000013 pounds per day, which is less than  $\frac{1}{2}$  of the average amount currently leaving the WWTP.
  - For comparison:
    - A 4' Fluorescent Light Bulb contains 0.04 grams of Mercury – *3 times what is in our treated effluent!*
    - A typical Fever Thermometer contains 0.7 grams of Mercury – *53 times what is in our treated effluent!*



### What can I do?

Properly dispose of household items that may contain mercury. The Northeast Indiana Solid Waste Management District (check out <http://www.niswmd.org/>) can help you with this. Some household items that have mercury include: older thermostats and thermometers, irons or space heaters designed to shut off if they fall over, sump pumps with float a float switch, any light bulb requiring a ballast to operate (all florescent light bulbs), to name a few. The Indiana Department of Environmental Management has additional information on mercury in our environment – go to: <http://www.in.gov/idem/4246.htm>.

**Attachment 4**  
**SOP for Sending Trace Mercury**  
**Inquiry to Selected Suppliers to the**  
**Angola POTW**



<b>Standard Operating Procedure</b> <b>City of Angola Wastewater Treatment</b> <i>Making Clean Water &amp; Protecting Public Health.</i> <i>All Day. Every Day. Period.</i>	<b>Document No:</b>	PT -003
	<b>Original Date:</b>	8/12/2013
	<b>Date Modified:</b>	
<b>Subject:</b>	<b>Request for Trace Mercury Content</b>	
<b>Approved By:</b>	C. Williams	

**Purpose**

This SOP is developed to aid the user in the proper procedure for requesting trace mercury data from suppliers. This SOP is in conjunction with the Streamlined Mercury Variance Application & Proposed Pollutant Minimization Program Plan. As part of the plan an SOP is to be developed to request information and data from suppliers that may contain mercury.

**Scope**

A letter requesting trace mercury content will be sent out to suppliers as items are ordered. Responses regarding mercury content will be documented and retained. If viable, alternative or substitute goods may be purchased that do not have trace amounts of mercury.

**Procedure**

- Investigation of current vendors has resulted in the following list of vendors that supply products which may contain trace amounts of mercury.

Vendor	Address	Typical Product	Estimated Annual Volume/Amount
BioChem	PO Box 5312 Evansville, IN 47716	Cationic Polymer	660 gallons-for BFP, Treatment Ops
USA BB	3781 Burwood Dr Waukegan, IL 60085	Lab reagents, chemicals, Bioaugmentation	30-50 gallons (estimated)
International Steel Service	Foster Plaza No. 7 661 Anderson Dr. Pittsburgh, PA 15220	Ferrous Chloride	22,000 gallons
CA Nedele	313 Mechanic St. Angola, IN 46703	Delimer, Car Wash	30 gallons
NCL of Wisconsin	PO Box 8 Birnamwood, WI 54414	Lab reagents & chemicals	30-50 gallons (estimated)
EMD Millipore	25760 Network Place Chicago, IL 60673	Water Treatment Supplies	
UV Doctor	4082 Bead Lake Rd Newport, WA 99156	UV Bulbs	
HP Thompson	101 Main St. Milford, OH 45150	UV Bulbs	
First Light	PO Box 191 Poultney, VT 05764	UV Bulbs	
Advanced UV Systems	19210 Van Ness Ave. Torrance, CA 90501	UV Bulbs	
Radiant Source Technology	PO Box 1515 Brighton, MI 48116	UV Bulbs	

- When purchasing goods from one of the above vendors or, when purchasing a product from an alternate vendor that may have trace mercury content, a Trace Mercury Content Request letter shall be sent out as items are ordered. The responses will be documented and retained for records.
- If a new vendor of products that may contain trace amounts of mercury is selected, the Trace Mercury Content Request letter shall also be sent out as items are ordered. The responses will be documented and retained for records. An attempt should be made to purchase goods from vendors that do not have trace amounts of mercury in their products.
- The Trace Mercury Content Letter will be provided once annually per product, per vendor.

