State of Washington Department of Ecology

Cruise Ship Memorandum of Understanding, Cruise Operations in Washington State Inspection Report

Northwest Regional Office

P.O. Box 330316
Shoreline, WA 98133

Phone: (425) 213-4230

Inspection Date	Permit Number	County	Receiving Waters	Ecology Inspector
September 29, 2023	NA	King	Marine Waters	Evan Dobrowski
Entry Time 9:00 am **Exit Time** 11:30 am	**Photos Taken** ☒ Yes ☐ No	**Samples Taken** ☐ Yes ☒ No	**Inspection Announced** ☒ Yes ☐ No	**Discharges to:** ☒ Surface Water ☐ Ground Water ☐ Dewater ☐ POTW

Name and Location of Site Inspected:
SEABOURN VENTURE, Seabourn Cruise Line
Pier 66
Seattle, Washington

Additional Participants/Inspectors:

On-Site Representative(s): ***Name/Title/Phone/e-mail***
Georgi Markov, Environmental Officer
Cady Moris, Holland American Group
Sr. Manager, Governance Data & Reporting

Responsible Official(s): ***Name/Title/Address/Phone/e-mail***
Patrick J McGuire, Vice President, Environmental Operations and Policy
Holland America Group
450 Third Avenue West
Seattle, WA 98119
206-626-3889, pmcguire@hollandamericagroup.com

Other Facility Data:
Notification made to Patrick McGuire on September 13, 2023

Flag – Bahamas

Section A: Areas Evaluated

☒ Black/Gray Wastewater System	☒ Residual Solids	☒ Records/Reports	☒ Hazardous Waste/ Solid Waste	☐ Sampling/Monitoring
☒ Discharge Locations	☒ Operation & Maintenance	☒ Sludge Handling/ Disposal	☒ Oily Bilge Water	☒ Other

Section B: For Vessels Discharging ≥ 1nm from Berth and ≥ 6 Knots Only [2.1.3(A)]

☐	Schematics Match Black/Gray Wastewater System	
☐	Operations as Described in Submitted Documentation	
☐	Daily 24-hour Continuous Monitoring for Turbidity or Equivalent Monitoring	
☐	Turbidimeter or Equivalent Monitoring Equipment Functioning Properly	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if High Turbidity Occurs	
	Turbidity or Equivalent: Last Calibration: Trigger Level for Early Alarm: Trigger Level for Shutdown: Recorded Turbidity/Equivalent Levels Above Triggers:	
☐	Daily 24-hour Continuous Monitoring for Disinfection Effectiveness	
☐	Disinfection Effectiveness Monitoring Equipment Functioning Properly	
	Disinfection Effectiveness Monitoring:	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if Disinfection System Upset Occurs	
☐	Disinfection System Operated and Maintained Properly	
	Disinfection System:	

NOT APPLICABLE

Section C: For Vessels Discharging Continuously [2.1.3(B)]		
☐	Schematics Match Black/Gray Wastewater System	
☐	Operations as Described in Submitted Documentation	
☐	Daily 24-hour Continuous Monitoring for Turbidity or Equivalent Monitoring	
☐	Turbidimeter or Equivalent Monitoring Equipment Functioning Properly	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if High Turbidity Occurs	
	Turbidity or Equivalent: Last Calibration: Trigger Level for Early Alarm: Trigger Level for Shutdown: Recorded Turbidity/Equivalent Levels Above Triggers:	
☐	Daily 24-hour Continuous Monitoring for Disinfection Effectiveness	
☐	Disinfection Effectiveness Monitoring Equipment Functioning Properly	
	Disinfection Effectiveness Monitoring: NOT APPLICABLE	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if Disinfection System Upset Occurs	
☐	Disinfection System Operated and Maintained Properly	
	Disinfection System:	
	Section D: General (Approved to Discharge)	
☐	No Discharges Within ½ Miles From Shellfish Beds/ Protocol (President's Point, Apple Tree Cove, Tyee Shoal, Middle Point (near Pt Townsend))	
☐	Discharges Immediately Stopped When High Turbidity Occurs	
☐	Discharges Immediately Stopped When Disinfection System Upset Occurs	
☐	Immediate Notifications Made to WA Department of Health for Disinfection System Upset	
☐	Sampling Conducted 2/month, 1/month in Seattle (BOD, TSS, Fecal Coliform, pH, Chlorine Residual)	
☐	Whole Effluent Toxicity Testing 1 per 2 Years (homeported) or 1/40 Calls for Continuous	
	Section E: General	
☒	Wastewater Discharge Records Review	Discharge records were reviewed (blackwater/graywater/residual solids) and are maintained properly. No discharges found to be in the OCNMS, MOU waters or Washington state waters (MOU related waters). Further review will be done following the end of the season.
☒	Wastewater Discharges protocol per MOU and managed properly	The discharge protocols are consistent with MOU requirements to not occur in MOU related waters.
☒	Residual Solids Managed Properly/Disposal Protocol per MOU	Residual solids protocols are consistent with MOU requirements.
☒	Hazardous Waste Managed Properly	Hazardous protocols are consistent with MOU requirements.
☒	WA Hazardous Waste Guidelines Followed (Appendix vii)	Hazardous waste protocols are consistent with MOU requirements.

