



Environmental
Protection Agency

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

April 4, 2012

Board of Public Affairs
Village of Kirkersville
PO Box 248
Kirkersville, OH 43033

**Re: Kirkersville WWTP
NPDES Permit 4PB00104/ OH0114049
Compliance Evaluation Inspection
Licking County
Notice of Violation**

To Whom it May Concern:

On April 2, 2012, a Compliance Evaluation Inspection was conducted at the Kirkersville WWTP. Present for the inspection was Eric Britenstein, contract operator for the Kirkersville WWTP and myself of the Ohio EPA, Central District Office, Division of Surface Water.

The purpose of the inspection was to evaluate compliance with the terms and conditions of your NPDES permit and to evaluate the operation and maintenance of the plant. The findings of the inspection are listed below and in the attached report:

- 1) Inflow and infiltration to the sanitary sewers is a major problem for the WWTP during precipitation events, so much so that the operator must use all 4 upflow clarifiers (instead of 2 used for normal flow) to minimize permit violations. Additionally, the operator has installed a bypass to the sand filters in order to avoid complications to the rest of the WWTP during high flow events. This has resulted in permit limit violations for CBOD₅ during February 2012 as explained by the operator during the inspection. This sand filter bypass is also a violation of Part III.16.B.1 of the NPDES permit.
- 2) Ultimately, the Village must reduce and/or eliminate the sources of inflow and infiltration to the sanitary sewers in order to allow for proper treatment of wastes at the WWTP and to avoid future violations of the NPDES permit.
- 3) The Village shall install appropriate signage at the WWTP outfall to the South Fork of the Licking River in accordance with the NPDES permit. This was to have been performed at the time of the effective date (July 1, 2007) of the permit but has been ignored by the Village.

- 4) Sand filters appear to be low on sand and shall be refilled as appropriate to ensure proper functionality (Figure 1). This item was also noted in the April 6, 2009 inspection report (attached).

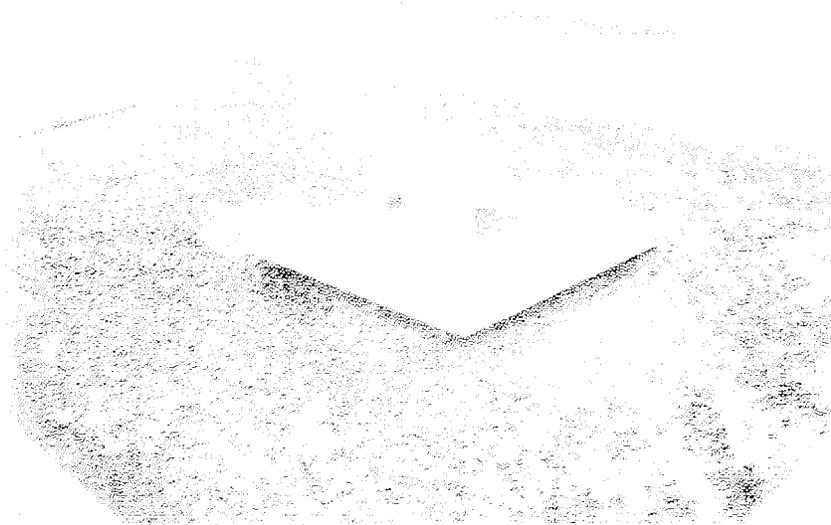


Figure 1. Sand filters need additional sand.

- 5) Spent sand filter sand and biosolids were improperly disposed alongside the sand filters as noted in the April 6, 2009 inspection report (attached). The Village has failed to dispose of this spent sand as required in this past inspection report. Proper disposal of this material shall commence immediately upon receipt of this letter. Photographs of the area around the sand filters shall be taken by the facility and submitted to Paul Vandermeer once the spent sand/biosolids mixture has been disposed.
- 6) The operator shall post a copy of his certification in the blower building and keep the original operator logbook on site as required in the NPDES permit.
- 7) The operator shall ensure that the dissolved oxygen and pH sensors are properly maintained and calibrated (in accordance with manufacturer's specifications) prior to each sampling event at the WWTP. A record of maintenance and calibration both the D.O. and pH sensors shall be kept in the operator logbook.

The Village of Kirkersville shall respond in writing to items 3) through 7) above within 30 days of the receipt of this letter. The Village shall provide a written response to items 1) and 2) above, detailing measures the Village will take to eliminate inflow and infiltration to the sanitary sewers, within 60 days of the receipt of this letter.

Board of Public Affairs
Village of Kirkersville
Page 3

If you have any questions or comments concerning the enclosed inspection report, please contact me at (614) 728-3854 or e-mail at paul.vandermeer@epa.ohio.gov.

Sincerely,



Paul L. Vandermeer
Environmental Specialist
Compliance and Enforcement Unit
Division of Surface Water
Central District Office

ec: Paul L. Vandermeer

PLV/nsm Kirkersville NOV

NPDES Compliance Inspection Report

SECTION B: NATIONAL PERMIT SYSTEM CODING				
Permit #	NPDES #	Inspection Type	Inspector	Facility Type
4PB00104	OH0114049	CEI	S	1
Inspection Date	Entry Time	Exit Time	Notice of Violation	Significant Non-Compliance
4/2/2012	9:00 AM	10:00 AM	Yes	No

SECTION C: FACILITY DATA	
Name and Location of Facility Inspected	Permit Effective Date
Kirkersville WWTP U.S. Route 40 Kirkersville, OH 43033	7/1/2007
	Permit Expiration Date
	6/30/2012
Name(s) and Title(s) of On-Site Representatives	Phone Numbers
Eric Britenstein, Contract Operator	(614) 207-9030
Name and Title of Responsible Official	Phone Number
Board of Public Affairs, Village of Kirkersville	(740) 522-0762

SECTION C: AREAS EVALUATED DURING INSPECTION		
Key: S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated		
U	NPDES Compliance	Both permit limit and frequency violations common. Also violation of general permit conditions.
M	Operations & Maintenance	New diffusers. Sand filters need additional sand. Sand filter bypass active during high flows.
U	Facility Site Review	Outfall signage not installed. Failed to remove spent sand and biosolids disposed on site.
U	Collection System	Inflow and infiltrations causing hydraulic overload at WWTP.
S	Flow Measurement	Influent pump metering.
S	Receiving Waters	
M	Laboratory	American Analytical performs most analyses except D.O., pH, and temperature.

