



**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korleski, Director



1PB0002920100317

CHAMPAIGN SAINT PARIS WWTP

REYNOLDS, JOSEP 2010/03/17



**Environmental
Protection Agency**

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Chris Korleski, Director

March 17, 2010

Mr. Joe Sampson
Village Administrator
Village of Saint Paris
P.O. Box 572
Saint Paris, Ohio 43072

RE: Village of Saint Paris Compliance Evaluation Inspection / Notice of Violation

Dear Mr. Sampson:

On March 11, 2010 Joe Reynolds performed a Compliance Evaluation Inspection at the Saint Paris Waste Water Treatment Plant.

The inspection was conducted as part of the compliance review for the plant. This inspection included a more in depth examination of the laboratory than has been done previously. The intent is to assist the Village in being able to document that the data produced by the laboratory is "true and accurate" and is therefore defensible. Please note that the NPDES permit in part III states that the permittee shall "Periodically calibrate and perform maintenance on all monitoring and instrumentation at intervals to ensure accuracy of measurements". Furthermore the certification statement required with the submittal of discharge monitoring reports asks the signer to certify "I believe the submitted information true, accurate and complete."

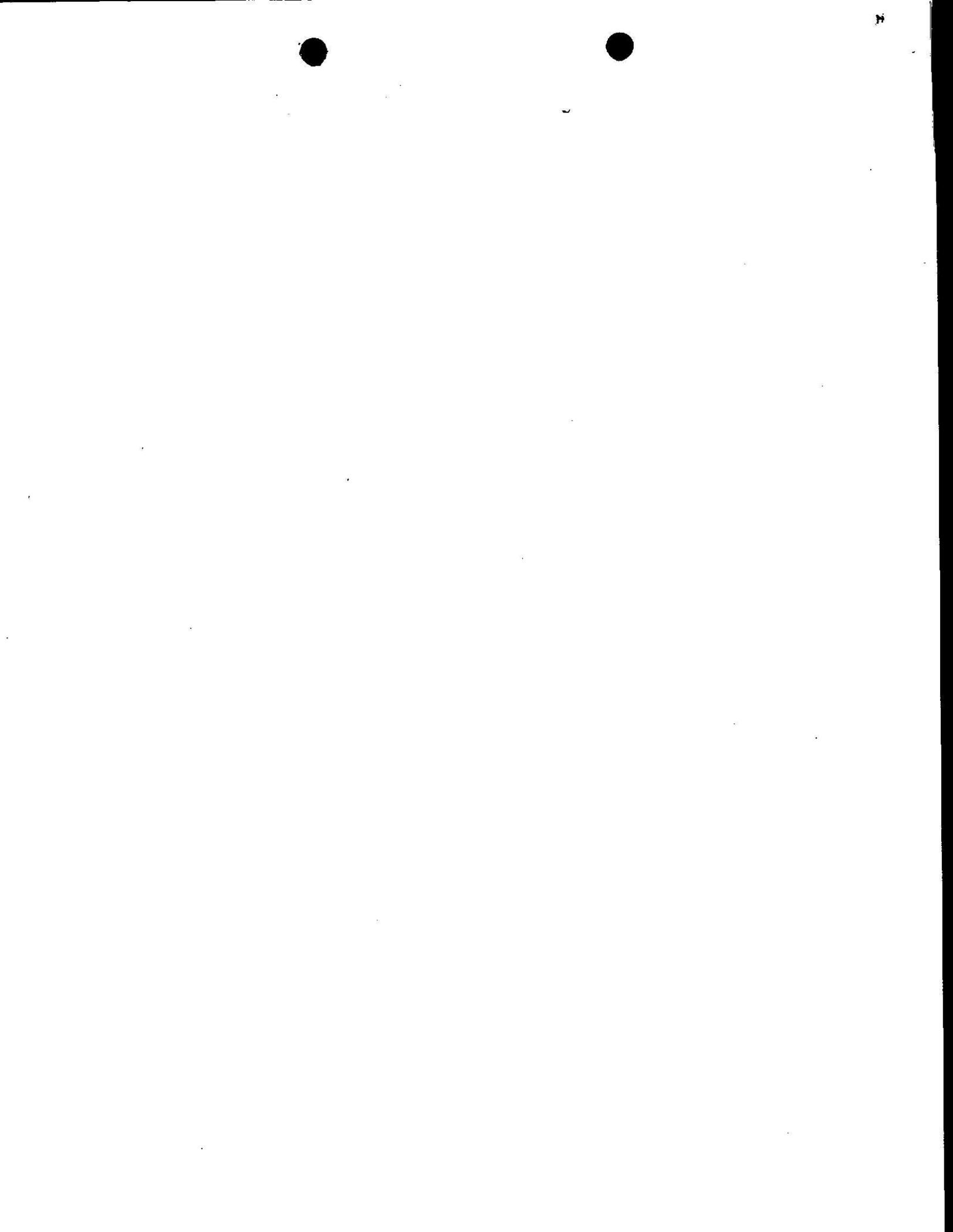
The inspection findings are included in the attached report. The report contains one item which requires a response. The response dates for this item is noted in the "Item Requiring a Response" section of the report.

