

Ohio Department of Health

Bureau of Environmental Health Residential Water and Sewage Program

"To protect and improve the health of all Ohioans"

Updated Systems as Defined in the Ohio EPA NPDES General Permit

May 2014

The Ohio Department of Health has approved twelve manufacturers of sewage treatment system components and treatment trains for use as a discharging system in Ohio in compliance with Ohio Revised Code Chapter 3718 and the terms and conditions of the Ohio Environmental Protection Agency (OEPA) National Pollutant Discharge Elimination Systems (NPDES) Household Sewage Treatment System (STS) General Permit OHK000002. The <u>list of approved discharging systems</u> is posted on the Ohio Department of Health website.

<u>General Permit OHK000002</u> was effective February 1, 2012 and includes language allowing the "update" of existing household sewage treatment systems. The permit defines an updated system as:

"Updated system" means any household sewage treatment system for an existing single family, two family or three family dwelling that was installed prior to January 1, 2007 that utilizes a system/ manufacturer model that has been approved by the Ohio Department of Health (ODH) to meet the conditions of this permit absent post aeration, disinfection and/or sampling mechanisms and can be updated to be an identical system to such approved by ODH by installing these additional components.

Ohio EPA NPDES Household STS <u>General Permit OHL000001</u> does not include this language and updated systems are not permissible.

Although many existing treatment units are identical to the treatment units utilized in ODH approved treatment trains for meeting the effluent standards outlined in the general permit, there are some existing units that look similar to the currently manufactured products that are structurally different and are not expected to function in the same manner as approved components. These units <u>cannot</u> <u>be</u> updated to the approved NPDES treatment train by adding the additional components outlined in the approval.

The following table is provided as guidance to system owners, system designers, and local health districts to determine whether an existing sewage treatment system can be updated through the addition of required components to an NPDES discharging sewage treatment system in compliance with the general permit.

The system schematic and information contained in the following table should be reviewed and compared to the existing STS to determine if a system upgrade is feasible to meet the General Permit OHK000002 requirements and subsequently obtain coverage under the permit. Local health departments, homeowners and designers are strongly encouraged to contact the manufacturer with any questions regarding existing system component models.

Clear and detailed documentation of current system configurations and installed modifications including specific models and sizes disinfection, re-aeration, failsafe mechanism, and sampling port shall be submitted to the Ohio EPA with the NPDES Notice of Intent. Updated systems must demonstrate maintenance contracts and sampling requirements.

Guidance for Updating Existing Systems by Manufacturer

Guidance for Opdating Lx	isting Systems by Manufacturer
Anua Puraflo Type B Biofilter + Salcor Model 3G UV Disinfection + Re-aeration + failsafe mechanism	All existing Puraflo Type B Biofilters can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval. Type A filters are not watertight and cannot be used in the NPDES treatment train.
BioMicrobics MicroFAST Models (0.5, 7.5, 0.9 and 1.5) with Salcor 3G Ultraviolet Disinfection + Re-aeration + pump lockout or telemetry	All existing MicroFAST units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Bionest Technologies Bionest System + Sterilite SC-320 UV disinfection + Reaeration + pump lockout failsafe	There are currently no Bionest Systems installed in Ohio.
Clearstream Wastewater Systems 500N, 500NC, 500NC2, 500NC3, 500NCS, 500NU, 600N, 600NC, 600NC2, 600NC3, 600NU, 750N, 750NC, 750NC2, 800N, 800NC, 800 NC2, 1000N, 1000-B, 1000NC, 1000 NC-B, 1500N, 1500 N-B, 1500NC, 1500 NC-B with pretreatment tank, Salcor 3GUV, re-aeration and failsafe	All existing Clearstream units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Consolidated Treatment Systems Enviro-Guard ENV or ENV-M + Salcor 3G UV Disinfection + Re-Aeration Device + pump lockout or telemetry	All existing Enviro-Guard units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Consolidated Treatment Systems Multi-Flo FTB Models (0.5, 0.6, 0.75, 1.0 & 1.5)+ Salcor 3G UV Disinfection + Re-Aeration Device + pump lockout or telemetry	All existing Multi-Flo units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Delta DF Series ATU + Salcor 3G UV Disinfection + Reaeration + Telemetry or Pump lock	All existing Delta DF units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval. The DF series was previously sold under the Whitewater brand name. These units are identical to the currently distributed Delta DF series units and can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Ecological Tanks Aqua Safe AS Models(AS500, AS600, AS750, AS1000, AS1500) + Disinfector UV + Re-aeration + Telemetry or Pump lock Approval includes concrete models AS500-C, AS600-C, AS750C, AS1000-C, AS1500-C	All existing AquaSafe units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Hoot Aerobic Systems Hoot H-NPDES Series (500, 750 and 1000) + Salcor 3G UV disinfection+ Re-aeration + telemetry or pump failsafe	All existing Hoot units and can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.