Comments:

Inspector		Signatures	
	4/4/12		4/4/12
Paul L. Vandermeer, Inspector Compliance & Enforcement Division of Surface Water Central District Office	Date	Mike Gallaway, Reviewer Section Manager Division of Surface Water Central District Office	Date

Compliance Data for Kirkersville WWTP between 4/1/2009 to 4/1/2012

Summary

Permit Effluent Limit Violations: 8
 Permit Effluent Code Violations: 0
 Permit Effluent Frequency Violations: * 28
 Compliance Schedule Violations: 0

Limit Violations						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
January 2010	001	Total Suspended Solids	7D Qty	6.8	7.0717	1/15/2010
February 2010	001	Total Suspended Solids	7D Conc	18	22.	2/1/2010
May 2011	001	CBOD 5 day	7D Qty	5.7	13.4312	5/22/2011
May 2011	001	CBOD 5 day	7D Conc	15	30.75	5/22/2011
August 2011	001	pH	1D Conc	9.0	9.27	8/19/2011
January 2012	001	Total Suspended Solids	7D Conc	18	27.5	1/15/2012
January 2012	001	Total Suspended Solids	7D Qty	6.8	11.6890	1/15/2012
February 2012	001	CBOD 5 day	7D Qty	5.7	8.50348	2/15/2012

Frequency Violations						
Reporting Period	Station	Parameter	Sample Frequency	Expected	Reported	Violation Date
March 2011	001	Phosphorus, Total (P)	1/Quarter	1	0	03/01/2011
March 2010	601	Nitrogen, Ammonia (NH3)	1/Week	1	0	03/22/2010
April 2009	001	CBOD 5 day	2/Week	2	1	04/01/2009
April 2009	001	Total Suspended Solids	2/Week	2	1	04/01/2009
May 2011	601	Oil and Grease, Hexane	1/Month	1	0	05/01/2011
July 2009	601	CBOD 5 day	1/Week	1	0	07/08/2009
July 2009	601	Nitrogen, Ammonia (NH3)	1/Week	1	0	07/08/2009

July	2009	601	Total Suspended Solids	1/Week	1	0	07/08/2009
July	2009	001	Fecal Coliform	1/Week	1	0	07/08/2009
July	2009	001	Total Suspended Solids	2/Week	2	1	07/08/2009
July	2009	001	CBOD 5 day	2/Week	2	1	07/08/2009
August	2009	001	Phosphorus, Total (P)	1/Quarter	1	0	08/01/2009
August	2010	001	Phosphorus, Total (P)	1/Quarter	1	0	08/01/2010
August	2010	001	Oil and Grease, Hexane	1/Quarter	1	0	08/01/2010
August	2011	001	Phosphorus, Total (P)	1/Quarter	1	0	08/01/2011
August	2011	001	Oil and Grease, Hexane	1/Quarter	1	0	08/01/2011
November	2011	001	Nitrogen, Ammonia (NH3	1/2Weeks	1	0	11/01/2011
November	2011	001	Total Suspended Solids	2/Week	2	0	11/01/2011
November	2011	001	CBOD 5 day	2/Week	2	0	11/01/2011
November	2011	001	Total Suspended Solids	2/Week	2	0	11/08/2011
November	2011	001	CBOD 5 day	2/Week	2	0	11/08/2011
November	2011	001	Total Suspended Solids	2/Week	2	0	11/15/2011
November	2011	001	CBOD 5 day	2/Week	2	0	11/15/2011
November	2011	001	Nitrogen, Ammonia (NH3	1/2Weeks	1	0	11/15/2011
November	2011	001	Total Suspended Solids	2/Week	2	0	11/22/2011
November	2011	001	CBOD 5 day	2/Week	2	0	11/22/2011
December	2010	001	Chromium, Dissolved He	2/Year	1	0	12/01/2010
December	2010	001	Oil and Grease, Hexane	1/Quarter	1	0	12/01/2010

Flow Data for Kirkersville WWTP between 4/1/2009 and 4/1/2012

	Date	Flows (MGD)
Ten Highest Flows	3/25/2010	1.092
	6/3/2011	0.790
	6/4/2011	0.790
	4/29/2010	0.437
	12/5/2011	0.261
	11/28/2011	0.245
	5/23/2011	0.231
	9/25/2009	0.226
	9/26/2009	0.226
	9/27/2009	0.226
Average Flow Rate		0.078

SECTION D: PERMIT VERIFICATION

- (a) Correct name and mailing address of permittee Y
- (b) Correct name and location of receiving waters Y
- (c) Products and production rates conform with permit application NA
- (d) Flows and loadings conform with NPDES permit Y
- (e) Treatment processes are as described in permit application Y
- (f) New treatment process added since last inspection Y*
- (g) Notification given to State of new, different or increased discharges N
- (h) All discharges are permitted Y*
- (i) Number and location of discharge points are as described in permit Y

Comments: *Sand filter bypass valve added to bypass sand filters during precipitation events which cause high flow into the WWTP.

SECTION E: COMPLIANCE

- (a) Any significant violations since the last inspection Y
- (b) Permittee is taking actions to resolve violations Y/N*
- (c) Permittee has a compliance schedule N
- (d) Permittee is meeting compliance schedule NA

Comments: *New diffusers installed to better aerate waste. No sewer work is planned to deal with significant problems of inflow and infiltration.

