

ATTACHMENT 2

FIELD EVALUATION FORM FOR
OPERATION AND MAINTENANCE PERFORMANCE REPORTS FOR
DOMESTIC WASTEWATER FACILITIES

Florida Department of Environmental Regulation

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FIELD EVALUATION FORM FOR
 OPERATION AND MAINTENANCE PERFORMANCE REPORTS FOR
 DOMESTIC WASTEWATER FACILITIES

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PHYSICAL CONDITION

Hydraulic and Organic Overloading

1. Is there evidence of past spills at the plant or through nearby (upstream) manholes? (Discoloration of the ground or a strong smell may indicate past spills at the plant.) yes no
2. Are raw sewage pumping stations, influent lines, overflow weirs, or other structures surcharged? yes no
3. Is there flow through bypass channels? yes no
4. Are there old high water lines or are the weirs on the clarifier flooded? yes no
5. Are there overflows at alternative discharge points, channels, or other areas? yes no
6. Are there any open-ended pipes that appear to originate in a process or storage area and periodically contain flows to the ground or to surface water? (Although these pipes have been disconnected from a closed system or otherwise removed from service, they can still be connected to a discharge source.) yes no
7. Is the facility receiving excessive septage dumping from septic tanks? yes no
8. Are checks for overflows performed routinely? yes no

General Condition

1. Is there evidence of corrosion problems at the treatment plant and in the collection system? yes no
2. Do any of the units or associated equipment show signs of excessive wear? yes no

Rule Requirements

1. Does each component, system, or process meet the applicable reliability standards required by Rule 17-600.400(1)(b), F.A.C.? yes no
2. Does the facility have adequate alarm systems for power or equipment failures as recommended by standard design references? yes no
Are they working properly? yes no
3. Is standby power or other equivalent provisions provided for all components, systems, and processes as recommended by standard design references? yes no

4. Are there adverse effects resulting from odors, noise, aerosol drift, and lighting at the facility? () yes () no
5. Are there piles of collected screenings, slurries, residuals, or by-products of treatment? (Their disposal, including run-off of any water, must be such that none enters surface waters or their tributaries.) () yes () no

Operating Problems

1. Are all components, systems, or processes (including associated equipment such as pumps, blowers, air compressors, oxygen systems, scum collection systems, residuals collection systems, diffusers, mechanical aerators, mechanical drives, mechanical mixers, motors, residuals heater, feed systems, backwash systems, control systems, flow measurement devices, automatic valves, ventilation fans, and other miscellaneous equipment) operating properly? () yes () no

If no, explain.

2. Are any components, systems, or processes out of service? () yes () no

If yes, complete the following table for each component, system, or process that is not operating.

Name	Date Out of Service	Type of Failure	Expected Date to Return to Service
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. Are there excessive noises associated with any component, system, or process? () yes () no
4. Is there any unusual equipment intended to correct operational problems (e.g. special pumps, floating aerators in diffused air systems, chemical feeders, temporary construction or structures, or any improvised systems)? () yes () no

5. Are all components, systems, and processes expected to continue to operate properly for the permit period? () yes () no

If no, explain. _____

Safety Features

1. Are proper safety precautions used for each component, system, and process?
() yes () no

If no, explain. _____

2. Is a written set of safety rules available to all employees? () yes () no

3. Is the plant generally clean and free from open trash areas? () yes () no

4. Is the plant site enclosed with a fence or otherwise designed with appropriate features that discourage the entry of animals or unauthorized persons? () yes () no

5. Are wastewater pipes clearly distinguished from product pipes?
() yes () no

6. Are there any cross connections between a potable water supply and non-potable source? () yes () no

7. Does the plant have the following recommended safety equipment?

- a. Portable air blower (gas motor or electric motor operated)
() yes () no

- b. Electric explosion-proof lantern () yes () no

- c. Safety harness () yes () no

- d. Hose mask with hand blower and 50-foot hose () yes () no

- e. Self contained breathing apparatus for plants using chlorine
() yes () no () not applicable

- f. Explosion and oxygen meters () yes () no

8. Is personal protective clothing provided (safety helmets, ear protectors, goggles, gloves, rubber boots with steel toes, etc.)? () yes () no

9. Are portable hoists available for equipment removal? () yes () no

10. Are ladders provided to enter manholes of wetwells (fiberglass or wooden for electrical work)? yes no
11. Are life preservers and throwlines provided adjacent to all basins, ponds, and lagoons? yes no
12. Are handrails provided and in-place around all basins and openings? yes no
13. Are all stairs, walkways, and platforms free of grease, oil, and debris and are nonskid surfaces used when needed? yes no
14. Is adequate lighting provided? yes no
15. Are all components, systems, and processes adequately ventilated? yes no
16. Are protective guards provided and in-place on all rotating machinery? yes no
17. Is all electrical circuitry enclosed and identified? yes no
18. Are appropriate warning signs posted (no smoking, high voltage, non-potable water, chlorine hazard, toxic and flammable gases, etc.)? yes no
19. Are emergency shower and eye wash facilities provided where needed? yes no
20. Are appropriate fire extinguishers provided where needed? yes no
21. Is instrumentation provided and operational for the detection of toxic and flammable gases and low oxygen levels? yes no
22. Do pressure vessels operate within their design rating and have a functional pressure relief? yes no not applicable
23. Are chemicals stored properly? yes no
24. Are undiked oil/chemical storage tanks used at the facility? yes no not applicable
25. Are chemical storage tanks designed to handle the particular chemical? yes no not applicable
26. Are storage bins provided with dust collectors and vents? yes no not applicable
27. Are storage bins large enough to avoid continuous filling which requires the presence of an operator all the time? yes no not applicable
28. Are access points for sampling dry points which can be reached safely? yes no

OPERATION AND MAINTENANCE PROGRAM

Staffing

- 1. Is the facility adequately staffed with certified operators in accordance with the requirements of Rule 17-602, F.A.C.? () yes () no

Maintenance Management

- 1. Is there an identification system to locate and identify all items of equipment? () yes () no
- 2. Does the facility maintain a records system which includes the following?
 - a. Preventive and corrective maintenance work performed () yes ()no
 - b. Maintenance man-hours () yes () no
 - c. Spare parts used in the repair () yes () no
 - d. Name of the person performing the work () yes () no
 - e. Maintenance related costs () yes () no
- 3. Is routine and preventive maintenance scheduled and performed on time? () yes () no
- 4. Are adequate spare parts and supply inventories maintained for each component, system, and process? () yes () no
- 5. Is the maintenance program adequate? () yes () no

If no, explain. _____

Records Keeping

- 1. Are records required by the permit maintained for a period of five years? () yes () no
- 2. Is the information required by the permit available, complete, and current? () yes () no
- 3. Are analytical results consistent with the data reported in the following?
 - a. Monthly operating report () yes () no
 - b. Limited wet weather discharge report () yes () no

- c. Ground water monitoring report () yes () no
- d. Reclaimed water or effluent analysis report () yes () no
- 4. Do sampling and analyses data include the following?
 - a. Dates, times, and location of the sampling () yes () no
 - b. The name of the individual performing the sampling () yes () no
 - c. The analytical methods and techniques used () yes () no
 - d. The results of the analyses and calibration () yes () no
 - e. The dates of the analyses () yes () no
 - f. The name of the person performing the analyses () yes () no
 - g. The instantaneous flow at the grab sample station () yes () no
- 5. Do monitoring records include records for all parameters that must be monitored in accordance with the permit? () yes () no
- 6. Are flow meter calibration records available? () yes () no
- 7. Are laboratory equipment calibration and maintenance records adequate? () yes () no
- 8. Are plant records adequate and do they include the following?
 - a. A copy of the Department permit () yes () no
 - b. An up-to-date operation and maintenance manual () yes () no
 - c. Record drawings () yes () no
 - d. Schedules and dates of equipment maintenance repairs () yes () no
 - e. Equipment suppliers manual () yes () no
 - f. Equipment data cards or equal () yes () no
- 9. Are operating records adequate? () yes () no

10. Have all untreated bypasses and discharges or overflows been reported to the Department? () yes () no

If no, explain. _____

Sampling

1. Are samples taken at the sites specified in the permit? () yes () no
2. Is sampling and analysis completed for each parameter specified by the permit? () yes () no
3. Is the frequency of sampling in accordance with the permit? () yes () no
4. Is the method of sample collection (grab or composite) in accordance with the permit? () yes () no
5. Are sample collection procedures in accordance with the approved test procedures referenced in Rule 17-601.400(1)(a), F.A.C.?
() yes () no
6. For flows of 100,000 gallons per day or greater, are recording flow meters and totalizers used? () yes () no () not applicable
7. Are flow recording devices calibrated at least annually? () yes () no

Laboratory Analysis

1. Are all laboratory tests required by Department rules performed by a laboratory that has been certified by HRS, or, for on-site tests for dissolved oxygen, pH, and total chlorine residual, are all tests performed by a certified laboratory or under the direction of an operator certified in accordance with Chapter 17-602, F.A.C.? () yes () no

INDIVIDUAL COMPONENTS, SYSTEMS, AND PROCESSES

PUMPING

Raw Wastewater

1. What is the location of the pump station? _____
2. What are the design flows to the pump station? _____ gpm average
_____ gpm peak
3. What are the actual flows to the pump station? _____ gpm average
_____ gpm peak
4. What type of pump control system is used?
 variable speed constant speed
5. If the control system is variable speed, what type of controller is used?
_____ not applicable
6. If multiple pumps are used, how is each unit operated?
 about 15-20% apart equally not alternated
 not applicable

Is the system remotely monitored? yes no not applicable
7. Does the pump station have a bypass? yes no

If yes, can the bypass flow be disinfected?
 yes no not applicable
8. Can the wet well be isolated into a minimum of two separate basins for maintenance? yes no
9. If one wet well basin is down for maintenance, how many pumps are operable?

10. Does the wet well design provide for equal division of flow to each of the pumps? yes no
11. What is the condition of the sump pump?
 good fair poor not applicable
12. What is the condition of the water seal systems?
 good fair poor not applicable
13. How often is the pump station checked? daily other

14. What is the downtime of the pumps? _____
15. What is the frequency of maintenance inspections by plant personnel?
_____ /year

16. If the pump station is constant speed, do sudden surges affect the operation of the treatment facility when each pump is activated?
 yes no not applicable
17. What is the general condition of the raw wastewater pump station?
 good fair poor
18. What are the most common problems that the operator has had with the pump station? If there are problems with the screens, use the section on screens.

PUMPING

Residuals

1. What is the design residuals pumping rate? _____ gallons/day
2. What is the actual residuals pumping rate? _____ gallons/day
3. What types of residuals are pumped? () primary
() return activated sludge () waste activated sludge
() other _____
4. How are residuals pumped? () manually () automatically
5. How often do the residuals pumps run? _____
6. What is the frequency of maintenance inspections by plant personnel?
_____ /year
7. What is the general condition of the residuals pump station?
() good () fair () poor
8. What are the most common problems that the operator has had with the pump station?