If you have any question concerning the inspection please contact Mr. Reynolds at (937) 285 - 6097.

Sincerely,

Martyn Burt
Compliance Supervisor
Division of Surface Water

cc: Rodney Callison, Operator of Record





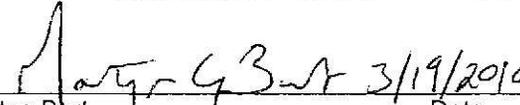
State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PB00029*GD	OH0021806	3/11/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
St. Paris Waste Water Treatment Plant 454 Huffman Drive St. Paris, Ohio 43072	9:00 AM	10/1/2008
	Exit Time	Permit Expiration Date
	12:00 PM	9/30/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Joe Sampson, Village Administrator Rodney Callison, Operator Mark Traylor, Operator in Training	(937) 663 - 4329 (937) 663 - 5523	
Name, Address and Title of Responsible Official	Phone Number	
Joe Sampson, Village Administrator P.O. Box 572 135 West Main Street St. Paris, Ohio 43072	(937) 663 - 4329	

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	S	Laboratory	N	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	S	Sludge Storage/Disposal	N	Other
S	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See Attached Report.	
Inspector	Reviewer
 Joe Reynolds Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
3/17/10 Date	3/19/2010 Date



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

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
in permit..... Y
- (f) Storm water discharges properly permitted..... Y

Comments/Status:

Section F: Compliance

- (a) Any significant violations since the last inspection..... N
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... N/A
- (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 N/E

Comments/Status:



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.....

Runs entire plant and one lift station.

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

Every week (Wednesday)

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

Everything is alarmed with auto dialer (battery back-up).

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

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

Quarterly maintenance logs.

(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..... N

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

Comments/Status:

[Empty box for comments/status]



Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... II
- (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..... N/A
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)

Hard bound book.
- (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)... Y
 - v. Identification of person making entries..... N
- (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..... N/A

Comments/Status:

There are no known overflows in the system.



Section G: Operation & Maintenance con't

Collection System:

- (a) Are there pump stations in the collection system..... Y
 - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....4
 - ii. How many pump stations have telemetered alarms.....4
 - iii. How many pump stations have operable alarms.....4

- (b) Any chronic collection system overflows since last inspection..... N
- (c) Regulatory agency notified of all overflows..... N/A
- (d) Are there CSOs in the collection system..... N/A
if so, what is the LTCP status.....

Separate system.

- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....

- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... N
- (h) Any WIB complaint received since last inspection..... N
- (i) Is there a WIB response plan..... N
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

Although the system is an older clay tile, inspections have shown the system to be in good shape. Most of the infiltration and inflow is from down spouts on the east end.



Section H: Sludge Management

- (a) Method of Sludge Disposal... Land Application
 Haul to Another NPDES Permittee
 Haul to a Mixed Solid Waste Landfill

*if one of the selected methods is land application, complete applicable charts.
Class A - Exception Quality Sewage Sludge (monitoring station 584)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 - Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 - Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Class B Sewage Sludge (monitoring station 581)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 - Land Injection	Option 10 - Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... N/A
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... N/A
- (h) Is a contractor used for sludge disposal..... Y
 If so, what is the name of the contractor.....

Comments/Status:



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: 12/1/2009)
- (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:

The flow meter is calibrated quarterly.

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:



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

Laboratory:

General

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... Y
- (b) Do SOP's include the following if applicable..... Y
 - Title
 - Scope and Application
 - Summary
 - Sample Handling and Preservation
 - Interferences
 - Apparatus and Materials
 - Reagents
 - Procedure
 - Calculations
 - Quality Control
 - Maintenance
 - Corrective Action
 - Reference (Parent Method)

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (d) if alternate analytical procedures are used, proper approval has been obtained..... Y
- (e) Analyses being performed more frequently than required by permit. Y
- (f) If (e) is yes, are results in permittee's self-monitoring report..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y (see score from GLC page)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: TSS, Oil & Grease, Ammonia, Nitrate, Metals, and Fecal Coliform.