SECTION F: OPERATION AND MAINTENANCE

- (a) Standby power available Y
If yes, what type? *Natural gas powered generator**
- (b) Adequate alarm system available for power or equipment failures Y**

- (c) All treatment units in service other than backup units Y
- (d) Wastewater Treatment Works classification II
- (e) Operator of Record holds unexpired license of class required by Permit Y
Class held: III
- (f) Copy of certificate of Operator of Record displayed on-site NA
- (g) Minimum operator staffing requirements fulfilled Y
- (h) Routine and preventative maintenance scheduled and performed Y/N*
- (i) Any major equipment breakdown since last inspection N
- (j) Operation and maintenance manual provided and maintained N
- (k) Any plant bypasses since last inspection N
- (l) Regulatory agency notified of bypasses Y
By MOR and/or Spill Hotline (1-800-282-9378)
- (m) Any hydraulic or organic overloads since last inspection Y#

Comments: *Generator is capable of powering both the WWTP and the pump station. Generator starts automatically in the event of an electrical power outage. **Flashing lights indicate pump or blower failures at the plant. No autodialer or other off site notification available. ^Operator will post a copy of the certificate in the blower building as soon as possible. #Hydraulic overloading of WWTP is common during rain events as noted in the flow data table. During heavy precipitation, flows can be upwards of 10 times the design causing the operator to bypass the sand filters. *Spent sand filter sand and biosolids were disposed of adjacent to the filter beds. The previous inspection performed on 4/6/2009 cited the same issue with a requirement to remove and dispose of this mixture. This requirement was ignored by the facility. Newly generated spent sand is now placed into a roll-off box for eventual disposal.

SECTION G: RECORD KEEPING

- a) Log book provided Y
- b) Format of log book *hard bound book*
- c) Log book(s) kept onsite in an area protected from weather N*
- d) 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 operation and maintenance activities (including preventative maintenance, repairs and request for repairs) Y
 - iv) Laboratory results (unless documented on bench sheets) Y
 - v) Identification of person making log entries Y
- e) Has the Operator of Record submitted written notification to the permittee, Ohio EPA and any applicable local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred? ... Y

Comments: *Operator has indicated that the log book will be kept on site from now on.

SECTION H: COLLECTION SYSTEM

- a) Percent combined system:..... 0%
- b) Any collection system overflows since last inspection N
 CSO SSO
- c) Regulatory agency notified of overflows NA
- d) CSO O&M plan provided and implemented..... NA
- e) CSOs monitored and reported in accordance with permit..... NA
- f) Portable pumps are used to relieve system NA
- g) Lift station alarms provided and maintained..... Y*
- h) Lift stations equipped with permanent standby power or equivalent Y
- i) Is there an inflow/infiltration problem (separate sewer system), or were there any major repairs to collection system since last inspection..... Y**
- j) Any complaints received since last inspection of basement flooding N
- k) Are any portions of the sewer system at or near capacity..... N
- l) Are operations changed during high-flow events? Y**

Comments: *Single pump station alarm consists of flashing light only. **Inflow and infiltration is significant during precipitation events and can result in changed operations at the plant (bypassing the sand filters) resulting in permit limit violations (e.g., February 2012). Additionally, all upflow clarifiers are placed online during hydraulic overloading events.

SECTION I: SLUDGE MANAGEMENT

- a) Sludge adequately disposed..... Y
 Method: *Landfilling (dried sludge), Land application (liquid sludge)*
- b) If sludge is incinerated, where is ash disposed of..... NA
- c) Is sludge disposal contracted..... Y
 Name: *Dry sludge-Waste Management, Liquid sludge-Carl Wheeler*
- d) Has amount of sludge generated changed significantly..... N
- e) Adequate sludge storage provided at plant..... Y
- f) Records kept in accordance with State and Federal law NE
- g) Any complaints received last year regarding sludge N
- h) Is sludge adequately processed (digestion, pathogen control) Y

Comments:

SECTION J: SELF-MONITORING PROGRAM

- a) Primary flow measuring device operated and maintained..... Y
 Type of device: *Metered influent pump* Device location: *Pump station*
- b) Calibration frequency adequate NA
 Date of last calibration:
- c) Secondary instruments operated and maintained..... NA
- d) Flow measurements equipment adequate to handle full range of flows.... Y

- e) Actual flow discharged is measured..... Y
- f) Flow measuring equipment inspection frequency *Daily*
- g) Sampling location(s) are as specified by permit..... Y
- h) Parameters and sampling frequency agree with permit..... Y
- i) 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:

SECTION K: Laboratory

- a) EPA applicable analytical testing procedures used (40 CFR 136.3)..... Y
- b) If alternate procedures are used, are they properly approved? Y
- c) Analysis performed more frequently NA
If yes, are results recorded in permittee's report? NA
- d) Commercial laboratory used:
Name: *American Analytical*
Parameters analyzed: all but D.O., pH, and temperature
- e) Quality assurance manual provided and maintained N
- f) Calibration and maintenance of instruments is satisfactory? Y/N*
- g) Results of last U.S. EPA quality assurance NA
Date:

Comments: *pH meter calibrated monthly and sensor replaced every 6 months or when unit fails to calibrate properly. D.O. meter never calibrated. In the future, the operator shall properly calibrate the D.O. meter according to the manufacturer's instructions prior to each use.

SECTION L: EFFLUENT/RECEIVING WATER OBSERVATIONS

Outfall Number	Outfall sign in place	Oil Sheen	Grease	Turbidity	Foam	Solids	Color	Other
001	No	No	No	No	No	No	Clear	

Comments: Facility shall install outfall signage in accordance with the NPDES permit specifications within 30 days of the receipt of this letter and submit a photograph of the installed sign to Paul Vandermeer upon the completed installation.