## References

"Mercury\_Letter\_to\_Vendors.doc"  
Streamlined Mercury Variance PMPP, Part 3, Section C, 6-Month Activities

**Attachment 5**  
**Trace Mercury Request sent to**  
**Selected Suppliers to the**  
**Angola POTW**



# CITY OF ANGOLA

## Wastewater Treatment

Physical Address: 1095 Redding Road  
 Mailing Address: 210 North Public Square  
 Angola, IN 46703

**Craig A. Williams**  
**Superintendent**  
 Phone: 260.624.2699  
 Cell: 260.905.6123  
 Fax: 260.624.2699  
*cwilliams@angolain.org*

February 28, 2014

Re: Trace Mercury Content Request

To Whom It May Concern:

Mercury is increasingly becoming a concern as an environmental pollutant. Mercury released from air and water sources is transformed into methylmercury in lakes or rivers. Methylmercury bioaccumulates in the aquatic food chain, making consumption of fish hazardous to those organisms high on the food chain. As a result, regulations on mercury in solid waste, air emissions and wastewater are becoming increasingly stringent.

Because of this, and our concern for the environment, our company has instituted a mercury reduction policy that requires the elimination or minimization of mercury in all our purchases. In order for our purchasing department to be able to make an informed choice on mercury content in the products that it buys, we are requesting that all vendors identify which of the following statements applies to your facility. Failure to complete and return this survey or knowingly falsifying your response may disqualify your company from future purchases from the City of Angola.

Which of the following statements is the most accurate representation for any chemicals, cleaners, solvents or process equipment purchased that may come in contact with wastewater:

Vendor Name: \_\_\_\_\_

Product supplied by vendor: \_\_\_\_\_

- All goods delivered have no known traces of mercury.
- Some of the goods delivered may have trace amounts of mercury, however an equivalent substitute product is not available for purchase by this vendor.
- Some of the goods delivered may have trace amounts of mercury and an equivalent substitute product is available for purchase by this vendor. Please list product and equivalent substitute:  
 \_\_\_\_\_
- Not Applicable

I certify that, to the best of my knowledge and belief, the statements provided here are true and correct. I understand that in the event that I have knowingly and willfully made any false statements, I will be liable in accordance with all applicable laws and statutes

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

\_\_\_\_\_  
 Position

\_\_\_\_\_  
 Date

Thank-you for your time in filling out this form. Please return this to our office and if you have any questions call the Angola Wastewater Treatment Plant at 665-6806.

**Attachment 6**  
**Updated POTW Inventory of**  
**Mercury Bearing Items**

ANGOLA WWTP

Oct. 2013

Mercury Inventory	
Chemicals	
Item	Quantity
Ferrous Chloride Solution	0
Nitric Acid	1 gallon
Sewer Tracing Dye	15 gal. on hand/ 5 gal. a year
Sulfuric Acid	2 gal. on hand/ 1 gal. a year
Acetic Acid	0
Chloride	0
Ammonium Reagent	2 Bottles
Buffers	3 gallons
Calibration kits	0
Diluents	0
sodium hypochlorite	1 Quart
Acetate	0
Nessler Reagent	0
Phosphorus Removal Chemicals	0
Dechlorination Chemicals	0
Sludge Thickening Polymers	140 gal. on hand/ 400 gal. a year
Potassium Hydroxide	0
Sodium Hydroxide	2 gallons
Sodium Chloride	500 grams
Chlorine	67.5 grams
COD analysis Reagent	0
TKN and TP analysis digestion Reagents	0
Mercury Analytical Standards	0
Elemental Mercury	0
Mercury or Mercurous Chloride	0
Mercury Iodide	0
Mercury Nitrate	0
Mercury (II) Oxide	0
Mercury (II) Sulfate	0
Merthiolate	0
Pesticides/ Fungicides/ Herbicides	5 gallons on hand
Tree Root Growth Control	0