Lab name: MASI Labs.

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling..... N
Date:
- (b) Were any parameters "Unsatisfactory"..... N/A
- (c) Reasons for "Unsatisfactory" parameters.....

Comments/Status:



Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Final effluent clear. Minor white foam.

Receiving Stream: Nettles Creek

Receiving Stream Description: Moderate turbidity (snow melt) no solids, no foam.

Comments/Status:

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 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:



Inspection Findings

The Village of Saint Paris currently holds National Pollutant Discharge Elimination System (NPDES) permit number 1PB00029*GD. This permit is for a 0.5 MGD waste water treatment system. The permit will expire on September 30, 2013.

The Compliance Evaluation Inspection (CEI) is used to determine the Village's compliance status with their NPDES permit. Representatives from the Village present during the inspection include: Joe Sampson (Village Administrator, Class III Operator), Rodney Callison (Plant Operator, Class III), and Mark Traylor (Operator in Training, Class II)

The treatment system includes an influent bar screen, two sequential batch reactors, chlorination / dechlorination tank, aerobic sludge digestion / holding, and sludge drying beds / storage pad.

A Supervisory Control and Data Acquisition (SCADA) computer software system has been in use as part of the plant oversight. The system monitors plant operations and is used to notify staff of alarm conditions. This system is being expanded to oversee lift station operations. In conjunction with this oversight a radio communication system has been added to the lift stations.

An operator's log book is being maintained at the plant. The log book is being maintained in accordance with the new rule with one exception. All entries need to be initialed by the person making the entry.

The Village has contracted with the Poggemeyer Design Group to perform facilities planning. Poggemeyer is currently working on a Permit to Install for a new influent screen.

When the Village's NPDES is renewed the agency will add bacteria monitoring for E. coli bacteria. New limits based on the E. coli water quality standards will be added to the permit.



Inspection Findings (cont.)

As part of all laboratory reviews the agency has added review criteria based upon the Code of Federal Register and Standard Methods. These reviews are intended to verify that the lab is following Standard Methods for all analysis performed in house and those sent to commercial laboratories. In order to provide time to meet the required standards, the agency is asking entities to review and update their lab procedures (as necessary) to meet the standards within one year of this inspection date.

During the last stream survey of Nettles Creek (2003) water quality impacts were noted downstream of the waste water treatment plant. Nutrients were identified as a contributing factor to the non-compliance. As part of the facilities planning work the village will need to work the agency to evaluate the need for nutrient removal systems. Additionally a waste load allocation / antidegradation review will need to be performed before any plant expansions can be considered.

Infiltration and Inflow has not been a problem (final effluent compliance) at the waste water treatment plant. The addition of flexible control systems (cycle times, air, etc.) and use of the settlometer test have allowed plant staff to adjust operation in response to storm flows and plant response.

Approximately 75 % of the system (clay sewer) has been inspected. The majority of the system is in good shape. There are issues with down spout tie-in on the east end of town.

Between the sludge digester / holding tank and the sludge drying beds there is over a year of sludge storage available at the plant. Sludge is currently being hauled to a sanitary landfill (Cincinnati). The Village contracts with Rumpke to haul solids.

From January 1, 2009 through December 31, 2009 the villager reported 13 Chlorine Residual code violations. These violations were attributable to a meter failure. There were no final effluent limitations violations during this same time period.



Plant Inspection

All influent flows pass through a bar screen. Pneumatic control influent gates regulate flows between the two reactors. One tank fills and aerates while the other settles.

Coarse bubble diffusers are being used to aerate the reactors. There was good mixing in the tank on-line. The mixed liquor was chocolate brown. Mixed Liquor Suspended Solids were being maintained at 1500 mg/l. Currently the reactor tank are set to aerate (100 minutes), settle (55 minutes), and decant (45 minutes). Preliminary solids were noted on the surface of the reactor in settle mode.

The plant generator is original to the plant. A new fuel tank was added to the system. The generator operates the entire plant. It is operated under load every Wednesday.

The Chlorine contact tank is a pass through system this time of year (no winter limit). The effluent was clear, minor grease solids noted.

The final effluent was clear. Slight white foam noted. No solids at the outfall. The stream had a grey tint, both up and down stream.

Item Requiring a Response

A Rainfall Derived Infiltration and Inflow (RDII) program needs to be developed to help in the identification and elimination of clear water sources into the sanitary sewer system. Please provide a written response details the village's plans for development of a RDII program by no later than April 19, 2010.



