2018

Ocean Ranger Guidebook

Alaska Department of Environmental Conservation

1/22/2018

This guidebook is intended for use by Ocean Rangers, the Ocean Ranger Contractor, and CPVEC Staff. Copies are available on request, but are not intended for general distribution. Please report any needed corrections to Ed White, CPVEC

Contents

Chapter 1

General Citations

Electronic references contain a copy of the Alaska General Permit, EPA VGP, and other cited documents.

General Reporting Information

Comprehensive and accurate reporting is critical to the success of the Ocean Ranger program. Concise, clear reporting is required for all reports.

Information required when documenting a noncompliant Item:

What? Give a concise, to the point statement of what the noncompliance is. Information listed must be relevant and objective.

When? List time and date, and length of time if applicable.

Where? Give the location of the noncompliant item. It is difficult to find items due to the size of the ships, and the fact that there can be more than one of something. For example, "on passenger deck" is not very precise, where "starboard side boat deck 10 feet aft of the #4 lifeboat davit" will help other Ocean Rangers find the item for follow-up if needed.

Why? Describe how the item is not in compliance. Be comprehensive and clear.

Who? Describe who was notified on the ship, which outside agencies were contacted, and who reported the item. Document who you notified about the item.

Be sure to state if something was not personally observed, such as something reported to you by the vessel's crew.

Additional Observations:

Additional observations are very helpful to the DEC. Vessel operators may not realize the significance of documenting that a potential non-compliance item was fixed. Information gathered by an Ocean Ranger saves operators time and effort.

There are two main types of additional observations:

- Compliance Verification
- Information Gathering

Compliance Verification is a follow up to an issue identified by an Ocean Ranger, sample results, DEC, or the US Coast Guard. Examples include; documenting whether a non-compliance was corrected or procedural changes made to avoid a noncompliance in the future.

1

Information Gathering covers a wide range of topics such as wastewater treatment information for general permit development.

Once a Season Reports:

Items on this report can change. If you see a change, update the Once a Season Report with the new information.

Photographs:

Label supporting photographs with the:

- Date
- Time
- Location

Sketches and Drawings:

Sketches and drawings are helpful for the reviewer- who may not be familiar with the item or ship.

Sharing of Information:

Ocean Rangers are permitted to share information such as reports and photos with the ADEC, Crowley, and the US Coast Guard.

Record on the daily report what information was provided, to whom, on what date.

DO NOT directly provide copies of reports or photos to anybody else. Other interested parties must make a request for information to ADEC.

Helpful Hints & Suggestions

Remember, readers of your report may have limited experience with cruise ships and marine engineering.

Do not Include

- *Personal Information*
- *Not a cruise ship? If another type of vessel, such as a fishing boat, report in the Oil Sheen report if oil related otherwise use a general report*
- *Questions and suggestions*
- *Unsure if it is a non-compliance item? Report it on a general report for DEC review*

Taking useful photographs

- *Take an "establishing" photograph showing the general location*
- *Take a "subject" photograph showing the item marked as critical*
- *Use a ruler or other object to establish scale*
- *Use a flash in dim or unlighted areas*
- *Stand on equipment or floors that are not vibrating excessively*

Information Section of the Job Aid

1. General Information
   The Job Aid contains instructions on information to enter. Provide the requested information. The vessel should have the number of passengers and crew onboard; provide what is listed at the time it was checked.
2. Discharge in Alaska on report day? (Y/N)
   Provide information at the time this item was completed.
3. Sample Taken? (Y/N)
   Provide information if a wastewater sample was taken.

a. Type- A compliance sample is a sample taken for the General Permit or USCG Continuous Compliance while discharging. WET Sampling is Whole Effluent Toxicity sample with a large volume taken at several times within a few hours. Receiving water sampling is sampling taken near the ship in water to monitor mixing zones.
   - Process sampling occurs onboard to check that the equipment is functioning, it does not have to follow the QAPP or GP requirements.
   - Information sampling would be for example when taking a sample without discharging for USCG or EPA.

b. Type of WW Sampled.
   Provide the type of wastewater that is being sampled. Example; mixed for mixed graywater and blackwater.
   - Receiving water is not wastewater, but is taken in the mixing zone off the ship with mixed seawater and discharged wastewater.

c. Sample ID- provided by the sampler. If no ID leave blank. Example; process sampling.
d. Sample date, time, duration.
   - Enter the date, approximate time sample began, and how long the sample took to complete.
   - Provide notes in general comments if sample was delayed, taken at multiple times, or was not completed.

e. Sample taken while discharging (Y/N)
   - List if ship was discharging or not.

f. Discharge continuous or intermittent.
   - Provide information if the discharge was while the ship was continuously discharging or if it was intermittent- such as from a tank with a level control that automatically pumps out when a level is reached.

4. Waste Offloads (Y/N)
   Fill in the information requested and check that offload matches waste offload plan.
5. Reportable Illness (Y/N) (42 CFR §71.21)
   - Report if the vessel is above the CDC reportable threshold, (2% of passengers or crew with GI or other illness).
   - Vessels must report any death or any illness among passengers or crew.