FLOW MEASUREMENT

1. What type of flow meter is used? propeller meter
 magnetic meter venturi tube flow tube
 positive displacement diaphragm meter weir
 Parshall flume rotameter other _____
2. What is the design capacity of the flow measurement device?
_____ mgd
3. What is the present wastewater flow measured? _____ mgd
4. Where is the flow meter located? _____
5. Are the flow measurement device and associated instruments
(totalizers, recorders, etc.) properly installed? yes no
6. Is there adequate straight length of pipe or channel before and after
the flowmeter? yes no
7. Is the flow entering the flume reasonably well-distributed across the
channel and free of turbulence, boils, or other disturbances?
 yes no not applicable
8. Is the flow measurement system capable of measuring the entire range
of wastewater flow? yes no
9. Are flow measurements being properly made by plant personnel?
 yes no
10. Are flow records properly kept? yes no
11. Are sharp drops or increases in flow records accounted for?
 yes no
12. Does the flow chart exhibit uniform flow? yes no
13. Do any plant return flows discharge upstream from the meter?
 yes no
14. Are float and bubble wells clean and free of grease and debris?
 yes no not applicable
15. Are weirs free of debris? yes no not applicable
16. Are weirs or flumes broken or cracked?
 yes no not applicable
17. Are weir plates corroded or damaged, not sharp edged ($\leq 1/8"$), or not
level? yes no not applicable
18. Are stilling wells clogged or broken?
 yes no not applicable

19. What is the frequency of calibration of the flow meter?
_____ /month
20. What date was the flow meter last calibrated? _____
21. Who performed the calibration? _____
22. What is the frequency of routine inspections for proper operation?
_____ /day
23. What is the frequency of maintenance inspections by plant personnel?
_____ /year
24. What is the general condition of the flow measurement facilities?
() good () fair () poor
25. What are the most common problems that the operator has had with the flow meter? _____

PRELIMINARY TREATMENT

Screens

1. What is the design flows of the screens? _____ mgd average
_____ mgd peak
2. What is the actual plant flow? _____ mgd average
_____ mgd peak
3. What type of screens are used? () manual () mechanical
4. How many screens are there? _____
5. What is the capacity of each screen? _____ mgd
6. How large are the screen openings? _____ millimeters
7. What are the dimensions of the channels? _____
8. What is the total daily volume of screenings? _____ cubic feet
9. What is the unit volume of screenings?
_____ cubic feet/million gallons
10. Is there excessive screen clogging or build-up of debris against the screens? () yes () no
11. Is there a bypass channel? () yes () no

Does the bypass channel have a screen?
() yes () no () not applicable
12. Does the influent channel design provide equal division of flow to each screen? () yes () no
13. How are screenings disposed? _____
14. What is the frequency of routine inspections for proper operation?
_____ /day
15. What is the frequency of maintenance inspections by plant personnel?
_____ /year
16. What is the downtime of the screens? _____
17. What is the general condition of the screening facilities?
() good () fair () poor
18. What are the most common problems that the operator has had with the screening facilities? _____

PRELIMINARY TREATMENT

Shredding and Grinding (Comminution)

1. How many shredding and grinding units are there? _____
2. What is the design capacity of each unit? _____ mgd
3. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
4. If multiple units are used, is the flow evenly distributed?
() yes () no
5. What are the dimensions of the channels? _____
6. Is there a bypass channel? () yes () no
7. What is the general condition of the shredding and grinding facilities? () good () fair () poor
8. What is the frequency of routine inspections for proper operation?
_____ /day
9. What is the frequency of maintenance inspections by plant personnel?
_____ /year
10. What is the downtime of the shredding and grinding facilities?

11. What are the most common problems that the operator has had with the shredding and grinding facilities? _____

PRELIMINARY TREATMENT

Grit Removal

1. What is the design capacity of the grit removal system?
_____ mgd average _____ mgd peak
2. What is the actual plant flow? _____ mgd average
_____ mgd peak
3. What type of grit removal system is used? () velocity controlled
() aerated () constant head () other _____
4. How many grit removal units are there? _____
5. What is the capacity of each unit? _____
6. What are the dimensions of the unit? _____ cubic feet
7. What is the daily volume of grit? _____ cubic feet
8. What is the unit volume of grit? _____ cubic feet/million gallons
9. How is the grit collection equipment operated?
() manually () time clock () continuous duty
10. Is the grit system clogged? () yes () no
11. Is the grit system subject to odors? () yes () no
12. Is the organic content of the grit excessive? () yes () no
13. Is there a bypass channel? () yes () no
14. Does the influent channel design provide equal division of flows to each grit removal unit? () yes () no
15. How is the grit disposed? _____
16. What is the frequency of routine inspections for proper operation?
_____ /day
17. What is the frequency of maintenance inspections by plant personnel?
_____ /year
18. What are the most common problems that the operator has had with the grit removal facilities? _____

BIOLOGICAL TREATMENT

Activated Sludge

1. How many aeration basins are there? _____
2. What is the design capacity of each basin? _____ mgd
3. What is the actual flow to each basin? _____ mgd average
_____ mgd peak
4. What is the flow regime? () conventional () step aeration
() complete mix () pure oxygen () other _____
5. What type of aeration equipment is used?
() diffused air () mechanical aerators () other _____
6. What are the dimensions of each aeration basin? _____
7. What is the color of the activated sludge? () black () dark brown
() light brown () other _____
8. What is the odor of the activated sludge? () septic () earthy
() none () other _____
9. What characteristics most accurately describe the foam?
() light, crisp () thick, dark () heavy, white () other _____
10. Are the tank contents mixed thoroughly? () yes () no
11. Are there excessive air leaks in the compressed air piping?
() yes () no () not applicable
12. Is the dissolved oxygen level in the aeration tank low (<1.0 mg/l)?
() yes () no
13. Does mixing appear excessive? () yes () no
14. Does air rise in clumps? () yes () no
15. Do there appear to be dead spots in the aeration basin?
() yes () no
If yes, at what location? _____
16. What is the depth of the sand and grit layer? _____ feet
17. What is the active capacity of the aeration basin?
_____ cubic feet
18. Is the process operating in its design mode? () yes () no
If no, explain. _____

19. Are the return activated sludge pumps operating? () yes () no
 If no, what is the reason? _____
20. Are there flow measurement devices for the return activated sludge and waste activated sludge systems? () yes () no
21. Does the aeration basin have a foam control system? () yes () no
22. If multiple basins are operating, is the flow distributed equally?
 () yes () no () not applicable
 How is it distributed? _____
23. Are the characteristics of the basin contents different in the various units? () yes () no () not applicable
24. How is the system operated? () manually () semi-automatically
 () automatically () computer-controlled () other _____
25. What is the frequency of routine inspections for proper operation?
 _____ /day
26. What is the frequency of maintenance inspections by plant personnel?
 _____ /year
27. What is the general condition of the activated sludge facilities?
 () good () fair () poor
28. What are the most common problems that the operator has had with the activated sludge system? _____

BIOLOGICAL TREATMENT

Trickling Filters

1. How many trickling filter units are there? _____
2. What is the design capacity of each unit? _____ mgd
3. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
4. What is the recycle flow? _____ mgd
5. How is the flow recycled? () continuously () intermittently
6. What is the filter classification? () low rate
() intermediate rate () high rate () super-high rate
7. What type of media is used? _____
8. What is the depth of the media? _____ feet
9. What is the diameter of each unit? _____ feet
10. What is the color of the filter? () black () dark brown
() light brown () other _____
11. What is the odor of the filter? () septic () earthy () none
() other _____
12. Is there evidence of uneven flow distribution from the trickling filter arms or on the trickling filter surface? () yes () no
13. Is there clogging of the trickling filter distribution arm orifices? () yes () no
14. Is there evidence of filter clogging (e.g., ponding)? () yes () no

If yes, explain. _____
15. Is there evidence of filter flies? () yes () no

Is there evidence of snails? () yes () no

Is there evidence of roaches? () yes () no
16. Is there a leak at the center column of the trickling filter distribution arms? () yes () no
17. Is there restricted rotation of the distribution arms? () yes () no

18. Is there grass or other vegetative material growing on the filter?
 yes no
 If yes, what? _____
19. Are there flow measurement devices for the recirculation flow?
 yes no
20. Are the recirculation pumps operating? yes no
 If no, why? _____

21. If multiple filters are operating, is the flow distributed equally?
 yes no not applicable
 How is it distributed? _____
22. Are the characteristics of the filter contents different in the various units? yes no not applicable
 If yes, describe. _____

23. How is the system operated? manually semi-automatically
 automatically computer-controlled other _____
24. What is the frequency of routine inspections for proper operation?
 _____ /day
25. What is the frequency of maintenance inspections by plant personnel?
 _____ /year
26. What is the general condition of the trickling filter facilities?
 good fair poor
27. What are the most common problems that the operator has had with the trickling filter system? _____

BIOLOGICAL TREATMENT

Rotating Biological Contactors (RBCs)

1. How many RBC units (shafts) are there? _____
2. What is the design capacity of each unit? _____ mgd
3. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
4. What type of RBC media is used? _____
5. What type of RBC drive is used? _____
6. What is the surface area of each unit? _____
7. What is the color of the biomass? () black () dark brown
() light brown () other _____
8. What is the odor of the unit? () septic () earthy () none
() other _____
9. Is there excessive breakage of rotating disks or shafts?
() yes () no
10. Is rotation of the media uniform? () yes () no
11. Is the flow distributed equally to parallel shafts? () yes () no
How is it distributed? _____
12. Are the characteristics of the tank contents different in the various
units? () yes () no () not applicable
If yes, describe. _____
13. Are RBC units housed in a building? () yes () no
Or does each unit have a cover? () yes () no
14. What is the frequency of routine inspections for proper operation?
_____ /day
15. What is the frequency of maintenance inspections by plant personnel?
_____ /year
16. What is the general condition of the RBC facilities?
() good () fair () poor
17. What are the most common problems that the operator has had with the
RBC system? _____

NITROGEN REMOVAL

Suspended Growth Nitrification

1. How many aeration basins are there? _____
2. What is the design capacity of each basin? _____ mgd
3. What is the actual flow to each basin? _____ mgd average
_____ mgd peak
4. How many stages does the nitrification system have? _____
What type of flow regime (e.g., conventional) does each stage have?

