



## Technical Guidance Committee Meeting

### Minutes

Thursday, August 20, 2015

**Teleconference**  
**Department of Environmental Quality**  
**1410 North Hilton**  
**Boise, Idaho**

#### **TGC ATTENDEES:**

Tyler Fortunati, REHS, On-Site Wastewater Coordinator, DEQ  
Joe Canning, PE, B&A Engineers  
Bob Erickson, REHS, Senior Environmental Health Specialist, SCPHD (via telephone)  
Dale Peck, PE, Environmental & Health Protection Division Administrator, PHD (via telephone)  
Michael Reno, REHS, Environmental Health Supervisor, CDHD (via telephone)

#### **GUESTS:**

Chas Ariss, PE, Wastewater Program Engineering Manager, DEQ  
Tammarra Golightly, Administrative Assistant, DEQ  
Ryan Spiers, Alternative Wastewater Systems, LLC (via telephone)  
Sheryl Ervin, Bio-Microbics, Inc. (via telephone)  
Allen Worst, R.C. Worst & Company, Inc. (via telephone)

#### **CALL TO ORDER/ROLL CALL:**

Meeting called to order at 9:33 a.m.  
Committee members and guests introduced themselves.

#### **OPEN PUBLIC COMMENT PERIOD:**

This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.

No public comment were submitted during the allotted agenda timeframe.

#### **NEW BUSINESS/DRAFT REVIEW**

##### **1.4.2.2 Extended Treatment Package System Approvals**

There were no questions or comments from the committee regarding this policy revision.



**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 1.4.2.2 Extended Treatment Package System Approvals as presented.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

See **Appendix A** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at [tyler.fortunati@deq.idaho.gov](mailto:tyler.fortunati@deq.idaho.gov).

#### **5.4 Extended Treatment Package Systems**

The committee had general questions on how a manufacturer's product would be moved from provisional approval to general approval. Tyler Fortunati stated that a manufacturer would have to be in contact with DEQ regarding their systems and the data being collected. After the manufacturer obtained the necessary data DEQ would review it and make a decision on general approval.

Dale peck inquired as to whether those manufactures with or without systems installed in Idaho currently on the provisional approval list would be removed after two years if they didn't obtain the necessary data or weren't in the process of obtaining it. Tyler Fortunati stated that this would be the case. After finalization of the proposed Extended Treatment Package System policy DEQ would notify those manufacturers of the changes to the program and the requirements they would need to meet to remain on the provisional approval list.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 5.4 Extended Treatment Package Systems as presented.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

See **Appendix B** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at [tyler.fortunati@deq.idaho.gov](mailto:tyler.fortunati@deq.idaho.gov).

#### **5.13 Total Nitrogen Reduction Approvals**

Tyler Fortunati explained that the total nitrogen reduction policy currently listed in section 8.6 of the TGM would be transitioned to a total nitrogen reduction approval list. The committee had questions as to how the operation and maintenance for the public domain systems would be relayed. Tyler Fortunati stated that it would be specified in the public domain system's design guidance as it currently is. The same would go for any other system included on the list and manufacturers' products would either contain the operation and maintenance requirements in their approved listing or in the guidance covering the system's classification.



Bob Erickson questioned why the sand mound was not included on the public domain systems list. Tyler Fortunati stated that it was never historically included on this list. Bob Erickson requested that DEQ provide the TGC a review of data obtained from literature on the sand mound's total nitrogen reduction abilities.

**Action Item:** Obtain total nitrogen reduction data for sand mounds and provide the information to the committee for consideration of inclusion on the Total Nitrogen Reduction Approvals list.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 5.13 Total Nitrogen Reduction Approvals as presented.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

See **Appendix C** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at [tyler.fortunati@deq.idaho.gov](mailto:tyler.fortunati@deq.idaho.gov).

#### **1.4.2.4 Proprietary Product Approval Policy**

Tyler Fortunati provided the committee an overview of a proposed addition to the policy that specifies functional design and treatment similarities to single-pass or recirculating media filters for any product that is submitted for review under this policy. The proposed addition also excludes products from consideration under the policy that have mechanical components that are in excess of a single-pass or recirculating media filter or those products that may allow wastewater to pass through the system untreated. The committee accepted this addition to the policy.

Dale Peck requested that the term operation and maintenance entity be replaced with approved service provider throughout the policy.

The committee held general discussion regarding how DEQ and the TGC would determine the treatment capabilities or a system and maintenance needs. Tyler Fortunati stated that the TGC is capable of requiring a manufactured product submitted for review under the proprietary product policy to undergo the two-level approval process that extended treatment package systems would have to go through. Tyler Fortunati also stated that operation and maintenance needs of a product would be determined on a case-by-case basis by the TGC and could be as simple as a property owner or more involved with managed maintenance through an approved service provider.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 1.4.2.4 Proprietary Product Approval Policy as amended.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.



See **Appendix D** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at [tyler.fortunati@deq.idaho.gov](mailto:tyler.fortunati@deq.idaho.gov).

### **5.14 Proprietary Wastewater Treatment Products**

Dale Peck requested that a comment column be added to the table listing the approvals. The committee felt that they wouldn't know exactly what should be included on the table until they had a product to place on it. Tyler Fortunati stated that the table contents can be adjusted in the future as needed based on the products that are approved.

