



John R. Kasich, Governor  
 Mary Taylor, Lt. Governor  
 Scott J. Nally, Director

April 10, 2013

Hamilton County Board of Commissioners  
 138 East Court Street, Room 603  
 Cincinnati, OH 45202

**RE: MSDGC Mill Creek WWTW/Compliance Inspection Report  
 NPDES Permit No. OH0025461/OEPA Permit No. 1PM00001\*LD**

Dear Gentlemen:

On March 27, 2013, I conducted a compliance evaluation inspection of the Mill Creek Wastewater Treatment Works (WWTW). Messrs. Bill Winters and Ed Ewbank represented the Metropolitan Sewer District of Greater Cincinnati (MSDGC) during the inspection process and provided additional information in the days following the inspection. The operators of record, Messrs. Larry Scanlan and Dan Siler, were not available on the day of the inspection. The purpose of the inspection was to evaluate compliance with the terms and conditions of the NPDES permit for the Mill Creek WWTW and to reexamine some key events that occurred in 2012.

**MSDGC Mill Creek WWTW  
 EFFLUENT LIMIT VIOLATIONS  
 (Period of Review: January 2012 – February 2013)**

7D = Weekly 30D = Monthly  
 1D = Daily    Conc. = Concentration (mg/l)    Qty. = Quantity (Kg/Day)

Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value
January 2013	604	Oil and Grease, Hexane	1D Conc	10	20.7

\*MSDGC provided follow-up correspondence dated February 20, 2013.

Mill Creek WWTW Construction

The facility is finishing up major construction projects; most of which were initiated around three years ago. The projects consisted of the following:

- The preliminary and primary treatment improvement project was approved by Ohio EPA on September 29, 2009 (PTI# 709564). This project is scheduled to be completed on May 20, 2013. Some of the more salient features include:

- Demolish the existing grit building and equipment and construct six new grit tanks/washers (90 MGD each).
  - Install two new grit pumps per each grit tank and associated discharge piping from the pumps to the new washers.
  - Construct new raw sewage flow metering and sampling facilities.
  - Extend the existing raw sewage force mains to the new grit facility.
  - Discharge conduits to convey de-gritted raw sewage from the grit tanks to downstream facilities.
  - Construct new primary influent conduits between the new grit tanks and primary settling tanks.
  - Decommission and remove the existing odor control unit and install three new biotrickling filter type odor control units
  - Remove existing rotating trough system for the primary settling tanks and install 16 new individual rotating troughs.
  - Construct two skimmings wet wells (east and west) adjacent to the north wall of the primary settling tank and install duplex submersible pump systems in each of the two skimmings wet wells.
- The secondary treatment upgrade and rehabilitation project were approved on September 16, 2009 (PTI# 709543). The purpose of the project was to 1) provide secondary treatment of up to 240 MGD for up to three consecutive days; 2) automate sludge pumping; 3) maintain a treatment process that is easy and straightforward to operate; 4) minimize staff requirements and 5) provide for equipment maintainability. This project is scheduled to be completed on May 22, 2013. Some of the more salient features include:
    - Replace the existing RAS pump station with a new dry pit centrifugal pump system in the north-south service tunnel.
    - Convert the existing RAS pump station wet well into a collection point for clarifier skimmings.
    - Route the RAS discharge to the first pass of each aeration system (to enable step feed/contact stabilization.)
    - Replace clarifier equipment including additional suction piping under the existing clarifier slab for required process control.
    - Replace the existing clarifier mechanism with Unitube collector units including center pier foundation modifications and reshaping of the clarifier basin bottom.
    - Modify the clarifier inlet and basins to provide energy dissipating baffles, flocculating inlets, and reaction baffles.
    - Install additional weir troughs.
    - Improve the influent step feed/RAS system including separate flow meter and control valve installations for improved process control.
    - Replace two existing WWTW substation units serving the secondary treatment process including switchgear, breakers, controls and enclosure.
    - Replace existing WAS pumps.



**Secondary clarifier improvements.**

- The raw sewage pump station (North PS) improvements (no PTI required) are scheduled to be completed August 20, 2013. This project included the following: pump rehabilitation (nine total pumps@ 40 MGD each), pump motor replacement, gate valve rehabilitation, electric actuator addition and replacement; Pump Station building exterior and interior rehabilitation, electrical work, structural work, plumbing replacement, HVAC replacement, and surface preparation and painting.  
Even though this project will not be completed until August, it is estimated that the facility will be able to pump 430 MGD (without back-up pumps since two 40-MGD pumps will still be out of service) by the time the primary/preliminary improvement project and secondary treatment upgrade are completed in May.

#### Mill Creek Fish Kill Incidents

Due to the ongoing construction, the Mill Creek WWTW has been limited in the amount of wastewater which can be treated during certain wet weather events. Interceptor gates are throttled in order to restrict influent wastewater so that the calculated maximum flow is not exceeded on a given day. Prior to the initiation of construction, the Mill Creek WWTW could provide preliminary treatment, primary treatment and disinfection to flows

of up to 430 MGD. Part II.Y.2. of the NPDES permit for the Mill Creek WWTW states the following:

*By maximizing the use of all available treatment units, the plant shall provide preliminary and primary treatment and chlorination to all flows up to a maximum of 430 MGD. Flow to secondary treatment will be maximized using 20 NTUs as an operating guide. At no time will the flow rate through secondary treatment be less than 130 MGD as measured at station 1PM00001604.*