Mercury Inventory	
Building Materials	
Item	Quantity
Paints	75 gallons on hand
Generators	5
Fire alarms	0
building security systems	6
Laptop computer screens	2
Monitors	9
Printers	4
DC Watt-Hour meters	3
Flame Sensors	3
Aquastats	0
Pressurestats	20
Firestats	2
Silent Light switches	2
Relay switches	12
Trickling filter Pivot Arm Bearing	0
Fluorescent Lamps	180 on hand/ 75 in a year
High-Pressure sodium lamps	0
Mercury arc lamps	0
Mercury vapor lamps	0
metal halide lamps	0
Ultraviolet disinfection Lamps	60 on hand/ 60 in a year
Mercury-zinc batteries	0
Mercury-cadmium batteries	0
Mercury alkaline batteries	0
Mercury oxide batteries	0
Fleet Vehicles	10
Lift Station Equipment	20
Traps with accumulated mercury	25*
Sumps with accumulated mercury	3*
sewer lines with accumulated mercury	2*
Mercury items collect for disposal	200
Polymers	140 gal. on hand/ 400 gal. a year

Items marked with an asterisk (\*) imply that each of the items on hand may contain accumulated mercury. The number value represents how many items are present at this time.

Mercury Inventory	
Equipment	
Item	Quantity
Manometers	1
Barometers	0
Thermometers	0
Ion exchange cartridges	0
Hanging Mercury Drops	0
Mercury Hollow Cathode Lamp	0
Accustats	0
Counterweights	0
Flow Meters	0
Gas Regulators	0
Gyroscopes	0
Hydrometers with thermometers	0
Level and Rotation Sensors	0
Pressure Gauges and Vacuum Gauges	2
Mercury-Sealed Pistons	0
Perimeters	0
Pressure-trols	0
Pyrometers	1
Rectifiers	0
Ring Balances	0
Shunt Trips	0
Steam flow meters	0
stokes gauges	0
Switches and Relays	0
Displacement Plunger relays	0
Mercoïd control switches	0
pressure control switches	0
relay switches	0
Mercury wetted relays	0
Mercury displacement relays	0
Sump pump	0
Tilt switches	0
Thermostats and Thermoregulators	7
Transmitters	0
air flow limit control	0
Temperature Control	7

**Attachment 7**  
**Updated List of Potential  
Commercial, Industrial and  
Institutional Sources of Mercury**

<b>Sector</b>	<b>Name</b>	<b>Address</b>
<b>Hospital</b>	Cameron Memorial Hospital	416 E. Maumee St.
<b>Medical Clinics</b>	Allen County Cardiology & Physicians	424 Williams St.
	Angola Physical Therapy	3270 Intertech Dr.
	Elmhurst Clinic	909 W Maumee St.
	Faith Community Health Clinic	909 S. Darling St
	Family Physicians Inc	1109 W Maumee St.
	Jonathon Alley	424 Williams St.
	Lab Corp	3250 Intertech Dr. Ste C
	Land-Lakes Family Health Service	317 S. Wayne St. #3B
	Maplewood Family Medicine	3270 Intertech Dr.
	Mattox Family Practice & Physicians	3250 Intertech Dr. Ste A
	Todd Brandon Women's Health Advantage	150 Growth Pkwy
	Urgent Care	1381 N Wayne St.
<b>Nursing Homes</b>	Lakeland Nursing Center	500 Williams St.
	Northern Lakes Nursing and Rehabilitation Center	516 Williams St.
<b>Veterinary Facilities</b>	All Paws & Claw	2107 N Wayne St.
	Grandview Veterinary Clinic	200 Growth Parkway
	Pokagon Veterinary Hospital	2650 W Maumee St.
<b>Dental Clinics</b>	Angola Dental Center	205 E Harcourt Rd.
	Bradley S. Igney DDS	224 N Wayne St.
	ELD	610 N Wayne St.
	Galen R. Williams DDS	901 Williams St.
	Healthy Smiles Family Dentistry	101 N Terrace Blvd.
<b>Public and Private Laboratories</b>	Trine University	1 University Ave.
	Angola High School	350 John McBride Ave.