General Lab Criteria

Criteria	Std Methods Required	Status	Rating
<p>Balance</p> <ul style="list-style-type: none"> • Standard Weights • Calibration Frequency / Documentation • Cleanliness, air movement, vibration 	<ul style="list-style-type: none"> • Either NIST Class s or ASTM/ANSI Class 1 weights^{1,2} • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ • Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum¹ • Service and recalibrate annually (manufacturer representative or comparable)¹ • Must be able to measure to 0.1 grams⁴ • Instrument manual available • Log book maintained⁶ 		NE
Comments:			
<p>Drying Oven (Suspended Solids)</p> <ul style="list-style-type: none"> • Temperature Recordkeeping • Calibration Frequency / Documentation 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} • Correction factor posted on thermometer / equipment¹ • Temperature recorded with each use⁴ • Thermometer temperature in 0.1° C increments⁵ • Acceptable temperature range is 103° – 105° F⁴ • Instrument manual available • Log book maintained⁶ 		NE



General Lab Criteria

Comments:			
<p>pH Meter</p> <ul style="list-style-type: none"> • Buffers Used for Calibration • Minimum of 2 point calibration • Buffer Expiration Date • Calibration Frequency / Documentation • Slope Documentation / Acceptability 	<ul style="list-style-type: none"> • Calibration per manufacturer specification and calibration buffers must bracket anticipated result⁷ • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ • Teflon covered magnetic stirrer for sample mixing or equivalent⁸ • Buffers must not be expired • Slope acceptable range indicated on benchsheet² • Instrument manual available • Logbook maintained⁹ 	<p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p>	A
Comments:			
<p>DO Meter</p> <ul style="list-style-type: none"> • Calibration Frequency / Documentation • Calibration Method 	<ul style="list-style-type: none"> • Calibration per manufacturer specification¹⁰ • Air or known DO calibration method¹⁰ • Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil)¹¹ • Logbook maintained⁹ • Instrument manual available • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of 		NE



General Lab Criteria

	samples (every 10 samples) ³		
Comments:			
<p>Incubator (CBOD/ E-Coli)</p> <ul style="list-style-type: none"> • Temperature Recordkeeping • Temperature Calibration / Documentation • E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or multi well tray (mfg. tray) 	<ul style="list-style-type: none"> • Check / record temperature twice daily for each shelf in use¹ • Thermometer calibrated annually with NIST traceable thermometer^{1,2} • Temperature correction information posted on incubator¹ • Acceptable temperature range (CBOD) is 20° C +/-1.0^{o 12} • Acceptable temperature range (E-Coli) is 35° C +/-0.5^{o 22} • E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) 23 • Instrument manual available • Logbook maintained⁹ • Temperature Log (thermometer reads to 0.1 Celsius).⁵ 		NE
Comments:			
<p>Refrigerator</p> <ul style="list-style-type: none"> • Temperature Recordkeeping • Temperature Calibration / Documentation 	<ul style="list-style-type: none"> • Temperature Log (thermometer reads to 0.1 Celsius).⁵ • Thermometer calibrated annually with NIST traceable thermometer^{1,2} • Thermometer held in water bath. ¹ • Refrigerator temperature <6≤° Celsius (+/-2°).¹³ • Do not store volatile solvents, food, or beverages.¹⁴ 		NE



General Lab Criteria

Comments:			
<p>Chlorine Meter</p> <ul style="list-style-type: none"> • Calibration Frequency / Documentation • Calibration Method • Standard expiration date • Standards used for calibration • Slope Documentation / Acceptability 	<ul style="list-style-type: none"> • pH / millivolt meter read to 0.1 mV¹⁵ • Electrode free of deposits and foreign material • Calibration using three iodate solutions 0.2, 1.0, 5.0 or Calibration per manufacturer specification¹⁶ • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ • Calibration curve (acceptable slope) • Log book being maintained.⁹ • Instrument manual available • Standards Expiration Date 		NE
Comments:			
<p>Ammonia Meter</p> <ul style="list-style-type: none"> • Calibration Frequency / Documentation • Calibration Method • Standard expiration date • Standards used for calibration • Slope acceptability 	<ul style="list-style-type: none"> • Electrode free of deposits and foreign material • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ • Teflon covered magnetic stirrer for sample mixing or equivalent¹⁸ • Standards used for calibration (3 ammonia solution 10 mg/l, 1 mg/l, and 0.1 mg/l) or calibration per 		NE



