

**Environmental
Protection Agency**

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

Re: Sandusky County
Fremont WWTP
NPDES Permit

January 5, 2011

Mayor & Council
City of Fremont
323 South Front Street
Fremont, Ohio 43420

Dear Mayor & Council:

On September 13, 2010, Mary Beth Cohen conducted a compliance inspection of the Fremont Water Pollution Control Center (WPCC). Mr. James Johnson, Superintendent and Mr. Jeff Lamson, Assistant Superintendent, were present and provided information regarding plant operations. All major treatment units were in operation during the inspection. The following items were noted:

Continued coordination with the superintendent of sewers is required for NPDES required reporting of separate sewer system overflows (SSO) and/or basement flooding.

It was indicated that an ongoing review and inspection of the storm water discharge structure located at Fulton St. / Bull Run may have revealed an unpermitted combined sewer overflow (CSO). Further inspection was to be conducted to determine if it should be included as having a combined sewer overflow (CSO). Please provide this office with the results of this investigation. If a CSO is determined to exist, an NPDES permit modification request to add the CSO shall be submitted or elimination (plugging) of the outfall will be necessary.

Stress testing was being conducted at the wastewater treatment plant.

The required submittal of the No Feasible Alternative (NFA) report was received on October 29, 2010, and is currently under review.

The removal of the Integrated Fixed-film Activated Sludge (IFAS) media continues.

A portion of the North Street siphon has been grouted shut due to a cave in, eliminating use of one of the three existing siphon lines.

A structural analysis of the aeration tanks/building (1962) has been completed, with recommendations provided for necessary repairs.

Replacement of the sand in the tertiary filters was completed in August. One under drain pipe also required repair.

The fine bubble diffusers in the aeration tanks are in the process of being changed from 9" to 12" discs.

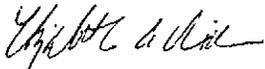
Ten (10) NIST thermometers were recently purchased for use in the lab, and were being installed at the time of inspection.

A review of your discharge monitoring reports (04/01/2009 through 11/30/2010) shows the following permit violation during this time.

Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
September 2010	001	00300	Dissolved Oxygen	1D Conc	5.0	4.63	9/3/2010

Our completed inspection report form is enclosed for your review. If there are any questions, please contact Mary Beth Cohen at (419) 373-3014.

Yours truly,



Elizabeth A. Wick, P.E.
District Engineer/Unit Supervisor
Division of Surface Water

/llr

Enclosure

pc: James Johnson, Superintendent (w/ enclosures)
DSW-NWDO-File



State of Ohio Environmental Protection Agency
Northwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
2PD00007	OH0025291	09/13/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Fremont Water Pollution Control Center 1019 Sand Street Fremont, OH 43420	9:00 am	May 1, 2010
	Exit Time	Permit Expiration Date
	1:30 pm	01/31/2012
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
James Johnson, Superintendent Jeff Lamson, Asst. Superintendent	419-334-3876	
Name, Address and Title of Responsible Official	Phone Number	
Mayor and Council City of Fremont 323 S. Front St Fremont, OH 43420	419-334-9556	

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

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

Continued coordination with the superintendent of sewers is required for NPDES required reporting of separate sewer system overflows (SSO) and/or basement flooding.

Stress testing was being conducted at the wastewater treatment plant.

The required submittal of the No Feasible Alternative (NFA) report was received on October 29, 2010, and is currently under review.

Many of the aeration tanks sludge gates are inoperable. A structural analysis of the aeration tanks/building (1962) has been completed.

Inspector	Reviewer
 Mary Beth Cohen Division of Surface Water Northwest District Office	 Elizabeth A. Wick, P.E. Water Quality Engineer Division of Surface Water
11/3/11 Date	11/3/11 Date

	Northwest District Office
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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) Correct name and location of receiving waters..... | Y |
| (c) Product(s) and production rates conform with permit application (Industries)..... | N/A |
| (d) Flows and loadings conform with NPDES permit..... | Y |
| (e) Treatment processes are as described in permit application... | Y |
| (f) New treatment process(es) added since last inspection..... | N |
| (g) Notification given to State of new, different or increased discharges..... | N/A |
| (h) All discharges are permitted..... | Y* |
| (i) Number and location of discharge points are as described in permit..... | Y |

Comments/Status:

* Possible unpermitted CSO being looked into by the City.