Sector	Name	Address
Significant Industrial Users	Angola Wire	502 Weatherhead St.
	T&S	900 Growth Parkway
	Univertical	203 Weatherhead St.
Industrial Users	Autoform & Manufacturing	1501 Wohlert St
	AW Manufacturing	1300 Wohlert St
	Baril Coatings USA	401 Growth Parkway
	C&K	240 Growth Parkway
	Chapman Brewery	300 Industrial Dr
	Cintas	1720 Wohlert St
	Double Envelope Company	100 Woodhull Dr
	EJ Brooks dba Tyden Brooks	409 Hoosier Dr
	Emf Corp	505 Pokagon Trail
	Finishing Brands	1910 N Wayne St
	Friskney	1105 Williams St
	G&S	1601 Wohlert St
	General Products	1411 Wohlert St
	Gettig	910 Wohlert St
	Hanna Brothers Drywall	1400 Wohlert St
	Hi Pro	1410 Wohlert St
	Highland Computer	1510 Wohlert St
	Hudson Aquatic Systems	1100 Wohlert St
Illuminated Images	1825 W Maumee St	

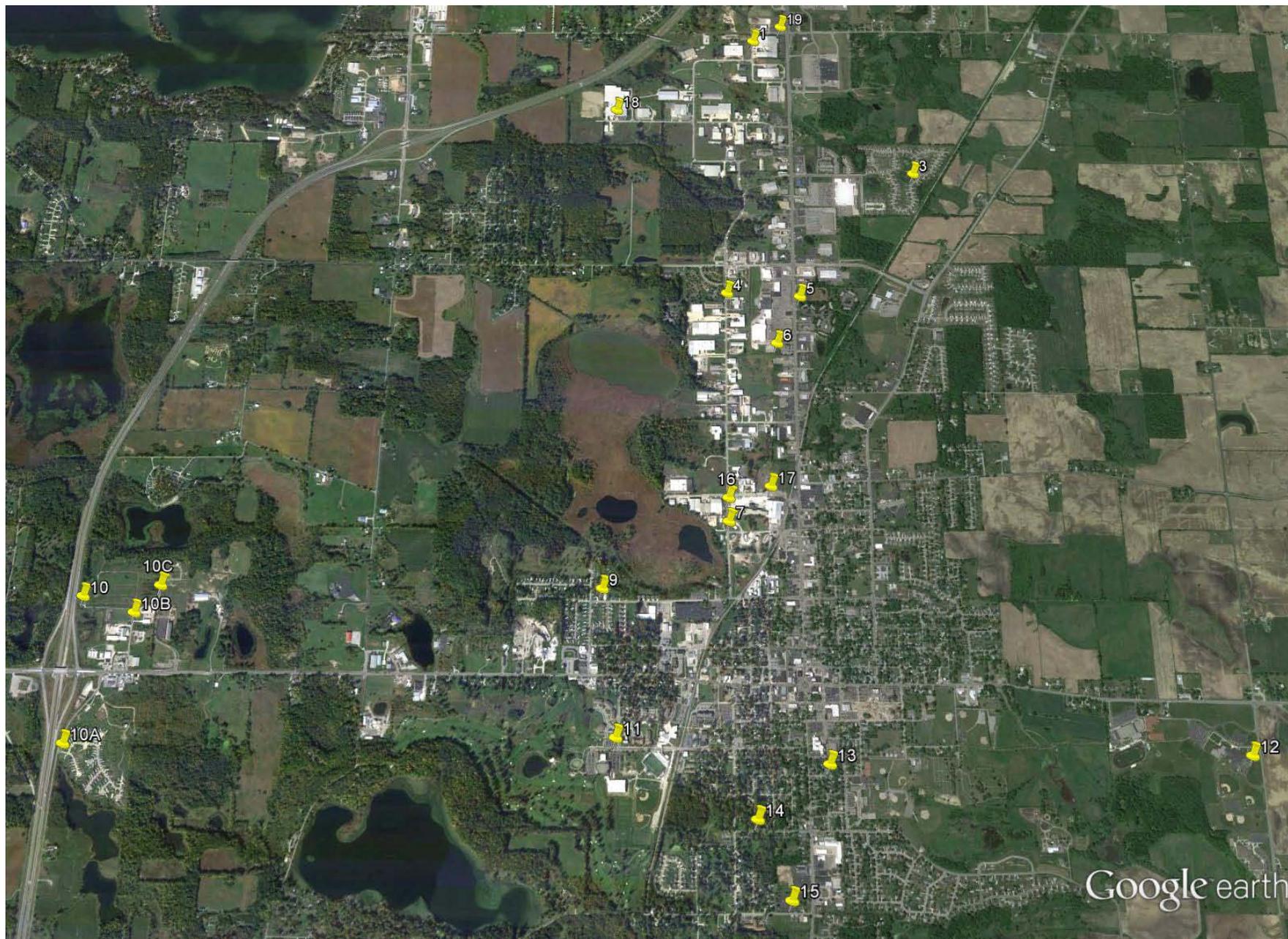
Sector	Name	Address
<b>Industrial Users</b>	Indiana Marine Products	409 Growth Parkway
	Innovation in Motion	201 Growth Parkway
	Jim Ingledue Construction	319 Pokagon Trail
	Kirk Enterprises	333 Hoosier Dr
	McLatcher Fridge	113 Industrial Dr
	Metal Spinners	800 Growth Parkway
	Metal Spinners	914 Wohlert St
	Mid-West Refractories	200 Industrial Dr
	Purity Cylinder Gases	2801 Woodhull Dr
	Rise inc	1600 Wohlert St
	Rockwell American	1304 Wohlert St
	Special Cutting Tools	1305 Wohlert St
	Sphinx	405 Pokagon Trail
	Star Crane & Hoist	1500 Wohlert St
	Steffy Wood Products	701 W Mill St
	Tenneco	503 Weatherhead St
	Titan Metal Spinning	301 Growth Parkway
	Ventra	3000 Woodhull Dr
	Vestil	2999 N Wayne St
	Wrengineering Inc.	498 E. Harcourt Rd