1

6. Scrubber used today (Y/N)?
   Was the Exhaust Gas Cleaning System (EGCS) in use at some time today? This is an information questions, ADEC is gathering information on scrubber use. Some ships do not have a scrubber.
7. Fuel used
   This is an information question. List fuels used during the day and information on fuel switchovers if they occurred.
8. Other reports worked on today
   List any other reports worked on such as general reports, oil sheen reports, and once a season reports.
9. Who was contacted regarding any potential noncompliant item
   List who with the crew or ship management you contacted regarding the reported item if the report was flagged as a potential noncompliant item in the report. Also list any non-ship contacts such as federal or state agencies.
10. General Comments and Photos
    Provide additional information not captured elsewhere, such as items or information of interest, specific information addressing comments in observations, and photos.

Chapter 2 Wastewater

General Citations

Waste Water Schematics

General Background:

Large cruise ships generate significant amounts of wastewater, compared with other vessels, because of the high number of crew and passengers. This wastewater is highly concentrated due to water conservation efforts. If this wastewater is released untreated, near shore, it becomes a human health concern.

Cruise ship wastewater effluent quality has been an issue of concern in Alaska since the 1990s. After public requests for information, sampling was performed; it showed that cruise ship marine sanitation devices (MSD II) were not working as designed. Federal and State laws were passed in 2000 and 2001 regulating effluent limits for treated sewage and graywater in Alaska.

In 2001, cruise ships discharging wastewater into marine waters of the State began installing Advanced Wastewater Treatment Systems (AWTS) to meet Federal and State requirements. Several types of AWTS were installed. In 2004 sample results indicated substantial improvements in effluent quality for fecal coliform, biochemical oxygen demand, suspended solids, and chlorine.

Not all cruise ships discharge in Alaskan waters. About half of all large cruise ships in Alaska are permitted to discharge, the others discharge outside of State and Federal waters. Some vessels are permitted, but only discharge under specific conditions, such as while underway or only discharge a limited volume.

Wastewater is one of the primary reasons for the creation of the Ocean Ranger program. You will be gathering information for current and future ADEC wastewater permitting and monitoring for items such as:

- Unpermitted discharges
- Exceedances of Federal and State effluent limits
- Sampling is representative of typical discharges

Regulatory Background:

Federal legislation in 2000, (Title XIV--Certain Alaskan Cruise Ship Operations, also known as the “Murkowski Law”) to regulate large cruise ship wastewater in Alaska, became effective in 2001.

Title XIV prohibits the discharge of untreated sewage in Alaskan waters; including areas within the Alexander Archipelago in Southeast Alaska more than 3 miles from shore, called donut holes. Title XIV also allowed the EPA to create minimum effluent quality regulations that are consistent with State water quality standards, and allows the State to impose additional

requirements and permits. The US Coast Guard (USCG) implemented interim regulations in 2001, but the EPA has not issued a final permit or regulations for this legislation.

The ADEC Commercial Passenger Vessel Environmental Compliance (CPVEC) Program was established in July 2001 by Alaska Statutes (AS) 46.03.460 - AS 46.03.490. State law set effluent limits and sampling requirements for the discharge of blackwater and graywater from commercial passenger vessels. Cruise ships that discharged wastewater in Alaska are required to take samples. Effluent limits were established for Fecal Coliform bacteria and suspended solids.

2

In August 2006, Alaskan voters approved a ballot measure that added new requirements to the CPVEC Program. Among several new provisions, the statute required operators of large commercial passenger vessels to obtain a wastewater discharge permit from the ADEC. The new law required that cruise ship wastewater effluent meet Alaska Water Quality Standards (WQS) at the point of discharge.

In 2008, the United States Environmental Protection Agency (EPA) issued a vessel general discharge permit (VGP). The VGP covers a wide range of wastewater and discharges; graywater, deck wash-down, ballast, boiler blow down, exhaust gas cleaning, and includes management practices for a variety of vessels. The VGP is issued and enforced by the EPA and USCG.

In 2013, House Bill 80 was passed by the Legislature, allowing the ADEC to issue a General Permit (GP) to cruise ships with effluent limits that are less stringent than the WQS at the point of discharge, if ADEC allows a mixing zone. The revised General Permit for large cruise ships was developed in 2014.

Some of the key differences between ADEC and USCG Alaska requirements for treated sewage and graywater are:

ADEC	USCG
Issues Permit	Approves continuous discharge
Stationary discharge is less than 6 knots only	Less than 6 Knots and within 1nm
50 passengers + (250 for large)	500 passengers +

Alaska General Permit requires large passenger vessels to follow a semimonthly sampling regime of treated sewage and graywater discharges. Under federal law, the U.S. Coast Guard allows large cruise ships, over 500 passengers, to continuously discharge blackwater and graywater in Alaska while in Port and at anchor if standards are met. For discharges while underway, less stringent requirements must be met.

In order to receive approval for continuous discharge a ship operator must submit to the USCG five sample results taken within 30 consecutive days that meet the requirements. If the conditions are met, the U.S.C.G. issues a continuous discharge approval letter. A ship approved by the U.S.C.G. to discharge continuously must sample their wastewater twice per month to maintain this approval.

Section 1: Wastewater Daily Observations

Job Aid Item: 1.1.a

Daily waste water and related discharge logs are current, monitored and recorded **IAW 18 AAC 69.050 & 33 CFR 159.315, AS 46.03.465 (a).**

Background: Cruise Ships in Alaska are required to maintain a Sewage and Graywater Discharge Record Book or Discharge Log onboard that documents when, where, how much, at what speed, and what type of wastewater was discharged in Alaskan. State regulations require a log for all vessels discharging in Alaskan waters, Federal regulations require vessels with over 500 passengers to carry a log book. Wastewater Discharge Logs are critical in determining what type of wastewater is being discharged and where. They are used for compliance checks and future permitting decisions. The logs must be accurate, complete, and filled out in a timely manner. Your onboard review of the Discharge Log allows time sensitive checks and verification while a vessel is underway. The logs are also checked by ADEC staff and the USCG.