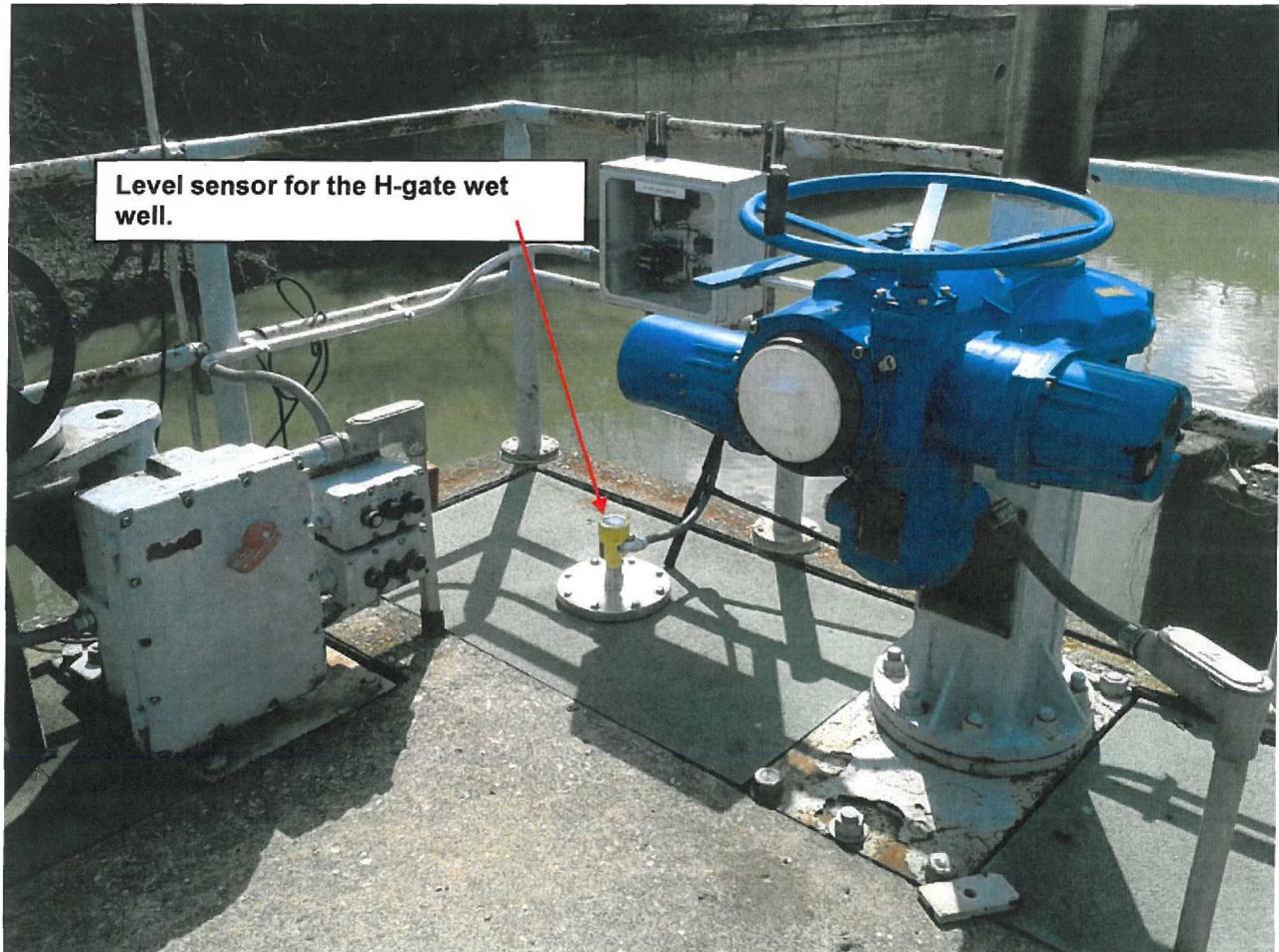
During construction, the WWTW treatment capacity has been limited to influent daily flows as low as 155 MGD. On the day of the compliance evaluation inspection, WWTW operations and maintenance staff had calculated the maximum target capacity (through primary treatment) at 280 MGD. Operations and maintenance staff meet every morning to calculate the maximum target capacity based on the ongoing construction as well as treatment unit/tank outages due to normal predictive maintenance items. An example spreadsheet that was used by MSDGC staff to calculate daily flow targets is attached to the report. Once construction is completed, MSDGC expects more reliability from the preliminary, primary and secondary treatment units.

ODNR conducted an investigation of a fish kill in the Mill Creek that occurred on May 30, 2012. During the course of the investigation, investigators noted evidence of raw sewage in the Mill Creek including floating black solids, sewage odors, floatables, and grease. They also counted 5,089 dead fish between the Gest Street Bridge in the Mill Creek and approximately 400 yards downstream of the Mill Creek in the Ohio River. They provided Ohio EPA Division of Surface Water with pictures and a description of the observations. Since both the Mill Creek Auxiliary Interceptor "H" gate (interceptor overflow located at the Mill Creek wastewater treatment works (WWTW)) and upstream combined sewers were overflowing raw sewage on May 29, 2012, the septic conditions in the Mill Creek are attributed to the Metropolitan Sewer District of Greater Cincinnati (MSDGC). It is highly likely these bypasses and overflows of sewage, in conjunction with low flow conditions in the Mill Creek and unseasonably warm weather, were significant contributors to depletion of the aquatic dissolved oxygen to levels that caused the fish kill.

Ohio EPA sent a Notice of Violation (NOV) to MSDGC dated June 13, 2012, regarding the fish kill in May. In the NOV, Ohio EPA required MSDGC prepare a response plan for communicating fish kill events to the appropriate authorities and to develop a means of monitoring stream conditions in order to determine when the potential for a fish kill is elevated (high temperatures, low dissolved oxygen, etc.). MSDGC has since created a "Compliance Stream Incident Monitoring & Response Procedure" (see attached).

The Notice of Violation also required MSDGC to begin monitoring daily discharges and 24-hour discharge flows at the H-gate. The results of this information are relayed in the influent "throttling" reports submitted to Ohio EPA SWDO. *Once construction is completed and full wet weather treatment capacity is resumed, MSDGC personnel do not anticipate any further bypassing incidences at the H-gate location. However, Ohio*

*EPA will create a monitoring station in the upcoming NPDES permit renewal for the H-gate location so there will be an eDMR reporting option in the event of a bypass.*



MSDGC has reported two fish kill incidents since May 2012 and have used the protocol outlined in the "Compliance Stream Incident Monitoring & Response Procedure". The occurrence on August 10, 2012, resulted in a dead animal count of 9,939 (provided by ODNR). ODNR and Ohio EPA acknowledge that while this major fish kill event is not acceptable, the prompt response and communication from MSDGC was vastly improved from the initial event in May. Both agencies will continue to work with MSDGC on this issue.

#### Polymer Offloading Incident

According to MSDGC, on June 14, 2012, front gate personnel inadvertently communicated to a wastewater operator that a truckload of sodium hypochlorite had arrived for delivery. The operator then permitted the driver to offload the contents of the truck into the sodium hypochlorite bulk storage. However, the truck was filled with polymer and not sodium hypochlorite. A chemical reaction with the storage tank caused a failure of an air relief valve and subsequent flooding of the secondary containment

area. Once the error was discovered, the sodium hypochlorite system was turned off from 10:00 p.m. on June 14, 2012, until 7:20 a.m. on June 15, 2012, when auxiliary disinfection was placed into service. MSDGC notified Ohio EPA's Spill Hotline when the event occurred.

MSDGC has since developed a new protocol for offloading at the sodium hypochlorite bulk storage area. The new protocol involves new signage at the offloading station and various checks for the driver and wastewater operator. The "Checklist for Driver Responsibilities re: Bulk Chemical Deliveries" is attached.



**Sodium hypochlorite bulk storage tanks and containment area.**

**Repairs to the concrete floor, which had been damaged during the spill event.**

**New signage and lock-check system for the sodium hypochlorite bulk storage offloading area**



Follow-up from February 7, 2012 Notification Letter

MSDGC submitted a notification letter dated February 7, 2012, concerning an on-site combined sewer overflow that occurred on February 2, 2012. MSDGC contacted the Ohio EPA Emergency Response hotline on February 3, 2012, and reported sludge floating in the Mill Creek.

Upon request by Ohio EPA during the compliance evaluation inspection, MSDGC provided the following additional information concerning this event:

*Normally, dewatering centrifuge centrate is directed to the primary influent channel. If there is a flow restriction that prevents centrate from flowing to the primary influent channel, then rather than overflowing onto the process floor centrate is directed to an overflow pipe that discharges to the Fitzpatrick sewer. This is believed to be the source of the floating sludge on the creek on February 2, 2012. To reduce the chance of overflowing centrate to the Fitzpatrick sewer, the overflow pipe elevation was raised. The centrifuge centrate would have to back up to a higher elevation before a bypass would occur, but still provide the needed protection to the dewatering process. Plant staff modified operating*

*procedures to reduce the chance of an overflow to the Fitzpatrick sewer when there is a chance the Fitzpatrick sewer would be running fuller, such as, high river elevation or storm flow by checking to see if the overflow was active and adjusting centrifuge operation to try to reduce or stop the overflow to the Fitzpatrick sewer, if possible.*

#### Follow-up from March 7, 2012 Notification Letter

MSDGC submitted a notification letter concerning an interceptor sluice gate that was closed even though the SCADA system indicated that it was open. Because the gate remained closed, overflows occurred in the collection system on February 23, 2012. MSDGC collection system personnel contacted treatment plant operators and the Ohio EPA Emergency Hotline was contacted. The gate was manually opened and the overflow stopped.

Upon request by Ohio EPA during the compliance evaluation inspection, MSDGC provided the following additional information concerning this event:

*When the Mill Creek Interceptor gate was opened, the SCADA system indicated the gate was open. It may have opened, but at some time the gate shaft slipped in the gate operator. The SCADA system continued to indicate the gate was open. The gate position was not visually checked in the field until the sewer overflow was seen. Plant staff was instructed to visually check the gate in the field any time the gate was moved to ensure it moved as expected.*

The following entry was prepared by Rick Hamant (MSDGC Operator) on February 24, 2012:

*The Mill Creek Interceptor gate (AF-D1) has failed due to a stripped, brass drive nut used to move the gate stem. This gate can be operated manually only and should now be throttled LAST in the sequence of high plant flow gate throttling. (CBS #4 cannot be used: The gate operator from CBS #4 has been moved to the AF-D1 gate temporarily). Operators need to visually verify that the Plant Influent Gates/H-Gate have responded to PC commands. This means physically go out and confirm that the gates have opened or closed...Especially when going into a high plant flow event and/or coming out of a plant high flow event. Record in eOps... (gate, position, visual confirmation). FOR THIS WEEEEKEND: The top of the AF-D1 gate stem needs to be manually opened to 20% or 24" above the blue base ASAP after the threat of storms is gone. Call me @ 638-9445 if needed. Thanks for being attentive to this in advance.*

#### Follow-up from August 2, 2012 Notification Letter

MSDGC submitted a notification letter concerning a dry weather overflow that occurred on July 30, 2012 (Ohio EPA spill hotline was contacted on July 31, 2012).

Upon request by Ohio EPA during the compliance evaluation inspection, MSDGC provided the following additional information concerning this event:

*The Mill Creek Interceptor gate was still not fully operational at this time. There was a tag placed on the gate indicating that an operator was to contact a supervisor before operating this gate. During the time before the gate was repaired, the tag appears to have been lost. An operator closed the gate due to plant flow, but did not put in the log that he had moved the gate. As staff did not expect the Mill Creek Interceptor gate to be moved, its position was not checked. Please see the attached item to see the additional instructions provided to operating staff.*

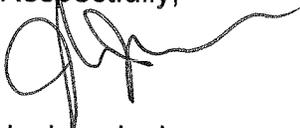
Attached is a copy of the standard operating procedure for influent gate throttling during wet weather events. The SOP is titled "Pump Building Storm Operation".

**Please note that the dry weather bypassing as described above is a violation of Part III (11.) of the facility's NPDES permit.**

While the nature of compliance evaluation inspections is to highlight uncomplimentary incidences, Ohio EPA acknowledges that the dry weather bypassing events (and polymer offloading incident) described within this report were reported and addressed promptly. Ohio EPA does not require any further information concerning any of the incidents described within the report at this time.

Thank you and your staff for the time extended during the inspection process. If you have any questions, please feel free to contact me by phone at (937) 285-6342 or by email at [joshua.jackson@epa.state.oh.us](mailto:joshua.jackson@epa.state.oh.us).

Respectfully,



Joshua Jackson  
Environmental Specialist II  
Division of Surface Water

JJ/kb

cc: Ed Ewbank, MSDGC  
Dan Siler, MSDGC  
Larry Scanlan

Enclosures



John R. Kasich, Governor  
 Mary Taylor, Lt. Governor  
 Scott J. Nally, Director

Division of Surface Water-Southwest District Office

## NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PM00001*LD	OH0025461	3/27/2013	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
MSDGC Mill Creek WWTW 1600 Gest Street Cincinnati, OH Hamilton County	9:30 a.m.	8/1/2009
	Exit Time	Permit Expiration Date
	1:00 p.m.	7/31/2013
Name(s) and Title(s) of On-Site Representatives		Phone Number(s)
Larry Scanlan and Dan Siler, ORCs		513-244-5108
Name, Address and Title of Responsible Official		Phone Number
Hamilton County Board of County Commissioners 138 E. Court Street, Room 603 Cincinnati, OH 45202		513-946-4400

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	S	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	N	Sludge Storage/Disposal	N	Other
N	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See attached.	
Inspector	Reviewer
 Joshua Jackson Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
Date 4-10-2013	Date 4/10/2013

Permit # : 1PM00001\*LD  
NPDES #: OH0025461

Sections E thru K: Complete on all inspections as appropriate  
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

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**Section E: Permit Verification**

Inspection observations verify the permit

- |  |   |
|--|---|
| (a) Correct name and mailing address of permittee .....                        | Y |
| (b) Flows and loadings conform with NPDES permit.....                          | Y |
| (c) Treatment processes are as described in permit application...              | Y |
| (d) All discharges are permitted.....  | Y |
| (e) Number and location of discharge points are as described<br>in permit..... | Y |
| (f) Storm water discharges properly permitted.....                             | Y |

Comments/Status:

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**Section F: Compliance**

- |   |     |
|---|-----|
| (a) Any significant violations in the period of review.....             | N   |
| (b) Appropriate Non-compliance notification of violations.....          | Y   |
| (c) Permittee is taking actions to resolve violations.....              | Y   |
| (d) Permittee has a compliance schedule.....                            | N   |
| (e) Compliance schedule contained in...N/A                              |     |
| (f) Permittee is in compliance with schedule.....                       | N/A |
| (g) Has biomonitoring shown toxicity in discharge since last inspection | Y   |

Comments/Status:

Ohio EPA performed acute toxicity testing of the effluent in 2009 and 2010. The effluent was found to be acutely toxic to both *P. promelas* and *C. daphnia*. Ohio EPA will be evaluating toxicity testing with the upcoming NPDES permit renewal.

**Section G: Operation & Maintenance**

**Treatment Works:**

Treatment facility properly operated and maintained

(a) Standby power available.....generator  or dual feed ..... Y

i. What does the back-up power source operate.....

The entire WWTW complex. According to MSDGC staff, Electric is fed to two separate transformers and substations from different sources. If a substation has a problem, then a manual switch is thrown, such that, the other substation can supply the additional electrical load. The loss of a substation may not result in a total loss of treatment because the electrical system is a "ring", and power may be supplied from another direction to treatment equipment.

ii. How often is the generator tested under load.....

N/A

(b) Which components have an alarm system available for power or equipment failures.....

MSDGC will be providing a complete list of alarms for the file.

(c) All treatment units in service other than backup units..... N

(d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....

Maximo (proprietary predicative maintenance software)

(e) Any major equipment breakdown since last inspection..... N

(f) Operation and maintenance manual provided and maintained..... Y

(g) Any plant bypasses since last inspection..... Y

(h) Any plant upsets since last inspection..... N

Comments/Status:

See section on WWTW construction.

**Section G: Operation & Maintenance con't**

**Record Keeping/Operator of Record:**

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... IV
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... Y
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met.....Y
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)  

Operational decisions are recorded in eOps, but staffing hours are recorded in a spiral calendar.
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
  - I. Identification of treatment works..... Y
  - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
  - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
  - iv. Laboratory results (unless documented on bench sheets)... N
  - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

**Comments/Status:**

Ohio EPA ORC list for all NPDES facilities shows Larry Scanlan and Bill Beyer as ORCs for the Mill Creek facility. MSDGC indicated they had submitted an updated form to Ohio EPA which removed Bill Beyer and added Dan Siler as ORC with Larry Scanlan. MSDGC submitted an additional form to clear any confusion (4/8/2013). Joshua Jackson forwarded the form electronically to Mark Stump in DSW-CO.

According to MSDGC staff, "eOPS is configured such that after an operator makes a log entry the operator, and only the operator can edit the log entry for up to 12 hours. After 12 hours has elapsed the log entry is locked and no eOPS user can alter the log entry, including the operator that made it. The 12 hour timeframe was selected so that an operator could edit a log entry, if necessary, made at the beginning of their shift."

Ohio EPA Southwest District Office does not object to this method, however MSDGC should consider tracking all changes made to existing entries, even those entries made within a 12-hour shift. This would ensure all information entered by staff is documented.

According to MSDGC staff, "(OAC)3745-09 (A) states, in part, "Some of the formats in which the records may be maintained include, but are not limited to, hard bound books with consecutive page numbering, time cards, separate operation and maintenance record, or well organized computer logs." The calendar

being used meets the intent of the rule. Pages cannot be added or subtracted from the calendar without obviously damaging the wire binding. The calendar pages are sequential. It would be obvious if any pages were removed. A label has been added to the calendar to clearly identify the calendar as the Operator of Record log. If OEPA is still of the opinion that the calendar does not meet the intent of the rule we will change the method for recording Operator of Record time, but we believe we are meeting the rules intent."

While Ohio EPA understands your position concerning the use of the calendar, it is not a hard-bound book (as required by OAC 3745-7) and the procedure for documenting ORC time must be modified to reflect this requirement. This change must be completed by no later than May 1, 2013.

Upon request, MSDGC provided ORC logbook entries (time requirement) for the weeks of August 6, 2012 and February 4, 2013. It appeared that the Messrs. Scanlan and Siler met the ORC staffing requirements. MSDGC has an approved ORC staffing hour reduction of 20 hours/5days/week based on another operator certified at a level no more than 2 classes below that of the treatment works or sewerage system onsite at the wastewater treatment facility 8 hours per day 5 days per week.

**Section G: Operation & Maintenance con't**

**Collection System: Not Evaluated**

**Section H: Sludge Management**

**Sludge Management: Not Evaluated (Incineration)**

**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
- (b) Flow meter calibrated annually ..... Y  
 (Date of last calibration: 5/8/2012)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

**Comments/Status:**

24-hour recording performed electronically (SCADA-eOps)

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**Section I: Self-Monitoring Program (con't)**

**Sampling:**

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y  
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

**Comments/Status:**

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**Section I: Self-Monitoring Program (con't)**

**Laboratory: Ohio EPA will conduct a comprehensive laboratory inspection within the next few months.**

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**Section J: Effluent/Receiving Water Observations**

Outfall # 002

Outfall Description:

Receiving Stream: Ohio River

Receiving Stream Description: River stage elevated at the date of the inspection

**Comments/Status:**

Due to the high river stage, the outfall diffuser for 002 could not be observed. The WWTW effluent was observed after at the effluent meter location. The effluent clear with mild foaming due to the turbulence around the Parshall Flume.

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**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from

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- sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or  
damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

**Comments/Status:**

**OPERATIONS PROCEDURES - COMPLIANCE  
STREAM INCIDENT MONITORING &  
RESPONSE PROCEDURE**

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**Purpose**

The purpose of this procedure is to establish a monitoring protocol to anticipate stream impact incidents and to ensure prompt notification when such incidents occur.

**Documentation**

- ◆ MSDGC NPDES Permit
- ◆ MSDGC Contact List

**References**

- ◆ Ohio Administrative Code 3745-1-04 (A, B, C and D) "Criteria Applicable to All Waters"
- ◆ Stream Observation Report

**Record of Revision**

Revision	Effective Date	Description
0	10/29/12 draft	Procedure issued.

Subject Expert:

\_\_\_\_\_  
MaryLynn Lodor,  
Environmental Programs Manager

Authorization:

\_\_\_\_\_  
James A. Parrott  
Executive Director

**OPERATIONS PROCEDURES - COMPLIANCE  
 STREAM INCIDENT MONITORING &  
 RESPONSE PROCEDURE**



**Roles and Responsibilities**

<p>Wastewater Treatment Division</p>	<p>Maintenance and Operations Staff</p>	<p>Lead – treatment plant / Support – treatment plant</p>	<p>√</p>	<p>√</p>	<p>Monitor and notification of overflows and bypasses associated with operations including, wet weather events and/or construction impacts of treatment plants; Oversees procedure implementation and coordinates Department resources for appropriate responses for events stemming from treatment facilities.</p> <p>For any spills, bypassing, overflows, gate throttling, including discharges from H-gate at the Mill Creek WWTP, MSD will follow NPDES permit conditions and/or standard protocol.</p>
<p>Wastewater Collection Division</p>	<p>Maintenance and Operations Staff</p>	<p>Lead – collection / Support - collection</p>	<p>√</p>	<p>√</p>	<p>For any collection overflows, MSD will follow NPDES permit conditions and/or standard protocol. Oversees procedure implementation and coordinates Department resources for appropriate responses for events stemming from the collection system.</p>
<p>Industrial Waste Division</p>	<p>Inspector</p>	<p>Support – treatment plant/ Lead – SIU/IUs</p>	<p>√</p>	<p>√</p>	<p>Monitors known problem areas and investigates incident including completing forms and notifications</p> <p>Once report is made, DIW will be a point of contact on follow up and investigation with ODNR &amp; OEPA.</p>

**OPERATIONS PROCEDURES - COMPLIANCE  
 STREAM INCIDENT MONITORING &  
 RESPONSE PROCEDURE**

CINCINNATI

Industrial Waste Division	Operations Manager	Input	√	√	Support resources to protect receiving stream impacts and provides additional resources with investigation of fish kills
Office of the Director	Environmental Programs Manager	Support – investigation / Internal Follow Up	√	√	Manages overall environmental programs for the Department and maintains regulatory relationships ensuring appropriate responses and reporting; conducts the assessment and follow up to ensure consistency.  Once report is made, EPM will be a point of contact.
Regulatory Agencies	Investigators/ Compliance Officers	Input/ Compliance Lead	√	√	Investigation of releases, notification and report reviews and responses, follow-up monitoring if warranted

## **Definitions**

**Fish Kill** – Because a small number of dead fish may simply reflect the natural cycle of aquatic life, a fish kill is defined as more than 10 dead fish, shellfish or other aquatic life within any given area.

**National Pollutant Discharge Elimination System (NPDES)** –As authorized by the Clean Water Act this permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal and other facilities must obtain permits if their discharges go directly to surface waters.

**Recreational Season** – May 1<sup>st</sup> to October 31<sup>st</sup>

## **Procedure Description**

### **Monitoring**

The purpose of the monitoring plan is to identify conditions on the lower Mill Creek that have the potential to cause a fish kill such as low stream levels, low dissolved oxygen (DO) levels, overflowing sewage, etc. Daily readings of stream temperature and DO of the Mill Creek are taken during the recreational season just upstream of the Gest Street Bridge at the Mill Creek Treatment Plant influent pump station. Operations staff shall conduct a daily visual check of the receiving stream during the recreational season to ensure no stream incidents have occurred. Visual checks are also made at the Barrier Dam and at the Mill Creek Treatment Plant influent pump station. Other facilities throughout the MSD service area may use the Stream Observation Report to notify and record stream incidents.

If less than 10 dead fish are observed, a note shall be entered into eOPS database. If conditions suggest a fish kill has occurred, (more than 10 dead fish were observed) then the following steps shall be completed:

1. **Observing Staff Contact Supervisor:**
  - a. When a member of MSD Treatment, Collection or Industrial Waste personnel observes what he or she believes to be a fishkill, his or her supervisor should be contacted immediately. Supervisors shall then complete the Stream Observation Report based on information provided by personnel member.
  
2. **Complete Stream Observation Report:**
  - a. A "Stream Observation Report" shall be completed by supervisory personnel from the relevant division in a timely manner after a stream incident is observed. notifies Additional staff from relevant divisions may also be notified depending upon the location and size of the incident.
  
3. **Notify external agencies and internal staff of the potential fish kill:**

After completion of the Stream Observation Report, MSD supervisory staff from the relevant division shall notify the following external agencies and internal staff making sure to attach the completed Stream Observation Report to the email:

  - a. Ohio Department of Natural Resources Emergency Operations Center: 614-799-9538
  - b. Ohio Environmental Protection Agency Spill Hotline: 800-282-9378
  - c. *External Reporting Email List*
    - i. Michelle Welsh: Ohio Department of Natural Resources Supervisor
    - ii. Joshua Jackson: Ohio Environmental Protection Agency Southwest District Staff
    - iii. Marianne Piekutowski: Ohio Environmental Protection Agency Southwest District Staff
  - d. *Internal Reporting Email List*

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**OPERATIONS PROCEDURE - COMPLIANCE  
STREAM INCIDENT MONITORING &  
RESPONSE PROCEDURE**

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CONFIDENTIAL

- i. Executive Director
- ii. Wastewater Collections Superintendent
- iii. Wastewater Treatment Superintendent
- iv. Assistant Wastewater Treatment Superintendent
- v. Wastewater Treatment Supervisor
- vi. Division of Industrial Waste Superintendent
- vii. Pretreatment Operations Manager
- viii. Supervisor of Industrial Waste Disposal
- ix. Environmental Programs Manager
- x. Environmental Programs Project Engineer
- xi. Communications Team
- xii. Legal

**4. Continued Observation/Coordination:**

- a. If the incident occurs at or downstream of the Mill Creek WWTP MSD treatment operators shall conduct periodic checks at both visual check locations approximately every three hours during daylight of the day of the incident and the following morning of the next daily shift.
- b. If on the next day, the stream has returned to normal, then the regular daily monitoring resumes.
- c. If on the next day, the impact persists and increased fatalities are apparent, additional notification will be provided to ODNR/OEPA.
- d. If the incident occurs at some other location along the Mill Creek, Industrial Waste staff or Wastewater Collection staff will continue to monitor the creek.

**Clean-up**

Following investigation from the regulatory agencies and when conditions warrant, MSD divisions will coordinate appropriate clean up resources. Recommendations are developed jointly within MSD Divisions.

**MSD Follow-Up Actions**

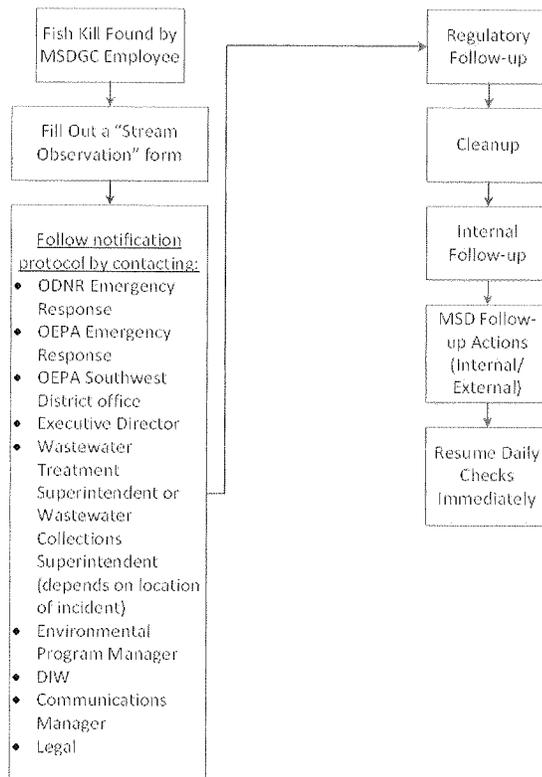
MSD shall use a cross-divisional team when developing recommendations and action plans among MSD team members to improve notifications, investigate the incident, and any other corrective actions to better manage future events; team is led by the Environmental Programs Manager.

**OPERATIONS PROCEDURES - COMPLIANCE  
STREAM INCIDENT MONITORING &  
RESPONSE PROCEDURE**



**Procedure Process Chart**

MSDGC  
Collection System and Treatment Plant Release Flow Chart  
Procedure once stream incident is observed



Prepared: July 19, 2012  
Revised: September 4, 2012

### STREAM OBSERVATION REPORT

<b>1. Date:</b> _____	<b>2. Time of Arrival:</b> _____	<b>3. Specific Waterbody &amp; Location:</b> _____		
<b>4. Person Reporting:</b> Name: _____ MSD Division: _____ Phone: _____ Address: _____		<b>5. Estimated Number of Fish Killed:</b> <input type="checkbox"/> 10-100 <input type="checkbox"/> >100 <b>Estimated number of species:</b> _____		
<b>6. Weather:</b> Outdoor Temperature (°F): _____ Currently raining: <input type="checkbox"/> Y <input type="checkbox"/> N Rainfall in last 24 hours: <input type="checkbox"/> Y <input type="checkbox"/> N Comments: _____	<b>7. Measured Water Quality:</b> Temperature (C): _____ pH: _____ DO: _____ Conductivity: _____ (Other): _____  <i>Temp: Max 85 degrees/Rapidly Lethal: mid 90s DO Min: 4mg/L; lethal at &lt;2 mg/L</i>	<b>8. Observed Water Condition:</b> <input type="checkbox"/> Turbidity <input type="checkbox"/> Sediment Loading <input type="checkbox"/> Low Flow Conditions <input type="checkbox"/> Colored: _____ <input type="checkbox"/> Odor: _____ <input type="checkbox"/> Other: _____		
<b>9. Field Observations:</b> <input type="checkbox"/> Fish coming to surface gulping for air <input type="checkbox"/> Algae bloom <input type="checkbox"/> Fish swimming erratically <input type="checkbox"/> Fish moving upstream to avoid something in water <input type="checkbox"/> Fish dying or dead after heavy rain <input type="checkbox"/> Fish have noticeable sores, lesions or deformities <input type="checkbox"/> Fish dying below a dam or discharge/effluent <input type="checkbox"/> Kill restricted to one species or size class	<b>10. Possible Causes/Sources:</b> <input type="checkbox"/> Low Dissolved Oxygen <input type="checkbox"/> Extreme High Ambient Air Temp <input type="checkbox"/> Chemical discharge/source <input type="checkbox"/> Activated CSO <input type="checkbox"/> Activated SSO – dry or wet <input type="checkbox"/> Other: _____			
<b>11. Documentation and Samples:</b> <input type="checkbox"/> Photos taken <input type="checkbox"/> Water samples: Number: _____ Sent to: _____ Tested for: _____				
<b>12. Persons &amp; Agencies to Notify:</b>				
	DATE	TIME	PHONE	REPORT SENT?
◆ Ohio Department of Natural Resources Emergency Operations Center: 614-799-9538	_____	_____	_____	_____
◆ Ohio Environmental Protection Agency Spill Hotline: 800-282-9378	_____	_____	_____	_____
◆ External Reporting Email List: <a href="#">MSD Stream Incident External Reporting</a>	_____	_____	_____	_____
◆ Internal Reporting Email List: <a href="#">MSD Stream Incident Internal Reporting</a>	_____	_____	_____	_____

\*Additional comments can be included on the back of this page.

This report is completed in an effort to provide notification of a stream incident within the MSD service area. For questions related to MSD Environmental Programs – contact MaryLynn Lodor at (513) 244-5535 or [marylynn.lodor@cincinnati-oh.gov](mailto:marylynn.lodor@cincinnati-oh.gov). If after hours call 352-4900.

**13. Additional Comments:**

This report is completed in an effort to provide notification of a stream incident within the MSD service area. For questions related to MSD Environmental Programs – contact MaryLynn Lodor at (513) 244-5535 or [marylynn.lodor@cincinnati-oh.gov](mailto:marylynn.lodor@cincinnati-oh.gov). If after hours call 352-4900.