☒	Solid Waste Managed Properly (zero garbage discharge)	Solid waste protocols are consistent with MOU requirements.
☒	Photo/X-Ray Waste Managed Properly (fluids, cartridges,…) and landed ashore	Photo and x-ray waste protocols are consistent with MOU requirements. No photo or x-ray wastes are generated onboard.
☒	Dry-Cleaning Wastes and Byproducts (fluids, sludge, filter materials…) Managed Properly (PERC – haz waste – landed ashore)	Dry cleaning protocols are consistent with MOU requirements. No dry cleaning is onboard.
☒	Unused/Outdated Pharmaceuticals Managed Properly (safely disposed of)	Unused or outdated pharmaceuticals management protocols are consistent with MOU requirements.
☒	Fluorescent and Mercury Vapor Lamp Bulbs Managed Properly (prevent release of mercury)	Fluorescent and mercury vapor lamp bulbs protocols for management are consistent with MOU requirements. Only LED's onboard.
☒	Waste Reduction/Reuse/Recycling Opportunities Maximized (glass, cardboard, aluminum & steel cans)	Waste reduction/reuse/recycling opportunities appear to be maximized per MOU requirements.
☒	Batteries Managed Properly (recycled, reclaimed, disposed of properly)	Batteries management protocols are consistent with MOU requirements.
☒	Incinerator Ash Managed Properly and minimized volume (haz waste segregation and annual testing)	Incinerator ash management is consistent with MOU requirements. On Micro auto gasification system onboard, no incinerator.
☒	Oily Bilge Water Managed Properly (<15 ppm, no visible sheen and underway)	Oily bilge water protocols are consistent with MOU requirements.
☒	Ballast Water Managed Properly (per Wash regs –reporting, treated or if open sea exchange >200 nm from outside EEZ, 50nm if not EEZ)	The vessel employs ballast water exchange outside 200 nm and treatment.
☒	OCNMS rules and regs followed	The discharge protocols are consistent with MOU requirements and are not to occur in OCNMS waters.
	Additional General Questions	
☒	How is deck runoff and hull cleaning handled (scuppers…) (non-toxic/phosphate free cleaners, biodegradable)	Deck runoff and hull cleaning protocols are consistent with MOU requirements.
☒	How is maintenance performed on the outside of the vessel (paint chipping, painting, etc)	Outside vessel maintenance protocols are consistent with MOU requirements.
☒	Sculleries and Galleys – type of detergents and degreasers used (phosphate free and non-toxic)?	Restaurants and galleys use detergents and degreasers that are non-toxic and phosphate free.
☒	How are food waste discharges handled (prevention of erroneous materials)?	Food waste discharge protocols are consistent with MOU requirements and records reviewed show no discharges in MOU related waters.
☒	Medical sinks/floor drains, chem. stor areas wastes go where (plugged, blackwater, bilge)?	Medical sinks/floor drains are reported as connected to Blackwater.
☒	Where is pool and spa water discharged? Dechlorinated/debrominated and underway?	Pool and spa water protocols are consistent with MOU requirements.
☒	What type of fuel is used and percent sulfur content?	<0.1% sulfur fuel content used when in MOU waters or SCR treated equivalent is used throughout the route.
Other:		

Section F: Sampling Results

Parameter	Results
Biochemical Oxygen Demand 5-Day (BOD_5)	
Total Suspended Solids (TSS)	
Fecal Coliform	
Residual Chlorine	
pH	
Ammonia, Nitrogen	

NOT APPLICABLE

Section G: Summary of Findings/Comments

Introduction

Evan Dobrowski, Washington State Department of Ecology (Ecology) Northwest Regional Office, Water Quality Program (NWRO-WQ) conducted the inspection of the Seabourn Cruise Lines, SEABOURN VENTURE on September 29, 2023. The main contact on board the SEABOURN VENTURE was Georgi Markov, Environmental Officer (EO) for the vessel. Holland American Group representative Cady Moris was also present during this inspection. Prior notification of the visit was given on September 13, 2023, for security protocol. The purpose of the inspection was to evaluate compliance with the *Memorandum of Understanding Cruise Operations in Washington State* (MOU), as amended. The SEABOURN VENTURE is not approved to discharge wastewater in MOU waters.

