



**Environmental
Protection Agency**

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

December 13, 2010

Mayor and Council
Village of Gratis
P.O. Box 574
Gratis, Ohio 45320

**RE: Compliance Evaluation Inspection (CEI)
Village of Gratis WWTP
Permit Number 1PB00041**

Mayor and Council:

On December 8, 2010, I conducted a Compliance Evaluation Inspection at the Gratis Wastewater Treatment Plant (WWTP). A copy of the inspection report and General Laboratory Criteria is enclosed. The inspection report contains one unsatisfactory rating (Effluent/Receiving Waters) and one marginal rating (Operations & Maintenance).

The compliance inspection included a more in depth examination of the laboratory than has been done previously. The intent is to assist Gratis 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."

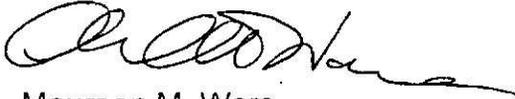
The need for a flow proportionate auto sampler for the effluent after the next permit renewal was discussed. In addition, the next permit will include a compliance schedule for *E. coli*. For the first disinfection season, permit limits will remain the same for fecal coliform, but monitoring only will be included for *E. coli*. The purpose is to determine if the existing disinfection facility at the WWTP will be adequate to meet the future *E. coli* limits. For the disinfection season after that, Gratis will need to meet effluent limits for *E. coli*, but not fecal coliform.

Please be advised that failure to comply with the requirements of your NPDES permit may be cause for enforcement action pursuant to the Ohio Revised Code Chapter 6111.

Mayor and Council – Village of Gratis
December 13, 2010
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If you have any questions or comments concerning the contents of this letter, please feel free to contact me at (937) 285-6103.

Sincerely,



Maureen M. Ware
Division of Surface Water

MMW/kla

enclosures

cc: Gary Wagner
cc: Preble County Health Dept.

Permit #: 1PB00041
 NPDES #: OH0047571



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
1PB00041	OH0047571	12/8/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Gratis WWTP 507 Enterprise Rd Gratis, Ohio 45320	9:00 AM	9/1/2008
	Exit Time	Permit Expiration Date
	10:45 AM	8/31/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Gary Wagner, ORC	937-313-4500	
Name, Address and Title of Responsible Official	Phone Number	
Mayor and Council P.O. Box 574 Gratis, Ohio 45320		

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

Section D: Summary of Findings (Attach additional sheets if necessary)

Effluent/Receiving Waters was rated unsatisfactory due to the numerous violations since the last inspection (See Notice of Violation dated 11/19/10). It was noted that I/I removal and a newly calibrated final effluent meter should reduce the potential for additional loading violations in the future. Operations & Maintenance was rated marginal due to an inoperable alarm for the Enterprise lift station. An ORC form for Gratis still needs to be submitted. See the cover letter regarding the laboratory.

Inspector	Reviewer
 Maureen M. Ware Division of Surface Water Southwest District Office Date: 12/13/10	 Martyn Burt Environmental Supervisor Division of Surface Water Southwest District Office Date: 12/13/10

Permit #: 1PB00041
NPDES #: OH0047571

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..... N/A

Comments/Status:

Section F: Compliance

- (a) Any significant violations since the last inspection..... Y
- (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 N/A

Comments/Status:

See NOV dated 11/19/10. Gratis has replaced over 50 manhole covers with dish style manhole covers to reduce I/I, which is believed to have contributed to the loading violations as the flow was frequently over the Average Daily Design Flow (ADDF) for the WWTP. Gratis also had the final effluent meter calibrated on 8/27/10. The meter was found to have been significantly out of calibration by recording flow that was higher than the actual flow. This also may have contributed to the loading violations.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

(a) Standby power available.....generator or dual feed N/E

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

The main lift station. As the WWTP treatment is via 4 lagoons, temporary power outages do not affect the WWTP.

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

weekly

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

the generator and the lift station.