<b>Sector</b>	<b>Name</b>	<b>Address</b>
<b>HVAC</b>	McLatcher Fridge	113 Industrial Dr.
	Armstrong Heating & Air Conditioning	304 Calvary Ln
	Masters Heating & Cooling Inc	101 W Fox Lake Road
	Preferred Maintenance	1920 Westwood Dr
<b>Auto Repair</b>	Angola Collision Services	340 Hoosier Dr.
	Angola Ford Mercury Inc	830 E. Maumee St.
	Angola Muffler & Brake	1319 Hammel Dr.
	Best 1 Tire of Angola	1101 N. Wayne St.
	Cole Cyle Sales	100 S Gerald Lett Ave
	Countryside Repair	1301 Wohlert St.
	Cueno's Car Care Center	207 Jackson St.
	Dave's Diesel	1201 Wohlert St.
	Dunham Chrysler Dodge Jeep and Dodge Truck	1006 S Wayne St.
	Gatchells Mufflers & Brakes	1013 N. Wayne St.
	Harold Chevrolet	824 N. Wayne St.
	Jiffy Lube	640 N. Wayne St.
	Lounsbury Garage	208 Mechanic St.
	Midas Auto Service Experts	2401 N. Wayne St.
	Panterra Coach & RV	101 Industrial Dr.
	Rapid Rebuilding	100 Industrial Dr.
	S&T Autobody Inc.	125 N. McKinley St.
	Smith Enterprise	101 McKinley St.
	Southtown Auto Repair	114 Lange Ln.
	Walmart	2016 N. Wayne St.