The SEABOURN VENTURE launched in 2021 and is 564 feet long. The passenger capacity is approximately 300 with a crew capacity of about 240. The vessel has 4 engines and two azipods. SEABOURN VENTURE is scheduled for 1 port calls in Seattle in the 2023 season on September 29, 2023.

Inspection

I arrived and boarded the ship at 8:30 am and began with introductions and a plan for the day with Georgi Markoc, EO and Cady Moris. We headed to the Engine Control Room and discussed the vessel itinerary and locations where discharges and fuel transitions occur. We reviewed electronic logs for various waste streams and went over the plan for the day with SEABOURN VENTURE engineering staff. After this we discussed various waste streams and discharge protocols as well as fuel transfer protocols. We then toured the blackwater marine sanitation devices, the oily bilge treatment, and the SCR with the engineering staff and the environmental officer. We then headed to the micro auto gasification system(MAGS) which is in the garbage room. We finished with a debrief in the Environmental Officers office

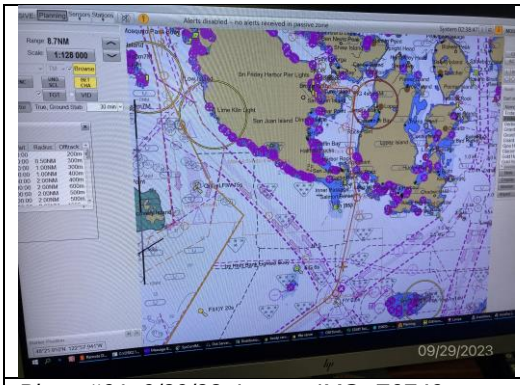

Photo #01 9/29/23 Image: IMG_E0740
By: Dobrowski
Description: navigational chart

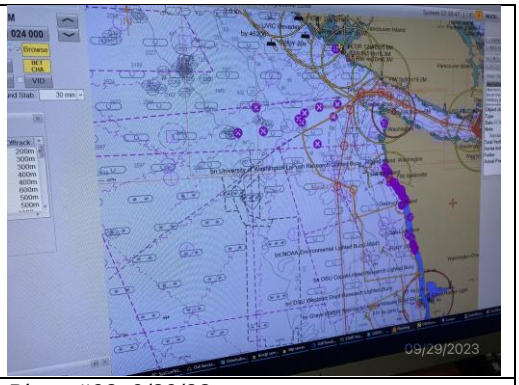

Photo #02 9/29/23
Image: IMG_E0741
By: Dobrowski
Description: navigational chart.

reviewing discharge and offload protocols I disembarked the vessel at 11:30 am.

Discharge Types and Protocols in MOU waters, Washington State waters or the Olympic Coast National Marine Sanctuary (OCNMS) (MOU related waters):

The discharge protocols start with voyage plans for each itinerary prior to that route. A matrix is developed for each route upon a detailed review of locations for allowed discharges. The matrix for the Seattle/Alaska route details no discharges in MOU related waters, for

- bilge water;
- blackwater;
- graywater;
- food waste;
- ballast water; and
- pool and spa water.

The matrix also shows that Puget Sound is a designated No Discharge Zone for sewage with a link to our website. The matrix is overlaid onto the navigational screen (Photo #02) to show the location where fuel switch overs and discharges stop just before the OCNMS and start upon leaving US waters.

The protocol for discharges is a closed-loop process. There is communication between the ECR Officer on Watch and the Bridge staff for approval from the Bridge that the vessel is in an area authorized for discharge. The overboard valves have a lock which has to be manually controlled. The keys for the locks are found in the engine control room and are controlled by a badge and then finger print. The badge and finger print control will only allow that person to access certain keys allowed to them. For the discharge valves only engineering and environmental officers have access to these keys. The discharge valves are then controlled electronically after the locks are removed and the discharges are logged into the NAPA system. Any change to the logs shows who made the change by staff passcode. Any changes are reviewed by the Bridge. The GPS system is connected to the log for accurate logging of the discharge location. The discharges all to occur outside of MOU related waters (Washington State waters, the Strait of Juan de Fuca up to the border with Canada and the OCNMS). For black water and gray water, the latitude and longitude coordinates are recorded in the NAPA system along with all other logs. The date, time and location of both the start and the stop of the discharges are recorded, along with port location, effluent type, speed, tank name and volume, valve name, and status of valve. The maker of the entry and reviewer/signer is also included, along with any notes. The vessel protocol is to not discharge blackwater or graywater in Canadian waters on this route. Navigation on the bridge shows clearly marked electronic maps indicating discharges to stop 13 miles outside the OCNMS (12 miles from shore and a one mile buffer).