**Motion:** Joe Canning moved that the TGC recommend preliminary approval to DEQ for Section 5.14 Proprietary Wastewater Treatment Products as amended.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

See **Appendix E** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at [tyler.fortunati@deq.idaho.gov](mailto:tyler.fortunati@deq.idaho.gov).

### **Final TGC Recommendation Regarding Proposals for Orenco AdvanTex and Bio-Microbics BioBarrier Products**

Tyler Fortunati began the discussion regarding the two product proposals by reminding the committee that they should first consider each product's design in comparison to other public domain system designs and second based on the historical performance of the system. Tyler Fortunati asked the committee to begin with making a recommendation on the Orenco AdvanTex product first followed by the Bio-Microbics BioBarrier.

#### Orenco AdvanTex Proposal

Dale Peck stated that he still believes all mechanical systems need continual maintenance including the public domain systems designed by a professional engineer.

Bob Erickson asked Allen Worst what Orenco thought of his three proposals to the committee for their product. Allen Worst stated that Orenco supported the proposals and that Tyler Fortunati had been in contact with them regarding this issue. Tyler Fortunati clarified for the committee that he had contacted both Orenco and Bio-Microbics regarding the proposals from Allen Worst and Ryan Spiers respectively. Tyler Fortunati stated that both manufacturers had stated they supported the proposals made for their products and the associated changes this may bring to their product approvals.

Mike Reno stated that under the proprietary product policy the committee just reviewed that the committee may require maintenance. Mike Reno stated that he agreed with Dale Peck that maintenance should be required for these systems.

Joe Canning stated that in his experience he had not witnessed the problems in public domain systems outlined in Allen Worst's proposal. Joe Canning stated that he does not



feel that the intermittent sand filter should be brought into a managed maintenance program but that he was open to bringing the recirculating gravel filter into a managed maintenance program.

The committee held a general discussion regarding the monitoring available for the AdvanTex product.

Bob Erickson stated that he is also a proponent of requiring managed maintenance for intermittent sand filters and recirculating gravel filters but believes this is a moot point. Bob Erickson stated that he felt DEQ was firm in their stance that none of the public domain systems designed by an engineer would be brought into a managed maintenance program. With that consideration Bob Erickson stated that he was in support of Mr. Worst's first proposal option of classifying the AdvanTex unit as a recirculating gravel filter and requiring the same homeowner maintenance for this product.

**Motion:** Dale Peck moved that the TGC recommend to DEQ that the Orenco AdvanTex product be classified as a proprietary wastewater treatment product and to remove the requirement for managed operation, maintenance, and monitoring and allow the system to be maintained under the property owner effective upon the final approval of the proprietary wastewater treatment product approval policy.

**Second:** Bob Erickson.

**Discussion:** Joe Canning stated that he was in favor of option one and three presented by Mr. Worst. Joe Canning stated that he was concerned with how the committee would look at other products in the future and what would prevent all of the extended treatment package systems from seeking this classification. Dale Peck stated that the committee's evaluation would be on a case-by-case basis. Tyler Fortunati clarified that with the amended version of the proprietary wastewater treatment product approval policy that systems which would potentially allow wastewater to discharge from the product without treatment would not be considered under this policy.

Mike Reno stated that the Orenco website listed a variety of operation and maintenance procedures that must be provided to their product of the warranty would be voided. Allen Worst stated that these could be done by the property owner without voiding the warranty but expressed that it was not his intent to install the systems and not be available to provide service to them.

**Voice Vote:** From the committee members present two voted Aye, two voted Nay. The committee chairman voted Aye to break the tie. Motion passed 3 Aye, 2 Nay.

#### Bio-Microbics BioBarrier Proposal

Dale Peck stated that the BioBarrier product is not designed like a recirculating media filter.



Ryan Spiers stated that he was having a hard time understanding why a proprietary wastewater treatment system design must be a recirculating or single-pass filter. Mr. Spiers stated that previous discussions were focused on the system's historical performance and failure method to negate the need for managed maintenance. Mr. Spiers further stated that the nature with which a system failed by not discharging effluent was also discussed and that his product met all these criteria. Mr. Spiers also provided an overview of how the BioBarrier product functions and the components involved. Mr. Spiers also outlined membrane fouling in the BioBarrier product and how that would prevent untreated wastewater from discharging from the product.

Tyler Fortunati posed the question as to whether the membrane system in the BioBarrier product would be considered similar to a single-pass filter to the committee. The committee held discussion on the system design and Ryan Spier's proposal.

The committee questioned Ryan Spiers on why the system would be used if the property owner didn't need total nitrogen reduction from the system. Mr. Spiers described to the committee circumstances on which he felt the system could be installed.

**Motion:** Joe Canning moved that the TGC recommend to DEQ that the Bio-Microbics BioBarrier product be classified as a proprietary wastewater treatment product and to remove the requirement for managed operation, maintenance, and monitoring and allow the system to be maintained under the property owner effective upon the final approval of the proprietary wastewater treatment product approval policy.

**Second:** Dale Peck.

**Discussion:** Bob Erickson questioned Joe Canning's reference to wastewater not discharging from this system without treatment and if that was referenced in the proprietary wastewater treatment product approval policy. Joe Canning stated this is correct. Bob Erickson asked Ryan Spiers to clarify the functionality of the BioBarrier product. Ryan Spiers provided Bob Erickson an account of how the BioBarrier functions and wastewater moves through the system.