SECTION M: 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 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:

Attachment: NPDES Compliance Inspection Report, April 6, 2009

NPDES

Compliance Inspection Report

A. NATIONAL DATA SYSTEM CODING

Permit No.	Facility No.	Date	Inspection Type	Inspector	Facility Type
4PB00104*CD	OH0114049	4/6/09	R	S	1

B. FACILITY DATA

Name and Location of Facility Inspected Village of Kirkersville Wastewater Treatment Plant (WWTP) North side of US Rt. 40 approx. one half mile east of Outville Road	Entry Time	Permit Effective Date
	Exit Time	Permit Expiration Date
	9:30 A.M.	7/1/07
	10:20 A.M.	6/30/12

Name(s) and Title(s) of On-Site Representative(s)	Phone Number(s)
Eric Britenstine, Operator in Responsible Charge	(c) 614-207-9030
Name, Address and Title of Responsible Official	Phone Number
Terry Ashcraft, Mayor, P.O. Box 211, 135 North 4 th Street, Kirkersville, Ohio 43033	740-927-9052

C. AREAS EVALUATED DURING INSPECTION (S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

- S Permit
- N/S Records/Reports
- N/U Operations & Maintenance – flow equalization tank and fixed media clarifier mud well pumps need repair.
- M Facility Site Review – repair of several pumps is necessary along with solids removal from slow sand filters.
- N Collection System
- N Flow Measurement
- N Laboratory
- S/N Effluent/Receiving Waters
- S/M Sludge Storage/Disposal – sand/solids removed from the effluent sand filter needs proper disposal.
- N Pretreatment
- N Compliance Schedules
- S Self-Monitoring Program

D. SUMMARY OF FINDINGS/COMMENTS: Design flow for this plant is 0.100 million gallons per day (MGD). Discharge monitoring report data indicates flows for 2008 averaged 0.06 MGD. The 2008 annual sludge report indicates that 4.75 dry tons of sludge was removed from the WWTP. Inspection of the flow equalization tank showed that the tank was operating in a flow-through rather flow-equalization mode since pumps in the tank were out of service. The flow equalization tank needs to be returned to service as soon as possible to limit the detrimental impact that hydraulic surges may have on effluent quality. Inspection of the effluent sand filter showed ponded wastewater in a filter cell. That filter, and others, needs cleaning to prevent wastewater ponding. Sand/sludge removed during effluent sand filter

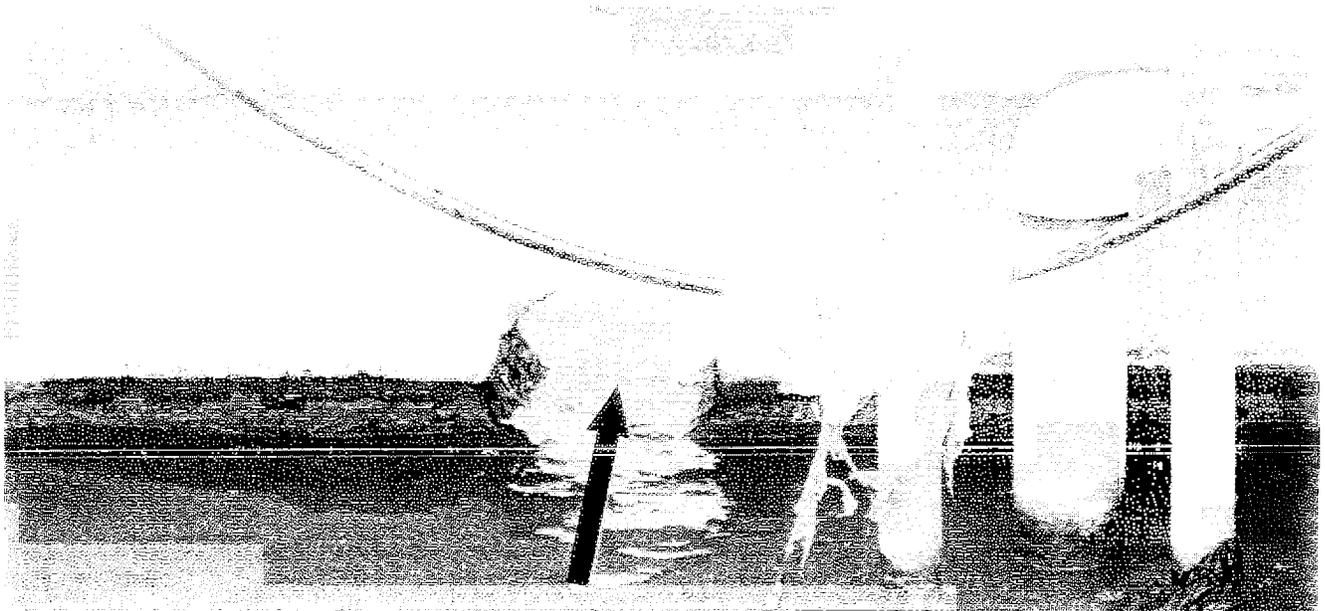
cleaning must be properly disposed of, not spread alongside the filter. The sludge drying beds were not in use at the time of this inspection. At the time of this inspection Mr. Britenstine indicated that he was working with Carl Wheeler for removal of liquid sludge from this plant.