<b>Sector</b>	<b>Name</b>	<b>Address</b>
<b>Appliance Repair</b>	Sanborn Service Center	1990 W. Maumee St.
<b>Multi-family Residential</b>	Angola Gardens	201 S. Shoup St.
	Crosswait Estates	2208 N. Wayne St.
	Darling Street Apartments	700 S. Darling St.
	Elliot Manor	617 Williams St
	Lakeland Apartments	201 W. Fox Lake Rd.
	North Lake Manor	300 Bittersweet Court
	Northcrest Apartments	810 Regency Ct.
	Village Green Apartments	1700 N. Wayne St.
	Williams Street Apartments	520 Williams St.

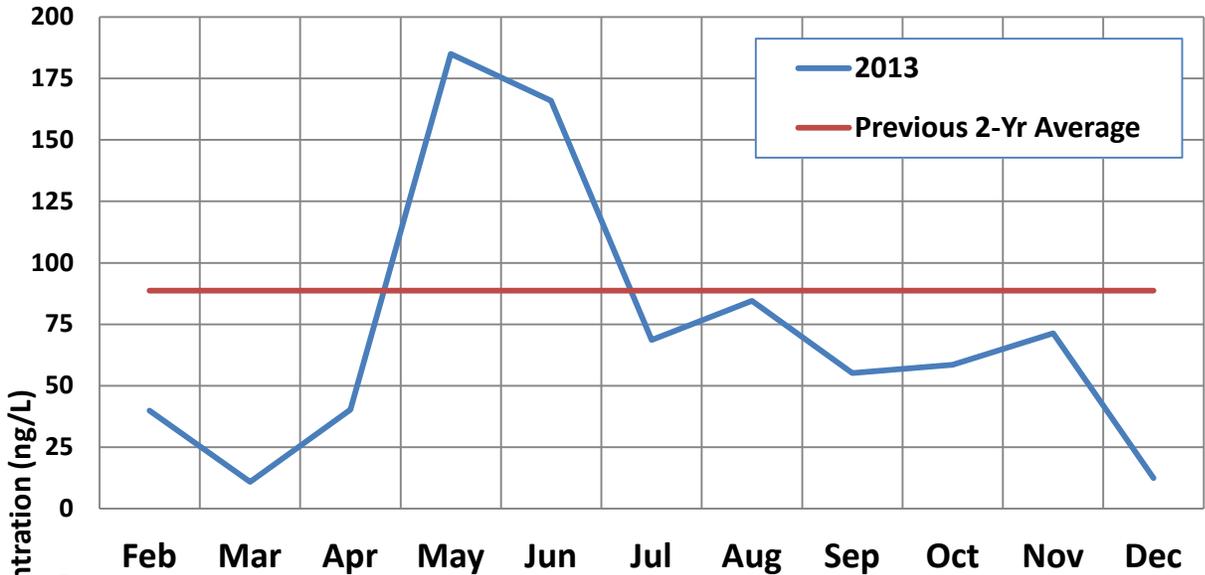
**Attachment 8**  
**Collection System Sampling**