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

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

calendar

(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)..... I
- (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.. N
- (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)

hardbound 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..... 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:

The Operator of Record form (revised October 2009) has yet to be submitted for Gratis. The form can be found at:
http://www.epa.state.oh.us/portals/28/documents/opcert/Operator_of_Record_Notification_Form.pdf

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.....1
 - ii. How many pump stations have telemetered alarms.....0
 - iii. How many pump stations have operable alarms.....1

- (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
if so, what is the LTCP status.....
- (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:

The alarm for the Enterprise lift station is not operable. Gratis will repair it as soon as possible. Although Gratis does not have an official RDII program, they continue to install manhole dishes (stops surface water from entering the manhole). Gratis has installed 50 such manhole dishes this year. Gratis has not had any water in basement complaints, but are prepared to deal with them on a case by case basis should they occur in the future.

Section H: Sludge Management

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"/>

- (a) Method of Sludge Disposal... Land Application
 Haul to Another NPDES Permittee
 Haul to a Mixed Solid Waste Landfill
- (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
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... Y
- (h) Is a contractor used for sludge disposal..... Y
 If so, what is the name of the contractor.....

Comments/Status:

As a lagoon WWTP, Gratis does not frequently need to remove sludge from the WWTP. It was last done about a decade ago. Gratis does not anticipate needing to do so again for at least another 15 years. The comminuter grinds solids to smaller than 5/8" inch.

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
ultrasonic and weir
- (b) Flow meter calibrated annually Y
(Date of last calibration: 8/27/2010)
- (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 was found to be significantly out of calibration when it was last calibrated on 8/27/10. Prior to that, it was recording flows that were significantly more than what was actually being discharged.

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)
- (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 | • Procedure |
| • Scope and Application | • Calculations |
| • Summary | • Quality Control |
| • Sample Handling and Preservation | • Maintenance |
| • Interferences | • Corrective Action |
| • Apparatus and Materials | • Reference (Parent Method) |
| • Reagents | |

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..... N/A
- (e) Analyses being performed more frequently than required by permit. N
- (f) If (e) is yes, are results in permittee's self-monitoring report..... N/A
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
(see score from GLC)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: everything except CBOD5, TSS, D.O., pH, chlorine, and temperature.

Lab name: Belmont

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling..... N/A
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: Pipe

Receiving Stream: Twin Creek

Receiving Stream Description: somewhat turbid. WWTP effluent was clear.

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/A
- (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:



General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class S or ASTM/ANSI Class 1 weights ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. ³	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Cleanliness, air movement, vibration	• Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments :

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2} . Correction factor posted on thermometer / equipment ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Thermometer temperature accurate to 0.5° Celsius ⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° F ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments :

General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Incubator (CBOD/ E-Coli)	Acceptable?		
<ul style="list-style-type: none"> • Temperature Recordkeeping 	<ul style="list-style-type: none"> • Temperature checked / recorded twice daily for each shelf in use¹(E-Coli) 	<input type="checkbox"/> Yes <input type="checkbox"/> No	M
	<ul style="list-style-type: none"> • Temperature checked / recorded daily² (CBOD) 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Acceptable temperature range (CBOD) is 20° C ±1.0^{o12} 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Acceptable temperature range (E-Coli) is 35° C ±0.5^{o22} 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Logbook maintained² 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> • Temperature Calibration / Documentation 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> • Temperature correction information posted on incubator¹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> • E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray 	<ul style="list-style-type: none"> • E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb)²³ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Instrument manual available 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Temperature Log (thermometer accurate to 0.5 Celsius).¹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: : Gratis recently purchased an NIST traceable thermometer. The incubator thermometer will be calibrated early in 2011 using the NIST traceable thermometer.

Criteria	Standard Methods Requirement		Rating
Refrigerator	Acceptable?		
<ul style="list-style-type: none"> • Temperature Recordkeeping 	<ul style="list-style-type: none"> • Temperature Log (thermometer accurate to 0.5 Celsius).⁵ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	M
<ul style="list-style-type: none"> • Temperature Calibration / Documentation 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> • Other 	<ul style="list-style-type: none"> • Thermometer held in water bath.¹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Refrigerator temperature ≤6° Celsius.¹³ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Do not store volatile solvents, food, or beverages.¹⁴ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Gratis recently purchased an NIST traceable thermometer. The refrigerator thermometer will be calibrated early in 2011 using the NIST traceable thermometer.

● General Lab Criteria ●

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter				
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• 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	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Method	• Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification ¹⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained. ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: :				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Ammonia Meter				
• Calibration Frequency / Documentation	• 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	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Method	• Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. ¹⁷	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: :				

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Sample Collection/Handling		Acceptable?		
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
• Chain of Custody	• Chain of custody (description, date, time, signature). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equipment blanks utilized ¹⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook being maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: At this time, Gratis uses 3 grabs in 2 hours as the compositing method (currently allowed by their permit). I noted that when the permit is next renewed, they will be required to use an autosampler. We discussed the future need for an SOP for cleaning the autosampler and proper use of blanks to verify the cleanliness of the autosampler.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Desiccator		Acceptable?		
• General criteria	• Properly working seals.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Desiccant fresh (blue color)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Log book being maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Bench sheets		Acceptable?		
• General criteria	• Date(s) ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M
	• Analyst initials ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Blue or black ink pen ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration information ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present ²	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Corrections, single line through, initialed and dated ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: The calibration information is currently kept on the log sheets. Gratis will need to also keep the calibration information on the bench sheets. The calculations are on the SOP's for the various parameters. Gratis will need to also show the calculations on the bench sheets. No corrections were noted on the bench sheet viewed.

● General Lab Criteria ●

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Criteria	Standard Methods Requirement	Acceptable?		Rating
Hot Water Bath (Fecal Coliform/E. Coli)				
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.2° C) ²¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Incubator temperature 44.5° C ± 0.2° ^{21/24}			
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Water Level	• Thermometer total immersion or partial (line on thermometer to ID immersion depth) ^{1,5}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Autoclaves/Steam Sterilizers				
• All apparatus utilized is adequately sterilized before use	• Sterilizing temperature 121° C ²⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• 10 to 30 minutes time based on material being sterilized ²⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust. ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Performance Checks	• Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

General Lab Criteria

Criteria	Standard Methods Requirement	Rating						
Final Effluent Temperature Monitoring		Acceptable?						
• General Criteria	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes <input type="checkbox"/> No						
	• Thermometer accurate to 0.1° Celsius ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No						
	• Log book being maintained ²	<input type="checkbox"/> Yes <input type="checkbox"/> No						
Comments:								
Number of Criteria Rated:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Acceptable</td> <td style="width: 50%; text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">Marginal</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">Unacceptable</td> <td style="text-align: center;"></td> </tr> </table>	Acceptable	2	Marginal	3	Unacceptable	
Acceptable	2							
Marginal	3							
Unacceptable								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Total Number of Areas Rated</td> <td style="width: 50%; text-align: center;">5</td> </tr> </table>	Total Number of Areas Rated	5				
Total Number of Areas Rated	5							
<p>Acceptable Ratings – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).</p>								
<p>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).</p>								
<p>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).</p>								
<table style="width: 100%;"> <tr> <td style="width: 40%;">Consider recommending PAI Audit from DES when:</td> <td> <ul style="list-style-type: none"> >60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable </td> </tr> </table>			Consider recommending PAI Audit from DES when:	<ul style="list-style-type: none"> >60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable 				
Consider recommending PAI Audit from DES when:	<ul style="list-style-type: none"> >60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable 							

Notation of Referenced Method

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Method 9020-B, Item 3 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-A, 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 CFR 136.3, Table II | <ul style="list-style-type: none"> 14 Method 1060A, Item 1 15 Method 4500-CI I, Item 2 16 Method 4500-CI I, Item 4 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, Item 2 23 Method 9223 B, Item 3 24 Method 1603, Item 2 25 Method 9030-B, Item 3 26 Method 9020 B, Table IV |
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● General Lab Criteria ●

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.

Preservation and Holding Times						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					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
NH3-N	P, G	500	G, C	Analyze as soon as possible or add H_2SO_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 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H_2SO_4 to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

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 °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