Jan Rice, Inspector, Ohio EPA, Central District Office

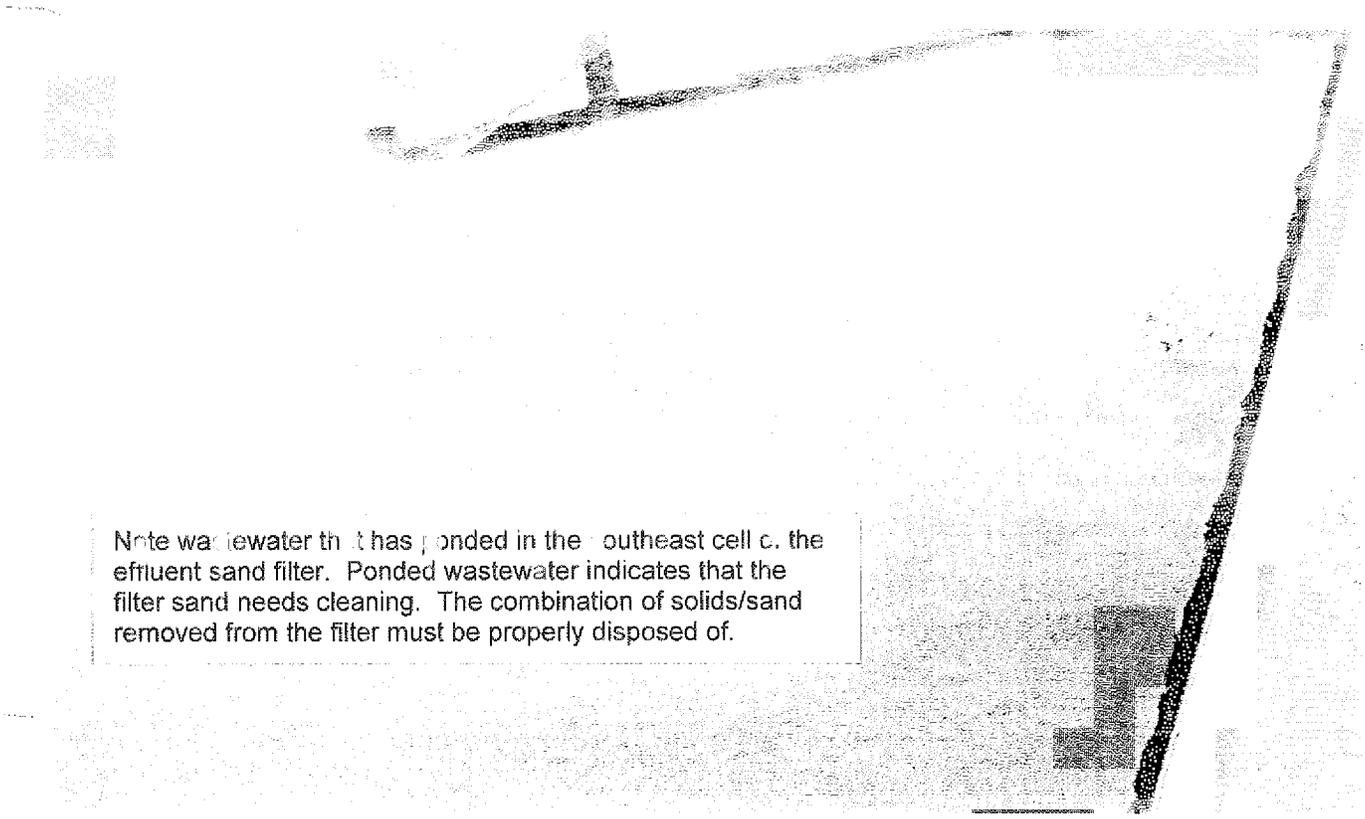
Date

Erin Sherer, Reviewer, Ohio EPA, Central District Office

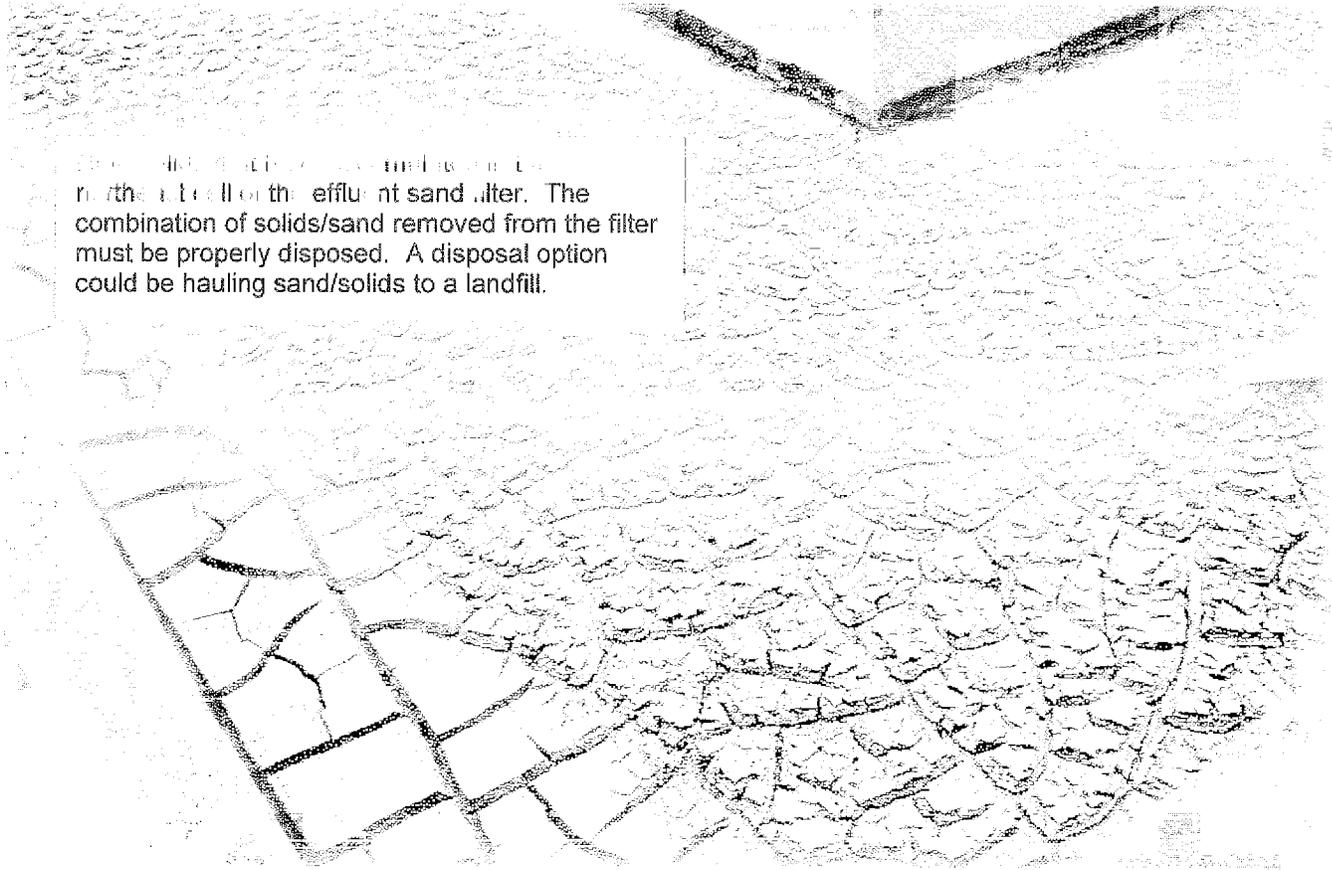
Date



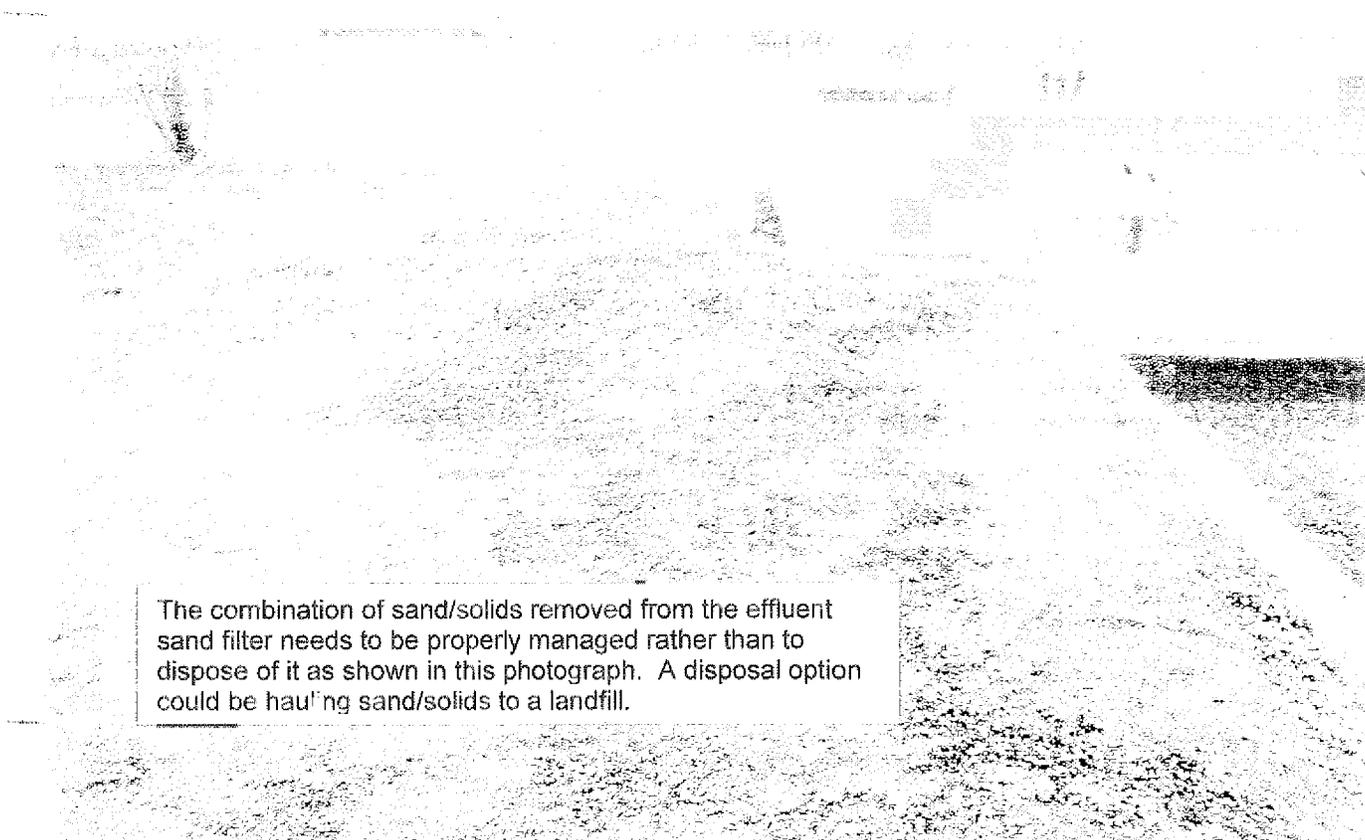
The black arrow indicates direction of wastewater flow from the flow equalization tank into the aeration tank at the time of this inspection. Wastewater should not normally rise to this elevation and flow through this opening. Wastewater would normally be pumped when necessary from the equalization tank through pipes which outlet into the aeration tank. Flow equalization tank pump repairs will restore this tank's operational capability.



Note wastewater that has ponded in the southeast cell of the effluent sand filter. Ponded wastewater indicates that the filter sand needs cleaning. The combination of solids/sand removed from the filter must be properly disposed of.

