U. S. Department of Homeland Security
United States Coast Guard
Certificate of Approval

Coast Guard Approval Number: 159.015/10172/1 Expires: 15 June 2031

SEWAGE POLLUTION PREVENTION EQUIPMENT
TYPE II MARINE SANITATION DEVICE (MSD)

SEA HORSE MANUFACTURING LLC.
P.O. Box 516
Lydia LA 70569

Model(s): SHSTP 100, SHSTP 200, SHSTP 300, SHSTP 400, SHSTP 500, SHSTP 750, SHSTP 1000, SHSTP 1500, SHSTP 2000, SHSTP 2500, SHSTP 3000, SHSTP 3500, SHSTP 4000, SHSTP 4500, SHSTP 5000, SHSTP 5500, SHSTP 6000, SHSTP 7000, SHSTP 8000, SHSTP 8500, and SHSTP 10000

This Type Approval Certificate documents that the above listed Type II Marine Sanitation Devices, within the limitations below, have been verified to conform with the requirements for the operational discharge methods by Title 33 Code of Federal Regulations (CFR) Part 159 and IMO MARPOL Annex IV Regulation 9/Resolution MEPC.227(64).

Supporting documentation including the system drawings, environmental conformance reports, operations manuals, validated Independent Laboratory (IL) report, and additional operational & installation limits are listed in the Appendix of this certificate.

Operational and Installation Limitations/Authorizations:

The models listed above may not be installed in hazardous areas.

The models listed above comply with the requirements of Title 33 CFR 159.97 and may be installed aboard inspected vessels.

This Type Approval Certificate includes the above listed Type II MSDs manufactured during the period of validity of this certificate. A copy of this certificate should be carried on board a vessel fitted with this equipment at all times. This type approval remains valid for equipment manufactured at any time during the period of validity of this certificate, even after the expiration date has passed.

A plate or durable label containing data of the manufacturer's name, type and serial numbers, hydraulic loading, and date of manufacture should be fitted on each sewage treatment plant.

*** End ***

THIS IS TO CERTIFY THAT the above-named manufacturer has submitted to the undersigned satisfactory evidence that the item specified herein complies with the applicable laws and regulations as outlined on the reverse side of this Certificate, and approval is hereby given. This approval shall be in effect until the expiration date hereon unless sooner canceled or suspended by proper authority.

GIVEN UNDER MY HAND THIS 15th DAY OF JUNE 2026, AT WASHINGTON D.C.

J. D. BALDASSINI
Chief, Engineering Division
BY DIRECTION OF THE COMMANDANT

TERMS: The approval of the item described on the face of the Certificate has been based upon the submittal of satisfactory evidence that the item complies with the applicable provisions of the navigation and shipping laws and the applicable regulations in Title 33 and/or Title 46 of the Code of Federal Regulations. The approval is subject to any conditions noted on this Certificate and in the applicable laws and regulations governing the use of the item on vessels subject to Coast Guard inspection or on other vessels and boats.

Consideration will be given to an extension of this approval provided application is made 3 months prior to the expiration date of this Certificate.

The approval holder is responsible for making sure that the required inspections or tests of materials or devices covered by this approval are carried out during production as prescribed in the applicable regulations.

The approval of the item covered by this certificate is valid only so long as the item is manufactured in conformance with the details of the approved drawings, specifications, or other data referred to. No modification in the approved design, construction, or materials is to be adopted until the modification has been presented for consideration by the Commandant and confirmation received that the proposed alteration is acceptable.

NOTICE: Where a manufacturer of safety-at-sea equipment is offering for sale to the maritime industry, directly or indirectly, equipment represented to be approved, which fails to conform with either the design details or material specifications, or both, as approved by the Coast Guard, immediate action may be taken to invoke the various penalties and sanctions provided by law including prosecution under 46 U.S.C. 3318, which provides:

"A person that knowingly manufactures, sells, offers for sale, or possesses with intent to sell, any equipment subject to this part *(Part B. of Subtitle II of Title 46 U.S.C.).* and the equipment is so defective as to be insufficient to accomplish the purpose for which it is intended, shall be fined not more than $10,000, imprisoned for not more than 5 years or both."

APPENDIX
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SUPPORTING DOCUMENTATION

Design and Construction Drawings:

Sea Horse Manufacturing LLC. Drawing, "SHSTP1001," Rev. --, dated May 1, 2010 (SHSTP 100, 200, 300, and 400)
Sea Horse Manufacturing LLC. Drawing, "SHSTP2001," Rev. --, dated May 1, 2010 (SHSTP 500, 750, 1000, and 1500)
Sea Horse Manufacturing LLC. Drawing, "SHSTP3001," Rev. --, dated May 1, 2010 (SHSTP 2000, 2500, 3000, 3500, 4000, and 4500)
Sea horse Manufacturing LLC. Drawing, "SHSTP4001," Rev. --, dated May 1, 2010 (SHSTP 5000, 5500, 6000, 7000, 8000, 8500, and 10000)
Sea Horse Manufacturing LLC. Drawing, "USCG-1001," Rev. --, dated May 1, 2010 (SHSTP Subchapter F and J Requirements)
Sea Horse Manufacturing LLC. Drawing, "USCG-1002," Rev. --, dated May 1, 2010 (SHSTP Subchapter F and J Requirements)
Sea Horse Manufacturing LLC. Drawing, "USCG-1003," Rev. --, dated May 1, 2010 (SHSTP Subchapter F and J Requirements)