<b>MILL CREEK TREATMENT PLANT</b>		Avail Cap. This Primary (MSD)	Req. This	180	Name/Date/Time: Iowa 3/27/2013 6:30a
Avail Cap. refers to the Theoretical Wet Weather Flow Cap. based on available equip. operating ≥ design.		280	180	180	
		430	240	240	River Level: 32.6
Guidelines for prioritizing work requests: If the Actual Available ≥ Required Available, then use 1,2 or 3. If the Actual Available < Required Available, then use 4 or 5.					
LIQUID PROCESS AREA	Total # of Units	Required # Available	Actual # Available	OPERATOR COMMENTS	
<b>PLANT INFLUENT GATES</b>	5	5	5		
MC Aux., MC(D-1), East Branch 1,2, & 3	5	5	5		
<b>SCREENING (change req'd to 4; Oct-Nov)</b>	4	4	3		
Bar Screens 1 & 2	2	see above	1	2 screen down due to bad bucket(rake)	
Bar Screens 3 & 4	2	see above	2		
<b>INFLUENT PUMPING</b>	12	11	6		
North Raw Swg. Pumps 1-9	9	see above	3	RSP #4 runs in hand only; RSPs #2, #3 are OK to use as needed. Do not run RSP-1; Failed vibration Test, #5 not available unit after testing	
South Raw Swg. Pumps 10 & 11	2	see above	2	Pumps 11 & 12 can be run in Auto/VFD. RSP #10 is hand only. Wet Well needs to be 16' or higher to run pumps. Do not run VFDs below 90%. Visual SCADA Screen alarm if well drops to 15.5'	
South Raw Swg. Pump 12	1	see above	1		
South Well Level Indicator	1	1	1		
North Well Level Indicator	1	1	1		
<b>GRIT REMOVAL</b>	6	5	5		
Grit Train= 1 tank, 1 pump, 1 washer	6	5	5	GT-6 Disch Drain Valve shows in hand but switch at valve in PC. GP-5A pump rebuild. GT-4 is OK but leaking lots of water from the organic waste drain control valve into the roll-off below	
<b>PRIMARY TREATMENT</b>	8	7	6	South Drainage pump ok to use 3-21-13	
Settling Tank= collectors, skim troughs & pump	8	7	6	#1 drained for maint.#2 is online but only has one influent gate open...PST 5 down for maint 3/25	
#1, 2, 3 PSP - # 1 & 2 Primary Tanks	3	2	3		
#4, 5, 6 PSP - # 3 & 4 Primary Tanks	3	2	3		
#7, 8, 9 PSP - # 5 & 6 Primary Tanks	3	2	2	RSP#9 has been locked out by maint. Electrical problems 3-4-13 mm	
#10, 11, 12 PSP - # 7 & 8 Primary Tanks	3	2	2	RSP #12 will run in hand and manual modes if needed	
Skim Thk Train=pump & collectors	2	1	1	N Skim Thick off for contractor	
<b>SECONDARY AERATION</b>	6	6	4		
W. Sec. Aer. Tanks	3	3	3		
E. Sec. Aer. Tanks	3	3	1	Aeration Tanks 1 & 3 off for contractor. East Aeration Tanks #1 and #3 filled 1/2 with NPW to protect diffusers from freezing.	
BBACs #1,2,3,5 & 6	5	1	0	2 BBACs canibalized. Need to PMT #6BBAC to be available for upcoming Blower CIP.	
BBAC #4 (for Power Demand Cost Control)	1	1	1		
<b>SECONDARY CLARIFICATION</b>	6	6	4		
W. Sec. Clarifiers	3	3	3		
W. RAS Pumps	9	9	9		
W. WAS Pumps	3	2	3	W WAS Pumps available; #2 & #3 are running off the New VFDs; Auto available for all; #1 WAS old VFD control	
E. Sec. Clarifiers	3	3	1	E Clarifiers 2 & 3 off for contractor	
E. RAS Pumps	9	9	3	RAS pumps for 2 & 3 Clarifiers off for contractor / No PLC control - All pumps running in HAND	
E. WAS Pumps	3	2	2	Only 2 of 3 New E.WAS pumps available; Available to run in Auto but minimum flow is 600-650 gpm.	
NPW Pumps (Exclude No. 1)	6	4	6		
<b>DISINFECTION</b>					
Sec.Eff. Hypo Metering pumps	3	2	1	Flow Pace Control has been restored. Pump #1 out of order.	
NPW Hypo Metering pump	1	1	1		
Post Hypo Metering pumps	2	1	2		
Sec.Eff. E.Channel Mixers	2	1	1	E-1 out of order	
Sec.Eff. W.Channel Mixers	2	1	2		
Hypo Loop pumps	2	1	0	Loop System off line until replacement valves are installed	
<b>INFLUENT SAMPLE STATION (602)</b>	1	1	1	Hand sample: 5ml x process flow, every two hours	
Stn=meters: 1-pH, 1-temp, 2-flow & 1-auto sampler	1	1	1	Sampler is not plugged in HAND sampling (kokosing project) been returned for 3 wks. Needs to be set up.	
<b>PRIMARY EFFLUENT SAMPLE STATION</b>	1	1	1		
Stn= 1-auto sampler	1	1	1	N/O# 953302, deficiency tag# 0329 3-12-2013 calibrate sampler pump, it is filling 2-3 sample jugs a day	
<b>SECONDARY BYPASS SAMPLE STATION (603)</b>	1	1	0	Currently hand sampled at secondary bypass until new sample station installed.	
Stn= 1-auto sampler	1	1	0		
<b>SECONDARY EFF. SAMPLE STATION (604)</b>	1	1	1		
Stn=meters: 1-pH, 1-temp, 1-DO, 2-flow, 1-ntu & 1-auto sampler	1	1	1		
<b>FINAL EFF. SAMPLE STATION (002/004)</b>	1	1	1		
Stn=meters: 1-pH, 1-ntu, 1-Cl2 titrator & 1-auto sampler	1	1	1		
Effluent Sample Pumps (004) - flood control	2	2	2		