**Voice Vote:** Motion passed 3 Aye, 1 Nay with Mike Reno clarifying that the Nay vote is based on his belief that all mechanical treatment systems should require managed maintenance.

### **NEXT MEETING:**

The next committee meeting is scheduled to be on November 5, 2015 at the Idaho Department of Environmental Quality's state office.

**Motion:** Bob Erickson moved to adjourn the meeting.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

The meeting adjourned at 11:18 a.m.

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### **TGC Parking Lot.**

This is a running list of issues requested to be prepared and presented at a future TGC meeting.

- Review the current design guidance from other states and current research for returning effluent from the recirculating gravel filter to the septic tank
- Add the float ball valve allowance into the recirculating gravel filter guidance
- Adjust the intermittent sand filter dosing rate to 5%
- Obtain total nitrogen reduction data for sand mounds and provide the information to the committee for consideration of inclusion on the Total Nitrogen Reduction Approvals list

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### **List of Appendices from the August 20, 2015 Meeting**

#### **Appendix A:**

1.4.2.2 Extended Treatment Package System Product Approvals

Status: Preliminary

#### **Appendix B:**

5.4 Extended Treatment Package Systems

Status: Preliminary

#### **Appendix C:**

5.13 Total Nitrogen Reduction Approvals

Status: Preliminary

#### **Appendix D:**

1.4.2.4 Proprietary Wastewater Treatment Product Approval Policy

Status: Preliminary

#### **Appendix E:**

5.14 Proprietary Wastewater Treatment Products

Status: Preliminary



## Appendix A

### **1.4.2.2 Extended Treatment Package System Approvals**

Extended treatment package systems (ETPS) are required to undergo two levels of approval in Idaho (IDAPA 58.01.03.009.03). The first level of approval is provisional approval based upon a manufacturer's submitted literature and data that support the treatment claims for the product. The second level of approval is general approval based upon a manufacturer's proven performance after installation and operation in Idaho. Upon receiving provisional approval a manufacturer must proceed to obtain general approval within a specified timeframe otherwise the product will be disapproved.

#### **1.4.2.2.1 Provisional ETPS Approval**

Provisional ETPS approval allows a manufacturer's unit to be installed on a property but the system must undergo annual operation, maintenance, monitoring, and reporting performed by an approved service provider and third party tester. Operation, maintenance, monitoring, and reporting are the responsibility of the manufacturer under provisional approval.

Manufacturers seeking provisional approval of an ETPS technology shall submit product information to the DEQ on-site wastewater coordinator for review by DEQ. In addition to product information (i.e., engineering designs and product manuals), manufacturers must submit NSF/ANSI Standard 40 ~~and 360~~ approvals, reports, and associated data or equivalent third party standards. Manufacturers also seeking approval on the ETPS units for reduction of total nitrogen (TN) must submit NSF Standard 245 approvals, reports, and associated data or equivalent third party standards. Equivalency determinations of third party standards shall be made by DEQ on a case-by-case basis. All third-party standards evaluated for the ETPS model must be submitted including approvals, disapprovals, reports, and associated data. ETPS models that have not undergone third-party testing and wish to be approved for reduction in TSS, CBOD<sub>5</sub>, and TN must be permitted and installed under the guidance in Section 4.7, "Experimental System."

Manufacturer's shall also submit as part of their request for provisional approval a quality assurance project plan to document how sampling and analysis will occur under provisional approval and identify who will perform both the sampling and analysis. All operation and maintenance performed during the provisional approval stage shall be done by a service provider approved by DEQ. All effluent testing performed during the provisional approval stage shall be done by a third party contracted by the manufacturer with experience in wastewater sampling. The service provider and effluent tester may not be the same individual or work for the same company. The manufacturer seeking approval and third party tester will be responsible for obtaining property access for testing of their system's effluent during the provisional approval stage. The manufacturer shall also be responsible for effluent testing costs.

All ETPS manufacturers that obtain provisional approval for one of their products must attempt to gain general approval and shall follow the minimum operation, maintenance, and effluent testing procedures outlined in section 4.8.3. Upon receiving provisional approval for an ETPS model a manufacturer must install that specific ETPS model within two years. If installation of the provisionally approved product does not occur within two years of the provisional approval the ETPS model shall be disapproved (IDAPA 58.01.03.009.04). Once a manufacturer's ETPS



model is installed under provisional approval operation, maintenance, and monitoring of that unit as described in the manufacturer's quality assurance project plan and section 4.8.3 must begin that same reporting year unless that system was installed less than three weeks prior to the reporting deadline. Additionally, if operation, maintenance, and monitoring of the provisionally approved unit is not submitted to DEQ for any year after initial installation under provisional approval the ETPS model shall be disapproved. Installed products under provisional approval that are disapproved shall be replaced by the manufacturer with a system that meets the installation requirements of the specific site that the ETPS model is installed at.

#### **1.4.2.2.2 General ETPS Approval**

General ETPS approval allows a manufacturer's unit to be installed on a property without the requirement to sample effluent on an annual basis for systems that are not required to obtain a TN level < 27 mg/L. The property owner must still have their ETPS unit undergo annual operation, maintenance, and reporting performed by an approved service provider.