Helpful Hints & Suggestions

A good Discharge Log will include:

- *Detailed instruction sheet*
- *Clear entries*
- *Page numbers*

Some common errors that have been discovered in Discharge Logs are;

- Locations, times, and dates have been transcribed incorrectly
- Discharge ports and effluent types have been incorrectly listed
- Volumes are often estimated and sometimes do not match what would be expected for a normal discharge volume

Discharge logs have also documented discharges of wastewater in unpermitted areas.

Ocean Rangers have a duty to make themselves familiar with the Discharge Logs and any recording instructions onboard each cruise ship. Not all Discharge Logs are the same, there are a wide variety of formats in use.

The completed Once a Season Report checklist list the crew member(s) responsible for the Discharge Logs, where and how the records are kept.

Example 1 is an instruction sheet often included in the record book. Examples 2 and 3 are copies of discharge record book pages with signatures.

Photo 1: BW stored in garbage cans from overflow

Example 1: Discharge Log Instruction Sheet

TSO ECR.1.20 Sewage and Greywater Discharge Record Book Instructions — Revised February 2007

Instructions:

When making entries into the Sewage & Greywater Discharge Book, each entry should be made as described below.

DAY	START TIME	START LAT	START LONG	DISCH PT(s)	EFF TYPE	FLOW (L/MIN)	P-I-C SIGN	DAY	STOP TIME	STOP LAT	STOP LONG	VOL (M/T)	MIN SPD(Kt)	P-I-C SIGN	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

(1) Enter the day of the month the discharge started.
(2) Enter the local time the discharge started using 24-hr clock.
(3) Enter the latitude where the discharge started.
(4) Enter the longitude where the discharge started.
(5) Enter the discharge ports that were activated during the discharge. Each discharge port may be identified by code from the schematic below.
(6) Enter the effluent type discharged from the following codes.

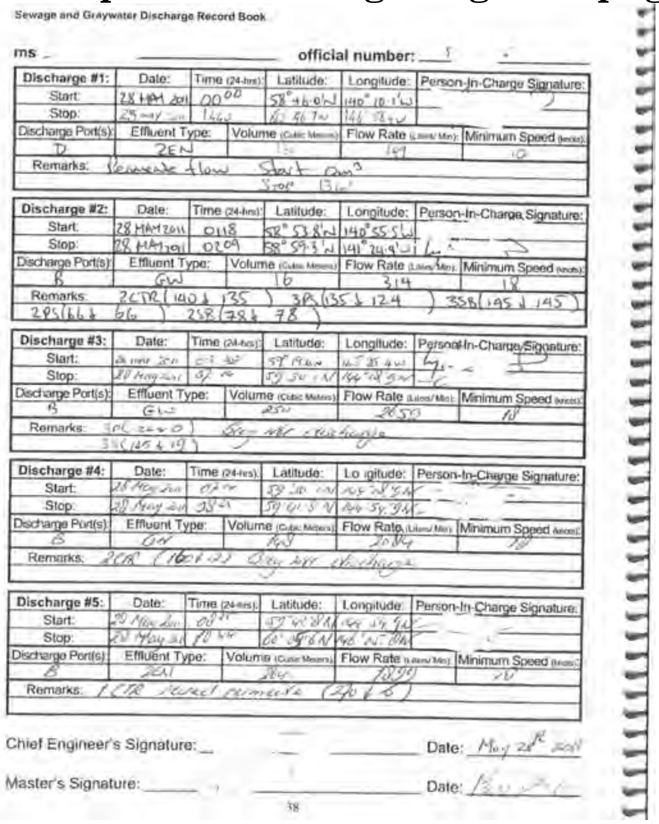
- US = Untreated Sewage
- TS = Treated Sewage
- GW = Greywater
- USG = Untreated Sewage and Greywater mix
- TSG = Treated Sewage and Greywater mix
- OTH = Other (includes desludging operations). This must be explained in the remarks section (16).

(7) Enter the average discharge flow rate in liters per minute for the discharge period.
(8) Enter the signature of the person in charge of starting the discharge operations.
(9) Enter the day of the month the discharge stopped.
(10) Enter the local time the discharge stopped using 24-hr clock.
(11) Enter the latitude where the discharge stopped.
(12) Enter the longitude where the discharge stopped.
(13) Enter the volume in cubic meters of effluent discharged during the discharge period.
(14) Enter the vessel's minimum speed in knots during the discharge period.
(15) Enter the signature of the person in charge of stopping the discharge operations.
(16) Enter any remarks as needed to clarify the circumstances of the discharge such as; if the discharge controls were set to automatic during the period, if the discharge was an emergency, if the discharge was accidental etc. If additional space is needed, you may continue the entry in on the blank sheets in the back of this book. **Note treatment technology or equipment type (if used). Examples include biological MSD, reverse osmosis, ultrafiltration.**

ii

Sewage and Greywater Discharge Record Book for Cruise Ships

Example 2: Discharge Logbook pages with signature A


Sewage and Graywater Discharge Record Book

ms: ______ official number: ______

Discharge #2:	Date:	Time (24-hrs):	Latitude:	Longitude:	Person-In-Charge Signature:
Start:	28 MAY 2011	0118	58° 53.8'N	140° 55.5'W	
Stop:	28 MAY 2011	0209	58° 59.3'N	141° 24.9'W	