MILL CREEK TREATMENT PLANT		Sludge Storage level: 8.38		Name/Date/Time: Franklin 3/27/13														
Guidelines for prioritizing work requests: If the Actual Available ≥ Required Available, then use 1,2 or 3. If the Actual Available < Required Available, then use 4 or 5.																		
Total Units	SOLIDS PROCESS AREA	Equipment Available? Y/N							If No. ready eqipt for maint work & mark R							Required # Available	Actual # Available	OPERATOR COMMENTS
		#1	#2	#3	#4	#5	#6	#7	#1	#2	#3	#4	#5	#6	#7			
	<b>DEWATERING/INCINERATION</b>																	Purpose: Process feed solids of ~4 to 6% to ~ 28% cake for Inc. w/ minimal recycle to primary treatment.
1	Polymer Unloading Pump	y														1	1	bulk poly transfer pump was written up for excess valve leaking
2	Sludge Feed Line Grinders	n	n						m	m						1	0	
7	Centrifuge Sludge Feed Pumps (Moyno)	y	y	y	y	y	y	y								see system	7	
7	Centrifuge Sludge Feed Pump Grinders	y	y	y	y	y	y	y								see system	7	
6	Centrifuges (Alfa Laval)	y	y	y	y	y	y									see system	6	#101 schwing hopper grate plugged
3	Sludge Collection Bins	y	y	y												see system	3	
6	Schwing Pumps	n	n	y	y	y	y		r	r						see system	4	03/11/13: SP-102 down for mt
3	CNPW Supply Pumps	y	y	y												2	3	
2	Air Compressors	y	y													1	2	
1	Air Compressors Water Cooler	y														1	1	
2	Polymer Age Tanks (Day Tank's)	y	y													see system	2	
7	Poly Transfer Pump (Blender/Feeder)	n	n	y	y	y	n	n	r	r				r	r	see system	3	Blender 1: G-1 Stevens bagged out 3-1-13. G-5 Stevens bag still on panel 1B. Blender 2: Short write WO 3-16-13
7	Poly Meter Pumps	y	y	y	y	y	y	y								see system	7	
2	SO2 Control FECL2 pumps	y	y													2	2	
1	Receiving Station Bin	y														1	1	
1	Receiving Station Pump	y														1	1	
3	Incinerators: HTFB	y	n	y						r						2	2	01/31/13: Incinerator #2 has been taken off line - will need scheduled PM work done 03
1	Natural Gas	y														1	1	
1	Propane System	n							r							1	0	Will not start contractor coming in to repair.
		1A	1B	2A	2B	3A	3B	1A	1B	2A	2B	3A	3B					
6	Ash Slurry Pumps	n	y	y	y	y	y	r							see system	5	#2A leaking; 2B valve sticking	
3	Fluid Bed System (on/off/pm)	on	pm	on											2	2	Maint changing filters on #3 FB	

ODOR CONTROL (seasonal: May - Nov.)				
Inf. Screening	2	1	1	
Grit Removal	3	2	3	#2 Makeup Water Bypass Valve leaking; may have froze
Primary Influent	1	1	1	Winterized/Off Line
Primary Effluent	1	1	1	Off Line
Dewatering	2	1	2	
Mulch Bed for Thickeners	1	1	1	
<b>Bold Face Pump Station</b>	3	3	3	
Raw Swg. Pumps 1, 2, & 3	3	3	3	
Grinder	1	1	1	
Influent Gate	1	1	1	
<b>SSO 700</b>				
Inf. Gates	2	2	2	
Raw Swg. Pumps 1-4	4	4	4	
Storage Tks	3	3	3	No on #1 tank drain.
CEHRS= Mixers:1-injection,1-floc & 1-collect drive. Pumps:1-poly, 1-coag, 2-sand & 1-poly blender, 1-UV sys, 1-fine scrn	1	1	1	
Inf. ntu meter	1	1	1	
Inf. pH meter	1	1	1	
Infl. Flow meter	1	1	1	
Eff. ntu meter	1	1	1	
Eff. pH meter	1	1	1	
Eff. D.O. meter	1	1	1	

**v-List for Driver Responsibilities re: Bulk Chemical Deliveries**

**Purpose:** Provide & maintain driver awareness of potential risks to life & public health.

7/12/12 drs

- 1) In 2012, a catastrophic event occurred at this facility when two incompatible chemicals were mixed thru a delivery error.
- 2) Failure to follow the procedures outlined below may result in the Driver / Carrier being responsible for losses, damages, or injuries resulting from the unsafe &/or discharge of product into the wrong storage tank.
- 3) The checklist is to reduce risk of a reoccurrence.

**Driver's Check List:**

- Proceed as directed. Obey all signage for everyone's safety (i.e. stop signs, speed limits, etc.)
- Stop at designated Chemical Delivery Staging Area & communicate to operator with your paperwork the product you are delivering. (you will be handled in the order staff are available, so if after 15 mins no one has arrived please call 513-244-5568)
- Once verified, the operator will direct you where to go. **Get their signature on your paperwork.**
- Stop at designated Chemical Unloading Station & communicate to receiving operator with your paperwork the product you are delivering.
- Once product, capacity, and valving are verified, the operator will unlock station for delivery.
- Perform  hookup, deliver product safely, and disconnect. **Get receiving operator signature on your paperwork.** And give copy to operator.
- Return completed v-List to guard on way out, to help us have record of those in plant in event of emergency.

Comments:

\_\_\_\_\_

**Date and Signatures:**

Driver:

\_\_\_\_\_

Staging Operator:

\_\_\_\_\_

Receiving Operator:

\_\_\_\_\_

# PUMP BUILDING STORM OPERATION

## INTERCEPTOR GATE THROTTLING SEQUENCE

1. MILL CREEK AUXILIARY GATE SG-AF-1 TO 30% OPEN
2. EAST BRANCH GATE AF-3 TO 10%
3. EAST BRANCH GATE AF-2 TO 10% (OPERATED FROM PANEL ID337A IN AOS1)
4. EAST BRANCH GATE AF-1 TO 10%
5. MILL CREEK MAIN INTERCEPTOR (SG-AF-L1) TO 10%
6. MILL CREEK AUXILIARY GATE SG-AF-1 AS NEEDED TO CONTROL FLOW TO 10% OPEN (5% AT A TIME)

IF MORE THROTTLING IS NEEDED:

7. IF WET WELL CONTINUES INCREASE THROTTLE EAST BRANCH GATES TO 5%
8. THROTTLE MAIN INTERCEPTOR (SG-AF-L1) TO 5%
9. IF WELL STILL CONTINUES TO RISE THROTTLE AUXILIARY (SG-AF-1) TO 5%

## OPENING INTERCEPTOR GATES

1. OPEN GATES OPPOSITE ABOVE ORDER AS WET WELL LEVEL PERMITS

NOTE: REMEMBER TO NOTIFY EPA OF GATE THROTTLING