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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 12, 2024

Mr. Steve Murdock
Delta Treatment Systems, LLC
4 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
SMurdock@infiltratorwater.com

Re: Product Line Approval: ECOPOD E50-NX

Dear Mr. Murdock:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the ECOPOD E50-NX aerobic treatment system product as requested on December 12, 2023. The listed product is approved for use in Texas. This approval is based on:

- The Gulf Coast Testing, LLC (GCT) issuance of the GCT Mark, certifying that ECOPOD E50-NX's performance conforms with NSF Standard 40 for Class 1 effluent.
- The GCT issuance of the GCT Mark, certifying that the listed product and its performance conform with the GCT certification based on the scaling report dated June 1, 2023.
- TCEQ approval of the training, operation, maintenance, and installation documents for the ECOPOD E50-NX product.

Regarding the approved product, ECOPOD E50-NX utilizes fully submerged moving bed biofilm reactor (MBBR) media housed in a specially designed reactor to treat wastewater. The system can be installed in two single-compartment tanks or one two-compartment tank and incorporates four process unit operations (clarification, biochemical oxidation/assimilation, secondary clarification, and anoxic denitrification) within four distinct treatment zones to reduce effluent concentrations of CBOD5 and TSS to levels below those required by Standard 40.

Regarding the testing, the configuration initially tested and certified by GCT utilized Infiltrator's IM-540 as the pretreatment tank and IM-1060 as a reactor tank. However, GCT provided determination letters authorizing the installation of the E50-NX in the CM-1060 tank utilizing the IM-540 as the pretreatment tank and in the 2-compartment IM-1530. Determination letters by GCT establish:

- The material used to construct the CM-1060 tank is identical to the IM-1060 tank in the tested Model ECOPOD E50-NX and will meet the requirements of Section 4 of Standard 40 and Standard 245.
- The CM-1060 tank housing the Model ECOPOD E50-NX is structurally sound based on a certified engineering report. The construction process, design, and compartment volumes of the Model ECOPOD E50-NX installed in the CM-1060 tank are proportionally equivalent to the tested Model ECOPOD E50-NX housed in the IM-1060 tank. The material used to construct the CM-1060 tank is identical to the IM-1060 tank in the tested Model ECOPOD E50-NX and will meet the requirements of Section 4 of Standard 40 and Standard 245.

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Table 1 shows the E50-NX tank volume as tested and certified using the IM-540 as the pretreatment tank, IM-1060 and CM-1060 as the reactor tank, and IM-1530 as a 2-compartment reactor.

IM-540 Working Volume	475	Gal
IM-1060 Working Volume	1,094	Gal
CM-1060 Working Volume	1,111	Gal
IM-1530 Working Volume	1,537	Gal

Table 1. E50-NX Tank Volumes

It is noted that in the specifications for the above referenced product that the systems may be capable of treating a 30-day average Carbonaceous Biochemical Oxygen Demand (CBOD) concentration of up to 600 milligrams per liter (mg/l) at peak loading. As required by Title 30 Texas Administrative Code (TAC) 285.32(c)(5)(A), approved proprietary units shall treat flows equal to or less than their rated capacity and with an influent wastewater strength ranging from a 30-day average CBOD concentration between 100mg/L and 300 mg/L. Proprietary units may be used as components in an overall treatment system treating influent concentration higher than 300 mg/L CBOD. However, when the influent is at the higher strength, the overall treatment system will be considered a non-standard treatment system (rather than a proprietary system) and shall meet the requirements set forth in 30 TAC 285.33(d). Tables 2 and 3 show the Influent and Effluent parameters values obtained during testing according to the Standard 40 Certification Report- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems. The system was tested under NSF/ANSI 245 and presented an 80.1% reduction in total nitrogen. The total nitrogen average over the duration of the certification testing was 7.8 mg/L.

Influent Characteristic	NSF 40 Standard Required	Actual Average
BOD5, mg/L	100 to 300	229
Total Suspended Solids (TSS), mg/L	100 to 350	269
Alkalinity (as CaCO3), mg/L	More than 175	237

Table 2: Influent Wastewater Characteristics Required Vs. Actual as Cited on the provided Standard 40 Certification Report- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems

Effluent Characteristic	Concentration Range (During testing)	Average Concentration	Median
CBOD5	1 to 35 mg/L	7 mg/L	5 mg/L
TSS	1 to 23 mg/L	7 mg/L	7 mg/L
pH	6.53 to 7.90 SU	7.21 SU	7.22 SU
BOD5 Loaded	169.9 pounds	BOD5 Removed	164.9 pounds

Table 3: Effluent Wastewater Characteristics as Cited on the provided Standard 40 Certification Report- Under the provisions of NSF/ANSI Standard 40 - 2022 for Residential Wastewater Treatment Systems

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This approval also notes that the subject product does not include pump chambers. Any pump tanks used in conjunction with approved products are subject to the requirements specified in 30 TAC §285.34(b).

This letter serves as proof of approval for the ECOPOD E50-NX until it is listed on the TCEQ website. If you have any questions or require clarification or additional information, please contact Cindy Rojas Annicchiarico by email at cindy.annicchiarico@tceq.texas.gov.

Sincerely,

A handwritten signature in cursive script that reads "Joseph L. Hopkins".

Joseph L. Hopkins, P.G.
Technical Programs Team Leader
Program Support and Environmental Assistance Division
Texas Commission on Environmental Quality

JLH/CRA