5. What type of aeration equipment (e.g., diffused air or mechanical aerators) does each stage have? _____

6. What are the aeration basin(s) dimensions? _____
7. Characteristics of the Carbonaceous Oxidation Basin:
What is the color of the activated sludge? () black () dark brown
() light brown () other _____
What is the odor of the activated sludge? () septic () earthy
() none () other _____
What characteristics most accurately describe the foam?
() light, crisp () dark, thick () heavy, white
() other _____
8. Characteristics of the Nitrification Basin:
What is the color of the activated sludge? () black () dark brown
() light brown () other _____
What is the odor of the activated sludge? () septic () earthy
() none () other _____
What characteristics most accurately describe the foam?
() light, crisp () dark, thick () heavy, white
() other _____
9. Are the tank(s) contents mixed thoroughly? () yes () no
10. Are there excessive air leaks in the compressed air piping?
() yes () no () not applicable
11. Is the dissolved oxygen level in the aeration tank(s) low
(≤ 1.0 mg/l)? () yes () no

12. Does mixing appear excessive? () yes () no
13. Does air rise in clumps? () yes () no
14. Do there appear to be dead spots in tank(s)? () yes () no
If yes, at what location? _____
15. What is the depth of the sand and grit layer? _____ feet
16. What is the active capacity of the aeration basin?
_____ cubic feet
17. Is the process operating in its design mode? () yes () no
If no, explain _____
18. Are the RAS pumps operating? () yes () no
If no, what is the reason? _____
19. Are there flow measurement devices for the RAS and WAS systems?
() yes () no
20. Does the aeration basin(s) have a foam control system?
() yes () no
21. If multiple basins for each step are operating, is the flow distributed equally? () yes () no () not applicable
How is it distributed? _____
22. Are the characteristics of the basin contents for each step different?
() yes () no
If yes, describe. _____

23. Is there an alkaline buffer added? () yes () no
If yes, what is it? _____
If yes, what is the dose? _____
24. How is the system operated? () manually () semi-automatically
() automatically () computer-controlled () other _____
25. What is the frequency of routine inspections for proper operation?
_____ /day
26. What is the frequency of maintenance inspections by plant personnel?
_____ /year

27. What is the general condition of the nitrification facilities?
() good () fair () poor
28. What are the most common problems that the operator has had with the nitrification system? _____

NITROGEN REMOVAL

Nitrifying Trickling Filters

1. How many stages does the nitrification system have? _____
2. How many trickling filter units are there in each stage? _____
3. What is the design capacity of each unit? _____ mgd
4. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
5. What is the recycle flow to each stage? _____
How is the flow recycled? () continuously () intermittently
6. What type of media is used? _____
7. What is the depth of the media? _____ feet
8. What is the diameter of each unit? _____
9. Characteristics of the Oxidation Tower:
What is the color of the filter? () black () dark brown
() light brown () other _____
What is the odor of the filter? () septic () earthy
() none () other _____
10. Characteristics of the Nitrification Tower:
What is the color of the filter? () black () dark brown
() light brown () other _____
What is the odor of the filter? () septic () earthy
() none () other _____
11. Is there evidence of uneven flow distribution from the trickling filter arms or on the trickling filter surface? () yes () no
12. Is there clogging of the trickling filter distribution arm orifices? () yes () no
13. Is there evidence of filter clogging (e.g., ponding)? () yes () no
If yes, explain. _____

14. Is there evidence of filter flies? () yes () no
 Is there evidence of snails? () yes () no
 Is there evidence of roaches? () yes () no
15. Is there a leak at the center column of the trickling filter distribution arms? () yes () no
16. Is there restricted rotation of the distribution arms?
 () yes () no
17. Is there grass or other vegetative material growing on the filter?
 () yes () no
 If yes, what? _____
18. Are there flow measurement devices for the recirculation flow?
 () yes () no
19. Are the recirculation pumps operating? () yes () no
 If no, why? _____

20. If multiple filters are operating for each stage, is the flow distributed equally? () yes () no () not applicable
 How is it distributed? _____
21. Are the characteristics of the filter contents different in the various units of each stage? () yes () no () not applicable
 If yes, describe. _____

22. How is the system operated? () manually () semi-automatically
 () automatically () computer-controlled () other _____
23. Is there an alkaline buffer added? () yes () no
 If yes, what is it? _____
 If yes, what is the dose? _____
24. What is the frequency of routine inspections for proper operation?
 _____ /day
25. What is the frequency of maintenance inspections by plant personnel?
 _____ /year
26. What is the general condition of the nitrification facilities?
 () good () fair () poor

27. What are the most common problems that the operator has had with the nitrification facilities? _____

NITROGEN REMOVAL

Nitrifying Rotating Biological Contactors

1. How many stages does the nitrification system have? _____
2. How many RBC units (shafts) are there in each stage? _____
3. What is the design capacity of each unit? _____ mgd
4. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
5. What type of RBC media is used? _____
6. What type of RBC drive is used? _____
7. What is the surface area of each unit? _____
8. What is the color of the biomass? () black () dark brown
() light brown () other _____
9. What is the odor of the unit? () septic () earthy () none
() other _____
10. Is there excessive breakage of rotating disks or shafts?
() yes () no
11. Is rotation of the media uniform? () yes () no
12. Is the flow distributed equally to parallel shafts? () yes () no
How is it distributed? _____
13. Are the characteristics of the tank contents different in the various
units? () yes () no () not applicable
If yes, describe. _____
14. Is there an alkaline buffer added? () yes () no
If yes, what is it? _____
If yes, what is the dose? _____
15. Are RBC units housed in a building? () yes () no
Or does each unit have a cover? () yes () no
16. What is the frequency of routine inspections for proper operation?
_____ /day
17. What is the frequency of maintenance inspections by plant personnel?
_____ /year

18. What is the general condition of the nitrification facilities?
() good () fair () poor
19. What are the most common problems that the operator has had with the nitrification facilities? _____

NITROGEN REMOVAL

Denitrification

1. How many denitrification units are there? _____
2. What is the design capacity of each unit? _____ mgd
3. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
4. What is the type of denitrification system? () suspended growth
() attached growth () other _____
5. What type of mixing equipment or media is used? _____
6. What are the tank (or column) dimensions? _____
7. Are the tank contents mixed thoroughly? () yes () no
8. Does mixing appear excessive so as to cause oxygenation?
() yes () no
9. Do there appear to be dead spots in the tank? () yes () no
If yes, at what location? _____
10. Is the process operating in its design mode? () yes () no
If no, explain. _____
11. How is the system operated? () manually () semi-automatically
() automatically () computer controlled () other _____
12. Is the wastewater temperature below 15°C? () yes () no
13. Is the wastewater pH below 6.0 or above 8.0? () yes () no
14. Is there excessive methanol? () yes () no
15. What is the frequency of routine inspections for proper operation?
_____ /day
16. What is the frequency of maintenance inspections by plant personnel?
_____ /year
17. What is the general condition of the denitrification facilities?
() good () fair () poor
18. What are the most common problems that the operator has had with the
denitrification facilities? _____

CHEMICAL TREATMENT

Chemical Feeding and Conditioning

This chemical feeding checklist relates to the liquid phase only. For the chemical feeds for residuals processing, refer to the individual residuals processes.

1. What are the actual plant flows? _____ mgd average _____ mgd peak
2. What chemicals are used? () lime () alum () ferric chloride
() sodium hydroxide () other _____

3. Where is the chemical added? () primary sedimentation
() aeration basin () secondary sedimentation () chemical
treatment facilities () other _____

4. What is the chemical dose? _____ mg/l _____ lbs/mgd
5. What is the principal purpose of the chemical addition? _____
6. Is the chemical feed system automatically controlled?
() yes () no

If yes, what is the method of control? () pH of the waste stream
() dose rate () concentration per million gallons
() other _____
7. What type of feed system is used? () volumetric
() belt gravimetric () loss-in-weight gravimetric
() metering pump () other
8. Is there a portion-measuring device at the feed unit? () yes () no
9. Is pH being measured at the pH adjustment tank? () yes () no
10. Are chemicals left in the open atmosphere? () yes () no
11. Are chemicals outdated? () yes () no
12. Are chemicals stored, moved, and handled properly? () yes () no
13. Is there evidence of chemical spills between the storage area and the
feed units? () yes () no
14. Are empty chemical containers properly disposed of? () yes () no
15. Are there appropriately sized berms or dikes at the liquid chemical
feed units and storage areas? () yes () no () not applicable
16. Is chemical dust present at the feed unit area or storage and transfer
areas? () yes () no () not applicable

17. Is a reserve supply of chemicals maintained? () yes () no
How many days of supply is maintained? _____
18. What is the frequency of routine inspections for proper operation?
_____ /day
19. What is the frequency of maintenance inspections by plant personnel?
_____ /year
20. What is the general condition of the chemical feed facilities?
() good () fair () poor
21. What are the most common problems that the operator has had with the
chemical feed systems? _____

CHEMICAL TREATMENT

Rapid Mix, Flocculation, and Chemical Clarification

1. What is the actual plant flow? _____ mgd average _____ mgd peak
2. What is the total flow through the chemical treatment system?
_____ mgd
3. How many units are there for each operation? _____

4. What is the flow through each unit? _____ mgd
5. If multiple units are used, is the flow divided equally?
 yes no not applicable

If no, what is the problem? _____
6. What type of rapid mixer is used? turbine propeller
 pneumatic other _____
7. What type of flocculator is used? turbine paddles
 other _____
8. What are the dimensions of the rapid mixing tank? _____
9. What are the dimensions of the flocculation tank? _____
10. What are the dimensions of the clarifier? _____
11. What is the depth of the sand and grit layer? _____ feet
12. What is the chemical coagulant? lime alum
 ferric chloride ferric sulfate
 other _____
13. What is the chemical dose? _____ mg/l
14. What is the detention time for rapid mixing? _____ seconds

What is the detention time for flocculation? _____ minutes

What is the detention time for clarification? _____ hours
15. What is the overflow rate of the clarifier? _____ gpd/ft²
16. What is the volume of residuals pumped? _____ gallons/day
17. What is the solids concentration of the residuals pumped? _____ %

18. Is there an automatic chemical feed control system? () yes () no
If yes, what is the method of control? () pH of waste stream
() dose rate () concentration per million gallons () other
19. What is the frequency of routine inspections for proper operation?
_____ /day
20. What is the frequency of maintenance inspections by plant personnel?
_____ /year
21. What is the general condition of the rapid mix, flocculation, and clarification facilities? () good () fair () poor
22. What are the most common problems that the operator has had with the rapid mix, flocculation, and clarification facilities? _____

SEDIMENTATION

Primary

1. How many primary sedimentation basins are there? _____
2. What is the design capacity of each basin? _____ mgd average
_____ mgd peak
3. What is the actual flow to each basin? _____ mgd average
_____ mgd peak
4. What are the dimensions of the basins? _____
5. Is the wastewater black or odorous? () yes () no
6. Is there an excessive accumulation of scum, grease, foam, or floating residuals in the clarifier? () yes () no
7. Are there excessive gas bubbles on the surface of the clarifier?
() yes () no
8. Is there scum overflow, lack of adequate scum disposal, or is the scum pit full? () yes () no
9. Does the tank surface indicate improper residuals withdrawal (i.e., excessive floating solids, gas, etc.)? () yes () no
10. What volume of residuals are pumped? _____ gallons/day
11. What is the solids concentration of the residuals? _____ %
12. Are there settleable solids in the effluent? () yes () no
13. How are residuals pumped? () manually () automatically
14. How often do residuals pumps run? _____ number of times each day
How long do residuals pumps run? _____ number of minutes each time
15. Does the residuals collection system show any signs of mechanical failure? () yes () no
16. Are there excessive residuals on the bottom of the basin (i.e., inadequate residuals removal)? () yes () no
17. Are residuals withdrawal ports clogged? () yes () no
18. Does the influent baffle system accomplish its purpose?
() yes () no
19. Does the effluent baffle system accomplish its purpose?
() yes () no