HydroAction AP or CLP Series+ Salcor 3G UV Disinfection + Re- Aeration Device + Telemetry or Pump Lockout (0-5-5 SNG-UV, 0-6-5 SNG-UV, 0-7-5 SNG-UV, 0-10-5 SNG-UV, 0-15-5 SNG-UV)	All existing HydroAction units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.
Jet 1500 Series BAT Media Plants (J-500, J-750, J-1000, J- 1250 & J-1500) + UV Disinfection (Salcor 3G or+ Jet 952) + Re-aeration + Telemetry or Pump lock	Not all Jet units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval. Please see the attached literature provided by the manufacturer that identifies specific models, sizes and dates of manufacture.
Norweco Singulair Model TNT + AT 1500 UV Disinfection + Reaeration (in separate pump basin or within Biokinetic System chamber)+ Service Pro Telemetry or Pump lock	Not all Norweco units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval. Please see the attached literature provided by the manufacturer that identifies specific models, sizes and dates of manufacture.
Orenco AdvanTex AX20 or AX20-RT + UV Disinfection (Salcor 3G, Univirex 36, or Orenco) + Re-aeration + pump lock-out	All existing AdvanTex AX20 units can be updated to the approved NPDES treatment train by adding the additional components outlined in the approval.

For more information and complete schematics of these systems visit the Ohio Department of Health Sewage Treatment Systems program webpage.

You may also contact the Ohio Department of Health sewage program at (614) 644-7551 or BEH@odh.ohio.gov.

Related Links:

- ODH NPDES Webpage
- NPDES Sampling Protocol:
- Sampling Port Requirements:
- Ohio STS Technical Advisory Committee

Where can I get more information?

Ohio Department of Health Residential Sewage Program 246 N. High Street Columbus, Ohio 43215 Phone: (614) 644-7551 Fax: (614) 466-4556

BEH@odh.ohio.gov



March 21, 2012

Mr. Nathan Johnson, RS
Ohio Department of Health
Residential Sewage and Water Program
246 North High Street
Columbus, OH 43215

RE: Previous Jet Systems used in Ohio

Dear Mr. Johnson,

The currently approved model Jet system, the J-500 BAT® media plant, was originally released in May of 1993 as the model J-353 500 gallon per day aerobic treatment plant. Subsequently, Jet released a complete series of treatment systems designed to treat up to 1500 gallons per day in July of 1995, at which time all of the systems were then re-designated as the J-1500 series BAT® media plants. Jet has not currently submitted any previous system designs to the Ohio Department of Health for a product review. Therefore any Jet systems rated at 500 gallons per day installed prior to May of 1993 would not meet the currently approved configuration, and any system designed to treat 750 gallons per day or greater installed prior to July of 1995 would also not meet the currently approved configuration.