Discharge Port(s):	Effluent Type:	Volume (Cubic Meters):	Flow Rate (Liters/Min):	Minimum Speed (knots):
B	GW	16	314	18

Remarks: 2CTR (140 & 135) 3PS (135 & 124) 3SB (145 & 145) 2PS (66 & 66) 2SB (78 & 78)

Discharge #1, #3, #4 and #5: Date: / Time (24-hrs): / Latitude: / Longitude: / Person-In-Charge Signature: / Start: / Stop: / Discharge Port(s): / Effluent Type: / Volume (Cubic Meters): / Flow Rate (Liters/Min): / Minimum Speed (knots): / Remarks:

Chief Engineer's Signature: ______ Date: May 28th 2011

Master's Signature: ______ Date:

38

Example 3: Discharge Logbook pages B

TSO ECR.1.20 Sewage and Greywater Discharge Record Book

Vessel: Official Number: Month/Year August 2011 Page: 1

Voyage :

DAY	START TIME	START LAT	START LONG	DISCH PT(s)	EFF TYPE	VOL (M/T)	P-I-C SIGN	DAY	STOP TIME	STOP LAT	STOP LONG	FLOW (L/MIN)	MIN SPD(Kt)	P-I-C SIGN	REMARKS
21-Aug-11	8:15	51°2.2'N	127°54.3'W	C+D	GW	740		21-Aug-11	17:21	52°35.9'N	130°00.9'W	1,355	13		Note3+5Vancouver to Ketchikan
21-Aug-11	8:15	51°2.2'N	127°54.3'W	C+D	GW	281		21-Aug-11	23:53	54°02.7'N	130°58.7'W	300	13		Note 2 Vancouver to Ketchikan
21-Aug-11	11:00	51°26.0'N	128°36.3'W	D	OTH	80		21-Aug-11	17:21	52°35.9'N	130°00.9'W	210	13		Note 4(a+b) Vancouver to Ketchikan
22-Aug-11	1.00	54°19.2'N	131°04.0'W	C+D	GW	19		22-Aug-11	2:02	54°34.2'N	131°14.7'W	300	15		Note 2 Vancouver to Ketchikan
22-Aug-11	14:26	55°21.2'N	131°42.0'W	B	TSG							0			Note 1 Ketchikan to Juneau
												#DIV/0!			
												#DIV/0!			
												#DIV/0!			
												#DIV/0!			
												#DIV/0!			
												#DIV/0!			
												#DIV/0!			

CTO's Signature:______ Date:______ Master's Signature:______ Date:______

NOTES :-

- Note 1 :- All discharges closed prior to entry into 4/12 limit. Automatic discharge control with Membrane Bio-Reactor treatment equipment.
- Note 2 - No flowmeter fitted to provide volume. All discharges closed prior to entry into 4/12 limit. Automatic discharge control
- Note 3 :- Bulk Discharge of held Greywater and Treated Sewage Greywater mix.
- Note 4 (a) :- De-sludge of MBR 1. No flowmeter fitted to provide volume. Overboard valves shut at finish time and position. Membrane Bio-Reactor treatment equipment.
- Note 4 (b) :- De-sludge of MBR 2. No flowmeter fitted to provide volume. Overboard valves shut at finish time and position. Membrane Bio-Reactor treatment equipment.
- Note 4 (c) :- De-sludge of MBR 3. No flowmeter fitted to provide volume. Overboard valves shut at finish time and position. Membrane Bio-Reactor treatment equipment.
- Note 5 - Bulk discharge of held laundry water.
- Note 6 :- Ships clocks retarded 1 hour.
- Note 7 :- Ships clocks advanced 1 hour.

2

Locations to compare against Discharge Log entries:

2

Dock Locations:

Port	Dock	Dock Location	Lat (N)	Long (W)
JNU	AIF	Anchor- Intermediate Float	58.28975	-134.39792
JNU	AJD	AJ Dock	58.28933	-134.39798
JNU	AMP	Anchor- Marine Park	58.2945	-134.40836
JNU	AS	Alaska Stream Dock	58.29867	-134.40564
JNU	CT	Cruise ship terminal	58.29545	-134.40068
JNU	FKL	South Franklin St Dock	58.29162	-134.39547
KTN	1	Dock 1 (salmon Landing)	55.3378	-131.64328
KTN	2	Dock 2 (Visitors Bureau)	55.34173	-131.64878
KTN	3	Dock 3 (City Float)	55.34202	-131.6498
KTN	AN3	Anchor (tender to berth 3)	55.342	-131.666
SIT	2BR	Anchor	57.01575	-135.35803
SIT	2CR	Anchor	57.03589	-135.30375
SIT	3CR	Anchor	57.98605	-136.96533
SKG	BRD	Broadway dock	59.44987	-135.32582
SKG	ORE	Ore Dock	59.45012	-135.3273
SKG	RRA	Railroad Dock Aft	59.44377	-135.32875
SKG	RRF	Railroad Dock Fore	59.44733	-135.32243
GB	N/A	Bartlett Cove Dock	58.4587	-135.8857
WHT		Whittier Cruise Dock	60.7783	-148.6942
SEW		Seward Cruise Dock	60.1180	-149.4281
KDK		Kodiak Ferry Dock	57.7868	-152.4029

Outer General Permit Boundaries (common entrances to SE Alaska):
58°05-17 N, 136°33-49 W and 58°11-41 N, 136°39-25 W [Cross Sound]
56°09-40 N, 134°40-00 W and 55°49-15 N, 134°17-40 W [Chatham Strait]
55°49-15 N, 134°17-40 W and 55°50-30 N, 133°54-15 W [Sumner Strait]
54°41-30 N, 132°01-00 W and 54°51-30 N, 131°20-45 W [Clarence Strait]
54°51-30 N, 131°20-45 W and 54°46-15 N, 130°52-00 W [Revillagigedo Channel]

Approximate- Glacier Bay "box":
North of 58.38° N and between 135.5° W and 137° W
Official Glacier Bay: *Glacier Bay means all waters inside a line drawn between Point Gustavus at 135°54.927' W longitude; 58°22.748' N latitude and Point Carolus at 136°2.535' W longitude; 58°22.694' N latitude.*

Other Locations:
Hinchinbrook Entrance (main entrance to Prince William Sound) 60.22 N, 146.82 W
Yakutat Bay entrance 59.58 N, 140.08 W
Tracy Arm entrance 57.75 N, 133.64 W
Forester Island (offshore of Prince of Wales Island) 54.8 N, 133.53W
Dixon Entrance Canadian Border (Canadian claim, not US approved) 54'40" N or 54.67 N

What to Check:

Wastewater Discharge Log

Check	Requirement	Citations*
All Entries	All discharges of treated or untreated wastewaters are recorded	18 AAC 69.050(a)
All Entries	Entries are accurate (check location, type, times, dates)	18 AAC 69.050 (b)
All Entries	Entries are legible and complete	33 CFR 159.315 (a)
All Entries	Discharge Logs are recorded timely	33 CFR 159.315 (e)
All Entries	Volumes and flow rates are accurate	33 CFR 159.315 (c)
All Entries	Discharge ports match VSSP	18 AAC 69.030 (b)
All Entries	Signed daily by master or designated person	33 CFR 159.315 (e)
Logbook	Kept onboard and available (all cruise ships over 500 passengers, discharging over 250 passengers)	33 CFR 159.315 (a) & 18 AAC 69.050 (a)
Logbook	Emergency or accidental discharge(s) are recorded and reported	33 CFR 159.315 (d) & GP 1.8 & GP 2.4
Logbook	Vessel Name and Official Number on each page	33 CFR 159.315 (a)
Logbook	Pages are not filled in in advance or pre-signed	33 CFR 159.315 (b)

Citations: IAW 18 AAC 69.050 **&** 33 CFR 159.315**,** AS 46.03.465 (a)

Job Aid Item: 1.1.b

Discharge Log type and volumes match other available information.

What to Check:

Discharge Log matches other available sources of information, such as meters, tank volume logs, and production information.

Job Aid Item: 1.1.c

Waste water to shore, such as into a sewer system or truck, discharges are not released into regulated water body IAW AS 46.03.462 and AS 46.03.463.

Helpful Hints & Suggestions

There can be multiple citations for each requirement. The most relevant are listed in the Table, (above).

Background: Some cruise ships discharge treated or untreated wastewater to shore for disposal. Most of this occurs in Juneau where graywater is offloaded to the Juneau sewer system. It is also possible that wastewater could be offloaded into trucks or to other municipal wastewater treatment systems.

What to Check:

1. Wastewater must be offloaded without spills or direct discharge to water bodies
2. Hoses must not leak; docks or shore must not have pools of wastewater
3. Check for unusual foam or smell in seawater near the offload operations

Citations: AS 46.03.462 **&** AS 46.03.463

2

Photo 2: Unknown Discharge

Photo 3: Sewage Offload by tank vaccume truck

Photo 4: GW offload hose in Juneau 1

Photo 5: GW off load hose in Juneau 2

Job Aid Item: 1.1.d

Check for unpermitted discharges of untreated wastewater, treated wastewater by unpermitted vessels, discharge in areas closed to discharge, discharge of sludge or biosolids in Alaska waters IAW **AS 46.03.462 & 463, 33CFR 159.307 & 309 and GP**.

Background: Wastewater discharge in Alaskan waters requires a Wastewater Discharge Permit. Wastewater that is discharged must meet all Federal and State requirements for treatment and can only be discharged where permitted. Discharge of untreated blackwater or graywater is prohibited in Alaskan waters and the Alexander Archipelago.

Title XIV, the "Murkowski Law", allows the State of Alaska to regulate wastewater discharge for large cruise ships within Alaskan waters and areas in the Alexander Archipelago that are outside of 3nm but within US territorial waters, closing the "doughnut holes" located in the Inside Passage. The boundaries are included in the General Permit and the GP reference map.

The Large Commercial Passenger Vessel Wastewater General Permit prohibits discharge into impaired or water quality limited waters and limits the type of discharges. Discharges must be from an Advanced Wastewater Treatment System (AWTS) and cannot contain; oily sheens, large amounts of foam, floating solids, garbage, grease, or sediments and sludge that does not meet the wastewater discharge standards (GP 1.3).

Photo 6: Foamy Discharge

5-10% of the treated WW volume is "biosludge" or "biosolids". These solids are kept in a holding tank or dried and incinerated. The sludge can be discharged outside 12nm.

Vessels that clean out the biosludge manually from the AWTS system tanks and system store it in drums or large garbage cans for later disposal. Document all biosludge storage operations.

Map 1 outlines where the Alaska Large Commercial Passenger Vessel Wastewater General Permit applies in Southeast Alaska. All areas inside of the blue 3 nautical mile boundaries for the outer coast and all areas inside of the red boundaries are covered by the General Permit.

The 3nm boundaries in blue inside of the red lines are known as "doughnut holes" and were closed to discharge of untreated sewage by Title XIV. The blue boundaries designate State Territorial Waters for all items other than wastewater.

There can be a difference between what can be discharged and what actually *is*. For many cruise ship operators, company policy is more stringent than what is required by Federal and State Regulations. For example, some operators treat all sewage even outside 12 nautical miles, and some voluntarily hold treated wastewater in areas such as Tracy Arm.

What to Check:

1. Check Discharge Logs entries for:
   - Entries documenting accidental or emergency discharges
   - Locations of discharge that show unpermitted WW discharge
   - Discharge amounts do not exceed the design capacity of the treatment plant
2. Check the latest version of the GP and vessel authorizations for information on discharge limitations
3. Monitor for unusual activities around the ship:
   - Overboard ports are closed on all non-discharging vessels in Alaskan waters
   - Overboard ports are closed on all discharging vessels in restricted areas
4. Watch for:
   - Foam
   - Solids
   - Oily sheens
   - Unusual smells in the waters around the cruise ship

Helpful Hints & Suggestions

Discharge restrictions for Tracy Arm are by a voluntary agreement only. There is no regulatory prohibition on the discharge of treated wastewater in Tracy Arm.

Citations: AS 46.03.462 (a-c), AS 46.03.463 (a & e). 33 CFR 159.307 **and** 33 CFR 159.309 (a)**. Also, see 2014 GP for applicable limitations.**

2

Map 1: General Permit SE Alaska Boundaries

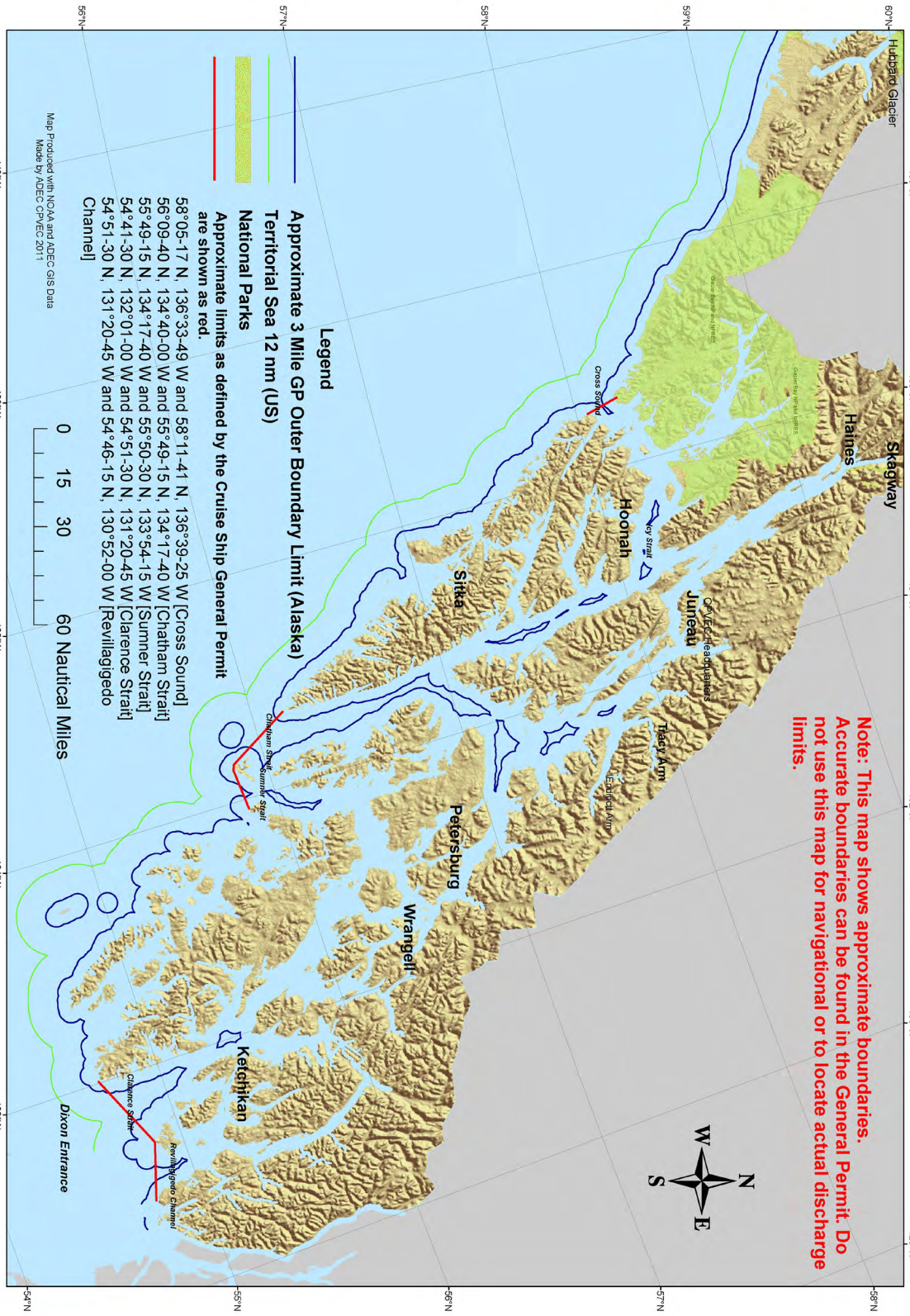


Table 1: Sewage and Graywater Discharges (Large Cruise Ships)