To obtain general approval, or to lower reduction levels from those set in a general approval for any constituent, the ETPS model manufacturer must submit data from ETPS models installed in Idaho. The data submitted must be obtained through operation, maintenance, and monitoring protocols described in section 1.4.2.2.1 under a DEQ accepted quality assurance project plan. Data from other states will not be considered under this approval process. Any data submitted must be specific to a particular ETPS make and model. Data submission must include information on 30 installations with a minimum of 3 full years of operational data on each system, or the equivalent number of data points obtained on an annual basis for a lesser number of installations. All maintenance and effluent testing records, as described in section 4.8.3, obtained over this period must be submitted for review.

DEQ will issue general approval of an ETPS product in conjunction with associated reduction levels for TSS, CBOD<sub>5</sub>, and TN. TSS and CBOD<sub>5</sub> reduction levels will be set at less than or equal to 45 mg/L and 40 mg/L respectively based on the data showing that 90% of the installed units have successfully maintained effluent reduction levels at or below 45 mg/L TSS and 40 mg/L CBOD<sub>5</sub>. TN Reduction levels will be determined through statistical analysis of the data submitted. The submitted data will be statistically evaluated to determine a resulting value that corresponds to a 95% upper confidence limit. The resulting value that corresponds to the 95% upper confidence limit will be used as the system's TN performance limit. Third-party report average reduction values will not be accepted to establish system performance approvals for any constituent.

For adjustment in reduction levels of effluent constituents from a current general approval level to be approved a manufacturer must submit data as described in section 1.4.2.2.1 that was obtained through a DEQ accepted quality assurance project plan. Adjustments shall be made based on data analysis described in section 1.4.2.2.2 except that the data must be obtained over a period of at least two years regardless of the number of data points and must be obtained for all of the specific ETPS models installed in Idaho that the adjustment is being requested for.



**Appendix B**

**5.4 Extended Treatment Package Systems**

Revision: ~~May 21~~ August 20, 2015

Table 5-3 lists extended treatment package systems certified approved by DEQ for provisional use. Table 5-4 lists extended treatment package systems approved by DEQ for general use. Provisional use approval requires that manufacturers follow specific operation, maintenance, and monitoring protocols to obtain general use approval (see section 1.4.2.2.1). General use approval allows manufacturers ETPS units to be installed following specific operation and maintenance protocols (see section 1.4.2.2.2).

**Table 5-3. Extended treatment package systems certified approved by DEQ for provisional use.**

<b>Manufacturer and Model Aerobic Treatment Device (Std 40)</b>	<b>Treatment Limit (GPD) Gallons per day</b>	<b>Third Party Standards (TPS) or Experimental BOD<sub>5</sub> Removal</b>	<b>Total Suspended Solids Removal</b>	<b>Operation, Maintenance, and Monitoring Provider Trench Size</b>	<b>Certification Approval Date</b>
A-Aerobic-1, LLC A-Aerobic-1 Class I	500	<u>TPS</u> Ave. 21 mg/L	Ave. 26 mg/L	Service Provider and Third Party Tester Intermittent sand filter drainfield	10/14/02
Advanced Septic Treatment System				Service Provider and Third Party Tester Intermittent sand filter drainfield	
TRD-1000-500 Class I	500				
TRD-1000-600 Class I	600				
TRD-1000-700 Class I	700	—	—		11/3/03
TRD-1000-800 Class I	800	<u>TPS</u>			
TRD-1000-900 Class I	900				
TRD-1000-1000 Class I	1,000				
Aero-Tech Aerobic Treatment Units				Service Provider and Third Party Tester Intermittent sand filter drainfield	
AT-500 Class I	500				
AT-600 Class I	600	—	—		11/26/08
AT-750 Class I	750	<u>TPS</u>			
AT-1000 Class I	1,000				
AT-1500 Class I	1,500				



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment Limit (GPD)</u> <u>Gallons per day</u>	<u>Third Party Standards (TPS) or Experimental BOD<sub>5</sub> Removal</u>	<u>Total Suspended Solids Removal</u>	<u>Operation, Maintenance, and Monitoring Provider</u> <u>Trench-Size</u>	<u>Certification Approval Date</u>
<u>Alternative Wastewater Systems Inc.</u>					
SYBR-AER Class I	500	—	—	<u>Service Provider and Third Party Tester</u> <u>Intermittent sand filter drainfield</u>	11/3/03
SYBR-AER Class I	600	—	—		
SYBR-AER Class I	800	<u>TPS</u>	—		
SYBR-AER Class I	1,000	—	—		
SYBR-AER Class I	1,500	—	—		
<u>American Wastewater Systems Inc.</u>					
BEST 1 AWS-500 Class I	500	—	—	<u>Service Provider and Third Party Tester</u> <u>Intermittent sand filter drainfield</u>	11/03/03
BEST 1 AWS-800 Class I	800	—	—		
BEST 1 AWS-1000 Class I	1000	<u>TPS</u>	—		
BEST 1 AWS-1200 Class I	1,200	—	—		
BEST 1 AWS-1500 Class I	1,500	—	—		
<u>Aquapoint</u>					
Bioclere 16/12/500: Class I	500	<u>Ave. 11 mg/L</u> <u>TPS</u>	<u>Ave. 13 mg/L</u>	<u>Service Provider and Third Party Tester</u> <u>Intermittent sand filter drainfield</u>	3/19/91
<u>Aquarobic International</u>					
Mini-Plant 54291 Concrete Filter Kit [1]: Class I	500 to 1,500 in	<u>Ave. 7 mg/L</u> <u>TPS</u>	<u>Ave. 11 mg/L</u>	<u>Service Provider and Third Party Tester</u> <u>Intermittent sand filter drainfield</u>	11/03/03
Mini-Plant 54291 Fiberglass Class I	100 gal units	—	—		
<del>Bio-Microbics®, Inc.</del> <del>RetroFAST® 0.375: Class I</del>	375	—	—	<u>Service Provider and Third Party Tester</u> <u>Intermittent sand filter drainfield</u>	—



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment</u> <u>Limit</u> <u>(GPD)</u> <u>Gallons</u> <u>per day</u>	<u>Third Party</u> <u>Standards (TPS)</u> <u>or Experimental</u> <u>BOD<sub>5</sub> Removal</u>	<u>Total Suspended</u> <u>Solids Removal</u>	<u>Operation, Maintenance,</u> <u>and Monitoring Provider</u> <u>Trench Size</u>	<u>Certification</u> <u>Approval</u> <u>Date</u>
<u>Bio-Microbics®, Inc.</u>					
BioBarrier® MBR 0.4 Class I	400			<u>Service Provider and</u> <u>Third Party Tester</u> <u>Intermittent sand filter</u> <u>drainfield</u>	
BioBarrier® MBR 0.4 N Class I	400				
BioBarrier® MBR 0.5 Class I	500				
BioBarrier® MBR 0.5 N Class I	500	—	—		—
BioBarrier® MBR 1.0 Class I	1,000				
BioBarrier® MBR 1.0 N Class I	1,000				
BioBarrier® MBR 1.5 Class I	1,500				
BioBarrier® MBR 1.5 N Class I	1,500				
<u>Bio-Microbics®, Inc.</u>					
MicroFAST® 0.5 Class I	500			<u>Service Provider and</u> <u>Third Party Tester</u> <u>Intermittent sand filter</u> <u>drainfield</u>	3/5/97
MicroFAST® 0.75 Class I	750	92%–95%	95%–97%		6/5/00
MicroFAST® 0.9 Class I	900	Ave. 11 mg/L	Ave. 16 mg/L		12/27/02
MicroFAST® 1.5 Class I	1,500				
<u>Busse Innovative Systeme GmbH</u>					
MF-B-400	400	— <u>TPS</u>	—	<u>Service Provider and</u> <u>Third Party Tester</u> <u>Intermittent sand filter</u> <u>drainfield</u>	7/7/09



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment Limit (GPD)</u> <u>Gallons per day</u>	<u>Third Party Standards (TPS)</u> <u>or Experimental</u> <u>BOD<sub>5</sub> Removal</u>	<u>Total Suspended Solids Removal</u>	<u>Operation, Maintenance, and Monitoring Provider</u> <u>Trench Size</u>	<u>Certification Approval Date</u>
Clearstream Wastewater Systems				<u>Service Provider and Third Party Tester</u>	
Model 500 N/C Class I	500			<u>Intermittent sand filter drainfield</u>	
Model 600 N/C Class I	600	95%–97%	93%–98%		3/28/96
Model 750 N/C Class I	750	Ave. 14 mg/L	Ave. 48 mg/L		
Model 1000 N/C Class I	1,000	<u>TPS</u>			
Model 1500 N/C Class I	1,500				
Consolidated Treatment System Inc.				<u>Service Provider and Third Party Tester</u>	
Multi-Flo FTB: Class I	500 to	96%–97%	97%–98%	<u>Intermittent sand filter drainfield</u>	4/2/96
0.5, 0.6, 0.6-C, 0.75, 1.0, 1.5	1,500	Ave. 5 mg/L	Ave. 6 mg/L		
Nayadic M: Class I	500 to	96%–97%	96%–98%		4/2/96
6A, 8A, 1050A, 1200A, 2000A	1,500	Ave. 6 mg/L	Ave. 7 mg/L		
		<u>TPS</u>			
Delta Env. Products				<u>Service Provider and Third Party Tester</u>	
DF40-C, F, CC, CA, FF-Class I	400			<u>Intermittent sand filter drainfield</u>	
DF50-C, F, CC, CA, FF-Class I	500	95%–98%	96%–97%		2/3/97
DF60-C, F, CC, CA, FF-Class I	600	Ave. 6 mg/L	Ave. 7 mg/L		
DF75-C, F, CC, CA, FF-Class I	750	<u>TPS</u>			
DF100-C, F, CC, CA, FF-Class I	1,000				
DF150-C, F, CC, CA, FF-Class I	1,500				
Desoto Concrete Products				<u>Service Provider and Third Party Tester</u>	
H-Two-O Series: Class I	500	—	—	<u>Intermittent sand filter drainfield</u>	11/3/03
	750	<u>TPS</u>			
	1,000				
Ecological Tanks, Inc.				<u>Service Provider and Third Party Tester</u>	
AA, AS 500 Class I	500			<u>Intermittent sand filter drainfield</u>	11/1/97
AA, AS-650 Class I	650	AA Ave. 2.0 mg/L	AA Ave. 2.2 mg/L		5/2/02
AA, AS-750 Class I	750	AS Ave. 2.0 mg/L	AS Ave. 1.6 mg/L		
AA, AS-100 Class I	1,000	<u>TPS</u>			
AA, AS-1500 Class I	1,500				
Enviro-Flo: Class I				<u>Service Provider and Third Party Tester</u>	12/18/02
E-500, E-550	500	Ave. 14 mg/L	Ave. 15 mg/L		



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment Limit (GPD)</u> <u>Gallons per day</u>	<u>Third Party Standards (TPS)</u> <u>or Experimental</u> <u>BOD<sub>5</sub> Removal</u>	<u>Total Suspended Solids Removal</u>	<u>Operation, Maintenance, and Monitoring Provider</u> <u>Trench Size</u>	<u>Certification Approval Date</u>
E-550	550	<u>TPS</u>		<u>Intermittent sand filter drainfield</u>	
E-600	600				
E-750	750				
E-1000	1,000				
H.E. McGrew, Inc. Class I				<u>Service Provider and Third Party Tester</u>	
Alliance 500, 750, 1000	500	<u>96.5%</u>	<u>97.2%</u>		6/5/00
Mighty Mac, 500, 600, 750	to	<u>Ave. 7 mg/L</u>	<u>Ave. 13 mg/L</u>	<u>Intermittent sand filter drainfield</u>	12/5/97
Cajun Aire Basic 500, 750, 1000	1,000	<u>Ave. 13 mg/L</u>	<u>Ave. 19 mg/L</u>		12/30/02
Cajun Aire Advanced, 500, 750, 1000		<u>TPS</u>			
Hoot Aerobic Systems, Inc. Class I				<u>Service Provider and Third Party Tester</u>	
H 500, 600, 750, 1000	500	<u>Ave. 3.2 mg/L</u>	<u>Ave. 3.6 mg/L</u>	<u>Intermittent sand filter drainfield</u>	2/6/01
LA 500, 1000	to	<u>TPS</u>			
	1,000				
Hydro-Action, Inc.: Class I				<u>Service Provider and Third Party Tester</u>	4/2/96
AP-500, 600, 750, 900, 1500	500 to	<u>Ave. 9 mg/L</u>	<u>Ave. 15 mg/L</u>	<u>Intermittent sand filter drainfield</u>	3/99
	1,500	<u>TPS</u>			8/1/03
Jet Inc.: Class I				<u>Service Provider and Third Party Tester</u>	
J-500, J-600	500	<u>88%–96%</u>	<u>91%–97%</u>	<u>Intermittent sand filter drainfield</u>	10/96
J-750, 1000, 1250, 1500	600	<u>Ave. 15 mg/L</u>	<u>Ave. 12 mg/L</u>		5/93
	750–1,500	<u>TPS</u>			7/29/97
MICROSEPTEC: Class I				<u>Service Provider and Third Party Tester</u>	
Enviroserver, ENFG 600, 1200, 1500	600	<u>Ave. 6 mg/L</u>	<u>Ave 8 mg/L</u>	<u>Intermittent sand filter drainfield</u>	6/25/99
	1,200	<u>TPS</u>			
	1,500				
National Wastewater Systems Inc.,				<u>Service Provider and Third Party Tester</u>	
Solar Air 500, 800, 1000, 1200	500	<u>Ave. 13 mg/L</u>	<u>Ave. 19 mg/L</u>	<u>Intermittent sand filter drainfield</u>	8/1/03
	800	<u>TPS</u>			
	1,000				
	1,200				
Norweco, Inc.				<u>Service Provider and</u>	



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment Limit (GPD)</u> <u>Gallons per day</u>	<u>Third Party Standards (TPS) or Experimental BOD<sub>5</sub> Removal</u>	<u>Total Suspended Solids Removal</u>	<u>Operation, Maintenance, and Monitoring Provider</u> <u>Trench Size</u>	<u>Certification Approval Date</u>
Singulair 950 series Class I	600–1,500	>85%	>85%	<u>Third Party Tester</u>	4/3/96
Singulair 960 series Class I	500–1,500	Ave. 6 mg/L	Ave. 10 mg/L	<u>Intermittent sand filter drainfield</u>	8/96
Singulair TNT	500-1,500	Ave. 4 mg/L	Ave. 9 mg/L		8/08
<u>TPS</u>					
<u>Oreco Systems Inc.</u>					
AdvanTex AX20N	500			<u>Service Provider and Third Party Tester</u>	
AdvanTex AX20-RT	500			<u>Intermittent sand filter drainfield</u>	4/10/02
AdvanTex AX15-2N	800				
AdvanTex AX20-2N	1,000	Ave. 5 mg/L	Ave. 4 mg/L		3/1/10
AdvanTex AX15-3N	1,200				
AdvanTex AX20-3N	1,500				6/11/12
AdvanTex AX25-RT3N	625				
<u>Pro Flo Aerobic Systems</u>					
Pro Flo 500 TL	500	—	—	<u>Service Provider and Third Party Tester</u>	
Pro Flo 750 SL	750	<u>TPS</u>		<u>Intermittent sand filter drainfield</u>	11/3/03
Pro Flo 1000 TC	1,000				
<u>Rogers Treatment Systems</u>					
Mudbug 5	500			<u>Service Provider and Third Party Tester</u>	
Mudbug 10	1,000	Ave. 15 mg/L	Ave. 22 mg/L	<u>Intermittent sand filter drainfield</u>	11/3/03
Mudbug 15	1,500	<u>TPS</u>			
<u>Southern Manufacturing</u>					
SM-500 Class I	500			<u>Service Provider and Third Party Tester</u>	
SM-600 Class I	600	98.7%	98.1%	<u>Intermittent sand filter drainfield</u>	9/1/97
SM-750 Class I	750	Ave. 2.0 mg/L	Ave. 1.8 mg/L		8/28/00
SM-1000 Class I	1,000	<u>TPS</u>			
SM-1500 Class I	1,500				
<u>SeptiTech</u>					
M400/M400D	300			<u>Service Provider and Third Party Tester</u>	
M550/M550D	400	Ave. 12 mg/L	Ave. 5 mg/L	<u>Intermittent sand filter drainfield</u>	12/09
M750/M750D	500	<u>TPS</u>			
M1200/M1200D	1,200				



<u>Manufacturer and Model</u> <u>Aerobic Treatment Device (Std 40)</u>	<u>Treatment Limit (GPD)</u> <u>Gallons per day</u>	<u>Third Party Standards (TPS) or Experimental BOD<sub>5</sub> Removal</u>	<u>Total Suspended Solids Removal</u>	<u>Operation, Maintenance, and Monitoring Provider</u> <u>Trench Size</u>	<u>Certification Approval Date</u>
M1500/M1500D	1,500				
Zabel Environmental Technology ATS-AD-500: Class I	500	— TPS	—	Service Provider and Third Party Tester Intermittent sand filter drainfield	12/02 Dropped

Notes: 5-day biological oxygen demand (BOD<sub>5</sub>); milligram per liter (mg/L); average (ave-); gallons per day (GPD)

**Table 5-4. Extended treatment package systems approved by DEQ for general use.**

<u>Manufacturer and Model</u>	<u>Treatment Limit (GPD)</u>	<u>CBOD<sub>5</sub> (≤40 mg/L) and TSS (≤45 mg/L) Removal</u>	<u>Operation and Maintenance Provider</u>	<u>Approval Date</u>
Bio-Microbics®, Inc. RetroFAST® 0.375: Class I	375	Yes	Service Provider	—
Bio-Microbics®, Inc. BioBarrier® MBR 0.4 Class I	400			
BioBarrier® MBR 0.4-N Class I	400			
BioBarrier® MBR 0.5 Class I	500			
BioBarrier® MBR 0.5-N Class I	500	Yes	Service Provider	—
BioBarrier® MBR 1.0 Class I	1,000			
BioBarrier® MBR 1.0-N Class I	1,000			
BioBarrier® MBR 1.5 Class I	1,500			
BioBarrier® MBR 1.5-N Class I	1,500			
Bio-Microbics®, Inc. MicroFAST® 0.5 Class I	500			3/5/97
MicroFAST® 0.75 Class I	750	Yes	Service Provider	6/5/00
MicroFAST® 0.9 Class I	900			12/27/02
MicroFAST® 1.5 Class I	1,500			



<u>Manufacturer and Model</u>	<u>Treatment Limit (GPD)</u>	<u>CBOD<sub>5</sub> (≤40 mg/L) and TSS (≤45 mg/L) Removal</u>	<u>Operation and Maintenance Provider</u>	<u>Approval Date</u>
<u>Orenco Systems Inc.</u>				
<u>AdvanTex AX20N</u>	<u>500</u>			
<u>AdvanTex AX20-RT</u>	<u>500</u>			
<u>AdvanTex AX15-2N</u>	<u>800</u>			<u>4/10/02</u>
<u>AdvanTex AX20-2N</u>	<u>1,000</u>	<u>Yes</u>	<u>Service Provider</u>	
<u>AdvanTex AX15-3N</u>	<u>1,200</u>			<u>3/1/10</u>
<u>AdvanTex AX20-3N</u>	<u>1,500</u>			
<u>AdvanTex AX25-RT3N</u>	<u>625</u>			<u>6/11/12</u>

Notes: 5-day carbonaceous biological oxygen demand (CBOD<sub>5</sub>); total suspended solids (TSS); milligram per liter (mg/L); ~~average (ave.);~~ gallons per day (GPD);



## Appendix C

**\*This section will replace the current Total Nitrogen Reduction Policy**

### **5.13 Total Nitrogen Reduction ApprovalsPolicy**

Revision: ~~August 30, 2012~~ August 20, 2015

On-site wastewater systems that qualify as best practical methods for the targeted nitrogen reduction amount appear in ~~Table 8-1~~ Table 5-14. Areas of concern, such as nitrate priority areas, areas with shallow soils over bedrock, or a shallow depth to ground water, may be required to use one of these best practical methods to reduce the development's or home's environmental impact. Values listed in the TN column should not be exceeded to ensure that the required TN reduction percentage is attained. These TN values may be used in NP evaluations to evaluate the impact on ground water resources. Products installed for reduction of TN < 27 mg/L are subject to effluent testing (see section 4.8).