20. Does the unit show signs of short circuiting and/or overloads?
 yes no
21. Are the effluent weirs level? yes no
22. Are the effluent weirs kept clean? yes no
23. If multiple units are used, is the flow distributed evenly?
 yes no not applicable
24. What is the frequency of routine inspections for proper operation?
_____ /day
25. What is the frequency of maintenance inspections by plant personnel?
_____ /year
26. What is the general condition of the primary sedimentation facilities?
 good fair poor
27. What are the most common problems that the operator has had with the primary sedimentation facilities? _____

SEDIMENTATION

Final

1. How many final sedimentation basins are there? _____
2. What is the design capacity of each basin? _____ mgd average
_____ mgd peak
3. What is the actual flow to each basin? _____ mgd average
_____ mgd peak
4. What are the dimensions of the basins? _____
5. Is chemical addition used to improve settling? () yes () no
If yes, what chemical(s) are added? _____
6. Is there an excessive accumulation of scum, grease foam, or floating residuals in the clarifier? () yes () no
7. Are there excessive gas bubbles on the surface of the clarifier?
() yes () no
8. Is there scum overflow, lack of adequate scum disposal, or is the scum pit full? () yes () no
9. Does the tank surface indicate improper residuals withdrawal (i.e., excessive floating solids, gas, etc.)? () yes () no
10. What volume of residuals is pumped? _____ gpd total
_____ gpd RAS _____ gpd WAS
11. What is the solids concentration of the residuals? _____ %
12. Are there settleable solids in the effluent? () yes () no
13. How are residuals pumped? () manually () automatically
14. How often do residuals pumps run? _____ number of times each day
How long do residuals pumps run? _____ number of minutes each time
15. Does the residuals collection system show any signs of mechanical failure? () yes () no
16. Is there excessive residuals on the bottom of the basin (i.e., inadequate residuals removal)? () yes () no
17. Is there excessive solids build-up in the center well of the clarifier? () yes () no
18. What is the depth of the sand and grit layer? _____ feet

19. Are residuals withdrawal ports clogged? () yes () no
20. Is the residuals blanket too high? () yes () no
21. Is there deflocculation in the clarifier? () yes () no
22. Is there pin floc in the overflow? () yes () no
23. Is there billowing sludge in the clarifier? () yes () no
24. Does the influent baffle system accomplish its purpose?
() yes () no
25. Does the effluent baffle system accomplish its purpose?
() yes () no
26. Does the unit show signs of short circuiting and/or overloads?
() yes () no
27. Are the effluent weirs level? () yes () no
28. Are the effluent weirs clean? () yes () no
29. If multiple units are used, is the flow distributed evenly?
() yes () no () not applicable
30. What is the frequency of routine inspections for proper operation?
_____ /day
31. What is the frequency of maintenance inspections by plant personnel?
_____ /year
32. What is the general condition of the final sedimentation facilities?
() good () fair () poor
33. What are the most common problems that the operator has had with the
final sedimentation facilities? _____

FILTRATION

1. How many filter units are there? _____
2. What is the design capacity of each unit? _____ mgd average
_____ mgd peak
3. What is the actual flow to each unit? _____ mgd average
_____ mgd peak
4. What type of filters are used? () gravity () pressure
5. What type of filter media is used? () sand () dual media
() mixed media () multi-media () diatomaceous earth
() other _____
6. What is the surface loading rate? _____ gpm/ft²
7. What is the backwash rate? _____ gpm/ft²
8. What is the surface wash rate? _____ gpm/ft²
What is the pressure of the surface wash? _____ psi
9. What type of control system is used? () constant flow
() headloss () time () turbidity of effluent
() total gallons filtered () other _____
10. Are the valves sequencing (opening and closing in order) correctly?
() yes () no
11. Is there a coagulant aid (filtration aid) system? () yes () no
If yes, what type? _____
12. What are the dimensions of the filter? _____
13. How is the filter system operated? () automatically () manually
() semi-automatically () other _____
14. Is the filter surface clogged? () yes () no
15. Is the filter run short? () yes () no
16. Is there gravel displacement of the filter media? () yes () no
17. Is there formation of mud balls in the filter media? () yes () no
18. Is there air binding of the filter media? () yes () no
19. Is there a loss of filter media during backwashing? () yes () no

20. Is there recycled filter backwash water in excess of five percent of the wastewater flow treated? () yes () no

21. What is the frequency of routine inspections for proper operation?
_____ /day

22. What is the frequency of maintenance inspections by plant personnel?
_____ /year

23. What is the general condition of the filtration facilities?
() good () fair () poor

24. What are the most common problems that the operator has had with the filtration facilities? _____

DISINFECTION

Chlorination

1. How many chlorine contact basins are there? _____
2. What is the design capacity of each basin? _____ mgd average
_____ mgd peak hourly flow
3. What is the actual flow to each basin? _____ mgd average
_____ mgd peak hourly flow
4. What are the dimensions of the basins? _____
5. What is the detention time of each contact basin at peak hourly flow?
_____ minutes
6. What chlorine dosage is applied? _____ mg/l
7. What is the normal level of chlorine residual in the basin effluent?
_____ mg/l
8. Are disinfection standards being met? () yes () no
9. What type of chlorination system is being used? () chlorine
cylinders () on-site sodium hypochlorite generation () sodium
hypochlorite solution () calcium hypochlorite solution
10. What is the design capacity of the chlorination system?
_____ lbs/day
What is the maximum capacity of the chlorination system?
_____ lbs/day
11. What is the configuration of the chlorine contact basin? () round
() rectangular () other _____
12. Is the contact basin adequately baffled to minimize short-circuiting?
() yes () no
13. How is chlorine introduced into the wastewater entering the contact
basin? () perforated diffusers () injector with single entry point
() other _____
14. Are mechanical mixing provisions incorporated in the chlorine contact
basins design? () yes () no
15. Is there an adequate reserve supply of chlorine? () yes () no
How many days of supply is maintained? _____
16. Are there high temperatures in the chlorination rooms?
() yes () no

17. Is there a build-up of residuals in the basin? () yes () no
18. Are there gas bubbles in the basin? () yes () no
19. Is there floating scum and/or solids in the basin? () yes () no
20. Is there excessive foaming downstream? () yes () no
21. Is there evidence of toxicity (dead fish, other dead organisms) downstream? () yes () no
22. What is the frequency of routine inspections for proper operation?
_____ /day
23. What is the frequency of maintenance inspections by plant personnel?
_____ /year
24. What is the general condition of the chlorination facilities?
() good () fair () poor
25. What are the most common problems that the operator has had with the chlorination process? _____

RESIDUALS TREATMENT

Chemical Conditioning

1. What is the actual volume of residuals conditioned?
_____ gallons/day average
2. What is the design residuals volume?
_____ gallons/day average
3. What type of residuals are conditioned? () primary () waste
activated () other _____
4. What type of chemical is used for conditioning? () lime () ferric
chloride () polymer () other _____
5. What is the chemical dosage? _____ lbs/ton dry solids average
6. How are chemicals purchased? () dry () liquid
7. What chemical storage volume is provided? _____ days
8. How are the chemicals fed? () automatically () manually
9. If dry feeders are used, what type of feeder is used? () volumetric
() gravimetric () not applicable
10. Are chemical feeders automatically paced? () yes () no
11. If lime is used, how is the lime purchased? () bags () bulk ()
not applicable
12. If lime feeding is used, is a vapor and dust collection system
installed? () yes () no () not applicable
13. Does the unit show signs of inadequate mixing? () yes () no
14. What is the frequency of routine inspections for proper operation?
_____ /day
15. What is the frequency of maintenance inspections by plant personnel?
_____ /year
16. What is the general condition of the residuals chemical conditioning
facilities? () good () fair () poor
17. What are the most common problems that the operator has had with the
residuals chemical conditioning facilities? _____

RESIDUALS TREATMENT

Gravity Thickening

1. How many gravity thickeners are there? _____
2. What is the design influent flow to each thickener?
_____ gallons/day average
3. What is the actual influent flow to the thickener?
_____ gallons/day average
4. What type of residuals are fed to the thickener? () primary
() waste activated () other _____
5. What are the dimensions of the thickener(s)? _____
6. How much thickened residuals are pumped? _____ gallons/day average
7. What is the solids concentration in the influent residuals? _____ %
8. What is the solids loading rate? _____ lbs/day/sq ft
9. What is the solids concentration in the thickened residuals? _____ %
10. What is the settleable solids concentration in the supernatant?
_____ mg/l
11. How are the influent residuals fed? () intermittently
() continuously
12. How are the thickened residuals pumped? () manually
() automatically
13. How often do the thickened residuals pumps run? _____
minutes/hour
14. How much downtime is there? _____ days/year
15. What is the frequency of cleaning? _____ /year
16. Does the influent baffle system accomplish its purpose?
() yes () no
17. Does the residuals collection system show any signs of mechanical
failure? () yes () no
18. Does the tank surface indicate improper residuals withdrawal (i.e.,
excessive floating solids, gas, etc.)? () yes () no
19. Does the effluent baffle system accomplish its purpose?
() yes () no
20. Are the effluent weirs level? () yes () no

- 21. Are surfaces and the effluent weirs clean? () yes () no
- 22. If multiple units are used, is the flow distributed evenly?
() yes () no () not applicable
- 23. Does the unit show signs of short circuiting and/or overloads?
() yes () no
- 24. What is the frequency of routine inspections for proper operation?
_____ /day
- 25. What is the frequency of maintenance inspections by plant personnel?
_____ /year
- 26. What is the general condition of the gravity thickening facilities?
() good () fair () poor
- 27. What are the most common problems that the operator has had with the gravity thickening facilities? _____

RESIDUALS TREATMENT

Flotation Thickening

1. How many air flotation thickening units are there? _____
2. What is the design influent flow to each thickener?
_____ gallons/day average
3. What is the actual influent flow to each thickener?
_____ gallons/day average
4. What are the dimensions of the thickener(s)? _____
5. What shape are the flotation tanks? () circular () rectangular
6. What type of residuals are fed to the thickener? () waste activated
() other _____
7. What is the volume of thickened residuals pumped?
_____ gallons/day
8. What is the solids concentration in the influent residuals? _____ %
9. What is the solids loading rate? _____ lb/hour/sq ft
10. What is the air solids ratio? _____
11. What is the hydraulic loading or overflow rate? _____ gpm/sq ft
12. What is the solids concentration in the thickened residuals? _____ %
13. What is the suspended solids concentration in the subnatant? _____ mg/l
14. What is the solids removal efficiency? _____ %
15. Are flotation aids used? () yes () no
If yes, what type? _____
16. What is the average dosage of flotation aid? _____ lbs/ton dry solids
17. What is the thickness of the floating residuals blanket? _____ inches
18. How are influent residuals fed? () intermittently () continuously
19. What is the effluent recycle ratio as a percentage of the influent
flow? _____
20. Are primary and secondary effluent readily available for auxiliary
recycle? () yes () no
21. How are thickened residuals pumped? () manually () automatically