Operations Manual:

"Sea Horse Manufacturing, LLC Installation, Operation & Maintenance Manual," Rev. --, dated 2017

Independent Laboratory Report:

TEi Testing Services Report No. TS-P00887 dated March 4, 2016 (Biological Efficacy Report)

Limits of Hydraulic Loading and Biochemical Oxygen Demand (BOD) without nitrification:

Model Name:	Maximum Throughput:	BOD Maximum Consumption:
SHSTP 100	0.61 m^3/day	0.45 kg/day
SHSTP 200	0.76 m^3/day	1.09 kg/day
SHSTP 300	1.14 m^3/day	1.63 kg/day
SHSTP 400	1.51 m^3/day	2.09 kg/day
SHSTP 500	1.89 m^3/day	2.72 kg/day
SHSTP 750	2.84 m^3/day	3.27 kg/day
SHSTP 1000	3.79 m^3/day	4.08 kg/day
SHSTP 1500	5.68 m^3/day	5.26 kg/day
SHSTP 2000	7.75 m^3/day	6.62 kg/day
SHSTP 2500	9.46 m^3/day	8.16 kg/day
SHSTP 3000	11.36 m^3/day	10.43 kg/day
SHSTP 3500	13.25 m^3/day	11.61 kg/day
SHSTP 4000	15.14 m^3/day	12.61 kg/day
SHSTP 4500	17.03 m^3/day	14.70 kg/day
SHSTP 5000	18.93 m^3/day	15.97 kg/day
SHSTP 5500	20.82 m^3/day	17.69 kg/day
SHSTP 6000	22.71 m^3/day	21.32 kg/day
SHSTP 7000	26.50 m^3/day	22.45 kg/day
SHSTP 8000	30.28 m^3/day	24.49 kg/day
SHSTP 8500	32.18 m^3/day	29.03 kg/day
SHSTP 10000	37.85 m^3/day	36.29 kg/day

TEST DATA AND RESULTS OF TESTS CONDUCTED ON SAMPLES FROM THE SEWAGE TREATMENT PLANT IN ACCORDANCE WITH IMO RESOLUTION MEPC.227(64)

The sewage treatment plant was tested and produced an effluent which, on analysis, produces:

.1 a geometric mean of no more than 100 thermotolerant coliforms/100 ml;
.2 a geometric mean of total suspended solids of 35 Qi/Qe mg/l if tested ashore or the maximum total suspended solids not exceeding (35 plus x) Qi/Qe mg/l for the ambient water used for flushing purposes if tested on board;
.3 a geometric mean of 5-day biochemical oxygen demand without nitrification (BOD5 without nitrification) of no more than 25 Qi/Qe mg/l;
.4 a geometric mean of chemical oxygen demand (COD) of no more than 125 Qi/Qe mg/l;
.5 a pH between 6 and 8.5

The sewage treatment plant can operate at angles of inclination of 22.5° in any plane from the normal operating position.

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Tested Sewage Treatment Plant, Type:	Sea Horse STP Models, Type II
Manufactured by:	Sea Horse Manufacturing LLC.
Organization conducting the test:	Director, TEi-Testing Services, Mechanical Laboratory (TEi-TS-M)
System tested:	Sea Horse Type II SHSTP 200
Designed hydraulic loading:	0.76 m^3/day
Designed organic loading (BOD):	1.09 kg/day
Number of effluent samples tested:	40
Number of influent samples tested:	40
Raw sewage (influent) quality: total suspended solids (TSS):	651 mg/L
Maximum hydraulic daily loading value (50% of max) :	0.38 m^3/day
Minimum hydraulic daily loading value (10% of max):	0.08 m^3/day
Average hydraulic daily loading value (20% of max, twice per day):	0.16 m^3/day
Total nitrogen influent quality:	16.2 mg/L
Total nitrogen effluent quality/reduction percentage:	0.41 mg/L; 97.5% reduction
Total phosphorus influent quality:	9.60 mg/L
Total phosphorus effluent quality/reduction percentage:	0.05 mg/L; 99.5% reduction
Dilution Compensation Factor (Qi/Qe):	1.0 Qi/Qe
Geometric Mean of the Thermotolerant Coliform Count:	3 tcu/100mL
Geometric Mean of Total Suspended Solids:	4.0 mg/L
Geometric Mean of BOD5:	6.2 mg/L
Chemical Oxygen Demand (COD):	23.0 mg/L
pH of effluent:	7.2 at 22.3°C
Type of disinfectant used:	Chlorine
If Chlorine – residual chlorine:	0.3 mg/L
Maximum:	0.5 mg/L
Minimum:	0.1 mg/L
Geometric mean:	0.3 mg/L
Was the sewage treatment plant tested with:	
Fresh water flushing:	Yes
Salt water flushing:	No
Fresh and salt water flushing capable:	Yes
Greywater added:	Yes 20% black water to 80% grey water
Was the sewage treatment plant tested against the environmental conditions specified in section 5.0 paragraph 5.9 of resolution MEPC.227(64):	
Temperature:	Yes
Humidity:	Yes
Inclination:	Yes
Vibration:	Yes
Reliability of electrical and electronic equipment:	Yes
Limitations and the conditions of operation are imposed:	
Salinity:	45 ppt
Temperature:	None
Humidity:	None
Inclination:	None
Vibration:	None

*** END ***