The best method to identify a system in the field that complies with the currently approved configuration is the presence of PVC fixed film media inside the aeration compartment. No previous models of Jet systems utilized this form of treatment media, and therefore would not have any such media present in the primary aeration compartment. However, if the system was installed after 1993 it is possible that the media in a failing system may have been damaged or have shifted. This would prevent detection from the surface of the treatment system. In such situations it is still possible to repair the system by re-positioning or replacing the media, at which point the system would meet the specifications of the currently approved system.

Jet Inc. has been producing and selling systems in the state of Ohio since the late 1950s and several models of Jet systems are currently installed in the state of Ohio. The most recent version of Jet systems in circulation prior to the J-1500 BAT® series systems were the Jet model J-153 aerobic treatment system and the model J-158 aerobic treatment system with upflow filter. The model J-153 was the most basic version, which has no media in the aeration compartment, and plastic tube settling plates mounted in the system's clarifier. The J-158



treatment system is composed of a basic J-153 system followed by a precast concrete upflow filter, which utilizes gravel media to further digest biological waste and solids. Several versions of the J-158 system were produced, as slight modifications were made to the design of the upflow filter. The model J-153 and J-158 systems are not currently approved for use in the state of Ohio.

Prior to the J-153 and J-158 systems Jet produced and distributed a number of treatment systems under several model designations, ranging from J-100 and J-101 to J-135 and J-136. The differences between these system revisions consisted of subtle changes to the internal baffles of the systems and slight modifications to the air delivery systems. Although all of the systems have similar tank geometry to the currently approved models, they do not have any media in the treatment compartment, nor do they have tube settlers in the clarifier or the upflow filter components. These systems are also not considered approved for use currently in the state of Ohio.

Please refer to the attached spreadsheet and drawings. This further illustrates the progression of Jet systems used in Ohio, including the specific model features for the currently approved and previously distributed models of Jet systems used in Ohio.

If you have any further questions, or require any additional data or information, please feel free to contact me at any time.

Best regards.

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Technical Manager

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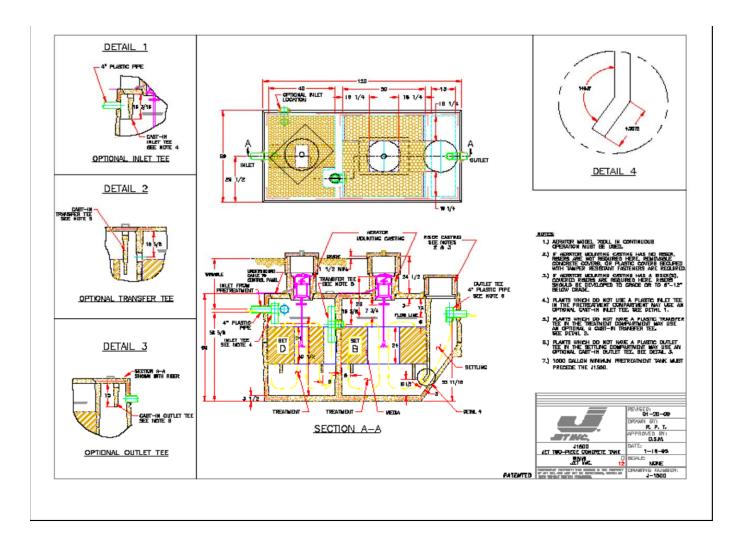
Jet Inc.