22. How often do thickened residuals pumps run? _____ minutes/hour
23. How much downtime is there? _____ days/year
24. What is the frequency of cleaning? _____ /year
25. Does the influent baffle system accomplish its purpose?
 yes no
26. Do the residuals collection systems show any signs of mechanical failure? yes no
27. Does the effluent baffle system accomplish its purpose?
 yes no
28. Are the effluent weirs level? yes no
29. Are surfaces and the effluent weirs clean? yes no
30. If multiple units are used, is the flow distributed evenly?
 yes no not applicable
31. Does the unit show signs of short circuiting and/or overloads?
 yes no
32. What is the frequency of routine inspections for proper operation?
 _____ /day
33. What is the frequency of maintenance inspections by plant personnel?
 _____ /year
34. What is the general condition of the flotation thickening facilities?
 good fair poor
35. What are the most common problems that the operator has had with the flotation thickening facilities? _____

RESIDUALS TREATMENT

Thermal Treatment

1. How many thermal treatment units are there? _____
2. What is the design residuals flow? _____ gpm
What is the design temperature? _____ °F
What is the design pressure? _____ lbs/sq in
3. What is the influent residuals flow? _____ gpm
What is the operating temperature? _____ °F
What is the operating pressure? _____ lb/sq in
4. What is the influent residuals solids concentration? _____ %
5. What is the volume of the treated residuals? _____ gal/day
6. What is the recycle liquor flow? _____ gal/day
7. What is the solids concentration of the treated residuals? _____ %
8. What is the BOD of the recycle liquor? _____ mg/l
9. What is the COD of the recycle liquor? _____ mg/l
10. What is the suspended solids concentration of the recycle liquor?
_____ mg/l
11. How is the recycle or decant liquor treated? _____
12. Does treatment of the recycle liquor upset the plant?
() yes () no
13. How are the off-gases handled? _____
14. Are excessive odors present from off-gases? () yes () no
15. How frequently is the system operated? _____ /day
How long is the system operated each time? _____ hours
16. How frequently is the system acid washed? _____ /year
17. What is the frequency of scale build-up inspections for the following items?
heat exchanger _____ /year
reactor _____ /year
piping _____ /year
oxidized residuals decant tank _____ /year
other _____ /year

- 18. What is the frequency of system pressure checks to insure the integrity of pressure piping and fittings? _____ /year
- 19. If multiple units are used, is the flow distributed evenly?
 yes no not applicable
- 20. Does the unit show signs of overload? yes no
- 21. Does the method of stabilization comply with either the Process to Further Reduce Pathogens (PFRP) or the Process to Significantly Reduce Pathogens (PSRP) as described in Title 40 Code of Federal Regulation's Part 257? yes no

If yes, which one? PFRP PSRP

If no, explain. _____

- 22. What is the downtime of the thermal treatment units? _____
- 23. What is the frequency of routine inspections for proper operation?
 _____ /day
- 24. What is the frequency of maintenance inspections by plant personnel?
 _____ /year
- 25. What is the general condition of the thermal treatment units?
 good fair poor
- 26. What are the most common problems that the operator has had with the thermal treatment units? _____

RESIDUALS TREATMENT

Anaerobic Stabilization

1. How many anaerobic digesters are there? _____
2. What is the design influent flow to each digester?
_____ gallons/day average
3. What is the actual influent flow to each digester?
_____ gallons/day average
4. What type of digester is used? () high rate () low rate
() primary tank () primary and secondary tank
5. What type of residuals are digested? () primary
() waste activated () other
6. What type of covers are used? () fixed () floating () none
7. What is the volume of the digester? _____ cubic feet
8. What is the influent solids concentration? _____ %
9. What is the volatile solids content of the influent residuals?
_____ %
10. What is the design volatile solids loading?
_____ lb/cu ft/day
11. How frequently do the residuals feed pumps run? _____
12. What is the duration of each run? _____
13. What is the depth of the scum blanket? _____ feet
14. What is the depth of the sand and grit layer? _____ feet
15. What is the active capacity of the digester? _____ cubic feet
16. What is the actual volatile solids loading? _____ lb/cu ft/day
17. What is the hydraulic loading? _____ days
18. What is the gas production rate? _____ cu ft/lb VS destroyed
19. What is the average CO₂ content of the gas? _____ %
20. What is the average CH₄ (methane) content of the gas? _____ %
21. What is the average reduction in volatile solids? _____ %
22. What type of mixing is used in the primary tank? _____

23. What provisions are made for heating? _____
24. What is the solids concentration of the residuals withdrawn from the digester? _____ %
25. What is the average pH of the digester? _____
26. What is the average temperature? _____ °F
27. What is the average alkalinity? _____ mg/1
28. What is the average volatile acids content? _____ mg/1
29. At what point in the plant is the supernatant returned? _____
30. Is the supernatant treated before it is return to the plant?
() yes () no
31. Are there metering provisions for return of the supernatant?
() yes () no
32. What is the average return flow rate of the supernatant?
_____ gal/day
33. What is the average BOD of the supernatant? _____ mg/1
34. What is the average suspended solids content of the supernatant?
_____ mg/1
35. Are the floating covers tilting? () yes () no
36. Is gas production adequate? () yes () no
37. Is the gas burner burning? () yes () no
38. Is the supernatant exuding a sour odor from either the primary or the secondary digesters? () yes () no
39. How frequently is the tank cleaned? _____
40. Does the method of stabilization comply with either the Process to Further Reduce Pathogens (PFRP) or the Process to Significantly Reduce Pathogens (PSRP) as described in Title 40 Code of Federal Regulation's Part 257? () yes () no

If yes, which one? () PFRP () PSRP

If no, explain. _____

41. What is the frequency of routine inspections for proper operation?
_____ /day

42. What is the frequency of maintenance inspections by plant personnel?
_____ /year
43. What is the general condition of the anaerobic digesters?
() good () fair () poor
44. What are the most common problems that the operator has had with the anaerobic digesters? _____

RESIDUALS TREATMENT

Aerobic Stabilization

1. How many aerobic digesters are there? _____
2. What is the design influent flow to each digester?
_____ gallons/day average
3. What is the actual influent flow to each digester?
_____ gallons/day average
4. What are the dimensions of each unit? _____
5. How many units are presently operating? _____
6. What type of residuals are treated in the aerobic digester?
() waste activated () primary () primary and waste activated
() other _____
7. How often are residuals applied to the digester? _____ /day
8. What is the total duration of influent pumping? _____ hours/day
9. How are influent residuals pumped? () manually () automatically
10. What is the solids concentration in the influent residuals? _____ %
11. What is the solids concentration in the aerobic digesters? _____ %
12. What type of aeration equipment is used? () diffused air
() mechanical mixers () combination () other _____
13. If diffused aeration is used, do air diffusers require frequent
cleaning? () yes () no () not applicable
14. What type of aerobic digesters are used? () open () closed
15. What type of aeration is provided? () conventional () pure oxygen
16. What is the residuals retention time? _____ days
17. What is the volatile suspend solids (VSS) loading?
_____ lb VSS/cu ft/day
18. What type of feed system is used? () continuous () batch
19. What is the solids concentration of the residuals following settling?
_____ %
20. How much waste residuals are pumped? _____ gallons/day
21. How often do waste residuals pumps run? _____ minutes/hour

22. How are residuals wasted? () manually () automatically
23. What volume of residuals are recycled back to the aerobic digester?
_____ gallons/day average
24. What percentage of the influent residuals flow is the recycle
residuals flow? _____ %
25. Are the contents of the tanks well mixed and relatively free of odors?
() yes () no
26. Is there a foaming problem? () yes () no
27. What is the dissolved oxygen (DO) concentration in the aerobic
digestion units? _____ mg/l
28. Are there provisions for pH adjustment by the addition of lime, sodium
hydroxide, or sodium bicarbonate? () yes () no
29. What is the volume of supernatant flow? _____ gallons/day average
30. What is the BOD of the supernatant flow? _____ mg/l
31. What is the suspended solids concentration of the supernatant?
_____ mg/l
32. What is the nitrate nitrogen concentration of supernatant?
_____ mg/l
33. What is the ammonia nitrogen concentration of the supernatant?
_____ mg/l
34. Is there excessive foaming in the tank? () yes () no
35. Are there objectionable odors in the aerobically digested residuals?
() yes () no
36. Is the digester overloaded? () yes () no
37. Is there clogging of diffusers in the digester?
() yes () no () not applicable
38. What is the depth of the sand and grit layer? _____ feet
39. What is the active capacity of the digester? _____ cubic feet
40. Is there adequate supernatant removal? () yes () no
41. If multiple units are used, is the flow distributed evenly?
() yes () no () not applicable
42. Does the unit show signs of short circuiting and/or overloads?
() yes () no

43. Does the method of stabilization comply with either the Process to Further Reduce Pathogens (PFRP) or the Process to Significantly Reduce Pathogens (PSRP) as described in Title 40 Code of Federal Regulation's Part 257? () yes () no

If yes, which one? () PFRP () PSRP

If no, explain. _____

44. What is the frequency of routine inspections for proper operation?
_____ /day

45. What is the frequency of maintenance inspections by plant personnel?
_____ /year

46. What is the general condition of the aerobic digesters?
() good () fair () poor

47. What are the most common problems that the operator has had with the aerobic digesters? _____

RESIDUALS TREATMENT

Centrifugation

1. How many centrifuges are there? _____
2. What is the design influent flow to each centrifuge?
_____ gallons/minute
3. What is the actual influent flow to each centrifuge?
_____ gallons/minute
4. How much cake is produced? _____ lb/day
5. What is the solids concentration of the influent residuals? _____ %
6. What type of centrifuges are used? () solid bowl () disc
() basket () other _____
7. What is the solids recovery? _____ %
8. What is the solids concentration in the discharge cake? _____ %
9. How are the centrifuges, conveyers, and residuals feed pumping facilities operated? () manually () automatically
10. How often does each centrifuge operate? _____ /hour
How long does each centrifuge operate each run? _____ minutes
11. Are metering provisions available for the return of the centrate?
() yes () no
12. Are there excessive solids in the fluid phase after centrifugation?
() yes () no
13. Is the centrifugation residuals cake adequately dry? () yes () no
14. If multiple units are used is the influent flow distributed evenly?
() yes () no
15. For multiple units are there provisions for equalization of the centrate flow? () yes () no
16. What type of conditioning chemicals are used? () lime () alum
() ferric chloride () other _____
17. What amounts of chemicals are fed? _____ lbs/day
18. How often are chemicals fed? _____ cycles/hour
What is the feed time per cycle? _____ minutes/cycle
19. Does the unit show signs of overloading? () yes () no

20. What is the frequency of routine inspections for proper operation?
_____ /day
21. What is the frequency of maintenance inspections by plant personnel?
_____ /year
22. What is the general condition of the centrifuges?
 good fair poor
23. What are the most common problems that the operator has had with the centrifuges? _____

RESIDUALS TREATMENT

Vacuum Filtration

1. How many vacuum filters are there? _____
2. What is the design influent flow to each filter?
_____ gallons/minute
3. What is the actual influent flow to each filter?
_____ gallons/minute
4. What is the percent solids of the influent residuals? _____ %
5. What is the effective area of each vacuum filter? _____ sq ft
6. What is the design loading rate? _____ lb/sq ft/hr
7. What is the percent solids in the discharge cake? _____ %
8. Are there settleable solids in the filtrate? () yes () no
If yes, what is the solids concentration? _____ mg/l
9. How often does each vacuum filter run? _____ /hour
How long does each vacuum filter operate each run? _____ minutes
10. What type of conditioning chemicals are used? () lime () alum
() ferric chloride () other _____
11. What amount of chemicals are fed? _____ lbs/day
12. How are residuals pumped? () manually () automatically
13. How are chemicals fed? () manually () automatically
14. How often do residuals pumps run? _____ /hour
How long do residuals pumps run each cycle? _____ minutes
15. How often does conditioning equipment run? _____ /hour
How long does conditioning equipment run each cycle?
_____ minutes
16. If multiple units are used, is the flow distributed evenly?
() yes () no
17. Does the unit show signs of short circuiting and/or overloads?
() yes () no
18. Is there a high level of solids in the filtrate? () yes () no

- 19. Is the filter cake thin? () yes () no
- 20. Is the filter cloth binding? () yes () no
- 21. Is there a low vacuum on the filter? () yes () no
- 22. Is the vacuum filter media cleaned properly? () yes () no
- 23. What is the frequency of routine inspections for proper operation?
_____ /day
- 24. What is the frequency of maintenance inspections by plant personnel?
_____ /year
- 25. What is the general condition of the vacuum filters?
() good () fair () poor
- 26. What are the most common problems that the operator has had with the vacuum filters?