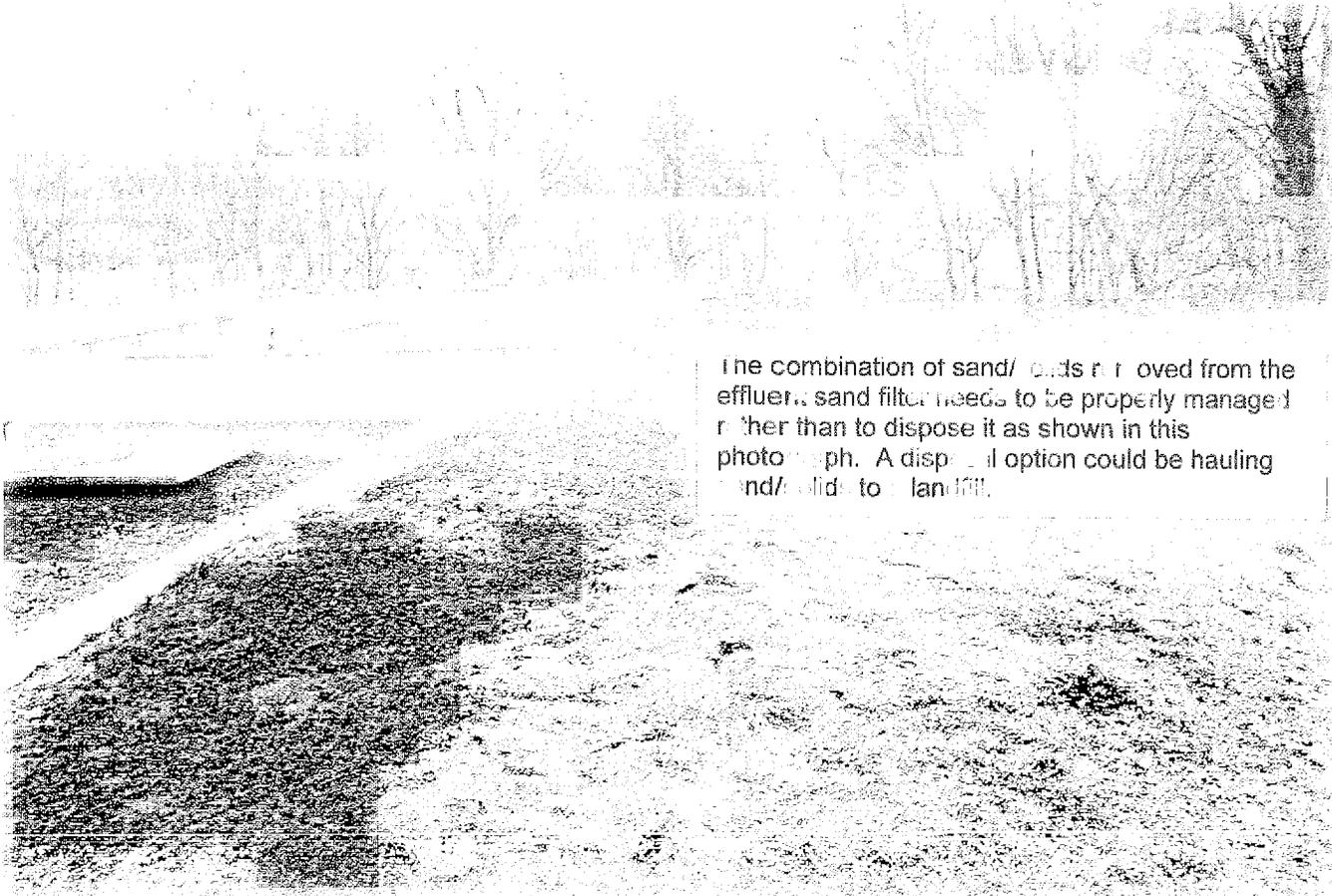


The solids/sand removed from the filter must be properly disposed. A disposal option could be hauling sand/solids to a landfill.

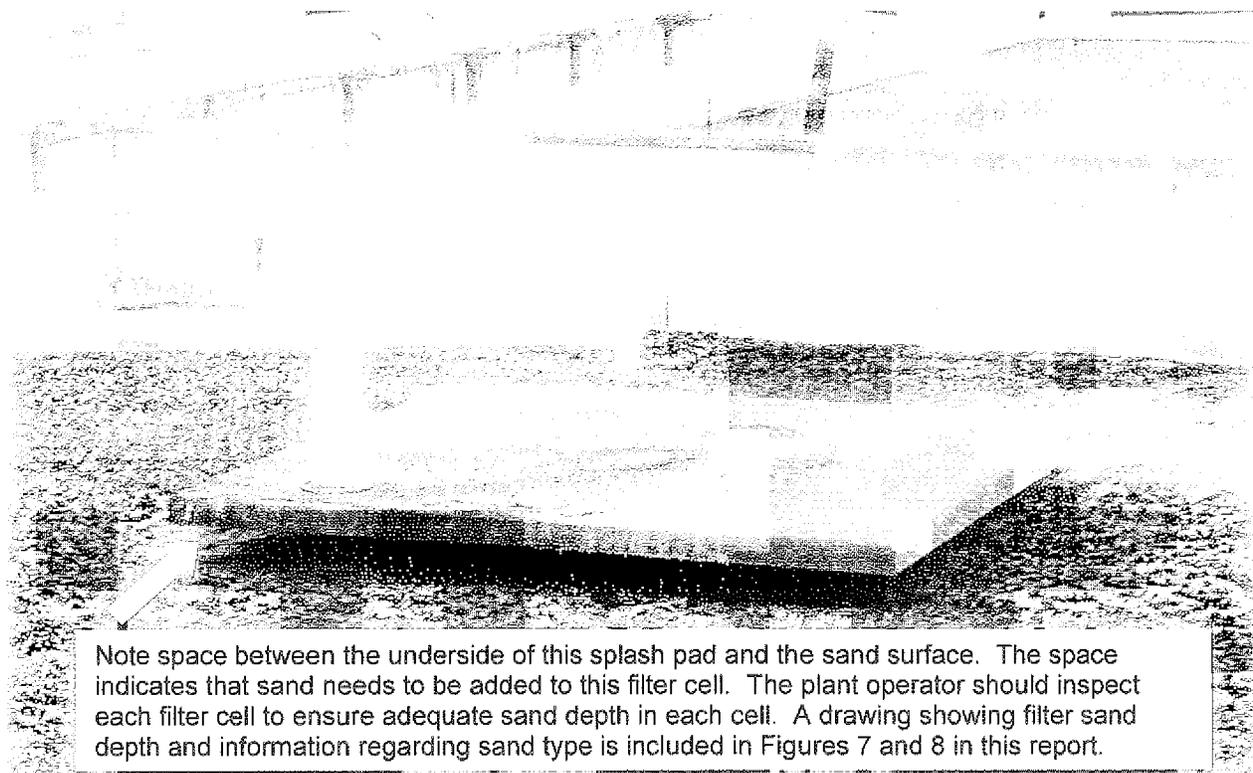


The combination of sand/solids removed from the effluent sand filter needs to be properly managed rather than to dispose of it as shown in this photograph. A disposal option could be hauling sand/solids to a landfill.