**Table 8-15-14. ~~Best practical methods for~~ On-site wastewater systems approved for total nitrogen reduction.**

<u>System or Manufacturer Product and Model</u> <b>Best Practical Method</b>	Total Nitrogen Reduction <sup>a</sup> (%)	Total Nitrogen <sup>a</sup> (mg/L)	Minimum Source Water Alkalinity <sup>b</sup> (mg/L)	<b>Operations and Maintenance Provider</b>
<b><u>Public Domain Systems</u></b>				
Intermittent Sand Filters (ISF)	15 <sup>c</sup>	38	108	<del>Property-owner</del>
Recirculating Gravel Filters (RGF)	40 <sup>c</sup>	27	189	<del>Property-owner</del>
<b>Extended Treatment Package Systems</b>				
Busse Innovative Systeme GmbH–MF-B-400	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Delta–Ecopod	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Delta–Whitewater	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Nayadic	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Norweco–Singulair	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Norweco–Singulair TNT	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Southern Manufacturing	30	32	156	<del>Nonprofit O&amp;M corp.</del>
Jet Inc.	32 <sup>d</sup>	31	163	<del>Nonprofit O&amp;M corp.</del>
<b><u>Recirculating Extended Treatment Package System</u></b>				
SeptiTech	55 <sup>e,f</sup>	20	180 mg/L	<del>Nonprofit O&amp;M corp.</del>
Orenco–AdvanTex	65 <sup>e,f</sup>	16	269 mg/L	<del>Nonprofit O&amp;M corp.</del>
BioMicrobics	65 <sup>f</sup>	16	269 mg/L	<del>Nonprofit O&amp;M corp.</del>

a. Quantifiable values (milligram per liter [mg/L]) will indicate compliance with the qualitative TN reduction limit expressed as a percentage (%) reduction.



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- b. Minimum recommended source water alkalinity to support nitrification in the denitrification process. Use of water softeners is not recommended due to potentially detrimental effects on the biological processes.
- c. Literature value
- d. Idaho testing
- e. Third party (Environmental Technology Verification Program)
- f. National Science Foundation data



## Appendix D

### **1.4.2.4 Proprietary Wastewater Treatment Product Approval Policy**

Proprietary wastewater treatment products (PWTP) for subsurface sewage disposal are produced by a manufacturer to provide secondary wastewater treatment. The manufactured product must have functional design and treatment similarities to single-pass or recirculating media filters to be classified as a proprietary wastewater treatment product. Similarities will be evaluated on a case-by-case basis. Products requiring mechanical components in excess of a single-pass or recirculating media filter or that may allow wastewater to pass through the system untreated by design will not be considered for proprietary approval.

Manufactured PWTPs must obtain an approval from DEQ prior to permitting and installation. To obtain approval the manufacturer must submit the required information listed in section 1.4 of this manual to DEQ's On-Site Wastewater Coordinator. In addition, to justify the effectiveness of wastewater treatment by the product the manufacturer must also submit the final evaluation report from NSF International on the product's evaluation under the provisions of NSF/ANSI Standard 40 or another equivalent third party standard. Equivalency of third party standards will be made by DEQ on a case-by-case basis. The NSF/ANSI Standard 40 report is required to obtain the same drainfield sizing reduction and separation distance reduction to limiting layers for the product as the intermittent sand filter or recirculating gravel filter. If the manufacturer would also like to obtain approval for total nitrogen (TN) reduction then they must also submit the final evaluation report from NSF International on the product's evaluation under the provisions of NSF/ANSI Standard 245 or another equivalent third part standard. Equivalency of third party standards will be made by DEQ on a case-by-case basis. The NSF/ANSI Standard 245 report is required to obtain the same TN reduction as the recirculating gravel filter.

Approval of PWTPs must be recommended to DEQ by the Technical Guidance Committee (TGC). Approval of a PWTP may be required to go through the same two-level approval process as extended treatment package systems (see section 1.4.2.2) depending on the system design and effluent reduction approvals sought. Approval processes and minimum installation requirements for PWTPs shall be determined on a case-by-case basis by the Technical Guidance Committee. PWTPs submitted for approval that have not been evaluated by NSF/ANSI under Standard 40 and/or 245 or another equivalent third party standard shall not be considered for reduction in drainfield disposal area or separation reductions to limiting layers. All approved PWTPs shall be installed by a permitted complex installer. Approved PWTPs are listed in section 5.14.

PWTPs may also require periodic operation and maintenance. The operation and maintenance provider for all PWTPs shall be determined on a case-by-case basis by the TGC and may be a property owner or an approved service provider. If a PWTP is approved, permitted, and installed with a nitrogen reduction limit that exceeds the nitrogen reduction limit of a recirculating gravel filter, then the operation and maintenance provider for the PWTP shall be an approved service provider and the system shall follow the same operation, maintenance, monitoring, and reporting requirements as extended treatment package systems. If a nitrogen reduction limit is approved for a PWTP it shall be listed in section 5.13.



**Appendix E**

**5.14 Proprietary Wastewater Treatment Products**

Revision: August 20, 2015

Table 5-15 lists proprietary wastewater treatment products approved by DEQ. Proprietary wastewater treatment products shall be installed by a permitted complex installer.

**Table 5-15. Proprietary wastewater treatment products approved by DEQ.**

<b><u>Proprietary Wastewater Treatment Product Manufacturer and Model</u></b>	<b><u>Treatment Limits (GPD)</u></b>	<b><u>Designer Requirements</u></b>	<b><u>Operation, Maintenance, and Monitoring Requirements</u></b>	<b><u>Drainfield Sizing and Size Limits</u></b>	<b><u>Vertical Separation Distances</u></b>	<b><u>Approval Date</u></b>	<b><u>Comments</u></b>
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Notes: gallons per day (GPD);