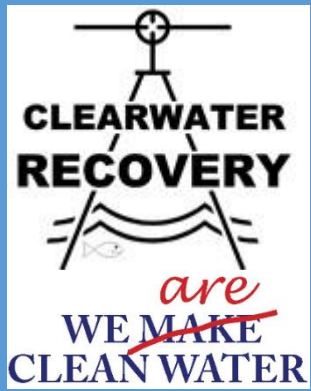


ONSITE DENITE





ONSITE DENITE INTRODUCTION

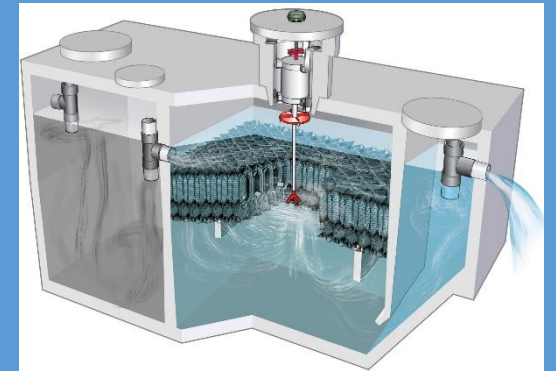
Innovative Alternative Septic Systems:

- JET – MASS DEP Approved to Remove Nitrogen!
- JET – Remedial, New Construction and Nitrogen Removal
- Benefits of an I/A System with Pros/Cons
- JET system – Simple to Install – Simple to Operate!
- Permits and Regulations
- Small Lot in Zone II – I/A Systems can Help!

Compliance with Board of Health Requirements:

- Operations and Maintenance Service Contracts
- Laboratory Testing
- Ensure fully functioning equipment

JET “BAT” Aerobic
Systems
**NITROGEN REMOVAL
APPROVED**



Permit types

Piloting - Approvals with specific conditions
Provisional

Remedial – Repair of failed or failing systems
50% reduction SAS area
2-foot reduction to SHGW
2 feet permeable soil

General - In most cases, assumes equivalent to Title 5 system
Once per year O&M service

Remember the good old days

In the beginning, Mass DEP required quarterly O&M service with laboratory effluent sampling.

Revised in January 2006 – semi-annual service with documented effluent field sampling for dissolved oxygen, pH, and turbidity.

Revised in November, 2012 and again in February, 2013 – operations and maintenance service provided by certified operator in accordance with manufacturer schedule. Effluent monitoring now once per year for single family homes.

Operation and Maintenance Service

To ensure proper operation and maintenance service (O&M) of the on-site treatment system, the owner shall enter into an O&M agreement with a qualified service contractor who's name appears on the company's current list of service contractors with a minimum Grade Level II Wastewater License.

I/A system approval by Mass D.E.P. is based on NSF Standard 40 or 245. Semi-annual O&M service is required.

Operation and Maintenance, Effluent quality, Monitoring, and Inspection

Miracle on Myrtle Street

You finally find the house of your dreams, complete with a circular driveway
You pass papers
And on moving day you find.....



After consulting with *Clearwater Recovery*,
the new homeowners found out the Board of Health
would approve use of a Jet system to get rid of the mound.



Silverado Construction began the
project by removing the mound
and the septic tank.



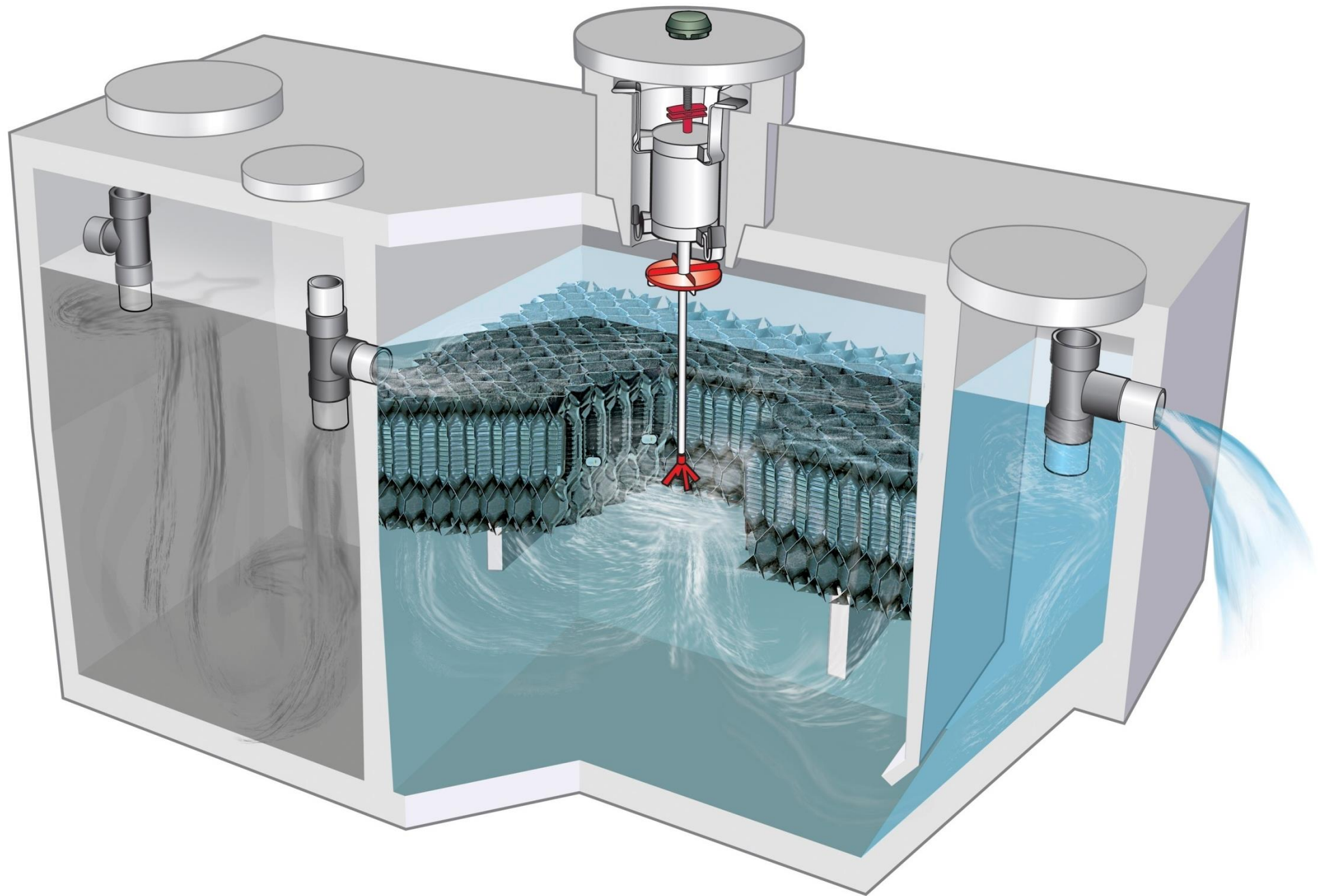
After!



NEW APPROVALS & COMPONENTS USED IN MA

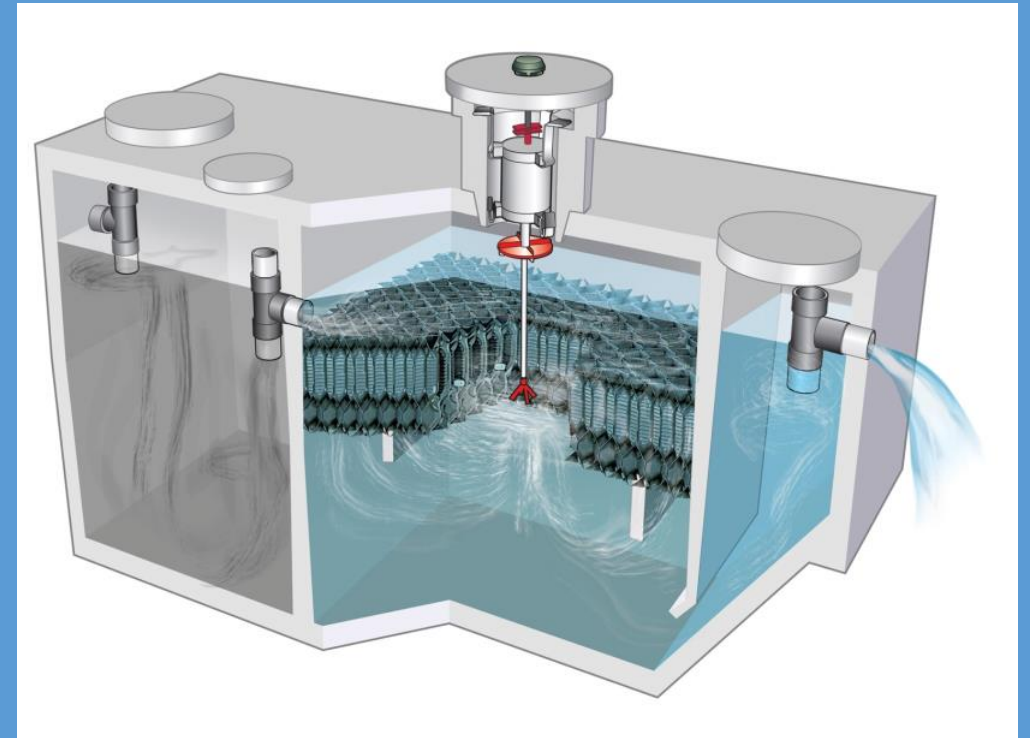
*If you want to experience honest,
dependable, responsive, service-
oriented wastewater treatment
specialists, you want JET –
a company founded on innovation
and anchored by service.*





RESIDENTIAL WASTEWATER GENERAL SPECIFICATIONS

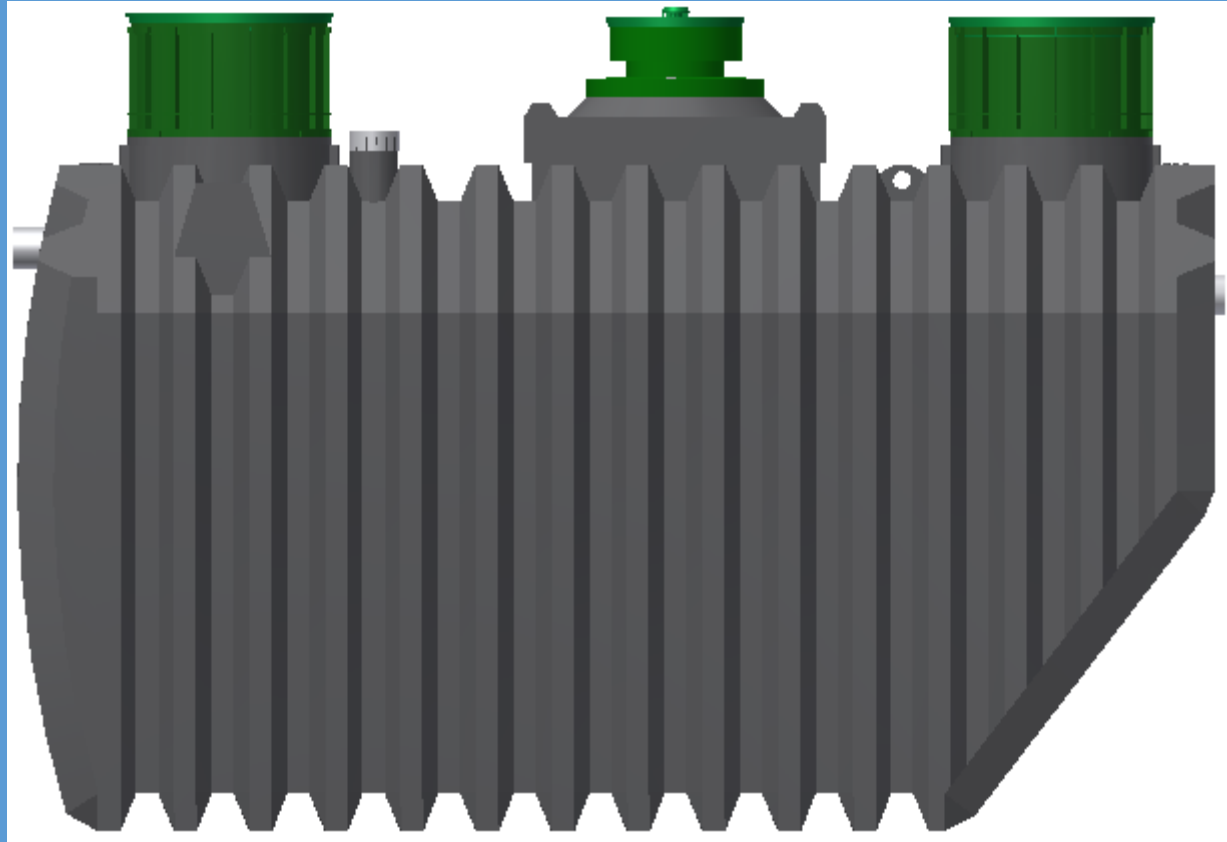
- Overall Plant Capacity - 1,200 Gallons
- Precast Concrete
 - 3 Yards
 - 2 1/2" thick walls
 - Approximately 10,000 lbs.
- Divided Into Three Compartments
 - Pretreatment
 - Treatment
 - Settling



JET J-500-800PLT PLASTIC TANK



TREATMENT FROM 500 TO 800 GPD



RESIDENTIAL WASTEWATER GENERAL SPECIFICATIONS

J500PLT / J800PLT Plastic Tank

Length: 123" (3.12m)

Width: 62" (1.57m)

Height: 73" w/o Riser (1.85m)

Height: 86" with Riser (2.18m)

Inlet Height: 59" at invert (1.49m)

Outlet Height: 56" at invert (1.42m)

Invert Drop: 3" (.076m)

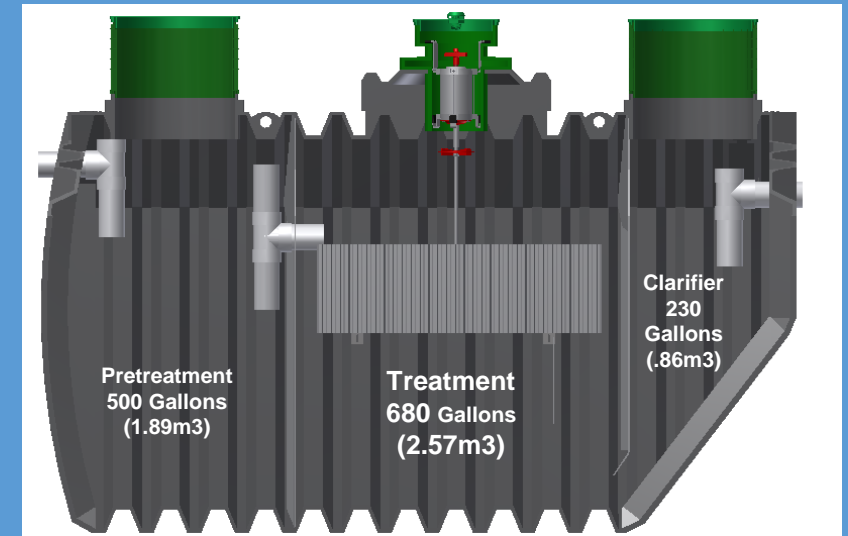
Functional Capacity: 1410 Gallons (5.32m³)

Total Capacity: 1929 Gallons (7.29m³)

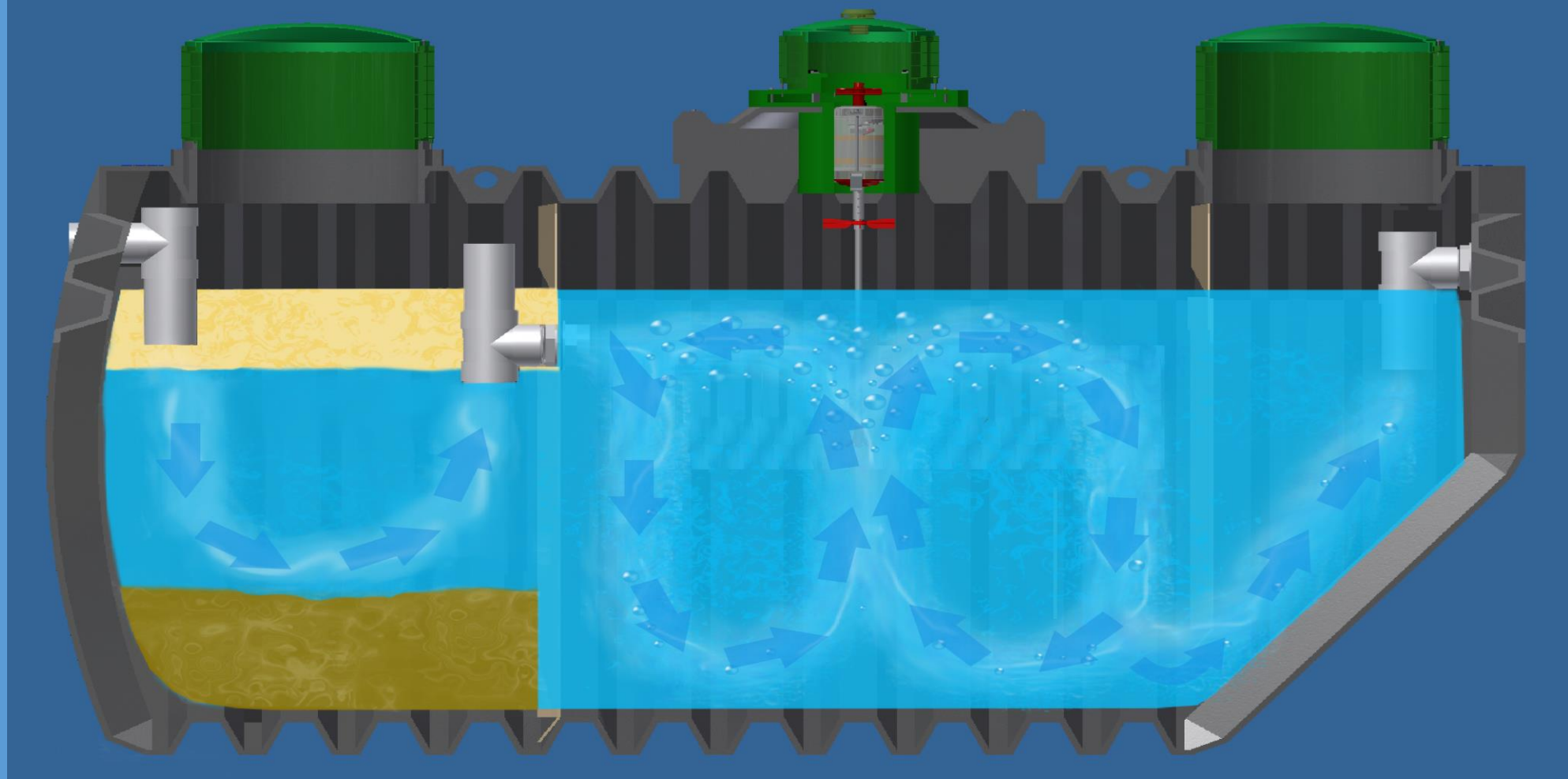
Freeboard: 12 Inches (.30m)

Nominal Wall Thickness: .625 Inches (.015m)

Weight: 1050 Pounds (476 kilogram)



JET BAT® PROCESS FLOW





Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

PILOTING APPROVAL

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

Stephen B. Nelson LLC
d/b/a Clearwater Recovery
175 Spring Street
Rockland, MA 02370

Trade name of technology and models: Jet J-1500CF, Jet J-1000CF, Jet J-750CF and Jet J-500CF, aerobic wastewater treatment system (hereinafter the 'System', 'Alternative System' or 'Technology'). Specifications of the System, Installation & Operation, Owner's manuals, and a technology inspection checklist are part of this Approval.

Transmittal Number: X285665
Date of Issuance: December 18, 2020
Date of Expiration: December 18, 2025

7. When the System is used for new construction in areas subject to the nitrogen loading limitations of 310 CMR 15.214, an increase in calculated allowable nitrogen loading per acre is allowed for facilities with a design flow of less than 2,000 gallons per day (gpd) as provided in 310 CMR 15.217(2). When used in such areas:
 - a) For any facility, an increase in the flow rate per acre is allowed up to a design flow up to 550 gpd/acre provided that the facility meets a TN effluent limit of 25 mg/l or less, or
 - b) For any residential facility, an increase in the flow rate per acre is allowed up to a design flow up to 660 gpd/acre provided that the facility meets a TN effluent limit of 19 mg/l or less.

If a System(s) needs replacement there must be an approved technology that can be installed on-site to meet the nitrogen loading limitations.

System Monitoring Responsibility

14. For at least the first 18 months of operation and until a System's Performance Evaluation (PE) has been completed by the Company, and approved by DEP, the Company shall be responsible for the following minimum monitoring requirements and effluent limits:

- a) For year-round properties:
 - 1) The facility shall be inspected monthly for the first 12 months then quarterly thereafter:
 - 2) The influent and effluent shall be monitored for pH, BOD5, TSS and total nitrogen (TN) monthly for the first 3 months, then quarterly for effluent only.
 - 3) After at least 6 quarterly samples, the effluent shall be sampled quarterly for TN and field tested for pH, turbidity, settleable solids and color.
 - 4) Non-residential facilities shall also monitor influent quarterly for wastewater temperature, pH, BOD5, TSS and TN for a minimum of 4 quarters; and,



System Monitoring Responsibility

14.

b) For Seasonal properties:

- 1) The facility shall be inspected and the influent and effluent sampled for pH, BOD5, TSS and TN at least twice per year, once 30 to 60 days after occupancy and the second sample must be taken no less than 2 months after the first sample or just prior to the seasonal end-of-use.
- 2) After at least 6 samples, the effluent shall be analyzed for just TN and field tested for pH, turbidity, settleable solids, and color.

Pros and Cons Of I/A systems

PROS

- ✓ Advanced treatment - cleaner discharge to leach field. A permanent solution to leach field failure (conventional leach systems are doomed to failure)
- ✓ Sites that do not meet Title V requirements can now have a fully functioning septic system

CONS

- ✓ Homeowner perception that maintenance is a financial burden - The true cost of I/A maintenance is comparable to 'big pipe' sewer costs
- ✓ Homeowner awareness - homeowners are not aware that they have to maintain an I/A system
- ✓ Board of Health / local approving authority can be overwhelmed in trying to keep track of so many varied systems, permits, repairs, testing requirements, site conditions, contract expirations/renewals



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