RESIDUALS TREATMENT

Pressure Filtration

1. How many pressure filters are there? _____
2. What is the design influent flow to each filter?
_____ gallons/minute
3. What is the actual influent flow to each filter?
_____ gallons/minute
4. What is the percent solids of the influent residuals? _____ %
5. What is the filter press volume? _____ cubic feet
6. What is the percent solids in the discharge cake? _____ %
7. Are there settleable solids in the filtrate? () yes () no
If yes, what is the solids concentration? _____ mg/l
8. How often does each pressure filter run? _____ /hr
How long does each pressure filter operate each run? _____ minutes
9. If acid washing is provided, is a recirculating system included?
() yes () no () not applicable
10. What type of conditioning chemicals are used? () lime () alum
() ferric chloride () other _____
11. What amount of conditioning chemicals are pumped? _____ lb/day
12. How are residuals pumped? () manually () automatically
13. How are chemicals fed? () manually () automatically
14. How often do residuals pumps run? _____ /hour
How long do residuals pumps run each cycle? _____ minutes
15. How often does conditioning equipment run? _____ /hour
How long does conditioning equipment run each cycle? _____ minutes
16. If multiple units are used, is the flow distributed evenly?
() yes () no () not applicable
17. Does the unit show signs of short circuiting and/or overloads?
() yes () no
18. Is there a high level of solids in the filtrate? () yes () no
19. Is the filter cake thin? () yes () no

- 20. Is there a residuals build-up on the belts and/or rollers of the filter press? () yes () no
- 21. Is there excessive moisture in the belt filter press residuals cake? () yes () no
- 22. Is there difficult cake discharge from the filter presses? () yes () no
- 23. Does the filter cake stick to the solids-conveying equipment of the filter press? () yes () no
- 24. Is there frequent media binding of the filter press? () yes () no
- 25. What is the frequency of routine inspections for proper operation?
_____ /day
- 26. What is the frequency of maintenance inspections by plant personnel?
_____ /year
- 27. What is the general condition of the pressure filters?
() good () fair () poor
- 28. What are the most common problems that the operator has had with the pressure filters?

RESIDUALS TREATMENT

Drying Beds

1. How many drying beds are there? _____
2. What is the design flow to each bed? _____ gallons/day average
3. What is the actual flow to each bed? _____ gallons/day average
4. What are the dimensions of the drying beds? _____
5. Are the residuals digested before they are applied to the drying bed?
() yes () no
6. What types of residuals are applied to the drying beds?
() digested primary () waste activated () other _____
7. What is the solids concentration of the residuals applied to the drying beds? _____ %
8. What is the solids loading rate? _____ lbs/yr/sq ft
9. What is the population served by the treatment plant? _____
10. What is the drying area provided? _____ sq ft/capita
11. What is the solids concentration of the dewatered residuals?
_____ %
12. What is the typical drying time required? _____ days
13. Are there problems with flies or other insects? () yes () no
14. Are there problems with weeds? () yes () no
15. Is there an underdrain system? () yes () no
16. Are there provisions for the return of drainage waters to the plant?
() yes () no
17. What is the typical sand depth? _____ inches
18. Are there any beds with sand depths less than 3 or 4 inches?
() yes () no
19. Are vehicles and equipment operated on permanent vehicle treadways or on planks or plywood laid on tops of the beds? () yes () no
20. Are splash plates or diffusion devices in place when residuals are applied to the beds? () yes () no

21. Are partitions between and around the bed tight so that residuals will not flow from one compartment to another or outside the beds?
 yes no
22. Are residuals distributed evenly on the drying beds? yes no
23. Are there dry residuals remaining in the drying beds? yes no
24. Are all drying beds used? yes no
25. Are dry residuals stacked around drying beds where run-off may enter navigable waters? yes no
26. Is the drying time excessive? yes no
27. Is the filtrate from the drying beds returned to the front of the plant? yes no
28. What is the frequency of routine inspections for proper operation?
_____ /day
29. What is the frequency of maintenance inspections by plant personnel?
_____ /year
30. What is the general condition of the drying beds?
 good fair poor
31. What are the most common problems that the operator has had with the drying beds?

DISPOSAL SYSTEMS

Outfalls

1. How many outfalls are there? _____
2. What type of receiving waters does the outfall(s) discharge to?
() ocean () estuary () lake () river () other _____
3. What is the design capacity of each outfall?
_____ mgd average _____ mgd peak
4. What is the present discharge at each outfall?
_____ mgd average _____ mgd peak
5. What are the diameter and length of each outfall? _____
6. Are the outfall diffusers functioning properly?
() yes () no () not applicable
7. Is the outfall(s) operating so that the discharge limitations specified in the permit are consistently met? () yes () no
8. How does the effluent flow in the outfall? () gravity () pressure

If the flow is by gravity and if the outfall(s) extends into the receiving waters, is a manhole provided at the shore end of the outfall? () yes () no () not applicable
9. Is adequate corrosion control provided (i.e., pipe coatings, cathodic protection, etc.)? () yes () no
10. For outfalls subject to tidal or high water backup, are flap valves or automatically closing gates functioning properly?
() yes () no () not applicable
11. Does the outfall(s) exhibit signs of scour or undercutting?
() yes () no
12. Is the outfall(s) adequately protected from floodwaters, tides, and other hazards so as to reasonably ensure structural stability and prevent stoppage? () yes () no
13. Can effluent samples be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters?
() yes () no
14. Are outfall and diffuser pipes routinely inspected for breakage and corrosion? () yes () no
15. What is the frequency of maintenance inspections by plant personnel?
_____ /year

16. What is the general condition of the outfall facilities?
() good () fair () poor

17. What are the most common problems that the operator has had with the
plant outfall(s)? _____

DISPOSAL SYSTEMS

Injection Wells

1. What is the name and address of the facility where the injection well(s) is located? _____

2. Are additional facilities served by the injection well(s)?
() yes () no

If yes, what is the name and address of each additional facility?

3. How many injection wells are there? _____
4. What is the maximum permitted flow to each injection well?
_____ gpm/mgd (circle one)
5. How many days during the last year has the actual maximum flow to the well exceeded the maximum permitted flow? _____
6. What was the average daily flow to each well during the last year?
_____ gpm/mgd (circle one)
7. What is the inside diameter of each well? _____ inches
8. Is there a fluid-filled annulus? () yes () no

If yes, what type? () tubing and packer () fluid seal
() other (specify) _____
9. What percentage of the total flow to the domestic wastewater treatment plant is from non-domestic sources? _____ percent
10. Are there any wastestream sources that bypass the wastewater treatment plant and discharge directly to the wet well? () yes () no

If yes, what percentage of the total flow to the well do these untreated wastes represent? _____ percent
11. Does the fluid in the wet well appear to be free of solids/floatables? () yes () no

12. What instrumentation is found at each well head?
() injection pressure () injection flow
() annulus pressure (fluid-filled annulus)
() annulus temperature (fluid-filled annulus)
() other (specify) _____

13. What were the instrument readings during the inspection and the appropriate adjustment factors, if any?

a. Injection pressure _____ psi
Adjustment factor: _____

b. Injection flow _____ gpm/mgd (circle one)
Adjustment factor: _____

c. Annulus pressure _____ psi
Adjustment factor: _____

d. Other (specify) _____ units _____
Adjustment factor: _____

14. What is the general condition of the well head instruments?
() good () fair () poor

15. How often are the instruments calibrated? _____ /year

16. When were the instruments last calibrated (date)?

a. Injection pressure ____/____/____

b. Injection flow ____/____/____

c. Annulus pressure ____/____/____

d. Other (specify type) ____/____/____ Type: _____

17. Is there surge and water hammer control equipment present?
() yes () no

If yes, what is the general condition of the surge and water hammer control equipment? () good () fair () poor

If poor, what is the problem? _____

18. Has mechanical integrity testing been conducted within the last five years? () yes () no

If yes, complete the following:

a. Pressure test date ___/___/___

Test pressure _____ psi

Pressure loss _____ psi

Test duration _____ hours/minute (circle one)

c. Temperature log date ___/___/___

Is there any anomalous temperature data?

() yes () no

If yes, explain. _____

d. Radioactive tracer survey date ___/___/___

Was fluid movement indicated? () yes () no

19. What is the predetermined acceptable limits for annulus pressure? _____ psi

Is the annulus pressure within the predetermined limits?

() yes () no

20. How many monitoring wells are there associated with the injection system? _____

21. Where are the monitoring wells located relative to the injection well(s) (distance/direction)? _____

22. Is each monitoring well functional? () yes () no

If no, what is the problem? _____

23. Which zones are the monitoring wells designed to monitor?

Well Number	Monitoring Interval
_____	_____
_____	_____
_____	_____
_____	_____

24. What volume of water is purged from each monitoring well prior to sampling? _____ gallons

25. How is the purge water disposed of?
 returned to wet well returned to head of treatment plant
 surface water discharge (may require separate permit)
 on well pad or ground (not acceptable)
 other (specify) _____

26. What chemical parameters are monitored and at what frequency are these parameters monitored?

Parameter	Frequency
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

27. Have any water quality trends been observed in the monitoring data? yes no
- If yes, which parameters are affected and what trend has been observed (increase/decrease)?