Discharge Types:

Blackwater includes toilet waste and medical drains and is sent by vacuum/jet to the Wartsila MBR Type 3 marine sanitation devices (photo #04). Description paraphrased from the schematic on the MSD system (Photo #03): Black water enters from the inlet into the aeration tank where the bacteria present in this section decomposes the blackwater in the presence of oxygen which is supplied by the aeration nozzles. A continuous supply of oxygen is necessary. The blackwater then enters into the settling section where settling takes place and flocs of activated sludge settles down along with other settleable matter. Sludge is returned back to the aeration section. The settled blackwater then enters into the disinfection section where chlorine is added (photo #03). Flow then goes to dedicated holding tanks if not in an area of discharge. Blackwater is not discharged in MOU related waters and all blackwater is treated. Settleable solids are monitored periodically and chlorine availability checked. Once per year, each MSD is taken off-line for a full maintenance cleaning. Solids are removed at this time, drummed and sent ashore.

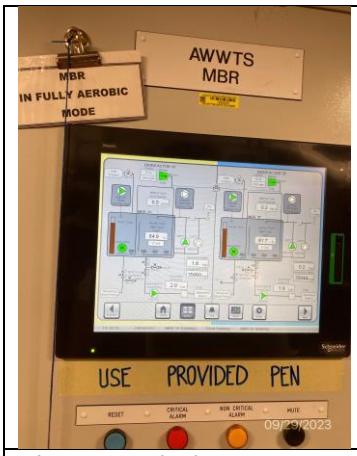

Photo #03 9/29/23 Image: IMG_E0728
By: Dobrowski
Description: MRB schematic

Photo #04 9/29/23
Image: IMG_E0725
By: Dobrowski
Description: MSD inlet screen tank

Graywater, which includes accommodation and crew sink and shower water, galley water, laundry and possibly spa water is held treated discharged outside of MOU related waters.

Dirty bilge water collected and is sent to one of two oily bilge tanks. Liquid moves to one 3 stage centrifugal oily water separators (OWS).. The system includes two stages of filtration and recirculates at >5 parts per million (ppm) oil content with the oily content meter (photo # 05). Oily sludge is collected from the system and sent ashore by truck. Maintenance on the OWS's includes regular cleaning of the filters and other regular checks and maintenance. Prior to discharge, the liquid is sent through a white box which only allows discharges <15 ppm. The discharge protocol for this route is outside the MOU related waters. The white box (photo #06). The Chief Engineer and the EO have the two separate keys and both need to be present to open the white box. There is a record each time the white box door is opened and a video camera on OWS equipment. The chief Engineer and the EO have the ability to review camera recordings. All portable pumps are logged and only used for certain equipment. The EO confirmed that he is not aware of any rerouting of oily bilge. The OWS was off and recirculating during the inspection and not discharging. If graywater tanks overflow or come in contact with oily bilge, the content is considered as oily bilge and treated through the OWS and the Captain and Chief Engineer are notified.

	
Photo #05 9/29/23 Image: IMG_E739 By: Dobrowski Description: OWS oil treatment	*Photo #06 9/29/23 Image: IMG_E735 By: Dobrowski Description: OWS White Box*

The SEABOURN VENTURE uses graywater in various tanks for ballast and therefore does not do ballast water exchanges. Stability has not been an issue.

The SEABOURN VENTURE has 1 fresh water pool, and 5 jacuzzies/spas which are also fresh water. The pools are discharged >12nm and outside of MOU related waters and the water can be sent to the graywater collection tanks for discharge outside of MOU related waters.

Food waste is segregated into soft and hard foods. Soft foods are fed into a pulper. The effluent from the food waste pulper is deposited into the grey water tanks and is discharged outside of MOU related waters. Hard foods either go through the MAGS or landed ashore as USDA waste in Seattle. Used cooking oil (photo #09) is sent ashore for recycling. The EO and Food Operations staff inspect the biodigester typically daily. There is no food chute on board.