### Mercury Collection Sampling Locations

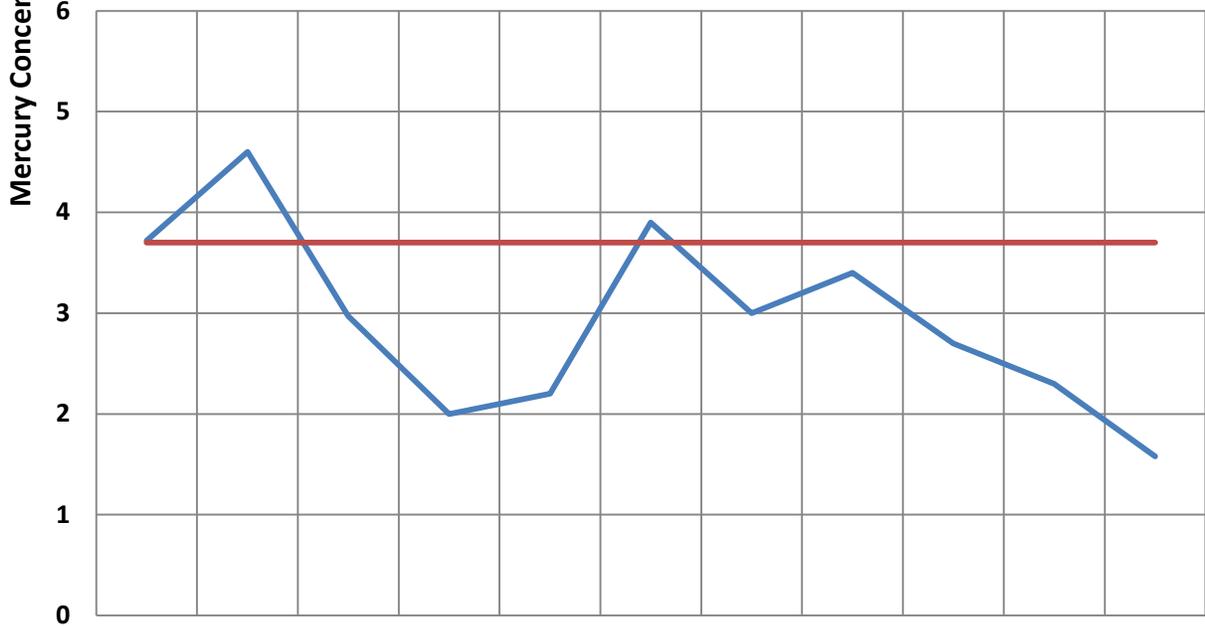


Site ID	Site Location	Test Date	Test Result (ng/L)
1	Woodhull Dr Sanitary Sewer Manhole (Industrial Area)	8/17/13	35.6
3	Northcrest Lift Station (Residential Subdivision)	8/17/13	90.5
4	Wohlert Sanitary Sewer Manhole	8/17/13	167
5	Village Green Lift Station (Residential Subdivision)	8/17/13	12.3
6	Pizza Hut Lift Station (Commercial Area)	8/17/13	19.9
7	Kings Lift Station, Wohlert St (Industrial Area)	8/17/13	47.5
9	Mill St. Lift Station (Residential Area)	8/17/13	289
10	Buck Lake Lift Station (Commercial & Residential)	8/17/13 10/23/13	1790 140
10A	Angola Gardens Lift Station (Residential Mobile Home Park)	10/23/13	14.6
10B	Hetzler Ct Sanitary Sewer (Commerical Area)	10/23/13	16.7
10C	Terrace Blvd Sanitary Sewer (Residential/Commercial Area)	10/23/13	2110
11	Tri-State Lift Station (Residential/University Area)	8/17/13	564
12	MSD Lift Station (School Area)	8/17/13	25.9
13	Prospect & Martha Sanitary Sewer Manhole (Residential Area)	8/17/13	20.8
14	Felicity & Superior Sanitary Sewer Manhole (Residential Area)	8/17/13	1830
15	Fox Lake Rd Lift Station (Residential Area)	8/26/13	28.2
16	Angola Wire (SIU)	1/15/13 5/7/13 8/21/13 12/11/13	6.95 4.21 4.20 6.36
17	Univertical (SIU)	2/27/13 6/12/13 9/11/13	570 0.623 6.48
18	T&S (SIU)	2/20/13 6/19/13 8/7/13 12/4/13	5.14 1.96 34.9 1.29
19	Vestil Manufacturing (Industrial)	3/26/13 5/8/13 7/17/13	50.9 44.8 862

**Attachment 9**  
**POTW Influent & Effluent Sampling**



WWTP Influent



WWTP Effluent

Testing Method		EPA 1631E										
MDL =		0.2 ng/L										
Reporting Limit =		0.5 ng/L										
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Influent (ng/L)</b>	40.5	39.9	10.9	40.3	185	166	68.6	84.6	55.1	58.5	71.4	12.4
<b>Effluent (ng/L)</b>	5.9	3.7	4.6	3.0	2.0	2.2	3.9	3.0	3.4	2.7	2.3	1.6