Section F: Compliance Schedules/Violations

- | | |
|---|--|
| (a) Any significant violations since the last inspection..... | N |
| (b) Permittee is taking actions to resolve violations..... | N/A |
| (c) Permittee has a compliance schedule..... | Y |
| (d) Compliance schedule contained in | <div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">NPDES permit</div> |
| (e) Permittee is meeting compliance schedule..... | Y |

Comments/Status:

The required submittal of the No Feasible Alternative (NFA) report was received and is currently under review.

It was noted that low D.O. occurred upon start up of the sand filters after refurbishing, possibly due to stagnant water left in the lines.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power available.....generator or dual feed Y
- (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 (OAC 3745-7)..... III
- (e) Operator of Record holds unexpired license of class required by permit..... Y
 Class: IV
- (f) Copy of certificate of Operator of Record displayed on-site..... N/E
- (g) Minimum operator staffing requirements fulfilled (OAC 3745-7)... Y
- (h) Routine and preventative maintenance scheduled/performed... Y
- (i) Any major equipment breakdown since last inspection..... N
- (j) Operation and maintenance manual provided and maintained.... Y
- (k) Any plant bypasses since last inspection..... N
- (jl) Regulatory agency notified of bypasses..... N/A
 On MORs and/or Spill Hotline (1-800-282-9378)
- (m) Any hydraulic and/or organic overloads since last inspection..... N

Record Keeping:

- (a) Log book provided..... N/E
- (b) Format of log book (i.e. computer log, hard bound book)
- (c) Log book(s) kept onsite (in an area protected from weather)..... N/E
- (d) Log book contains the following:
 - I. Identification of treatment works..... N/E
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... N/E
 - III. Daily record of operation and maintenance activities (including preventative maintenance, repairs and request for repairs)..... N/E
 - IV. Laboratory results (unless documented on bench sheets)... N/A
 - V. Identification of person making log entries..... N/E
- (d) Has the operator of record submitted written notification 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

Section G: Operation & Maintenance (con't)

Collection System:

- (a) Percent combined system: 65%
- (b) Any collection system overflows since last inspection..... Y
(CSO and/or SSO)
- (c) Regulatory agency notified of overflows (SSOs)..... N/A
- (d) CSO O&M plan provided and implemented..... Y
- (e) CSOs monitored and reported in accordance with permit..... Y
- (f) Portable pumps used to relieve system..... N/E
- (g) Lift station alarms provided and maintained..... Y
- (h) Are 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..... Y

Comments/Status:

Some of the aeration tanks activated sludge gates are inoperable. Closure devices have been fabricated to allow for optional 'feed' points within the aeration tanks.

One of the aeration tanks remains out of service while the IFAS pilot project plastic media is still being removed.

Continued coordination with the superintendent of sewers is required for NPDES required reporting of separate sewer system overflows (SSO) and/or basement flooding.

Hydraulic overloads occur during rainfall and snow melt.

The final effluent being discharged was observed to have a slight green cast.

Section H: Sludge Management

- (a) Sludge management plan (SMP)
Submitted date: 02/06/2002 Approval #:03-428-PW Not submitted N/A
- (b) Sludge management plan current..... Y
- (c) Sludge adequately disposed..... Y
(Method:Land application)
- (d) If sludge is incinerated, where is ash disposed of
- (e) Is sludge disposal contracted..... Y
(Name:Midwest Compost)
- (f) Has amount of sludge generated changed significantly since
last inspection..... N
- (g) Adequate sludge storage provided at plant..... Y
- (h) Land application sites monitored and inspected per SMP..... Y
- (i) Records kept in accordance with State and Federal law..... Y
- (j) Any complaints received in last year regarding sludge..... N
- (k) Is sludge adequately processed (digestion, pathogen control)..... Y

Comments/Status:

A new RAS pump has been installed, and another pumps impeller is being replaced.
Available sludge storage at the plant is limited to 75 - 80 days.

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary flow measuring device operated and maintained..... Y
Type of device: Ultrasonic & Parshall flume Ultrasonic & Weir Weir
Calculated from influent Other (Specify: Magnetic Flow Meter)
- (b) Calibration frequency adequate Y
(Date of last calibration:)
- (c) Secondary instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range
of flows..... Y
- (e) Actual flow discharged is measured..... Y
- (f) Flow measuring equipment inspection frequency
 Daily Weekly monthly other

Comments/Status:

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
- (d) Sample collection procedures are adequate..... Y
 - (i) Samples refrigerated during compositing..... Y
 - (ii) Proper preservation techniques used..... Y
 - (iii) Containers and sample holding times prior to analysis conform with 40 CFR 136.3..... Y
- (e) 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
- (f) Adequate records maintained of sampling date, time, location, etc.. Y

Laboratory:

General

- (a) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (b) If alternate analytical procedures are used, proper approval has been obtained..... N/A
- (c) Analyses being performed more frequently than required by permit. Y
- (d) If (c) is yes, are results in permittee's self-monitoring report..... Y
- (e) Commercial laboratory used..... Y

Parameters analyzed by commercial lab:

*Mercury, cyanide, hexavalent chromium, organics, TTOs, O&G, and TKN
Sludge parameters: arsenic, selenium, molybdenum, phosphorus,
potassium, fecal*

Lab name:

Jones & Henry / ENO River Labs (PCB's) / A&L Labs (sludge fecals)

Quality Control/Quality Assurance

- (f) Quality assurance manual provided and maintained..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
- (h) Adequate records maintained..... Y
- (i) Results of latest USEPA quality assurance performance sampling program: Satisfactory Marginal Unsatisfactory

Date: 2010 - DMQRA #30

Comments/Status:

Analyses being performed more frequently than required by permit are reported in the self monitoring reports as allowed by the e-DMR program.

Section J: Effluent/Receiving Water Observations

Outfall Number	Oil sheen	Grease	Turbidity	Visible Foam	Visible Floating Solids	Color	Other
001	None	None	None	None	None	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
- (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:

F. GUIDE - VISUAL OBSERVATION - UNIT PROCESS

Form Approved

OMB No. 158-R0035

RATING CODES: S = Satisfactory; U = Unsatisfactory; M = Marginal; IN = In Operation; OUT = Out of Operation

CONDITION OR APPEARANCE		RATING	COMMENTS
General	Grounds	S	
	Buildings	S	
	Potable Water Supply Protection	S	
	Safety Features	S	
	Bypasses	Out	
	Storm water Overflows	Out	
	Alternate Power Source	S	Three permanent generators @ plant w/ one portable for use in system
	Storm Ret. Pond / E.Q. Basin	In	Sand Road Pond – pond water being routed to head of plant
Preliminary	Maintenance of Collection Systems	-	
	Pump Station	In	
	Ventilation	In	
	Bar Screen	In	Two units (influent comes in at two different locations)
	Disposal of Screenings	S	Landfill
	Comminutor	In	
	Grit Chamber	In	Grit removal auger is run manually every 2 hours
	Disposal of Grit	S	Landfill
	Grit Dewatering	In	Runs 12 X / day @ 15 min / run
Primary	Settling Tanks	In	Two circular units, both in use
	Scum Removal	In	Landfill
	Sludge Removal	In	
	Effluent	S	Effluent was observed to have slight grey cast
Sludge Disposal	Digesters - Anaerobic	In	Two stage anaerobic units series (south digester lid caved in and now removed)
	Temperature and pH	S	Runs at 100' -102' F
	Gas Production	S	Flared off
	Heating Equipment	In	Boiler in operation (old unit as backup)
	Sludge Pumps	In	2 RAW, 3 RAS, 2 WAS, 2 Digested and 2 Thickener
	Sludge Storage	M	Limited storage capacity
	Disposal of Sludge	S	Land application
	Chemical Additive / Treatment	Out	Polymer and sodium bicarbonate added to sludge as needed
	Thickener / Holding	In	1 aerated thickener tank, 5 sludge holding tanks
Other	Flow Meter and Recorder	In	
	Records	S	
	Lab Controls	-	
	Chemical Treatment	In	Ferrous chloride for phosphorus removal
	Chemical Treatment	Out	Phosphoric acid no longer being used
Secondary Tertiary	Aeration Treatment (step feed)	In	3 of 6 tanks in use (one out due to IFAS media not yet removed)
	Secondary Settling Tanks	In	2 of 3 tanks in use due to lower flows – slight floc carryover observed
	Aeration Blowers	In	2 of 4 in use
	Tertiary Sand Filters	In	All 4 units in use – all sand recently replaced (super chlorinated - cleaning)
Disinfection	Effluent	S	Final effluent being discharged appeared to be clear
	Disinfection System	In	Sodium hypochlorite (used all year long to keep sand filters oxidized)
	Effective Dosage	S	
	Contact Time	S	
	Contact Tank	In	
	Dechlorination	In	Sodium bisulfate - used all year long (tank may need to be replaced)
	Chlorine	In	Chlorine used for RAS to control filamentous growth as needed

General Lab Criteria – Fremont WWTP

9/13/10

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class S or ASTM/ANSI Class 1 weights ^{1,2}	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. ³	<input type="checkbox"/> Yes	<input checked="" 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ⁶	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

It was indicated that calibration verification/documentation will be implemented.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
		• Log book maintained ⁶	<input checked="" type="checkbox"/> Yes	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2} . Correction factor posted on thermometer / equipment ¹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Thermometer temperature in 0.1° C increments ⁵	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° F ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

The drying oven manual will be checked for the internal thermometers calibration information.

Criteria	Standard Methods Requirement	Acceptable?		Rating
pH 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
		• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes	
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result ⁷	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

General Lab Criteria – Fremont WWTP

Comments:			
Criteria	Standard Methods Requirement		Rating
Dissolved Oxygen Meter	Acceptable?		
• Calibration Method	• Air or known DO calibration method ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	• Calibration per manufacturer specification ¹⁰	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Calibration verification required at least once each day the meter is used. ³	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil) ¹¹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement		Rating
Incubator (CBOD/ E-Coli)	Acceptable?		
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use ¹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	• Acceptable temperature range (CBOD) is 20° C ±1.0 ^{o12}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5 ^{o22}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained ⁹	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature correction information posted on incubator ¹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) ²³	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature Log (thermometer reads to 0.1 Celsius). ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:
NIST thermometers were recently purchased and in the process of being installed at the time of inspection.

Criteria	Standard Methods Requirement		Rating
Refrigerator	Acceptable?		
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.1 Celsius). ⁵	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Thermometer held in water bath. ¹	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Refrigerator temperature ≤6° Celsius. ¹³	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages. ¹⁴	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

General Lab Criteria – Fremont WWTP

Comments:				
Criteria	Standard Methods Requirement			Rating
Chlorine Meter		Acceptable?		A
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵	<input checked="" 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 checked="" 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained. ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: <i>Manufacturer's specifications will be checked for calibration method used for their chlorine limit (0.038). Chlorine meter in use provides digital readout of the calibration curve that is manually recorded.</i>				
Criteria	Standard Methods Requirement			Rating
Ammonia Meter		Acceptable?		A
• 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input checked="" 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				
Criteria	Standard Methods Requirement			Rating
Sample Collection/Handling		Acceptable?		A
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

General Lab Criteria – Fremont WWTP

• Other	• Composite samples refrigerated during sample collection ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equipment blanks utilized ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook being maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Desiccator		Acceptable?		
• General criteria	• Properly working seals.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• Desiccant fresh (blue color)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Log book being maintained ⁹	<input checked="" 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	A
	• 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Corrections, single line through, initialed and dated ²	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Hot Water Bath (Fecal Coliform/E. Coli)		Acceptable?		
• Temperature Recordkeeping	• Temperature Log (thermometer reads 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 ⁹	<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:

*Fecal Coliform test is conducted at the WTP lab by WWTP lab staff.
New NIST thermometers have recently been purchased and are being installed.*

Criteria	Standard Methods Requirement	Acceptable?		Rating
Autoclaves/Steam Sterilizers		Acceptable?		
• 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	

General Lab Criteria – Fremont WWTP

<ul style="list-style-type: none"> • Documentation 	<ul style="list-style-type: none"> • 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	
	<ul style="list-style-type: none"> • Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used¹ 	<input 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 type="checkbox"/> No	
	<ul style="list-style-type: none"> • Log book being maintained⁹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> • Performance Checks 	<ul style="list-style-type: none"> • Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules¹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:
Fecal Coliform test is conducted at the WTP lab by WWTP lab staff.

Number of Criteria Rated:	Acceptable	11
	Marginal	
	Unacceptable	
	Total Number of Areas Rated	11

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).

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).

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
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General Lab Criteria – Fremont WWTP

Notation of Referenced Method

1 Method 9020-B, Item 4	14 Method 1060A, Item 1
2 Method 1020-A, Item 1	15 Method 4500-CI I, Item 2
3 Method 1020-B, Item 10	16 Method 4500-CI I, Item 4
4 Method 2540-B, Item 2	17 Method 4500-NH3 D, Item 4
5 Method 2550-B, Item 1	18 Method 4500-NH3 D, Item 2
6 Method 1020-B, Item 1	19 Method 1060-B, Item 2
7 Method 4500-H B, Item 4	20 Method 1060-B, Item 1
8 Method 4500-H B, Item 2	21 Method 9222D, Item 1
9 Method 1020-B, Item 2	22 Method 9223 B, Item 2
10 Method 4500-O B, Item 3	23 Method 9223 B, Item 3
11 Method 4500-O G, Item 3	24 Method 1603, Item 2
12 Method 5210-B, Item 5	25 Method 9030-B, Item 3
13 CFR 136.3, Table II	26 Method 9020 B, Table IV

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

General Lab Criteria – Fremont WWTP

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