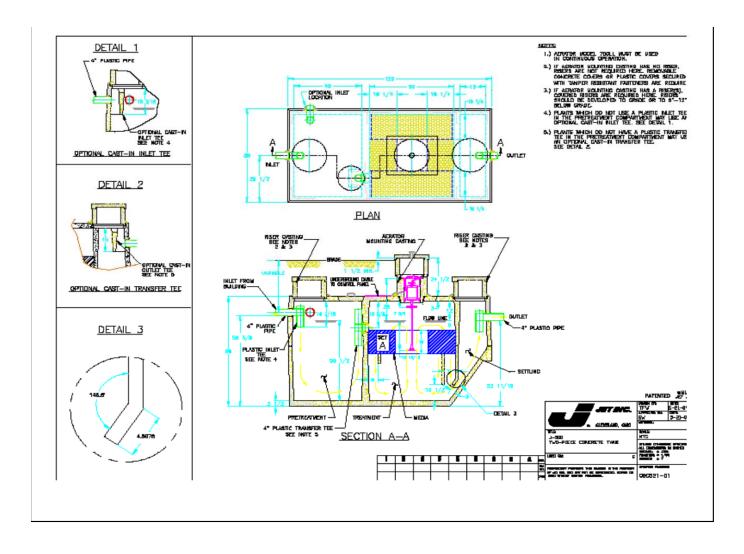
750 Alpha Drive

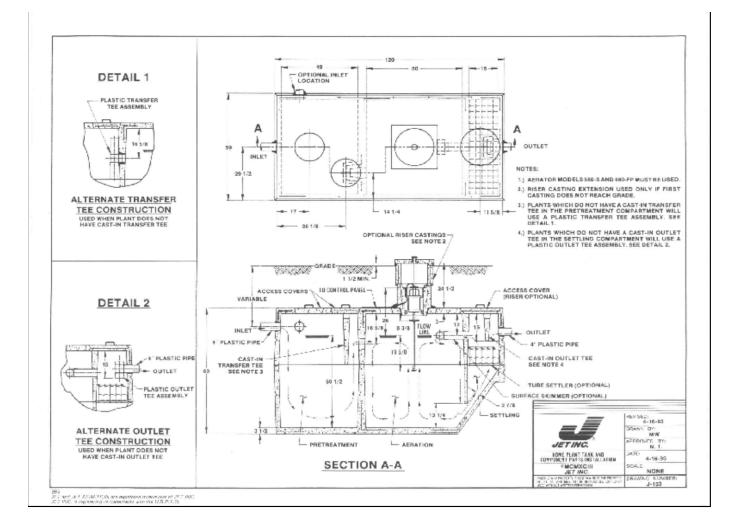
Cleveland, OH 44143

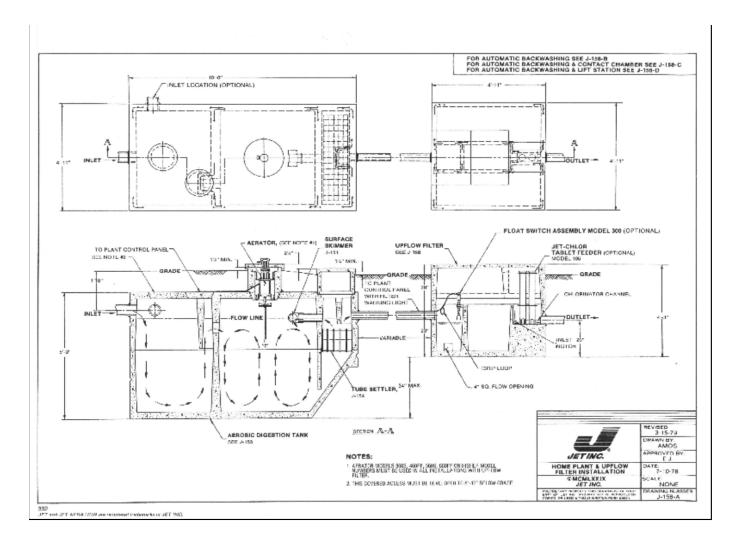
Jet Treatment System Product Timeline

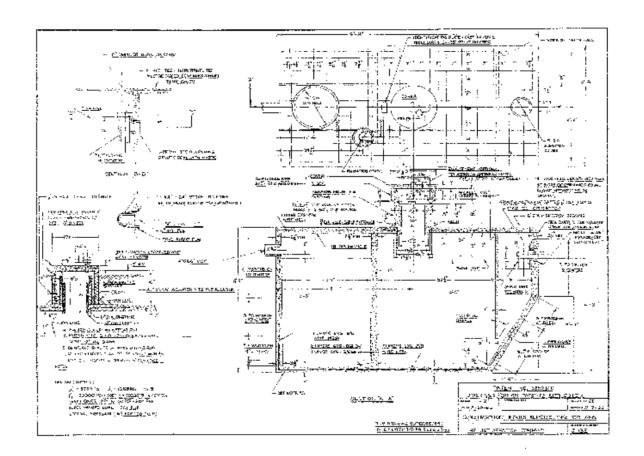
Model Number	Release Date	Drawing Numbers	Features
J-1500 Series	July 1, 1995	J-500, J-750, J-1000, J-1250, J-1500	Fixed film media plants with tiered capacities up to 1500 GPD
J-353/J-500	May 1, 1993	J-353, J-500	Fixed film media plant with treatment capacity of 500 GPD
J-153	January 1, 1974	J-153	Activated sludge plant with settling plates in clarifier
J-158 Series	January 1, 1974	J-158A, J-158B, J-158C, J-158D	Activated sludge plant with settling plates in clarifier and attached anerobic upflow filter (models A-D)
J-135 Series	March 1, 1966	J-135, J-136, J-142	Activated sludge plants
J-100 Series	November 1, 1958	J-100, J-101, J-102, J-103	Activated sludge plants

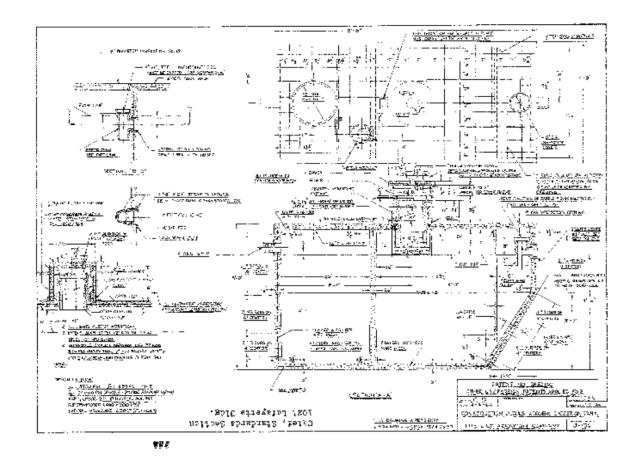


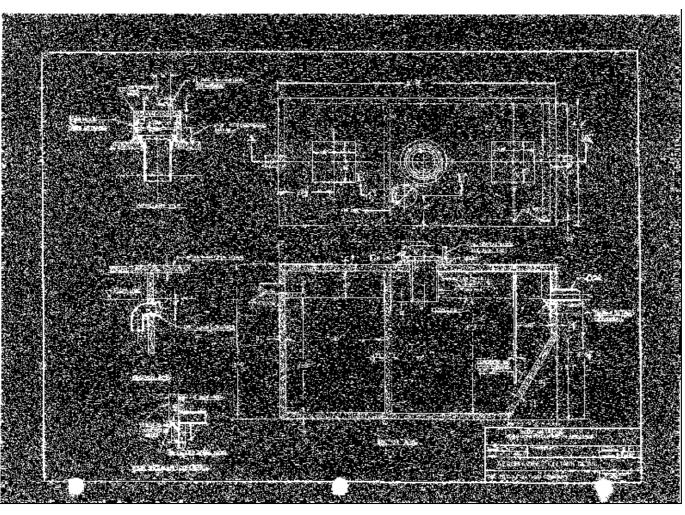
















March 30, 2012

Mr. Nathan Johnson, RS Ohio Department of Health Residential Sewage and Water Program 246 N High Street Columbus, OH 43215

Dear Nathan:

Norweco currently has two Singulair® systems approved for use in Ohio, the Singulair® Model 960 system and the Singulair® Model TNT system. These systems were approved for use by ODH in 2007. The 960 system is approved for installations using onsite disposal fields and the TNT system is used for NPDES off lot discharging installations.

The first Singulair® system used in Ohio dates back to the late 1970s and early 1980s. The system consisted of the same precast concrete tank as is used in today's models, with a Model 780 aerator and control center. The control center operated the aerator continuously at a shaft speed of 3450 RPM. The Model 300 Internal Synthetic filter was installed at the tank outlet in the clarification chamber. This system was tested at NSF and listed as a Class "I" system (drawing PC-4-1104).

In 1990 some changes were made and the system was tested again at NSF. The internal filter was replaced by the Bio-Kinetic® filter and the system was again listed as a Class "I" unit under Standard 40 test protocol (drawing PC-4-1120). In 1997 the Model 960 system (drawing PC-5-7006) became available and included the Model 96 aerator. The aerator control panel was changed to allow for an adjustable aerator run time. The time clock is factory preset at a 30 minute on/off time cycle. Aerator run time can be increased by 5 minute increments or run continuously. The Model 96 aerator shaft speed was decreased to 1725 RPM. In 2006, the Singulair® Model TNT system (drawing PC-5-7064) was introduced as a Class "I" system and tested for CBOD, TSS, TN, and Fecal coliform reduction. The 206C aerator was introduced with the TNT system as a replacement for the Model 96 aerator. The control panel was changed to provide a 60 minute on/off aerator run time that is not adjustable.

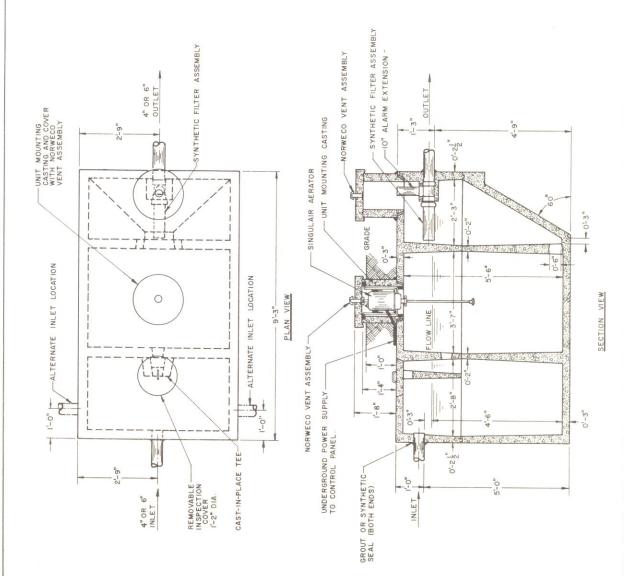
Any Singulair® tank that includes a Bio-Kinetic® filter can be upgraded to an NPDES system. To determine this, the clarification chamber can be inspected to verify that the system includes a Bio-Kinetic® filter. Tanks that include the Model 300 filter cannot be upgraded because there is no connection for the Bio-Kinetic® filter. If you need any additional information or have any questions, please let me know.

Sincerely,

Norweco, Inc.

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Scott Hetrick Sales Manager



NSF CLASS ONE SINGULAIR INDIVIDUAL HOME WASTEWATER TREATMENT SYSTEM

NOTES

- FALL THROUGH PLANT FROM INLET TO OUTLET IS THREE INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- 2. PRECAST RISERS MUST BE USED TO EXTEND UNIT MOUNTING CASTING AND FILTER RISER TO GRADE.
- ON DEEPER INSTALLATIONS INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE
- TANK REINFORCED PER ACI STANDARD 318-71.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY FIVE POUNDS EACH.
- 6. CONTACT LOCAL DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

TANK CAPACITY: 1,300 GALLONS