What?	Stationary[1]	Continuous[2]	Title XIV AK Waters[3]	Outside 12 nm[4]
Treated Wastewater	AK GP	USCG Approval	AK GP	Yes
Untreated Wastewater	No	No	No	Yes[5]
Sludge/Biosolids	No	No	No	Yes

Table 2: Other Wastewaters (Large Cruise Ships)*

What?	Within 3 nm	Outside 3 nm	Outside 12 nm[6]
Pool/spa water	De-chlorinate, de-brominate	Yes	Yes
Boiler water	No[7]	Yes	Yes
Ballast water[8]	Varies	Varies	Varies
Hazardous Waste	No	No	No
Oily water[9]	No	No	No

*Note: wastewaters could be comingled, limits from 2013 EPA VGP

Table 3: Solid Wastes (MARPOL Annex V 2013)

What?	Within 3 nm	Outside 3 nm[10]	Outside 12 nm[11]
Food wastes	No	Yes, if ground or comminuted	Yes
Cooking Oil	No	No	No
Incinerator Ash	No	No	No
Paper, glass, metal, rags, refuse, all other garbage	No	No	No
Plastics	No	No	No

[1] Stationary in the Alaska Wastewater General Permit is defined as less than 6 knots speed.
[2] Continuous discharge is within 1 nautical mile from nearest shore or less than 6 knots speed.
[3] For wastewater from large cruise ships, includes the whole of the Alexander Archipelago in Alaska and within 3 nm from shore as defined in 33 CFR 159.305
[4] Outside United States Territorial Seas
[5] Needs to be discharged underway and at a moderate rate of discharge if stored in holding tanks.
[6] Outside United States Territorial Seas
[7] Unless conditions in the EPA VGP are met.
[8] Requirements of EPA VGP must be met, see EPA VGP for details on where discharge is allowed
[9] More than 15 ppm of oil.
[10] 3 nautical miles from shore. Alaskan waters for most definitions.
[11] Outside United States Territorial Seas

Job Aid Item: 1.1.e

WW discharge for permitted vessels performed IAW GP Authorization Letter. **(AS 46.03.462 (a)) and GP 4.4**

2

Background: The GP authorization letter identifies what types of wastewater discharge, and any discharge limitations, the vessel is allowed in Alaskan waters. For example, some vessels are only allowed to discharge while underway. These ships should be checked for any stationary discharges. Some vessels can only discharge specific types of wastewater, for example blackwater and accommodations graywater. Example 4 is a GP authorization letter; in it other graywater sources entering the waste stream such as galley water must be checked.

Helpful Hints & Suggestions

A list of ships authorized to discharge in Alaska waters is in the WW Table.

What to Check:

Discharge Logs:

- What valves are open - closed
- Tank levels to see if a vessel is following the GP authorization letter

Citation: ADEC WW GP- Section 4.4 on authorized discharges. See next page for Example Authorization Letter.

Example 4: GP Authorization Letter for Wastewater

AUTHORIZATION TO DISCHARGE

Alaska Department of Environmental Conservation
Division of Water
CPVEC Program

AUTHORIZATION TO DISCHARGE UNDER THE LARGE COMMERCIAL PASSENGER VESSEL WASTEWATER DISCHARGE GENERAL PERMIT NO. 2013DB0004

FACILITY ASSIGNED AUTHORIZATION NUMBER: 2013DB0004-00xx

GENERAL PERMIT NUMBER: **2013DB0004**
See this General Permit for all permit requirements.

The following facility is authorized to discharge in accordance with the terms of the State of Alaska General Permit 2013DB0004 and any specific requirements listed in this authorization.

The authorization effective date is **April 30, 2015.**The authorization to discharge shall expire at midnight, **on the expiration or termination date of General Permit 2013DB0004 (August 28, 2019)** unless notified by the Department. The permittee must reapply for an authorization when the Department issues a General Permit that replaces 2013DB0004 if the permittee intends to continue operations and discharges from the facility.

SECTION 1 – RESPONSIBLE PARTY INFORMATION	
Issued to:	X Cruise Line

SECTION 2 – FACILITY INFORMATION	
ADEC File Number:	920.45.0xx
Authorization Number	*2013DB0004-00xx*
Facility Name:	Ship Name
Type of Facility	Large Commercial Passenger Vessel
Type of Wastewater Authorized for Discharge:	Treated mixed, black and greywater - additional special conditions for discharge apply (see below).
Type of Wastewater Treatment System:	Hamworthy Membrane Bioreactor
Type of Authorization:	Authorized for discharge of wastewater treated through a Hamworthy Membrane Bioreactor wastewater treatment system configuration as approved by the Department in the current Vessel Specific Sampling Plan while underway at speeds greater than 6 knots. Authorization for discharge of treated wastewater through a Hamworthy Membrane Bioreactor wastewater treatment system while stationary or at speeds less than 6 knots except while in the port of Skagway, AK. No discharges are authorized in the waters of Skagway, AK.

SECTION 3 – REGULATED DISCHARGE INFORMATION – EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	
Effluent Compliance Point:	Wastewater effluent sampling port(s) identified in the Department approved Vessel Specific Sampling Plan and Notice of Intent.