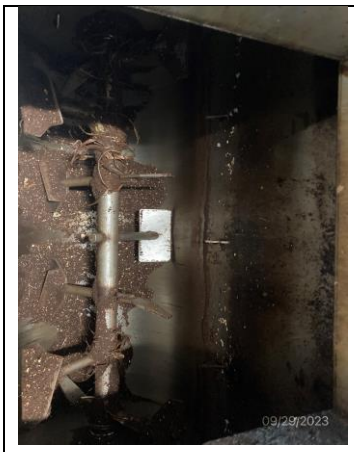		
Photo #07 9/29/23 Image: IMG_E0711 By: Dobrowski Description: inside of food processor	*Photo #08 9/29/23 Image: IMG_E0715 By: Dobrowski Description: Glass Crusher*	*Photo #09 9/29/23 Image: IMG_E0718 By: Dobrowski Description: cooking oil and miscellaneous chemical storage.*

Deck runoff goes directly overboard. The VGP requirements are followed for prevention of any materials off the deck. Only non-toxic, phosphate free cleaners are used. Outside vessel maintenance is not done at the Port of Seattle. Work does not occur if too windy and is done with permission of the Port.

Laundry water is sent to the graywater collection tanks and discharged outside MOU related waters. Dry cleaning is not done on the vessel..

No photo waste is generated onboard this vessel. X-rays are done digitally without any waste. This vessel is equipped with only LED's, so there are no florescent bulbs to dispose of. Hazardous waste materials are stored separately in various dedicated locations throughout the vessel and include items such as paints, thinners, oily rags and debris, MAGS ash, chemicals, aerosols photo waste, and some batteries. Bio-medical waste goes through the MAGS with sharps being offloaded as biomedical waste ashore. Hazardous waste is mostly offloaded in Victoria on this route.

Unused or outdated pharmaceuticals and narcotics are either destroyed onboard through the MAGS or are landed ashore via red medical bag waste. When medical waste does go through the MAGS the Lead Nurse is required to transport the

medical waste and witness MAGS operation. Expired IV fluids, saline solution, and injectables are discarded down medical drains.

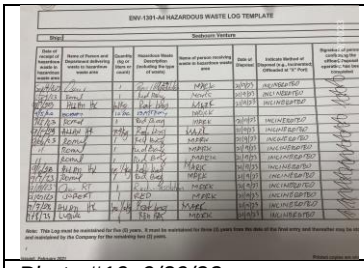
ENV-1301-A4 HAZARDOUS WASTE LOG TEMPLATE

Photo #10 9/29/23
Image: IMG_E0743 By: Dobrowski
Description: Garbage/Hazardous Waste Record Example Log

Garbage such as domestic and operational waste is offloaded in Seattle. Some USDA wastes, some food waste, biomedical bagged waste, some plastics, food contaminated cardboard, and some paper goes through MAGS. Ash is tested annually and offloaded as hazardous waste if necessary. The garbage record book was reviewed (photo #10) and showed consistency with requirements.

Glass, heavier plastics, most cardboard, aluminum, tin and steel cans, batteries, used cooking oil and other items are recycled in Seattle.

A Selective Catalytic Reduction (SCR) for exhaust is installed on the SEABOURN VENTURE. The SCR operates using Urea and a metal honeycomb mixed with exhaust gases to reduce the Nitrogen in the gas on all engines. While in MOU waters the vessel is switching over to MGO fuel < 0.1% sulfur. The SCR uses filters (photo #12, and photo #13) and discharges are diluted and monitored before discharge.

Photo #11 9/29/23 Image: IMG_E0732 By: Dobrowski
Description: overboard discharge lock

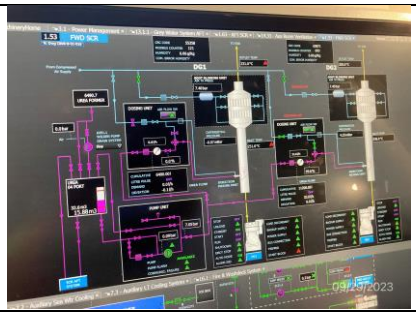

Photo #12 9/29/23
Image: IMG_E0723 By: Dobrowski
Description: SCR diagram

Photo #13 9/29/23
Image: IMG_0724 By: Dobrowski
Description: SCR filter

The vessel has a clear process for notifications for any non-compliance incident.

Conclusions and Recommendations

The protocols for discharges are clear. Records were orderly and appeared consistent with the MOU.

Copies to:
Georgi Makov, Environmental Officer, SEABOURN VENTURE
Alex Adams, Port of Seattle
Amy Jankowiak, Ecology
Central Files: Seabourn Cruise Line – SEABOURN VENTURE; WQ 6.1

Section H: Signatures

Name and Signature of Inspector:	Agency/Office/Telephone:	Date
Evan Dobrowski, Compliance Specialist *Evan Dobrowski*	Department of Ecology Northwest Regional Office Water Quality Program 206-594-0175	November 20, 2023