Figure 3.



The combination of sand/ sludge removed from the effluent sand filter needs to be properly managed rather than to dispose it as shown in this photograph. A disposal option could be hauling sand/ sludge to a landfill.



Note space between the underside of this splash pad and the sand surface. The space indicates that sand needs to be added to this filter cell. The plant operator should inspect each filter cell to ensure adequate sand depth in each cell. A drawing showing filter sand depth and information regarding sand type is included in Figures 7 and 8 in this report.

Sand Filter Cross Section showing gravel/sand layers thickness

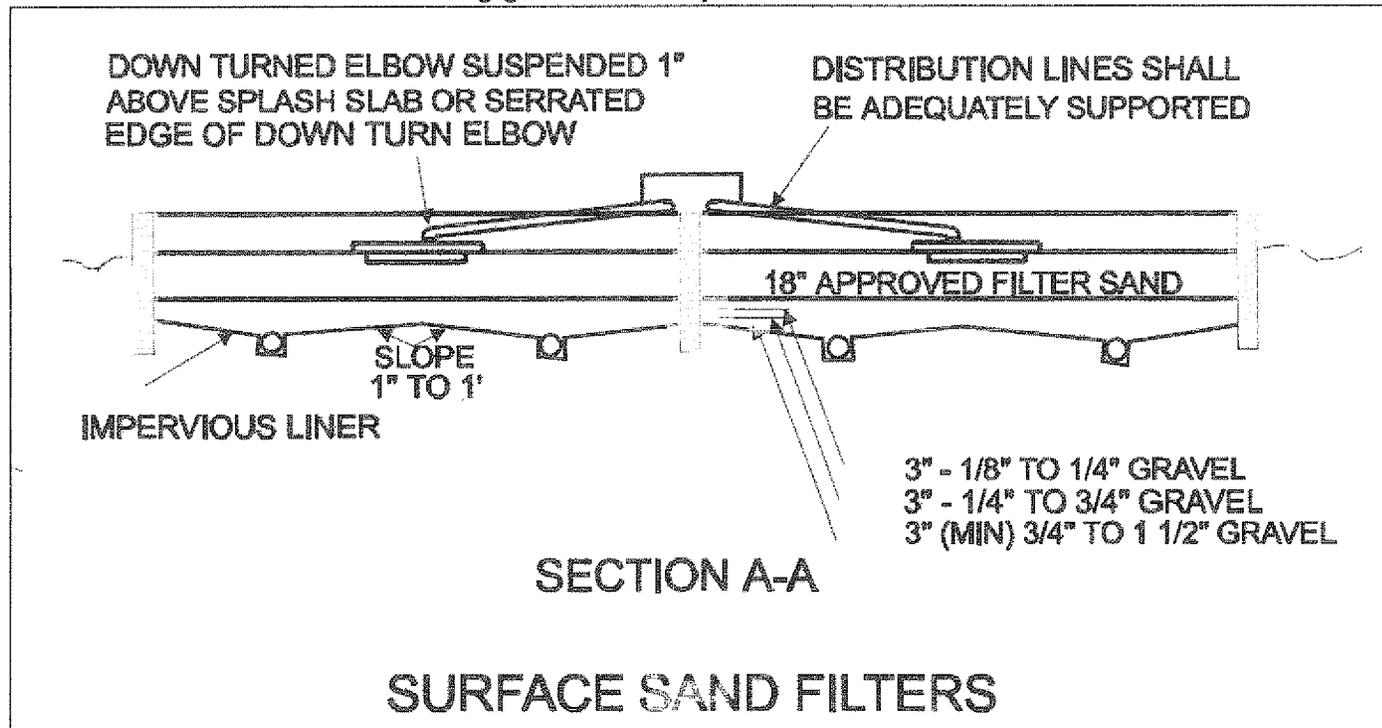


Figure 8.

Ohio Administrative Code Filter Sand Requirements

3745-42-09 Requirements for filter sand.

(A) Applicability.

- (1) No person shall install or replace filter sand without first providing the director with written certification that the standards identified in this rule are met. The certification statement shall be obtained from the sand manufacturer or a professional engineer and shall be supported by laboratory analysis.
- (2) This rule shall apply to owners and operators of the following treatment works:
 - (a) Conventional subsurface sand filters;
 - (b) Conventional surface sand filters;
 - (c) Recirculating sand filters; and
 - (d) Other similar sand filter technologies.

(B) Owners and operators of facilities described in paragraph (A)(2) of this rule shall use only sand that has:

(1) Undergone a sieve analysis and met the criteria of one of the following standards:

(a) ASTM C136. "Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates;" or

(b) ASTM D151. "Standard Method for Sieve Analysis of Granular Mineral Surfacing For Asphalt Roofing Products;"

(2) An effective size and uniformity coefficient, in conformance with table B-1 of this rule:

Table B-1

Sand filter technology	Effective size (millimeters)	Uniformity coefficient
Conventional subsurface sand filters *	0.4 to 1.0	less than 3.0
Conventional surface sand filter *	0.4 to 1.0	less than 3.0
Recirculating Sand Filter *	1.2 to 2.5	less than 2.0

*Sand shall be washed and free of clay and silt to minimize the amount of fines in the sand.

(3) Been quantified using ASTM C117, "Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing." The percentage of the material passing the seventy-five-micrometer sieve shall not exceed 1.5 per cent of the total sample weight.

(4) Been analyzed using ASTM D4318, "Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils," and classified as nonplastic.

Effective: 12/1/2007

R.C. 119.032 review date: 10/17/2008

Promulgated Under: R.C. 119.03

Statutory Authority: R.C. 6111.03

Rule Amplifies: R.C. 6111.03, 6111.44

Prior Effective Dates: None

Figure 9: