



**RECEIVED**  
By Bourne Health Department at 2:22 pm, Oct 24, 2023

October 24, 2023

Ms. Terri Guarino, R.S., C.H.O.  
Bourne Board of Health Agent  
24 Perry Avenue  
Bourne, MA 02532

**RE: 55 Maryland Avenue, Bourne, MA – Bruce Tofias**

Dear Ms. Guarino:

On behalf of the applicant, Bruce Tofias, we request the Town of Bourne Board of Health approval of a Title 5 Septic Upgrade Design (no increase in flow) at the above referenced address.

Based on a drawing by our firm, three (3) variances under the Town of Bourne Board Health Regulations and Title 5 are required for siting the proposed denitrifying septic system. The proposed septic upgrade is a voluntary upgrade by the homeowner from a substandard cesspool to an enhanced reducing septic system. The choice available technology by the homeowner for enhanced nitrogen reduction is the FAST Treatment System by Bio-Microbics, Inc. In specific, the system includes a MicroFast 0.75 Unit to be installed in the general location of the existing leaching pit. The variances for the septic upgrade are to vary the 150 feet setback requirements from the Wetland Resource Areas to the Soil Absorption System, and 25-feet from Fast Tank to the wetland. The property does not contain an area that will meet the local 150' setback to wetlands. The proposed location is the furthest location on the property to the coastal dune at a setback of 118-feet and the furthest to the waters of Back River at over 150-feet. The best approach to provide adequate environmental and public health protection similar to a conforming system with the 150 feet requirement is to upgrade the system with the addition of nitrogen reducing technology as proposed with this application. Due to these circumstances, the setback distances requested are as follows:

NO	DESCRIPTION	BYLAW REQUIRED	STATE REQUIRED	PROPOSED	WAIVER
1.	S.A.S. to Wetland (Coastal Bank)	150'	50'	39'	111'
2.	S.A.S. to Wetland (Coastal Dune)	150'	N/A	118'	32'
3.	Fast Tank to Wetland (Coastal Bank)		25'	22'	3'

There is no proposed changes to the existing dwelling, and therefore no increase in sanitary design flow.

An application has been filed with the Bourne Conservation Commission for this voluntary septic system upgrade project. The proposed wetland setbacks waiver is for the local Board of Health requirements to the Coastal Dune and Coastal Bank.

If you have any questions, please feel free to contact me.

Sincerely,

Raul Lizardi-Rivera, P.E.  
Director of Engineering

Encl. 7 Copies of Request and Plan

Cc: Bruce Tofias

**CAPE & ISLANDS**  
ENGINEERING  
800 Falmouth Road Suite 301C  
Mashpee, MA 02649  
508-477-7272  
info@capeeng.com

Bank of America, NA

3153

5-13/110

10/24/2023

PAY TO THE ORDER OF Town of Bourne

\$ \*\*125.00

One Hundred Twenty-Five and 00/100\*\*\*\*\*

DOLLARS

Town of Bourne  
24 Perry Avenue  
Buzzards Bay, MA 02532-3441



*Charles A.*

AUTHORIZED SIGNATURE

MP

MEMO

BoH Local Upgrade: 55 Maryland



Security features included. Details on back.

**CAPE & ISLANDS**  
ENGINEERING  
800 Falmouth Road Suite 301C  
Mashpee, MA 02649  
508-477-7272  
info@capeeng.com

Bank of America, NA

3154

5-13/110

10/24/2023

PAY TO THE ORDER OF Town of Bourne

\$ \*\*250.00

Two Hundred Fifty and 00/100\*\*\*\*\*

DOLLARS

Town of Bourne  
24 Perry Avenue  
Buzzards Bay, MA 02532-3441



*Charles A.*

AUTHORIZED SIGNATURE

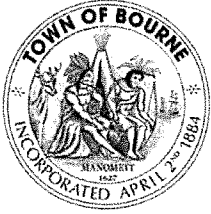
MP

MEMO

I/A Septic System: 55 Maryland



Security features included. Details on back.



# Bourne Board of Health Application for Septic Variance or Waiver Requests



In accordance with the established procedures of the Bourne Board of Health, this application is for septic variances and waivers which have not been approved administratively and require approval at a public meeting. Please use the following application form for guidance on how to apply for variances and waivers which serve new construction, changes in use, increases in flow, or repairs and upgrades to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

## 1. Facility Name and Address:

Owner's Name

Bruce Tofias

Facility's Street Address

55 Maryland Avenue, Bourne, MA

Owner's Telephone Number

781-622-0080

Owner's E-mail Address

btofias@gmail.com

Owner's Mailing Address

76 Plain Road, Wayland, MA 01778

## 2. Applicant or Preparer's Name and Address (if different from above):

Preparer's Name

Raul Lizardi-Rivera, P.E.

Company

Cape & Islands Engineering, Inc.

Telephone Number

508-477-7272

E-mail Address

raul@capeeng.com

Mailing Address

800 Falmouth Road, Suite 301C, Mashpee, MA 02649

## 3. Type of Facility (check all that apply):

Residential    Commercial    Institutional    School    Industrial    Mixed Use

4. Describe Facility (i.e. single-family dwelling, 45 seat restaurant): A six (6) bedroom dwelling serviced by a substandard on-site septic system which consists of a cesspool located approximately 18' of the top of the coastal bank, 64' to the dune and 135' to the water's edge of Back River.

5. Type of System Proposed (check all that apply):    Conventional Title 5    I/A System

Pumped System    Gravity System    Pressure Dosed    Tight Tank    Other

6. Describe the existing and proposed septic system components: Voluntary replacement, installation and maintenance of a proposed FAST denitrifying septic system upgrade with NO increase in design flow. Existing septic system pumped dry, filled with clean sand or abandoned or properly removed and disposed of at an approved upland

7. Design Flow per 310 CMR 15.203 (in gallons/ day):

663	EXISTING	PROPOSED
Design flow of system:	660	660
Total design flow of facility: <i>(if more than one system on subject property)</i>	unknown	663

8. Enclose a **letter of request for variances/waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances of the individual case. Note that with regard to variances for new construction, enforcement of the provision from which a variance is sought must be shown to deprive the applicant of substantially all beneficial use of the subject property in order to be manifestly unjust. Be sure to explain why full compliance with the applicable regulations is not feasible, and how a level of environmental protection that is at least equivalent to that provided under Title 5 and the Board of Health Regulations can be achieved without strict application of said regulations.

9. In order for this Application to be deemed complete, it must be accompanied by the following:

- \$125 filing fee + any other applicable permit application fees paid to the Town of Bourne.
- Application for a Disposal System Construction Permit (may be filled out by installer).
- Six copies of Letter of Request describing nature of variances.
- Six sets of complete engineered plans and specifications, one with original stamp of design engineer; plus, one electronic copy. All variances/ waivers must also be listed on the plans per 310 CMR 15.220(4).
- Six sets of floor plans, existing and proposed.
- Six copies of Nitrogen Loading Calculation Worksheet \*required for all applications.
- If abutter notification is required, one of each of the following must be submitted:
  - A copy of the certified list of abutters from the Assessor's Department.
  - Sample letter for abutter notification postmarked 10 days prior to meeting date.
  - Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2).
- Proposals for installation of Innovative/Alternative septic systems must be accompanied by:
  - A copy of the Certification for Use including technology specific conditions.
  - Draft disclosure notice for the I/A technology to be recorded in the deed.
- Hydrogeologic data may be required for new leaching facilities proposed within 100ft of a wetland/watercourse.
- Percentage of Increase Worksheet may be required for waivers or increases in flow.

10. Certification:

"I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there may be significant consequences for submitting false information, including, but not limited to, penalties or fine and/or imprisonment for deliberate violations."

Facility Owner's Signature \_\_\_\_\_ Date \_\_\_\_\_

Print Name Bruce Tofias

Signature of Preparer Raul Lizardi-Rivera Date Oct. 24, 2023

Print Name Raul Lizardi-Rivera, P.E., Cape & Islands Engineering, Inc.

September 28, 2023

Ms. Terri Guarino, R.S., C.H.O.  
Bourne Board of Health Agent  
24 Perry Avenue  
Bourne, MA 02532

**RE: Application for Local Upgrade Approval, 55 Maryland Avenue, Bourne, MA**

Dear Ms. Guarino:

This letter is in regard to the above referenced application.

Please accept this letter as my written authorization to allow Raúl Lizardi-Rivera, P.E. of Cape & Islands Engineering, Inc. and/or his Associates to represent this property on my behalf.

If you have any questions, please feel free to contact me.

Sincerely,



Bruce Tofias  
76 Plain Road  
Wayland, MA 01778  
btofiias@gmail.com  
781-622-0080

N O T  
A N QUITCLAIM DEED N O T  
A N

KNOW ALL MEN BY THESE PRESENTS, that I, LAUREN TOFIAS, having an address c/o Bruce Tofias, guardian 76 Plain Road, Wayland, MA 01778,

For consideration paid of SEVEN HUNDRED FIFTY THOUSAND AND 00/100 DOLLARS (\$750,000.00)

OFFICIAL OFFICIAL  
GRANT to COPY COPY

BRUCE TOFIAS, having an address at 76 Plain Road, Wayland, MA 01778

with quitclaim covenants

a twenty-five percent (25%) tenancy in common interest in the following described land now known as 55 Maryland Avenue in the Town of Bourne, County of Barnstable, Commonwealth of Massachusetts:

- Southerly by Maryland Avenue, eighty-one and 42/100 (81.42) feet;
- Southwesterly by Lot 2, about one hundred seventy-two (172) feet;
- Northwesterly by Back River;
- Northeasterly by land now or formerly of Stephen P. Alden, being the middle line of a Way, about ninety-three (93) feet; and
- Southeasterly by land now or formerly of Harry Atherton et al, one hundred fifty and 21/100 (150.21) feet.

Said land is shown as LOT 1 on the plan hereinafter mentioned.

- Southerly by Maryland Avenue, eighty (80) feet;
- Southwesterly by land now or formerly of Robert E. Nelson et al, one hundred fifty- three and 52/100 (153.52) feet;
- Northwesterly by land now or formerly of Alice H. Porter, about forty-five (45) feet;
- Northerly by Back River; and
- Easterly by Lot 1, about one hundred seventy-two (172) feet.

Said land is shown as LOT 2 on said Plan.

PROPERTY ADDRESS: 55 Maryland Avenue, Bourne, MA 02532

All of said boundaries, except the water line, have been determined by the Land Court to be located as shown on subdivision plan 22485-B dated August 24, 1967 drawn by Newell B. Snow, Surveyor, and filed in the Land Registration Office at Boston, a copy of which is filed in the Barnstable County Registry of Deeds in Land Registration Book 158 Page 16 with Certificate of Title No. 21036 and said land is shown thereon as LOTS 1 and 2.

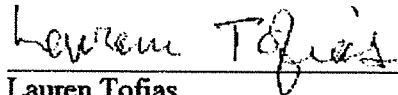
So much of said land as is included within the limits of said Maryland Avenue and said Way, is subject to the rights of all persons lawfully entitled thereto in and over the same.

There is appurtenant to said land the right to use the whole of said Avenue and Way approximately shown on said plan in common with all others lawfully entitled thereto.

The land is subject also to any and all public rights legally existing in and over the same below mean high water mark.

For title reference see that certain Land Court Registered Land Order of Court filed as Document No. 1,467,177 on September 13, 2022 and Land Court Certificate No. 231045.

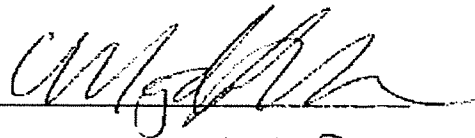
Executed as a sealed instrument this 20<sup>th</sup> day of December, 2022.

  
\_\_\_\_\_  
Lauren Tofias

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss.

On this 20<sup>th</sup> day of December, 2022, before me, the undersigned notary public, appeared Lauren Tofias, who is personally known to me to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it voluntarily for its stated purpose as her free act and deed.

  
\_\_\_\_\_  
Name: *Magda L. Fleckner*

My Commission Expires: \_\_\_\_\_

**MAGDA L. FLECKNER**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires September 12, 2025

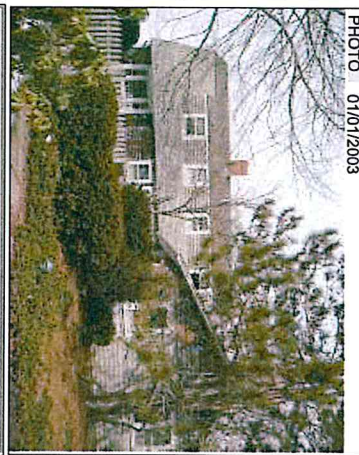
CURRENT OWNER		PARCEL ID		LOCATION	
TOFIAS EVELYN J C/O TOFIAS BRUCE & LAUREN TOFI 76 PLAIN RD WAYLAND, MA 01778-2312		30.2-10-0		55 MARYLAND AVE	
TRANSFER HISTORY		DOS		BK-FG (Cent)	
TOFIAS BRUCE & LAUREN TOFI TOFIAS EVELYN J		09/13/2022		1 (231045) (73637)	
CLASS	CLASS%	DESCRIPTION	BN ID	BN	CARD
1010	100	SINGLE FAMILY		1	1 of 1
PMT NO	PMT DT	TY	DESC	AMOUNT	INSP
10689	11/08/2010	3	ALT/RENO	26,000	100

CD	IT	AC/SF/UN	Nbhd	Inf1	N Index	ADJ BASE	SAF	Topo	Lpi	VC	CREDIT AMT	ADJ VALUE
100	S	40,000	9	1,00	100	1,335,040	1.00	A	6.40			1,225,690
300	A	0,067	9	1,00	100	92,160	1.00	A	6.40			6,170
<b>TOTAL</b>												
ZONING 1 FRNT 0												

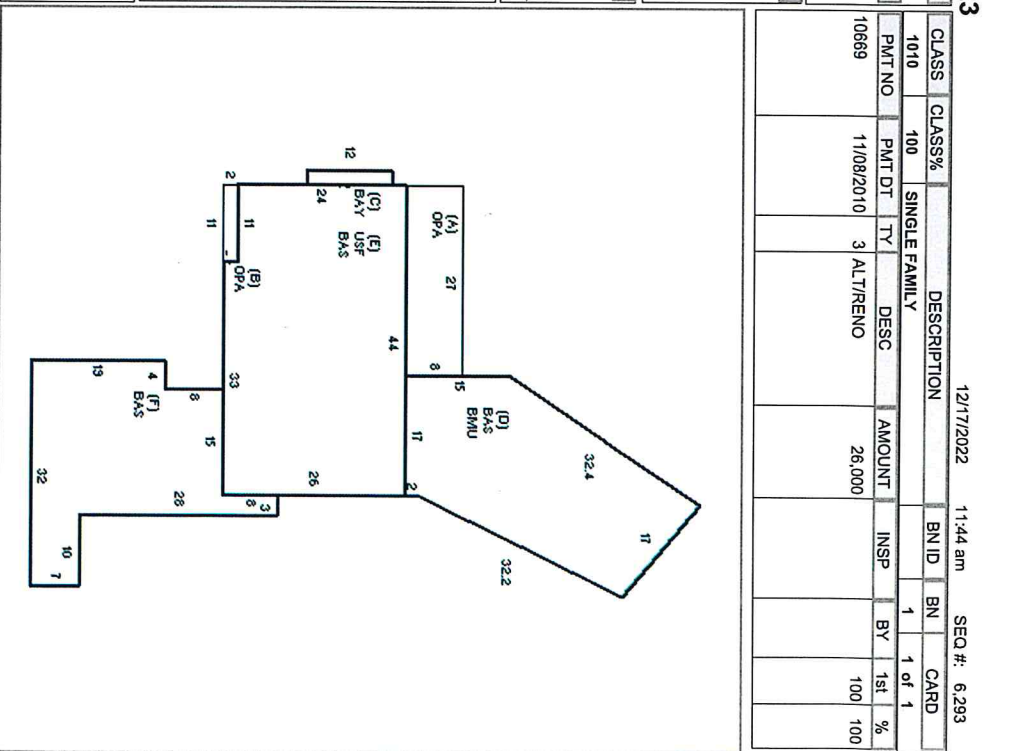
ASSESSED	CURRENT	PREVIOUS
LAND	1,231,900	1,090,100
BUILDING	459,000	364,200
DETACHED	14,700	13,300
OTHER	0	0
<b>TOTAL</b>	<b>1,705,600</b>	<b>1,467,600</b>

TY	QUAL	COND	DIM/NOTE	YB	UNITS	ADJ PRICE	RCNLD
IPG	A	1.00	A 0.75		800	24.47	14,700

MODEL	CD	ADJ	DESC	MEASURE	LIST	REVIEW	TL
1	5	1.00	RESIDENTIAL COLONIAL (100%)	2/24/2005	2/24/2005	2/24/2005	TL
QUALITY	FRAME	SIZE ADJ	DETAIL ADJ	OVERALL	ADJ	RCN	
1	1.00	WOOD FRAME (100%)	1,040	1,000	1,000	1,000	



BLDG COMMENTS



YEAR BLT	NET AREA	\$/sqft (RCN)	SIZE ADJ	DETAIL ADJ	OVERALL	ADJ	RCN
1900	3,681	\$164					

ELEMENT	CD	DESCRIPTION	ADJ	S	BAT	T	DESCRIPTION	UNITS	YB	ADJ PRICE	RCN
FOUNDATION	3	FOUN. WALL	1.00	+	OPA	N	OPEN PORCH	238	1900	56.32	13,404
EXT COVER	1	WOOD SHINGLE	1.02	C	BAY	L	BAY WINDOW	24	1900	173.29	4,159
ROOF SHAPE	3	GAMBRREL	1.00	D	BMU	N	BSMT UNFINISHED	757	1900	43.98	33,255
FLOOR COVER	1	ASPH/COMP SHIN	1.00	+	BAS	L	BASE AREA	2,535	1900	157.35	398,892
INT. FINISH	1	PASTER	1.00	E	USF	L	UPPER STORY FIN	1,122	1900	99.42	3,611,90
HEATING/COOLING	2	HOT WATER	1.02	O	F21	O	CAPE CELLAR	1		8,428.10	8,428
FUEL SOURCE	2	GAS	1.00	FIX	O	XTRA FIXTURES	15		2,037.41	30,561	30,561

TOTAL RCN	CONDITION ELEM	CD
603,905	EXTERIOR	A
	INTERIOR	A
	KITCHEN	A
	BATHS	A
	HEAT	A
	ELECT	A

EFF. YR/AGE	COND	FUNC	ECON	DEPR
1994 / 27	24	24	0	24
	% GD			76
				\$459,000





October 24, 2023

Abutters to referenced property.

RE: Notice of Board of Health Public Hearing, 55 Maryland Avenue, Bourne, MA

Dear Abutter:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.00, and Section 1 of the Town of Bourne Board of Health Regulations, you are hereby notified that Bruce Tofias, has requested a hearing before the Bourne Board of Health for relief from Title 5 and/or the Town of Bourne Board of Health Regulations for the voluntary replacement, installation and maintenance of a proposed FAST denitrifying septic system upgraded. The location of the property for this proposal is 55 Maryland Avenue, Bourne, MA where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

NO	DESCRIPTION	BYLAW	STATE	PROPOSED	WAIVER
		REQUIRED	REQUIRED		
1.	S.A.S. to Wetland (Coastal Bank)	150'	50'	39'	111'
2.	S.A.S. to Wetland (Coastal Dune)	150'		118'	32'
3.	Fast Tank to Wetland (Coastal Bank)		25'	22'	3'

This hearing is tentatively scheduled for Wednesday, November 15, 2023 at 5:30 pm, via Hybrid. Information regarding the hearing may be available for your review 48 hours prior to the meeting by going to the Town of Bourne website.

Meeting agendas are posted on the Town of Bourne website, [www.townofbourne.com/health](http://www.townofbourne.com/health) no less than 48 hours in advance of the hearing. Please confirm the date, time, and location of the meeting with the Town, in case of any changes. Should you have any questions or concerns, please do not hesitate to contact me or the Bourne Health Department at 508-759-0600 ext. 1513.

Sincerely,

  
 Jean E. Duff-Still  
 Permitting Specialist

Cc: Board of Health



Michael Leitzel, Chairperson  
Ellen Doyle Sullivan, Clerk  
Donna Barakauskas, Member

**TOWN OF BOURNE**  
**Board of Assessors**  
24 Perry Avenue  
Buzzards Bay, MA 02532  
(508) 759-0600 Ext. 1510



Rui Pereira, MAA  
Director of Assessing

September 6, 2023

Cape & Islands Engineering  
Stacy Hylinski  
800 Falmouth Rd, Ste. 301C  
Mashpee, MA 02649

Re: Abutters List for Map 30.2 Parcel 10  
Property address: 55 Maryland Avenue

As required by the Bourne Board of Health, pursuant with section 310 CMR 15.411(1), this is to certify that the attached list of names and addresses constitutes all of the parties in interest as shown on the most recent tax list of the Town of Bourne.

Abutting properties are: Map 30.1 Parcels 17 & 22; Map 30.2 Parcels 8, 11, 12 & 224.

Your filing fee of \$25.00 has been received by the Bourne Assessor's Office.

**Please be advised that this abutters list is only good for 30 days from the date on this letter. Expired abutters list can be recertified for an additional filing fee.**

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan*  
*Donna Barakauskas*  
*Michael Leitzel*

ABUTTERS LIST  
 LIVE  
 Key IN 6122,6125,6136,6138,6139,16479

Report #24: Owner Listing Report  
 Fiscal Year 2024

Bourne .MA

Key	Parcel ID	Owner	Location	L/C/I/C	Bk-Pct(Cert)/DI	Mailing Street	Mailing City	ST	Zip Cdl/County
6122	30.1-17-0	KEELER RUSSELL S & WENDY F TRS RUSSELL S KEELER REV TRUST	53 MARYLAND AVE	N	34766/248	PO BOX 65	ROCHESTER	MA	02770
6125	30.1-22-0	OWNER UNKNOWN	0 PHINNEYS POINT	N	00000/0000	0 PHINNEYS POINT	BOURNE	MA	02532-3441
6136	30.2-9-0	PERETTI MARK F ETUX LESLIE A DOUGHERTY	0 MARYLAND AVE	N	22050/25	PO BOX 534	MONUMENT BEACH	MA	02553
6138	30.2-11-0	PERETTI MARK F ETUX LESLIE A DOUGHERTY	61 MARYLAND AVE	N	22050/25	PO BOX 534	MONUMENT BEACH	MA	02553
6139	30.2-12-0	GARANITO JOHN N TR OF 22 MARYLAND AVE RLTY TRUST	22 MARYLAND AVE	N	15169/289	174 DEAN ST UNIT C	TAUNTON	MA	02780
16479	30.2-224-0	JEN G REALTY LLC	0 MARYLAND AVE	N	23462/248	174 DEAN ST UNIT C	TAUNTON	MA	02780

Total Records 6

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2 Serv. (check box, add fee as appropriate)  
Return Receipt (hardcopy) \$  
Return Receipt (electronic) \$  
Certified Mail Restricted Delivery \$  
Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
Postmark Here

Owner Unknown  
at Postage 0  
0 Phineys Point  
Bourne, MA 02532-3441

Street and Ap  
City, State, ZIP  
55 Maryland Tofias  
Both

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Return Receipt (electronic) \$  
Certified Mail Restricted Delivery \$  
Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
Postmark Here

Garanito John N Tr of  
22 Maryland Ave Rity Trust  
174 Dean St. Unit C  
Taunton, MA 02780

Street and Ap  
City, State, ZIP  
55 Maryland Tofias

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
Postmark Here

Peretti Mark F Etux  
Leslie A Dougherty  
PO Box 534  
Monument Beach, MA 02553

Street and Ap  
City, State, ZIP  
55 Maryland Tofias

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
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Owner Unknown  
at Postage 0  
0 Phineys Point  
Bourne, MA 02532-3441

Street and Ap  
City, State, ZIP  
55 Maryland Tofias  
Both

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Return Receipt (electronic) \$  
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Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
Postmark Here

Jen G Realty LLC  
174 Dean Street Unit C  
Taunton, MA 02780

Street and Ap  
City, State, ZIP  
55 Maryland Tofias

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Return Receipt (electronic) \$  
Certified Mail Restricted Delivery \$  
Adult Signature Required \$  
Adult Signature Restricted Delivery \$

242023  
Postmark Here

Keller Russell S & Wendy TRS  
Russell S Keeler Rev Trust  
PO Box 65  
Rochester, MA 02770

Street and Ap  
City, State, ZIP  
55 Maryland Tofias

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

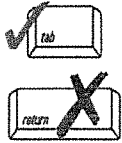


Massachusetts Department of Environmental Protection  
 Bureau of Water Resources - Wetlands  
**WPA Form 2 – Determination of Applicability**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Bourne  
 Municipality

**A. General Information**

**Important:**  
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Bourne  
 Conservation Commission

To: Applicant

Bruce Tofias  
 Name  
 76 Plain Road  
 Mailing Address  
 Wayland MA 01778  
 City/Town State Zip Code

Property Owner (if different from applicant):

Name  
 Mailing Address  
 City/Town State Zip Code

Phone Number

Phone Number

Email Address

Email Address (if known)

1. Project Location:

55 Maryland Avenue  
 Street Address

Bourne  
 City/Town

Latitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)

Longitude (Decimal Degrees Format with 5 digits after decimal e.g. -XX.XXXXX)

30.2

10-0

Assessors Map/Plat Number

Parcel/Lot Number

2. Date Request Filed:

8/28/2023

[How to find Latitude and Longitude](#)

[and how to convert to decimal degrees](#)

**B. Determination**

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

Upgrade the existing septic system.

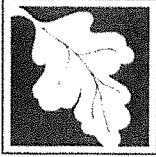
Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

Septic Repair Design Plan (No increase in design flow) 9/11/2023

Title Date

Title Date

Title Date



Massachusetts Department of Environmental Protection  
Bureau of Water Resources - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Bourne  
Municipality

**B. Determination (cont.)**

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

**Positive Determination**

Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

1. The area described on the referenced plan(s) is an area subject to jurisdiction under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.
- 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

- 2b. The boundaries of Wetlands Resource Area(s) and Buffer Zone(s) listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

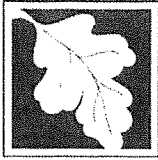
3. The work described on referenced plan(s) and document(s) is within an area subject to jurisdiction under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.
4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to jurisdiction under the Act. Therefore, said work requires the filing of a Notice of Intent
5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

\_\_\_\_\_  
Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Ordinance or Bylaw Citation



Massachusetts Department of Environmental Protection  
Bureau of Water Resources - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Bourne  
Municipality

**B. Determination (cont.)**

6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:
7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)(c) 2. for more information about the scope of alternatives requirements):
- Alternatives limited to the lot on which the project is located.
  - Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.
  - Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.
  - Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

**Negative Determination**




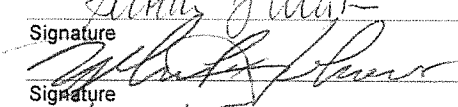
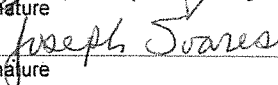
Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

1. The area described in the Request is not an area subject to jurisdiction under the Act or the Buffer Zone.
2. The work described in the Request is within an area subject to jurisdiction under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.
3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to jurisdiction under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).
4. The work described in the Request is not within an Area subject to jurisdiction under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to jurisdiction under the Act.



Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection - Wetlands  
**WPA Form 2 – Determination of Applicability**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**C. Authorization (cont.)**

Signatures:	
Signature 	
Signature _____	Printed Name _____
Signature 	Printed Name <u>Susan J. Weston</u>
Signature _____	Printed Name _____
Signature 	Printed Name <u>Merlin P. Adams</u>
Signature _____	Printed Name _____
Signature 	Printed Name <u>Joseph Soares</u>
Signature _____	Printed Name _____
Signature _____	Printed Name _____
Signature _____	Printed Name _____
Signature _____	Printed Name _____

**D. Appeals**

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see <https://www.mass.gov/service-details/massdep-regional-offices-by-community>) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.





Massachusetts Department of Environmental Protection  
Bureau of Water Resources - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Bourne  
Municipality

**B. Determination (cont.)**

5. The area described in the Request is subject to jurisdiction under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statutory/regulatory provisions)

6. The area and/or work described in the Request is not subject to additional review and approval by:

Bourne

Name of Municipality

Pursuant to a municipal wetlands' ordinance or bylaw.

Bourne Wetland Protection Bylaw

Name

Article 3.7

Ordinance or Bylaw Citation

**C. Authorization**

This Determination is issued to the applicant and delivered as follows:

- By hand delivery on

Date

- By certified mail, return receipt request on

9/25/2023

Date

9214 8901 9403 8331 3959 38

Certified Mail Number

A copy of this Determination has been sent on the same date, considered the date of issuance, to the appropriate DEP Regional Office and the property owner (if not the applicant) in the manner as follows:

**DEP**

- By eDEP DOA Submittal Platform (Attach this form and supporting documents)

- By USPS mail

Date

- By hand delivery

Date

**Property Owner (if not applicant)**

- By mail

Date

- By hand delivery

Date



# Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

See Cape Cod Commission Technical Bulletin 91-001 for further details: [https://sepscocommission.org/resource-library/files/turbid/dep/Commissioner/Website\\_Resources/Regulatory/NitrogenLoadTechBulletin.pdf](https://sepscocommission.org/resource-library/files/turbid/dep/Commissioner/Website_Resources/Regulatory/NitrogenLoadTechBulletin.pdf)

Facility Address: 55 Maryland Avenue  
Preparer's Name: Cape & Island Eng.  
Date: 9/7/2023  
Watershed: Pinneys Harbor

Project Nitrogen Load		Proposed Wastewater		New Construction/ Raze & Rebuild, Increases In Flow, or Repairs/ Upgrades		Existing Conditions	
1.	<p>Project Title-5 wastewater flows: <input type="text" value="660.0"/> gpd (a)</p> <p>Actual wastewater flows: <input type="text" value="175.0"/> gpd (b)</p> <p>Average wastewater flows: <input type="text" value="417.5"/> gpd (A)</p> <p>* Title-5 flows prescribed by 1951-001 for commercial uses</p> <p>Place <math>\checkmark</math> in applicable box:  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <input checked="" type="checkbox"/> Will the project be connected to sewer?  <input type="checkbox"/> Is project Title-5 wastewater flow 10,000 gpd or greater?</p> <p>Place <math>\checkmark</math> in applicable box and multiply unsewered wastewater flow by applicable conversion factor:            Standard Title-5 System (35-ppm-N) <input checked="" type="checkbox"/> 0.048359            DEP-approved I/A System (25-ppm-N) <input type="checkbox"/> 0.034542            DEP-approved I/A System (19-ppm-N) <input type="checkbox"/> 0.028252            DEP-approved Enhanced I/A (12-ppm-N) <input type="checkbox"/> 0.016580            Type of system: <input type="text" value="Fast 0.75 model"/> </p> <p>Wastewater nitrogen load (Title-5 flows) = <input type="text" value="17.23"/> kg-N/yr (B)</p> <p>Wastewater nitrogen load (Actual flows) = <input type="text" value="4.35"/> kg-N/yr (C)</p>	<p>Calculate (A) through (P) as w/ (A) through (P):</p> <p>Title-5 wastewater flows: <input type="text" value="660.0"/> gpd (A)</p> <p>Actual wastewater flows: <input type="text" value="175.0"/> gpd (B)</p> <p>Avg. wastewater flows: <input type="text" value="417.5"/> gpd (A)</p> <p>Place <math>\checkmark</math> in applicable box:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            Is existing development on sewer? (if 'Yes', then go to line 2.)</p> <p><input checked="" type="checkbox"/> Sub-Standard Title-5 System (Cesspool)  <input type="checkbox"/> DEP-approved I/A System (commercial)  <input type="checkbox"/> DEP-approved I/A System (residential)  <input type="checkbox"/> DEP-approved Enhanced I/A</p>	<p>Stormwater Runoff</p> <p>Town of Bourne Recharge rate for Bourne (inches; for natural areas from Technical Bulletin 91-001): <input type="text" value="21"/> (RECH)</p> <p>Project site area: <input type="text" value="0.944"/> acres (D)</p> <p>Project site wetland area: <input type="text" value="0.000"/> acres (E)</p> <p>Project site upland area: <input type="text" value="0.944"/> acres (F)</p> <p>Previous unpaired upland: <input type="text" value="0.799"/> acres (G)</p> <p>Previous unpaired upland: <input type="text" value="0.799"/> acres (G)</p> <p>Paved area: <input type="text" value="3.798"/> s.f. (H)</p> <p>Factor may be adjusted for employment of LID → LID = low/impact development</p> <p>Roof area: <input type="text" value="2.519"/> s.f. (I)</p> <p>Roof runoff offset: <input type="text" value="0.5377"/> kg-N/yr (J)</p> <p>Roof runoff offset: <input type="text" value="0.1783"/> kg-N/yr (K)</p>	<p>Fertilizer</p> <p>Previous unpaired upland - roof area = <input type="text" value="3.4019E-04"/> s.f.</p> <p>Managed turf/ lawn area = <input type="text" value="1.803"/> kg-N/yr (L)</p>	<p>Total Nitrogen Load</p> <p>Total project nitrogen load (Title-5 flows): <input type="text" value="19.85"/> kg-N/yr (M)</p> <p>Total project nitrogen load (Actual flows): <input type="text" value="7.11"/> kg-N/yr (N)</p> <p>Nitrogen load per acre (Average): <input type="text" value="14.27"/> kg-N/yr/acre (O)</p>	<p>Proposed Nitrogen Loading Concentration</p> <p>Project nitrogen loading concentration (Title-5 flows): <input type="text" value="6.14"/> ppm-N (P)</p> <p>Project nitrogen loading concentration (Actual flows): <input type="text" value="2.77"/> ppm-N (Q)</p> <p>Project nitrogen loading concentration (Average): <input type="text" value="4.46"/> ppm-N (R)</p>	<p>Existing nitrogen loading concentrations:</p> <p>Title-5 flows: <input type="text" value="10.65"/> ppm-N (P)</p> <p>Actual flows: <input type="text" value="4.28"/> ppm-N (Q)</p> <p>Average: <input type="text" value="7.47"/> ppm-N (R)</p>
<p>Calculate (A) through (P) as w/ (A) through (P):</p> <p>(M) = (B)+(I)+(K)+(L)</p> <p>(N) = (C)+(H)+(K)+(L)</p> <p>(O) = (M)+(N) * 2 *(F)</p> <p>(P) = (A)-(723.76 + (G)*(RECH)+3.7288 + (H)+10.594 + (K)+0.75</p> <p>(Q) = (B)-(723.76 + (G)*(RECH)+3.7288 + (H)+10.594 + (K)+0.75</p> <p>(R) = (P)/(O) * 2</p>		<p>next page --&gt;</p>					

**Resource Impact Based Criteria**

**Marine Water Recharge Areas / Coastal Embayments**

2.  Yes  No  
 Is the project located in any of the following watersheds: Buttermilk Bay Basins, Phinneys Harbor / Back River / Esal Pond, Pocasset River Basin, Pocasset Harbor / Hen Cove / Red Brook Harbor, Megansett / Squeteague Harbors\*\*?  
 (If 'No', then go to line 3.)

Name of Watershed (from Regional Policy Plan Data Viewer): **Back River / Phinneys Harbor**

Critical Nitrogen-loading limit\*\* :  kg-N/year/acre (S)

Does project's nitrogen load (O) exceed the existing load (OT) AND the critical nitrogen load (S)?  Yes  No  
 (If 'No', then go to line 3.)

Excess project nitrogen load to be mitigated:  kg-N/yr (T) = LESSER OF (O)-(S) x(F) AND (O)-(OT) x(F)

\*\* When a nitrogen-loading limit has been determined through either a Total Maximum Daily Load (TMDL), a Massachusetts Estuaries Project-accepted technical report, or specified by a Commission-approved comprehensive wastewater management plan pursuant to Objective WR3, or if impaired water quality has been documented for the receiving coastal waters, the nitrogen loading limit shall be 0 kg-N/yr per acre pursuant to Objective WR3.

**Groundwater Quality**

3.  Yes  No  
 Does the project's nitrogen loading concentration in groundwater (R) exceed the greater of 5 ppm or the existing concentration (R)?  
 (If 'Yes', the project will need to provide an alternative strategy for meeting these thresholds by using another worksheet)

**Potential Public Water Supply Areas**

4.  Yes  No  
 Is project in a Potential Public Water Supply Area (PPWSA)?  
 (If 'No', then go to line 5.)

Does the project's nitrogen loading concentration (R) exceed the greater of 1 ppm or the existing concentration (R)?  
 (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities?  
 (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

**Wellhead Protection Areas**

5.  Yes  No  
 Is project in a Wellhead Protection Area (WHPA)?

Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm or the existing concentration (R)?  
 (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities?  
 (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

**Fresh Water Recharge Areas**

6.  Yes  No  
 Is project wastewater disposed of within 300 feet of a stream or fresh surface water body?  
 (If 'No', then go to line 7.)

Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body?  
 (If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)

**Other Potential Impacts**

7.  Yes  No  
 Will the project withdraw more than 20,000 gallons of water per day?  
 (If 'Yes', then the project must provide documentation demonstrating that there will not be significant impacts to water levels, surface waters and wetlands)

8.  Yes  No  
 The project must demonstrate compliance with Objective WR4, including use of Low Impact Development to mitigate impacts of stormwater runoff and O & M plans for maintaining stormwater infrastructure and landscaping.



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

Matthew A. Beaton  
Secretary

Martin Suuberg  
Commissioner

### **CERTIFICATION FOR GENERAL USE**

Pursuant to Title 5, 310 CMR 15.000

#### **Name and Address of Applicant:**

Bio-Microbics, Inc.  
8450 Cole Parkway  
Shawnee, KS 66227

#### **Trade name of technology and models:**

FAST Treatment Systems with Nitrogen Reduction including models *MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0*, *HighStrengthFAST® 1.0, 1.5, 3.0, 4.5, 9.0* and *NitriFAST® 0.5, 0.75, 1.0, 1.5, 3.0, 4.5, 9.0* (all hereinafter the "System") for facilities with design flows less than 2,000 gallons per day (GPD). Schematic drawings illustrating the models and an Inspection Checklist are part of this Certification.

Transmittal Number: X232831  
Date of Issuance: December 29, 2010, revised March 20, 2015

#### **Authority for Issuance:**

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection (hereinafter "the Department") hereby issues this General Use Approval to: Bio-Microbics, Inc., 8450 Cole Parkway, Shawnee, KS 66227 (hereinafter "the Company"), approving the above referenced FAST technology (hereinafter "the Technology" or "System") for use in the Commonwealth of Massachusetts subject to the conditions herein. Sale and use of the Technology are subject to compliance by the Company, the Designer, the System Installer, the Operator, and the System Owner with the terms and conditions herein. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

\_\_\_\_\_  
David Ferris, Director  
Wastewater Management Program  
Bureau of Water Resources

March 20, 2015  
Date

#### **I. Purpose**

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370  
MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

Printed on Recycled Paper

1. Subject to the conditions of this Approval and any other local requirements, the purpose of this Approval is to allow the use of the System in Massachusetts on a General Use basis. With the necessary permits and approvals required by 310 CMR 15.000, this Certification authorizes the installation and use of the System in Massachusetts.
2. The System may be installed for residential facilities with design flow less than 2,000 GPD where a system in compliance with 310 CMR 15.000 exists on-site or could be built and for which a site evaluation in compliance with 310 CMR 15.000 has been approved by the local approving authority; or by the Department if Department approval is required by 310 CMR 15.000. This Approval allows for the use of the System as an equivalent alternative technology in accordance with 310 CMR 15.202 on facilities for nitrogen reduction in a Department designated nitrogen sensitive or limited area as defined in 310 CMR 15.214 and 15.215.

Non-residential facilities are not allowed under this approval. Non-residential facilities include properties with businesses and/or commercial establishments.

3. The technology shall meet or exceed the following effluent discharge requirements:
  - Effluent Total Nitrogen (TN) concentration of 19 mg/L (for 660 gallons per day per acre -gpda- loading) or 25 mg/L (for 550 gpda loading).
  - Effluent pH range shall be 6.0 to 9.0.
  - The System is approved for use at facilities with a maximum design flow less than 2,000 GPD.
4. The System Owner or the designated System Operator (or 'Operator') has responsibility for oversight and sampling of the System if the property served was allowed to increase the discharge rate per acre above 440 gpda in an area subject to Nitrogen Loading Limitations.

The System Owner will be required to repair, replace, modify or take any other action as required by the Department or the local approving authority, if the Department or the local approving authority determines that the System is not capable of meeting the required reduction in nitrogen in the effluent.

The Company is responsible for the approved technology as described below.

## **II. General Description of the Technology and Design Standards**

1. The tank containing the FAST® insert is installed between the building sewer and the soil absorption system (SAS). The SAS shall be designed and constructed in accordance with 310 CMR 15.100 - 15.279 and subject to the provisions of this Certification.
2. Technology Description - The FAST® system is an aerobic wastewater treatment system that utilizes a completely submerged fixed film process to treat organics and nitrify, and a passive recycle system for denitrification. Each model contains submerged media specific to the application. Microorganisms grow on the media and remove soluble contaminants from the wastewater, utilizing them as a source of energy for growth and production of new microorganisms. The FAST® system insert consists of a liner around the media and an airlift to provide aeration and mixing within the confines of the liner. The area outside the liner in the septic tank remains anoxic for denitrification and a passive recirculation system

moves the aerated wastewater to the outside of the liner to obtain denitrification. The aeration and circulation inside the liner are provided by a blower that pumps air into a draft tube that extends down the center of the media. Treated effluent passes out of the aerobic zone of the treatment plant through a pipe connected directly to a baffled quiescent area in the liner. Final effluent is discharged to a soil absorption system. Specific model considerations are as follows:

- The MicroFAST® 0.5, 0.75 and 0.9, HighStrengthFAST® 1.0 and NitriFAST® 0.5, 0.75 and 0.9 are installed in the second compartment of a two-compartment tank with a total liquid capacity of at least 1,500 gallons constructed in accordance with 310 CMR 15.226.
  - The MicroFAST®, HighStrengthFAST® and NitriFAST® 1.5 are installed in the second compartment of a two compartment 3000-gallon tank constructed in accordance with 310 CMR 15.226.
  - The MicroFAST®, HighStrengthFAST® and NitriFAST® 3.0 is installed in a separate tank constructed in accordance with 310 CMR 15.226 and located between a standard Title 5 septic tank, designed in accordance with 310 CMR 15.223 and 15.224, and the soil adsorption system (SAS). In this larger system, an additional recycle pump may be needed to send nitrified effluent back to the septic tank for added denitrification. Consult the Company for proper layout.
  - The NitriFAST® models can also be used for additional nitrification in series after the MicroFAST® models or HighStrengthFAST® models. In this configuration the tanks used for the NitriFAST® shall be constructed in accordance with 310 CMR 15.226 and meet the minimum dimensions and volumes required by the Company.
  - Flow equalization may also be employed prior to the FAST® system depending on the type of facility. Consult Company for proper layout.
3. All access ports and manhole covers shall be readily removable, of durable material and installed and maintained at grade to allow for maintenance of the System. No structures shall be located directly upon or above the access locations which could interfere with performance, access, inspection, pumping, or repair. Sufficient access for infrequent maintenance of the System treatment media and all other treatment works shall be evaluated, and addressed in the System design if necessary, by the designer. System control panel(s) including alarms shall be mounted in a location accessible to the operator of the System.

4. Wastewater Loading and Effluent Concentration Design Standards

For new residential construction in an area subject to the Nitrogen Loading Limitations of 310 CMR 15.214, and the facility does not meet with the Nitrogen Loading Limitations pursuant to the aggregation provisions of 310 CMR 15.216, an increase in calculated nitrogen loading per acre is allowed for facilities with design flow less than 2000 gpd with limitations as follows:

- The design flow shall not exceed 660 gallons per day per acre (gpda) and the total nitrogen (TN) concentration in the effluent shall not exceed 19 milligrams per liter (mg/L); or

- The design flow shall not exceed 550 gallons per day per acre (gpda) and the total nitrogen (TN) concentration in the effluent shall not exceed 25 milligrams per liter (mg/L).
- TN is measured as the total of TKN (Total Kjeldhal Nitrogen), NO<sub>3</sub>-N (Nitrate nitrogen) and NO<sub>2</sub>-N (Nitrite nitrogen).

### **III. General Conditions**

1. The provisions of 310 CMR 15.000 is applicable to the use and operation of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Certification.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by an independent U.S. EPA or DEP approved testing laboratory, or a DEP approved independent university laboratory, unless otherwise provided in the Department's written approval. It shall be a violation of this Certification to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
3. The facility served by the System and the System itself, shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
4. In accordance with applicable law, the Department and the local approving authority may require the System owner to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare or the environment.
5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sanitary sewer system. Accordingly, no System shall be upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004.
6. Design, installation, and use of the System shall be in strict conformance with the Company's DEP approved plans and specifications and 310 CMR 15.000, subject to this Certification.

### **IV. Conditions Applicable to the System Owner**

1. The System owner shall at all times have the System properly operated and maintained by a Company approved Operator in accordance with this Certification, the designer's operation and maintenance requirements and the Company's approved procedures.
2. The System is certified only in connection with the discharge of sanitary wastewater from facilities with a design flow of less than 2000 gpd. Any non-sanitary wastewater generated and/or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed of.

3. The System Owner shall provide access to the site for the System Operator to perform inspections, maintenance, repairs, responding to alarm events, field testing, and sampling as may be required by the Approval.

Operation and Monitoring Requirements

4. System effluent total nitrogen (TN) concentrations shall not exceed 19 or 25 mg/L and effluent pH shall not be less than 6.0 or more than 9.0. Field test observations of dissolved oxygen (DO) shall equal or exceed 2 mg/L and for Turbidity shall be equal or less than 40 NTU.
5. All samples shall be taken at a flowing discharge point, i.e. distribution box, pipe entering a pump chamber or other Department approved location from the treatment unit.
6. Inspection, operation and maintenance (O&M), sampling, and field testing of the System required by the Approval shall be performed by a Company approved Operator who has been certified at a minimum of Grade Level 4 (four) by the Board of Registration of Operators of Wastewater Treatment Facilities, in accordance with Massachusetts regulations 257 CMR 2.00, and is an approved Title 5 System Inspector in accordance with 310 CMR 15.340.
7. Prior to commencement of construction of the System, the System Owner shall provide to the local approving authority a copy of a signed O&M Agreement that meets the requirements of paragraph IV (8).
8. The System Owner shall maintain, at all times, an O&M Agreement with a qualified System Operator approved by the Company. The Agreement shall be at least for one year and include the following provisions:
  - a) The name of a System Operator who is an approved System Inspector in accordance with 310 CMR 15.340 and who meets any additional qualification requirements specified in the Approval;
  - b) The System Operator must inspect the Alternative System as required by paragraph IV (9) and (12);
  - c) The System Operator shall be responsible for submitting the monitoring results to the System Owner in accordance with paragraph IV (13) and to the local approving authority in accordance with paragraph IV (14); and
  - d) In the case of a System failure, an equipment failure, alarm event, components not functioning as designed, or violations of the Approval, procedures and responsibilities of the System Operator and System Owner shall be clearly defined for corrective measures to be taken immediately. The System Operator shall agree to provide written notification within five days, describing corrective measures taken, to the System Owner and the local board of health.
9. The System Owner shall comply with the following monitoring requirements if the System is subject to a TN concentration limit in accordance with paragraph II (4):



- a) Year-round installations shall be inspected and have effluent sampled for at least the TN parameter quarterly for the first year, then a minimum of twice/year thereafter, at least 5 months apart and with at least one sample taken between December 1 and March 1 of each year. Field testing shall be completed per paragraph IV (11) below, and as determined necessary by the System Operator. See DEP Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#t5pols>. Wastewater flow shall be recorded at each inspection, see 'Flow Metering' paragraph IV (10).
- b) Seasonal installations shall be inspected and have effluent sampled for at least the TN parameter a minimum of twice/year. At least one sample must be taken 30 to 60 days after each seasonal occupancy begins. A second sample must be taken no less than 2 months after the first sample. Field testing shall be completed per paragraph IV (11) below, and as determined necessary by the System Operator. Wastewater flow shall be recorded at each inspection, see 'Flow Metering' paragraph IV (10).
- c) Systems in operation prior to issuance of this Approval, which have received approval of sampling reduction from the Department may continue with that System monitoring frequency.

Properties occupied at least 6 months per year are considered year-round properties. Properties occupied less than 6 months per year are considered seasonal properties.

TN is measured as the total of TKN (Total Kjeldhal Nitrogen), NO<sub>3</sub>-N (Nitrate nitrogen) and NO<sub>2</sub>-N (Nitrite nitrogen).

10. Flow Metering: Reporting of residential System water use is not required, however it is recommended the Operator record water meter readings if available at all inspections, or otherwise estimate System flow, to assist in addressing possible operational problems or issues. Flow measurement when recorded shall be based on:
  - a) actual metering data of wastewater flow to the System or actual water meter data of flow to fixtures that discharge to the wastewater system; or
  - b) actual water meter data for the total facility with either actual meter data or estimated flows for non-wastewater usage subtracted from the total facility water usage. If estimating the wastewater portion of metered water usage, the System Operator shall provide a best estimate of wastewater discharged to the System with the method of estimating, such as pump run times, occupancy rates, adjustment due to seasonal outdoor watering use, etc.; or
  - c) for Systems installed under a prior Approval that did not include a wastewater flow data reporting requirement, if no flow meters are available, the System Operator shall provide a best estimate of wastewater discharged to the System with the method of estimating, such as pump run times, occupancy rate, etc.
11. Field Testing: Temperature, turbidity, pH and DO shall be measured and recorded in the field whenever the effluent is sampled for TN. See applicable sections of the Department's Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#t5pols>.

12. At a minimum, the System Operator shall inspect the System:
  - a) quarterly for the first year then two times per year thereafter;
  - b) in accordance with the approved O&M manual, the Designer's operation and maintenance requirements, and the requirements of the local approving authority; and
  - c) any time there is an alarm event, equipment failure, or system failure.

Recordkeeping and Reporting

13. Within 60 days of any site visit, the System Operator shall submit an O&M report and inspection checklist to the System Owner and the Company. It is recommended the System Owner and Company maintain copies of these items for possible Department audit. The O&M report shall include, at a minimum:
  - a) for a System failing, any corrective actions taken;
  - b) wastewater analyses, wastewater flow data, field testing results and inspection checklists;
  - c) any violations of the Approval;
  - d) any determinations that the System or its components are not functioning as designed or in accordance with the Company specifications; and
  - e) any other corrective actions taken or recommended.
14. By February 15th of each year the System Owner or the System Operator if designated by the owner, shall submit to the local approving authority all monitoring results with all O&M reports and inspection checklists completed by the System Operator during the previous 12 months.
15. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Operator shall notify the System Owner immediately.
16. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Owner and the System Operator shall be responsible for the notification of the local approving authority within 24 hours of such determination.
17. The System Owner shall notify the Approving Authority and the Company in writing within seven days of any cancellation, expiration or any other change in the terms and/or conditions of the O&M Agreement required by Paragraph IV (8).
18. Violations of the TN concentration in the System effluent shall not constitute a failure of the System for the purposes of 24-hour notification or 5-day written reporting as required in Paragraphs IV (16) and (8).
19. The System owner shall provide a copy of this Approval, prior to the signing of a purchase and sale agreement for the facility served by the System or any portion thereof, to the proposed new owner.

20. The System owner shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
21. Prior to issuance of a Certificate of Compliance of the System, and after recording and/or registering the Notice required by 310 CMR15.287(10), the System Owner shall provide to the Local Approving Authority a copy of: (i) a certified Registry copy of the Notice bearing the book and page/or document number; and (ii) if the property is unregistered land, a Registry copy of the System Owner's deed to the property, bearing a marginal reference on the System Owner's deed to the property. The Notice to be recorded shall be in the form of the Notice provided by the Department.
22. Prior to signing any agreement to transfer any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the System Owner shall provide written notice of all conditions contained in the Approval to the transferee(s). Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part of thereof a copy of the Approval for the System. The System Owner shall send a copy of such written notification(s) to the Local Approving Authority within 10 days of giving such notice to the transferee(s).

**V. Conditions Applicable to the Company**

1. The Company shall notify the Director of the Wastewater Management Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Certification is issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Certification applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.
2. The Company shall develop maintain and update as necessary the following: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; a maintenance checklist; and a recommended schedule for maintenance of the System consistent with the Department's requirements essential to consistent successful performance of the installed Systems.
3. The Company shall institute and maintain a program of operator training and continuing education. The Company shall maintain and annually update, and make available the list of qualified operators by February 15th and make the list known to local approving authorities, the Department and to users of the technology.
4. The Company shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
5. The Company shall include copies of this Certification and the procedures described in Section V (3) with each System that is sold. In any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Certification and the procedures described in Section V (3).

6. A copy of the wastewater analyses, wastewater flow data, field testing results, and System Operator O&M reports and inspection checklists from each installed System shall be maintained by the Company or its designee for possible Department audit.
7. If the Company wishes to continue this Certification after its expiration date, the Company shall apply for and obtain a renewal of this Certification. The Company shall submit a renewal application at least 180 days before the expiration date of this Certification, unless written permission for a later date has been granted in writing by the Department. This Certification shall continue in force until the Department has acted on the renewal application.

## **VI. Conditions Applicable to the System Designer**

1. Upon submission of an application for a DSCP, the Designer shall provide to the local approving authority:
  - a) a certification, signed by the owner of record for the property to be served by the System, stating that the property owner:
    - i) has been provided a copy of the Approval, the Owner's Manual, and the Operation and Maintenance Manual, if applicable, and the Owner agrees to comply with all terms and conditions;
    - ii) has been informed of all the owner's costs associated with the operation including, when applicable: power consumption, maintenance, sampling, recordkeeping, reporting, and equipment replacement;
    - iii) understands the requirement for a service contract;
    - iv) agrees to fulfill his responsibilities to provide a Deed Notice as required by 310 CMR 15.287(10) and the Approval;
    - v) agrees to fulfill his responsibilities to provide written notification of the Approval to any new owner, as required by 310 CMR 15.287(5);
    - vi) if the design does not provide for the use of garbage grinders, the restriction is understood and accepted;
    - vii) if the design is for an upgrade of failed or nonconforming system, the System Owner has been provided a copy of the evaluation of the existing system;
    - viii) whether or not covered by a warranty, the System Owner understands the requirement to repair, replace, modify or take any other action as required by the Department or the local approving authority, if the Department or the local approving authority determines that the Alternative System is not capable of meeting the performance standards; and
  - b) a certification, signed by the Designer that the design conforms to the Approval with Conditions and 310 CMR 15.000.

## **VII. Reporting**

1. All notices and documents required to be submitted to the Department by this Certification shall be submitted to:

Director  
Wastewater Management Program  
Department of Environmental Protection,  
One Winter Street - 5th floor  
Boston, Massachusetts 02108

**VIII. Rights of the Department**

1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, non-compliance with the terms of this Certification, non-payment of the annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Certification, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Certification and/or the System against the owner or operator of the System and/or the Company.

# NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM

M.G.L. c. 21A, § 13 and 310 CMR 15.0287(10)

**ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:** 55 Maryland Avenue, Bourne, MA

**TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM** *[check and complete each that applies]:*

- Deed recorded with the BARNSTABLE Registry of Deeds in Book 19415, Page 844  
 Certificate of Title No. 231961 issued by the Land Registration Office of the BARNSTABLE Registry District  
 Source of title other than by deed \_\_\_\_\_

**NAME(S) OF OWNER OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:** Bruce Tofias

**OWNER(S) MAILING ADDRESS:** 76 Plain Road, Wayland, MA 01778

WHEREAS, Section 15.280 of Title 5 of the State Environmental Code (“Approval of Alternative Systems”), provides for the Massachusetts Department of Environmental Protection (the “Department”) to approve or certify, as appropriate, all proposals to construct, upgrade or replace on-site sewage disposal systems using alternative systems;

WHEREAS, owners and/or operators of approved or certified alternative systems are subject to general conditions, as specified in Section 15.287 of Title 5 of the State Environmental Code, 310 CMR 15.287, and may be subject to special conditions, as specified in the Department’s approvals or certifications; such general and special conditions potentially including, without limitation, requirements relating to the use of trained operators, periodic inspections, maintenance, sampling, reporting and/or recordkeeping;

WHEREAS, the owners and/or operators this alternative system acknowledges and agrees to comply with the provisions of all of the Bourne Board of Health Alternative Septic System Regulations and any other conditions for the existence of the system;

WHEREAS, Section 15.287(10) of Title 5 of the State Environmental Code, 310 CMR 15.287(10), requires that “prior to obtaining a Certificate of Compliance for installation of a new or upgraded system, the system owner shall record in the chain of title for the property served by the alternative system in the Registry of Deeds and/or Land Registration Office, as applicable, a Notice disclosing both the existence of the alternative on-site system and the Department’s approval of the system. The system owner shall also provide evidence of such recording to the Bourne Board of Health [;]” and

WHEREAS, the Property is served by an alternative sewage disposal system.

NOW, THEREFORE, Notice of an alternative sewage disposal system is hereby given for the above-referenced Property, as follows:

**1. Existence.** An alternative system has been installed as a new or upgraded alternative sewage disposal system, on or adjacent to the Property, and serves the Property. The trade name and model number(s) of the alternative system are as follows:

**Trade name of technology:** Fast Treatment System with Nitrogen Reduction

**Manufacturer Name:** Bio-Microbics, Inc.

**Model number(s):** MicroFast 0.75

A copy of the Department of Environmental Protection's Approval/Certification is available online at the Department's website:

<https://www.mass.gov/guides/title-5-innovativealternative-technology-approval-letters>

**2. Approval/Certification.** On March 20, 2020 [date], the Department, pursuant to its authority under the section of Title 5 as specified below, approved or certified the technology used in the above referenced alternative system, under MassDEP Transmittal Number X232831 [Transmittal Number].

[Check one of the following, as applicable:]

- Approved for remedial use under 310 CMR 15.284
- Approved for piloting under 310 CMR 15.285
- Provisionally approved under 310 CMR 15.286
- Certified for general use under 310 CMR 15.288

**\*\*This Notice of Alternative Sewage Disposal System must be submitted to the Bourne Board of Health\*\***

WITNESS the execution hereof under seal this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, made by the above-named Alternative System Owner(s).

\_\_\_\_\_  
[Alternative System Owner(s) Signature(s)]

Print Name(s): Bruce Tofias

COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, ss

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_ (name of document signer), proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

\_\_\_\_\_  
(Official signature and seal of notary)

Approved and Accepted By:

\_\_\_\_\_  
Terri Guarino, R.S., C.H.O.  
Health Director  
Town of Bourne

Wastewater Treatment Services, Inc.

44 Commercial Street  
Raynham, MA 02767

Tel: (508) 880-0233  
Fax: (508) 880-7232

September 8, 2023

**DRAFT**

Bruce Tofias  
76 Plain Road  
Wayland, MA 01778

Subject: BioMicrobics FAST® System  
55 Maryland Avenue - Bourne, MA

Dear Bruce,

Enclosed is the Inspection & Testing Agreement for the FAST® Treatment System to be located at the above referenced address.

The annual maintenance cost of this agreement is \$XXXX per year. The cost for the first year's testing is \$XXXX. **This will need to be paid in advance to Wastewater Treatment Services, Inc. and returned with the signed Inspection & Testing Agreement to our Raynham office prior to the order being processed.**

Your property is subject to a \$XXXX/year fee for the Barnstable County Septic Management Program. As your provider, we are required to collect this fee on their behalf. This fee is included in the total amount due below.

Thank you for your order and we look forward to working with you. If you should require any additional information please do not hesitate to call or write.

Sincerely,

*Wastewater Treatment Services, Inc.*

Please make check payable to:

Wastewater Treatment Services, Inc.  
Agreement & Testing Fee: \$XXXX  
Barnstable County Fee: \$XXXX  
Total Amount Due: \$XXXX



**INSPECTION AND TESTING AGREEMENT**

Agreement entered into by and between **Wastewater Treatment Services, Inc.** (herein called **WTS**) and the **FAST® System OWNER** (herein called **OWNER**) for the inspection by **WTS** of certain equipment of **OWNER** which is described below.

Upon acceptance of this agreement at **WTS's** office, **WTS** will render the following services only:

Equipment will be inspected at least 2 times per year that this Agreement remains in effect, with the first inspections beginning \_\_\_\_\_. These inspections will include:

- 1) Testing of the sludge depth in the septic tank.
- 2) Inspection, power testing and clean/replace intake filter of the air blower.
- 3) Inspection of the alarm system.
- 4) Inspect overall condition of **FAST®** System.
- 5) Notify **OWNER** of any problems encountered.
- 6) Service other than routine maintenance will be billed at an hourly rate, plus travel and parts.

**WTS** shall notify the local Board of Health and Department of Environmental Protection in writing within 24 hours of a system failure or alarm event including corrective measures that have been taken.

**OWNER** will be billed standard **WTS** charges for any parts used in repairs or maintenance. Any additional labor time will be billed to the **OWNER** at current labor rates.

Emergency service between regular inspections will be provided at standard labor rates during normal business hours; at time and one-half after 5:00 PM and on Saturdays; and at double time on Sundays and holidays. Emergency service charges will include a minimum four (4) hours of labor, plus standard **WTS** charges for parts, plus mileage and travel charges. The annual rate includes routine maintenance, but does not include repairs required for damages caused by abuse, accident, theft, acts of third persons, forces of nature, or alterations made to the equipment. **WTS** shall not be responsible for failure to render the agreed services if caused by strikes, labor disputes, non-cooperation by **OWNER**, or other factors beyond the control of **WTS**.

**OWNER** understands and agrees that **WTS** is not responsible for special, incidental or consequential damages, including but not limited to loss of time, injury to person or property, or equipment failure.

**OWNER** agrees that **WTS** may enter **OWNER's** property and have acceptable access to all areas deemed by **WTS** to be necessary or appropriate for **WTS** to perform its duties hereunder.

Current **WTS** practice is to send **OWNER** approximately 10 days before expiration of the term of the current contract an invoice for one year of service. It is **OWNER's** responsibility to timely return the payment. **WTS** must receive the payment before expiration of the current contract year to assure continuous contract coverage.

Failure to return payment may result in suspension of service, cancellation of the contract and/or nullification of warranties, at the election of WTS. OWNER may not assign this contract without the prior written consent of WTS. It will remain in force until a party cancels by written notice to the other at the address given herein.

<u>MANUFACTURER</u>	<u>MODEL NO.</u>	<u>SERIAL NO.</u>	<u>LOCATION</u>	<u>ANNUAL RATE</u>	<u>PERMIT</u>
Bio-Microbics	MicroFAST .5		Bourne, MA	\$XXXX (Includes Field Testing)	General

EQUIPMENT OWNER Wastewater Treatment Services, Inc.

**DRAFT**

\*Signed by OWNER: \_\_\_\_\_

Signed: \_\_\_\_\_

Bruce Tofias  
55 Maryland Avenue  
Bourne, MA 02532

44 Commercial Street  
Raynham, MA 02767  
Tele: (508) 880-0233  
Fax: (508) 880-7232

Telephone: \_\_\_\_\_

Effective Date of Agreement \_\_\_\_\_

E-mail address: \_\_\_\_\_

OWNER understands that this is a one year contract and (1) ANNUAL RATE payment is for one year only commencing on the effective date set forth above and is non-refundable; (2) Current DEP Regulations require OWNER to maintain a service agreement for the life of the FAST® System; and (3) ANNUAL RATE is subject to changed based on current WTS rates. **I HAVE READ AND UNDERSTAND THE FOREGOING.**

\*Signed by OWNER: \_\_\_\_\_

**Field Testing**

Onsite testing performed 2 times per year will be used to demonstrate that the systems are operating at a secondary treatment standard of 30 mg/L of BOD5 and TSS. The following will be performed:

- 1) Visual examination of the effluent for color, turbidity and effluent solids.
- 2) Effluent pH to determine if the waste water is between 6 and 9 standard units.
- 3) Dissolved Oxygen, 2mg/L or more, to ensure that the system is operating.
- 4) Turbidity, less than or equal to 40 NTU.

If the effluent does not meet effluent quality standards, a grab sample will be collected for laboratory analysis. Results sent to state and local Agencies as well as the OWNER. OWNER is responsible for providing acceptable access to effluent for field testing and/or to enable a grab sample to be taken for laboratory testing performed. If such laboratory sample is required, OWNER will be responsible for charges incurred. **IF REQUIRED, THE COST FOR THIS ADDITIONAL TESTING WILL BE \$200/VISIT.**

**Effluent Testing**

Town Requirements are two (2) grab samples per year for pH, BOD, TSS, Nitrate, Nitrite, and TKN at a cost of \$XXXX/visit.

\*Approval for Testing \_\_\_\_\_  
Owner's Signature

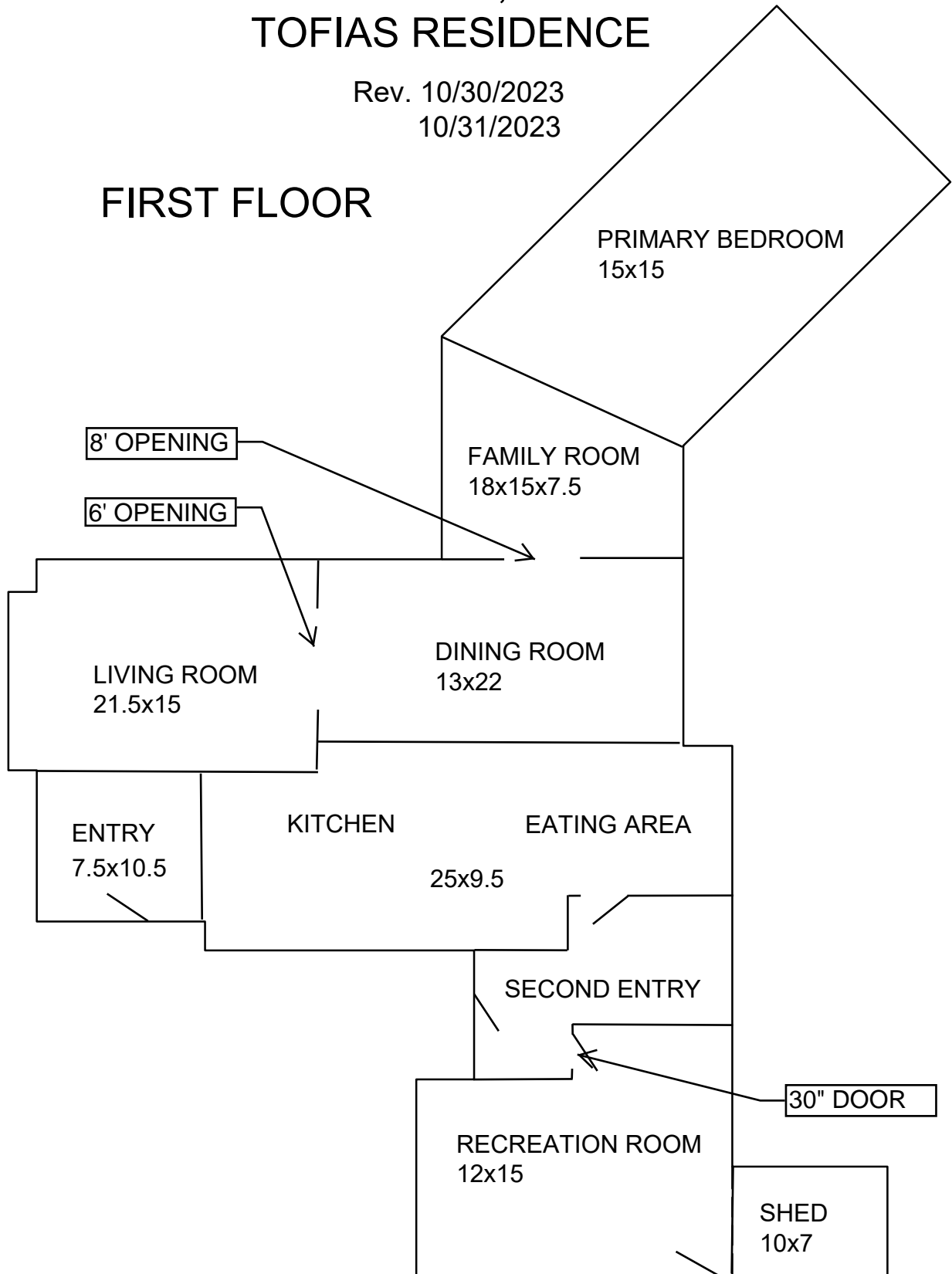
Operator assigned: Michael Moreau  
Telephone: (508) 880-0233

**\*Your property is subject to a yearly fee for the Barnstable County Septic Management Program\***

55 MARYLAND AVE., MONUMENT BEACH  
BOURNE, MA  
TOFIAS RESIDENCE

Rev. 10/30/2023  
10/31/2023

FIRST FLOOR



**RECEIVED**

By Bourne Health Department at 10:15 am, Oct 31, 2023

55 MARYLAND AVE., MONUMENT BEACH  
BOURNE, MA  
TOFIAS RESIDENCE

Rev. 10/30/2023

SECOND FLOOR