General Lab Criteria

	<ul style="list-style-type: none"> • manufacturer specification¹⁷ • Verify calibration slope is acceptable (per manufacturer Spec.). • Log book being maintained⁹ • Instrument manual available 		
<p>Comments:</p>			
<p>Sample Handling / Collection</p> <ul style="list-style-type: none"> • Sample Labeling • Chain of Custody 	<ul style="list-style-type: none"> • Samples container labeled (description, date, time, preservative added, initialed).¹⁹ • Chain of custody (description, date, time, signature).¹⁹ • Composite samples refrigerated during sample collection¹⁴ • Equipment blanks utilized¹⁴ • SOP for cleaning of sampling equipment • Logbook being maintained⁹ 		NE
<p>Comments:</p>			
<p>Desiccator</p>	<ul style="list-style-type: none"> • Properly working seals. • Desiccant fresh (blue color) • Log book being maintained⁹ 		NE



General Lab Criteria

Comments:			
Benchsheets	<ul style="list-style-type: none"> • Date(s)² • Analyst initials² • Equations, calculations, units for all measurements, notations, and results present² • Calibration information² • Blue or black ink pen² • Corrections, single line through, initialed and dated² 	<p style="text-align: center;">Acceptable Acceptable Acceptable</p> <p style="text-align: center;">Acceptable Acceptable NA</p>	A
Comments:			
<p>Hot Water Bath (Fecal Col./ E-Coli)</p> <ul style="list-style-type: none"> • Temperature Recordkeeping • Temperature Calibration / Documentation • Water Level 	<ul style="list-style-type: none"> • Temperature Log (thermometer reads 0.2° C)²¹ • Thermometer calibrated annually with NIST traceable thermometer^{1,2} • Thermometer total immersion or partial (line on thermometer to ID immersion depth)^{1,5} • Incubator temperature 44.5° C +/- 0.2°^{21/24} • Log book being maintained⁹ 		NE
Comments:			



General Lab Criteria

Marginal Ratings – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).

Unsatisfactory Rating - Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).

PAI Audit Recommendation Criteria:

>60% Marginal Rating = Recommend PAI Audit from DES

>45% Combination of Marginal and Unacceptable Rating = Recommend PAI Audit from DES

>30% Unacceptable = Recommend PAI Audit from DES

Approved Standard Methods

- CBOD / BOD 5 Day, Std Methods 5210-B
- Ammonia, Selective Electrode Method, Std Methods 4500-NH3 D
- Total Residual Chlorine, DPD Colorimetric Method, Std Methods 4500-Cl G
- Total Suspended Solids, Dried at 103-105 Degrees C, Std Methods 2540-D
- Dissolved Oxygen, Membrane Electrode Method, Std Method 4500-O G
- pH, Electrometric Method, Std Methods 4500-H+ B
- Fecal Coliform, Membrane Filter Procedure, Std Methods 9222D
- Escherichia Coli, Enzyme Substrate Test, Std Method 9223B
- Escherichia Coli Membrane Filtration Procedure EPA Method 1603
- Oil and Grease USEPA 1664A or Std Methods 5520B
- Metals, general, USEPA 200, Std Methods 3111B or C, or 3120B
- Volatiles (Purgeables by purge and trap), USEPA 6210, Std Methods 624
- Semi-Volatiles (Base/Neutrals and acids), USEPA 6410, Std Methods 625
- Pesticides, USEPA 6410 and 6630, Std Methods 608



General Lab Criteria

Preservation and Holding Times

Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH ₃ -N	P, G	500	G, C	Analyze as soon as possible or add H ₂ SO ₄ to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO ₃ to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d until extraction 40 day after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d until extraction 40 day after extraction



General Lab Criteria

Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 0^{\circ}$ C, If chlorine present add sodium thiosulfate tablet,	Transportation time 6 hrs. Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H ₂ SO ₄ to pH <2, Refrigerate $\leq 6^{\circ}$ C	28 d	28 d

Notation of Referenced Method

1. Method 9020-B, Item 4	2. Method 1020-A, Item 1
3. Method 1020-B, Item 10	4. Method 2540-B, Item 2
5. Method 2550-B, Item 1	6. Method 1020-B, Item 1
7. Method 4500-H B, Item 4	8. Method 4500-H B, Item 2
9. Method 1020-B, Item 2	10. Method 4500-O B, Item 3
11. Method 4500-O G, Item 3	12. Method 5210-B, Item 5
13. Method 1060B, Table 1060I	14. Method 1060A, Item 2
15. Method 4500-Cl I, Item 2	16. Method 4500-Cl I, Item 24
17. Method 4500-NH3 D, Item 4	18. Method 4500-NH3 D, Item 2
19. Method 1060-B, Item 2	20. Method 1060-B, Item 1
21. Method 9222D, Item 1	22. Method 9223 B, Items 2
23. Method 9223 B, Item 3	24. Method 1603, Item 2

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