Parameter	Trend Observed
_____	_____
_____	_____
_____	_____

28. What type of monitoring well instrumentation is present?
 pressure water level
29. When was the monitoring well instrumentation last calibrated?
 ___/___/___
30. Does the water level/pressure data show a trend? yes no
- If yes, what is the trend? _____
31. Are there any fluid leaks, or evidence of fluid leaks, at the injection or monitoring well heads? yes no
32. Do the well heads, valves, and other surface appurtenances appear to be in good working order and well maintained?
 yes no
33. What is the general condition of the injection and monitoring well heads and other surface appurtenances?
 good fair poor
34. What is the emergency discharge method?
 other well(s) surface waters percolation ponds
 other (specify) _____

- 35. Are facilities in place to use the specified emergency discharge method? () yes () no
- 36. Are the injection and monitoring well heads fenced or otherwise protected from accidental damage by heavy equipment? () yes () no
- 37. Are plant operators familiar with procedures for emergency shut down of the injection system? () yes () no
- 38. Is an emergency procedures manual located on-site?
() yes () no

REUSE SYSTEMS

Part II Slow Rate Land Application Systems; Restricted Public Access

1. Is at least secondary treatment provided? () yes () no
2. Is at least basic disinfection provided? () yes () no
3. If a subsurface application system is used, does the reclaimed water never exceed 10 mg/l of TSS? () yes () no () not applicable
4. Does the treatment facility have a permitted capacity of at least 0.1 mgd? () yes () no
5. Are ground water monitoring facilities provided and is monitoring regularly performed (normally quarterly)? () yes () no
6. Are background, intermediate, and compliance wells provided and monitored? () yes () no () not applicable
7. Are monitoring wells well marked? () yes () no () not applicable
8. Are monitoring wells operational and well maintained?
() yes () no () not applicable
9. Are there any violations of ground water standards at the compliance wells? () yes () no () not applicable
10. Is there evidence of potential ground water quality problems at the intermediate wells? () yes () no () not applicable
11. Are system storage facilities provided and do they have adequate capacity? () yes () no () not applicable
12. Are the storage facilities lined? () yes () no () not applicable
13. Is there evidence of seepage through the berms?
() yes () no () not applicable
14. Is there evidence of discharge over the tops of the berms, erosion of the berms, or of any illegal discharge devices?
() yes () no () not applicable
15. Are piping, control, and pumping facilities operational and well maintained? () yes () no () not applicable
16. Is there evidence that the storage facilities are used?
() yes () no () not applicable
17. Are the berms well maintained (including vegetation control)?
() yes () no () not applicable
18. Is a mosquito control program in place?
() yes () no () not applicable

19. Is there evidence of mosquito problems?
 yes no not applicable
20. Is an emergency overflow structure provided and is it well maintained and usable? yes no not applicable
21. Are storage facilities enclosed with a fence or other facilities that preclude public access? yes no not applicable
22. Are any features provided that enable reduction in setback distances?
 yes no
- If yes, specify:
- High-level disinfection
 - Class I reliability
 - Subsurface application systems
 - Continuous vegetated barrier at least 5 feet high
 - Low trajectory, low pressure nozzles or surface application
23. Are adequate setback distances provided from the wetted area to the property lines or buildings? yes no not applicable
24. Are adequate setback distances provided to potable water supply wells, Class I waters, and Class II waters?
 yes no not applicable
25. Is the wetted area at least 100 feet from outdoor public eating, drinking, and bathing facilities? yes no not applicable
26. Are transmission facilities located at least 100 feet from public water supply wells? yes no not applicable
27. Is there evidence of hydraulic problems such as ponding or run-off from the site? yes no not applicable
28. Is public access adequately restricted by fencing or posting of advisory signs? yes no not applicable
29. Are distribution piping, pumping, and other appurtenances well maintained and operational? yes no not applicable
30. Is there evidence of clogging of nozzles or other facilities?
 yes no not applicable
31. Is there evidence of or public complaints about aerosol drift off of the site, odors, or other nuisance conditions?
 yes no not applicable
32. Are the distribution facilities labeled?
 yes no not applicable
33. Are above ground hose bibbs present?
 yes no not applicable

34. Are supplemental fertilizers or residuals applied to the site?
 yes no not applicable
35. If fertilizers or residuals are applied, are they applied in moderate amounts such that the nutrient needs of the crops are not exceeded?
 yes no not applicable
36. Is there evidence that fertilizer or residuals application results in ground water quality problems (nitrogen is main concern)?
 yes no not applicable
37. What crops are grown? _____
38. Are the crops routinely harvested and removed from the site?
 yes no not applicable
39. Are underdrains or perimeter drainage features provided?
 yes no not applicable
- If yes, specify:
- Underdrains
 Perimeter drains
40. Does the water collected in underdrains or perimeter drainage features meet appropriate effluent limits? yes no not applicable
41. What is the average annual hydraulic loading rate (based on the total wetted area)? _____ inches/week
42. Are cattle allowed to graze on the site? yes no
- If yes, what type?
- Beef cattle
 Dairy cattle
 Others _____
43. If dairy cattle graze on the site, are they kept off the site for at least 15 days after application of reclaimed water?
 yes no not applicable
44. If edible food crops are grown, please complete the checklists for Part III reuse systems and for edible crop irrigation.

REUSE SYSTEMS

Part III Slow Rate Land Application Systems; Public Access; Residential Irrigation; and Edible Crops

1. Is at least secondary treatment provided? () yes () no
2. Is high-level disinfection provided? () yes () no
3. Do the treatment facilities have permitted capacities in excess of the minimum system size requirements (0.1 mgd for public access systems, 0.5 mgd for residential irrigation, 0.5 mgd for edible crop irrigation)? () yes () no
4. Is there a DER-approved cross-connection control program covering the areas served by reclaimed water? () yes () no
5. Is there a uniform system for color coding and/or marking reclaimed water pipes? () yes () no
6. Does the utility inspect all new connections to the reclaimed water system? () yes () no
7. Does the utility provide routine inspections of existing connections to the reclaimed water system? () yes () no
8. Is an approved industrial pretreatment program in-place?
() yes () no () not needed
9. Is the industrial pretreatment program enforced? () yes () no
10. Is there a DER-approved operating protocol on-site and available to the operators? () yes () no () not needed
11. Has the operating protocol been updated and approved annually?
() yes () no
12. What set points are contained in the operating protocol for the following items?

Turbidity: _____ NTU

Chlorine Residual: _____ mg/l

Other Parameter (specify): Parameter: _____

Limit: _____ mg/l
13. Are the operators familiar with the operating protocol?
() yes () no
14. Does the operator use the operating protocol to control the facility and to make judgments on the quality of the reclaimed water being produced? () yes () no

15. Is the 5.0 mg/l TSS limit met at all times for reclaimed water sent to the reuse system? () yes () no
16. Are the high-level disinfection criteria for fecal coliforms met at all times for reclaimed water sent to the reuse system?
() yes () no
17. Have the operators simulate a case where turbidity or chlorine residuals violate the limits set in the operating protocol. Is the reclaimed water of "unacceptable quality" diverted to the reject storage system or permitted alternative discharge system?
() yes () no
18. Are continuous monitoring devices provided for measuring turbidity (after filter/before chlorination) and chlorine residual (after contact chamber)? () yes () no
19. Are these instruments in good repair and used in the operation and control of the facilities? () yes () no
20. Are the filters in operation and in good repair? () yes () no
21. Are chemical feed facilities provided? () yes () no
22. What chemicals can be added? _____
23. Are the chemical feed facilities in operation and in good repair?
() yes () no
24. Can the high-level disinfection criteria be met without chemical addition? () yes () no
25. Is the reclaimed water flowing out of the filters and chlorination system very clear? () yes () no
26. Is the turbidity measurement being reported consistent with the appearance of the reclaimed water? () yes () no
27. Are system storage facilities provided to store reclaimed water of acceptable quality? () yes () no
28. Are system storage facilities used? () yes () no
29. Are system storage facilities well maintained and fully operational?
() yes () no
30. Are system storage facilities (including golf course lakes) used for temporary storage (as opposed to being used as "percolation ponds" with no effort to pump out of them for irrigation purposes)?
() yes () no
31. Are lined reject storage facilities provided to store reclaimed water of unacceptable quality? () yes () no

32. Is there evidence that reject storage facilities are used?
 yes no
33. Is the reject storage system well maintained and fully operational?
 yes no
34. If automatic control and diversion are provided, are the systems operational, well maintained, and used?
 yes no not applicable
35. Is reclaimed water released to the system storage and reuse system only during periods when an operator is present?
 yes no not applicable (other reliability measures provided)
36. Is stored reject water returned to the treatment facilities for additional treatment and disinfection?
 yes no not applicable
37. Are the facilities for return of reject water to the treatment facilities well maintained, operational, and in use?
 yes no not applicable
38. Are reclaimed water pipes and appurtenances appropriately marked and color coded? yes no
39. Are advisory signs posted alerting the public that reclaimed water is being used? yes no
40. Are there illegal surface water discharge points? yes no
41. Is there evidence of abuse of the system, such as significant run-off off-site, or severe ponding? yes no
42. Are low trajectory nozzles used within 100 feet of outdoor public eating, drinking, or bathing facilities? yes no
43. Is reclaimed water applied within 75 feet of potable water supply wells? yes no
44. Are distribution systems and pumps operational and well maintained?
 yes no
45. Are ground water monitoring facilities provided and is monitoring regularly performed (normally quarterly)? yes no
46. Are background, intermediate, and compliance wells provided and monitored? yes no not applicable
47. Are monitoring wells well marked? yes no not applicable
48. Are monitoring wells operational and well maintained?
 yes no not applicable

49. Are there any violations of ground water standards at the compliance wells? () yes () no () not applicable
50. Is there evidence of potential ground water quality problems at the intermediate wells? () yes () no () not applicable
51. Are above ground hose bibbs present on reclaimed water lines? () yes () no () not applicable
52. Is there evidence of or public complaints about aerosol drift, odors, or other nuisance conditions? () yes () no () not applicable

REUSE SYSTEMS

Part III Slow Rate Land Application Systems; Edible Crops

1. Does the treatment facility have a permitted capacity of at least 0.5 mgd? () yes () no

Note: The minimum system size is reduced to 0.1 mgd if the following conditions are met:

- a. A direct contact method of irrigation is not used.
 - b. The crop produced is processed before human consumption.
 - c. Public access to the site is restricted.
2. What edible crops are grown? _____
 3. What edible crops are commercially processed (thermal processing) before being sent to commercial markets? _____
 4. List the edible crops produced that are **always** peeled, skinned, or cooked by consumers? _____
 5. What types of application methods are used when irrigating with reclaimed water? _____
 6. Does the DER permit accurately describe the crops grown, processing provided, and application methods?
() yes () no () not applicable
 7. Is a direct contact method (spray irrigation) used on crops that are not peeled, skinned, cooked, or thermally processed before human consumption (does not include irrigation of citrus or tobacco)?
() yes () no () not applicable
 8. Is public access to the site restricted by fencing or by posting of advisory signs? () yes () no () not applicable
 9. Are the farm workers aware of the fact that reclaimed water is being used for irrigation? () yes () no () not applicable

REUSE SYSTEMS

Part IV Rapid Rate Land Application Systems

1. Is at least secondary treatment provided? () yes () no
2. Is at least basic disinfection provided? () yes () no
3. Does the reclaimed water never exceed 12 mg/l of nitrate (as N)?
() yes () no () not applicable
4. Does the treatment facility have a permitted capacity of at least 0.1 mgd? () yes () no
5. Are ground water monitoring facilities provided and is monitoring regularly performed (normally quarterly)? () yes () no
6. Are background, intermediate, and compliance wells provided and monitored? () yes () no () not applicable
7. Are monitoring wells well marked? () yes () no () not applicable
8. Are monitoring wells operational and well maintained?
() yes () no () not applicable
9. Are there any violations of ground water standards at the compliance wells? () yes () no () not applicable
10. Is there evidence of potential ground water quality problems at the intermediate wells? () yes () no () not applicable
11. Are system storage facilities provided and do they have adequate capacity? () yes () no () not applicable
12. Are the storage facilities lined? () yes () no () not applicable
13. Is there evidence of seepage through the berms?
() yes () no () not applicable
14. Is there evidence of discharge over the tops of the berms, erosion of the berms, or of any illegal discharge devices?
() yes () no () not applicable
15. Are piping, control, and pumping facilities operational and well maintained? () yes () no () not applicable
16. Is there evidence that the storage facilities are used?
() yes () no () not applicable
17. Are the berms well maintained (including vegetation control)?
() yes () no () not applicable
18. Is a mosquito control program in place?
() yes () no () not applicable

19. Is there evidence of mosquito problems?
 yes no not applicable
20. Is an emergency overflow structure provided and is it well maintained and usable? yes no not applicable
21. Are storage facilities enclosed with a fence or other facilities that preclude public access? yes no not applicable
22. Are any features provided that enable reduction in setback distances?
 yes no
- If yes, specify:
- High-level disinfection
 Class I reliability
 Site adjacent to a right-of-way
23. Are adequate setback distances provided from the wetted area to the property lines or buildings? yes no not applicable
24. Are adequate setback distances provided to potable water supply wells, Class I waters, and Class II waters? yes no not applicable
25. Are transmission facilities located at least 100 feet from public water supply wells? yes no not applicable
26. Is there evidence of a reduction in infiltration rates over the last permit period? yes no
27. Is there evidence of hydraulic problems such as ponding or run-off from the site? yes no not applicable
28. Is public access to the overall site adequately restricted by fencing or posting of advisory signs? yes no not applicable
29. Are the infiltration basins surrounded by a fence or other features that preclude public access? yes no not applicable
30. Are distribution piping, pumping, and other appurtenances well maintained and operational? yes no not applicable
31. Is there evidence of clogging of distribution or other facilities?
 yes no not applicable
32. Is there evidence of or public complaints about odors, excessive ground water mounding, or other nuisance conditions?
 yes no not applicable
33. Are the distribution facilities labeled?
 yes no not applicable

34. Are above ground hose bibbs present?
 yes no not applicable
35. Are two or more infiltration basins provided?
 yes no not applicable
36. Is the system operated with an alternating wetting and drying cycle?
 yes no not applicable

If yes, basin is wetted for _____ days and is dried for _____ days.

37. Are the basins allowed to fully dry before being reloaded?
 yes no not applicable

Note: If the basins are not allowed to dry, the system is subject to regulation as an other system under Part VII of Chapter 17-610, F.A.C. This will require higher levels of treatment and reliability.

38. Are the berms well maintained? yes no not applicable
39. Are the basin bottoms routinely scarified or otherwise maintained to maintain percolation rates? yes no not applicable
40. Is adequate freeboard provided (3 feet from normal maximum fill line to the top of the berm)? yes no not applicable
41. Is an emergency overflow or discharge device provided to ensure that water in the basin will not reach within 1 foot of the top?
 yes no not applicable
42. Are the emergency overflow or discharge facilities well maintained and operational? yes no not applicable
43. Are underdrains or perimeter drainage features provided?
 yes no not applicable

If yes, specify:

- Underdrains
 Perimeter drains

44. Does the water collected in underdrains or perimeter drainage features meet appropriate effluent limits? yes no not applicable
45. What is the average annual hydraulic loading rate (as applied to the total bottom area of all infiltration basins)?
 _____ inch/day

REUSE SYSTEMS

Part V Absorption Field Systems

1. Is at least secondary treatment provided? () yes () no
2. Is at least basic disinfection provided? () yes () no
3. Does the reclaimed water never exceed 12 mg/l of nitrate (as N)?
() yes () no () not applicable
4. Does the reclaimed water never exceed 10 mg/l TSS?
() yes () no () not applicable
5. Does the treatment facility have a permitted capacity of at least 0.1 mgd? () yes () no
6. Are ground water monitoring facilities provided and is monitoring regularly performed (normally quarterly)? () yes () no
7. Are background, intermediate, and compliance wells provided and monitored? () yes () no () not applicable
8. Are monitoring wells well marked? () yes () no () not applicable
9. Are monitoring wells operational and well maintained?
() yes () no () not applicable
10. Are there any violations of ground water standards at the compliance wells? () yes () no () not applicable
11. Is there evidence of potential ground water quality problems at the intermediate wells? () yes () no () not applicable
12. Are system storage facilities provided and do they have adequate capacity? () yes () no () not applicable
13. Are the storage facilities lined? () yes () no () not applicable
14. Is there evidence of seepage through the berms?
() yes () no () not applicable
15. Is there evidence of discharge over the tops of the berms, erosion of the berms, or of any illegal discharge devices?
() yes () no () not applicable
16. Are piping, control, and pumping facilities operational and well maintained? () yes () no () not applicable
17. Is there evidence that the storage facilities are used?
() yes () no () not applicable
18. Are the berms well maintained (including vegetation control)?
() yes () no () not applicable

19. Is a mosquito control program in place?
 yes no not applicable
20. Is there evidence of mosquito problems?
 yes no not applicable
21. Is an emergency overflow structure provided and is it well maintained and usable? yes no not applicable
22. Are storage facilities enclosed with a fence or other facilities that preclude public access? yes no not applicable
23. Are any features provided that enable reduction in setback distances?
 yes no
- If yes, specify:
- High-level disinfection
 Class I reliability
 Site adjacent to a right-of-way
24. Are adequate setback distances provided from the wetted area to the property lines or buildings? yes no not applicable
25. Are adequate setback distances provided to potable water supply wells, Class I waters, and Class II waters?
 yes no not applicable
26. Are transmission facilities located at least 100 feet from public water supply wells? yes no not applicable
27. Is there evidence of a reduction in infiltration rates over the last permit period? yes no
28. Is there evidence of hydraulic problems such as wetness at the ground surface, ponding, or run-off from the site?
 yes no not applicable
29. Are adequate advisory signs posted around the site?
 yes no not applicable
30. Are distribution piping, pumping, and other appurtenances well maintained and operational? yes no not applicable
31. Is there evidence of clogging of distribution or other facilities?
 yes no not applicable
32. Is there evidence of or public complaints about odors, run-off, excessive ground water mounding, or other nuisance conditions?
 yes no not applicable
33. Are the distribution facilities labeled?
 yes no not applicable

34. Are above ground hose bibbs present?
 yes no not applicable
35. Are two or more distribution systems provided?
 yes no not applicable
36. Is the system operated with an alternating wetting and drying cycle?
 yes no not applicable

If yes, system is wetted for _____ days and is dried for _____ days.

37. Are the distribution systems rested before being reloaded?
 yes no not applicable

Note: If the distribution systems are not allowed to rest, the system is subject to regulation as an other system under Part VII of Chapter 17-610, F.A.C. This will require higher levels of treatment and reliability.

38. Is the property well maintained? yes no not applicable
39. Is the absorption field operated such as to use the overlying vegetation? yes no
40. Is the vegetation routinely cut and the cuttings removed from the site? yes no not applicable
41. Are underdrains or perimeter drainage features provided?
 yes no not applicable

If yes, specify:

- Underdrains
 Perimeter drains

42. Does the water collected in underdrains or perimeter drainage features meet appropriate effluent limits? yes no not applicable
43. What is the average annual hydraulic loading rate (as applied to the total bottom area of all distribution systems' trenches)?
 _____ inch/day

WETLAND SYSTEMS

1. What is the acreage of the wetland? _____ acres
2. What is the annual average discharge to the wetland? _____ mgd
3. What is the average annual hydraulic loading to the wetland?
_____ inches/week
4. What is the maximum annual hydraulic loading to the wetland?
_____ inches/week
5. What is the minimum annual hydraulic loading to the wetland?
_____ inches/week
6. What is the annual loading rate of total phosphorus to the wetland?
_____ grams per square meter per year
7. What is the annual loading rate of total nitrogen to the wetland?
_____ grams per square meter per year
8. Who is responsible for operating the spreader structure(s) which discharges the effluent into the wetland?
() wastewater treatment plant operator () consulting firm _____
() other _____
9. What operational criteria are used to determine needed adjustments to the spreader structure(s)? _____

10. Does the spreader structure(s) distribute the effluent effectively over the discharge point into the wetland? () yes () no
11. Are there any signs of erosion or ponding at the initial discharge into the wetland? () yes () no
12. Is there a build-up of foreign materials which evaded screening at the wastewater treatment plant? () yes () no
13. How does the effluent flow through the wetland?
() channels () sheets () other _____

Does the effluent sheet flow through with even coverage in all parts of the wetland or does it tend to channelize in certain areas?

14. Is the perimeter of the wetland posted with signs indicating that effluent is being applied to the area? () yes () no
15. Is the public allowed access to the wetland? () yes () no

If no, how is access prevented? _____

16. Is a holding pond on-site? () yes () no

If yes, what is the capacity of the holding pond?
_____ million gallons

17. Has any effluent not meeting pretreatment requirements been discharged into the wetland system? () yes () no

How are such discharges typically avoided? _____

18. Is the odor in the wetland system offensive? () yes () no

19. Has the discharge to the wetland impacted the type, nature, or function of the wetland? () yes () no

Explain. _____

20. What portion of the year is the wetland predominantly dry? _____

21. Has the discharge to the wetland affected historic water levels, periods of time the wetland is predominantly dry, or periods of time the wetland is predominantly wet? () yes () no

22. Have there been die-offs or shifts in vegetative composition at either the initial discharge into the wetland or other points throughout the wetland? () yes () no

23. Have there been changes in fish or amphibian populations since the discharge to the wetland was initiated? () yes () no

24. Have there been any shifts in pH, dissolved oxygen, or other water quality parameters since the discharge was initiated? () yes () no

If yes, why? _____

25. Are threatened or endangered species (e.g., ospreys, eagles, alligators, etc.) present? () yes () no

If yes, please list species, locations, and approximate dates seen.

26. What is the general condition of the wetland?
() good () fair () poor

27. What is the frequency of routine inspections of the wetland?
_____ /year

28. Who is responsible for each aspect of operational monitoring of the receiving/treatment wetland required by the permit?

29. Are all wetland stations permanently marked? () yes () no

If yes, how are they marked? _____

30. What type of stage monitor is used at each site? _____

31. Is each stage monitor operating properly? () yes () no

32. Are wetland samples taken at the sites specified in the permit?
() yes () no

33. Is sampling and analysis completed for each parameter specified by the permit? () yes () no

34. Is the frequency and methodology of sampling in accordance with the permit? () yes () no

35. Is laboratory analysis conducted in accordance with the permit?
() yes () no

36. Are copies of current and past wetland reports kept at the wastewater treatment plant? () yes () no

Is the amount of information and the detail provided in these reports consistent with that required by the permit? () yes () no

37. What are the most common problems with the wetland? _____