Effluent Limitations	Table 3 of the General Permit for discharges underway at speeds greater than 6 knots. Table 4 of the General Permit for discharges while stationary or at speeds less than 6 knots.
Special Conditions:	The Ship Name is not authorized to discharge wastewater into the waters of Skagway, AK.
Monitoring Requirements	Tables 5 and 6 of the General Permit including Receiving Water Monitoring, and WET testing in 2017, and any other applicable monitoring requirements in the General Permit
Discharge Monitoring Report (DMR)	The Ship Name must submit a monthly DMR with effluent limits that is available on the Department's website: (http://dec.alaska.gov/water/cruise_ships/gp/2014gp.html) or on a similar form approved by the Department.

SECTION 4 – RECEIVING AREA INFORMATION-RECEIVING WATER	
Receiving Area Name:	Marine waters of the state of Alaska as defined in the General Permit
Underway Mixing Zone Description:	63 meters in length, 5 meters in width, and a depth from the water surface to the depth the discharge port is below the water surface plus one meter. The shape of the mixing zone is an elongated rectangle that extends from the discharge port towards the stern of the ship.
Stationary Mixing Zone Description:	Radius of 83 meters and a depth from the water surface to the depth the discharge port is below the water surface plus one meter. The mixing zone will extend away from the hull of the vessel in a semicircle centered on the discharge port. No authorized mixing zone in Skagway, AK.
Skagway Discharge at Ore or Broadway Docks	N/A, no discharge authorized in Skagway, AK.
SECTION 5 – ADDITIONAL TERMS AND CONDITIONS (GP 4.3.2)	
Skagway Discharges	The Ship Name is not authorized to discharge wastewater into the waters of Skagway, AK.

If you have any technical questions regarding this authorization or the requirements of the general permit, please contact the Cruise Program Manager at (907) 465-xxxx.

SECTION 5 – CERTIFICATION/SIGNATURE

Signature	*Date*
Edward E White	EPS III, ADEC CPVEC
Printed Name	*Title*

Section 2: General Wastewater and EPA VGP

Job Aid Item: 1.2.a

Boiler blow down water is handled **IAW VGP 2.2.6**

Background: Boiler blow down discharge can contain high levels of metals or other priority pollutants. The EPA determined that this discharge should be mimized near shore and in port. Boilers on board of modern large cruise ships are used for heating purposes.

Most vessels have dedicated tanks where the "boiler blow downs" are stored. The boilers have "top and bottom" blow downs. Some vessels do periodical blow downs (top bottom), other vessels have these blow downs automated with a timer, others do continuous blow downs.

Some vessels were found to be directing their blow down water into bilge spaces and treated this water through the OWS system. From there the treated water was comingled with the influent of the AWTS.

Helpful Hints & Suggestions

For EPA VGP items the definition of minimize is: "reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best marine practice."

Ocean Rangers must understand these operations in detail and document the process, including estimated volumes. Blow down volumes should correlate closely to the boiler system makeup water.

Photo 7: Boiler drain, soot trap

Photo 8: Boiler drain line

What to Check:

- Boiler/economizer blowdown may not be discharged in EPA VGP waters (3nm) unless the conditions stated in the VGP are met.

Citation: EPA VGP 2.2.6 **Boiler/Economizer Blowdown**

2

Job Aid Item: 1.2.b

If seawater piping bio-fouling chemicals and chlorine are used, use is minimized **IAW VGP 2.2.20**

Background: The EPA included this in the VGP to minimize the use of pesticides near shore. Pesticides and herbicides may have unintentional environmental impacts because they are used to kill biofouling organisms. Vessels use anti-biofouling chemicals in different ways; some use them to keep the "sea water side" clean, others reduce the dosing rate of the chemicals while in Alaskan waters or in port, and some have multiple anti-biofouling systems installed on their primary water (raw/seawater) system.

What to Check:

- Biofouling chemicals used per their FIFRA label, if a registered pesticide. A FIFRA label will include information on application amounts and how to apply the chemical treatment.

Citation: EPA VGP 2.2.0 **Seawater Piping Biofouling Prevention**

Job Aid Item: 1.2.c

Cathodic Hull protection used **IAW VGP 2.2.7**

Background: The EPA included this item in the VGP due to a concern of discharge of potentially toxic levels of metals such as copper and zinc. Most vessels had a copper anode system installed. These are sacrificial copper anodes. These anodes in most cases are installed in the seawater intakes in the sea chest. Ocean Rangers need to understand the use and working of the system and how they are operated.

What to Check:

Sacrificial anodes must not be used more than necessary to adequately prevent corrosion of the vessel's hull, sea chest, rudder, or other exposed areas of the vessel.

Citation: EPA VGP 2.2.7 **Cathodic Protection**

Job Aid Item: 1.2.d

Prohibited sources, e.g. hazardous materials from photo shop/print shops, hospital, laboratories, carpentry paint shops, upholstery shops, etc. do not enter the GW, BW or bilge systems **IAW VGP 2.1.2 & 5.1.1.1.4 and AS 46.03.745**

Background: The addition of hazardous materials to a water body is prohibited. Current AWTS and OWS technology does not treat many of these substances. Adding toxicsdamages wastewater treatment systems, principally those with biological processes.

Under the EPA VGP operators may not add substances that drain to the bilgewater that are not produced in the normal operation of a vessel. During overhauls and cleaning operations, noxious liquid substances may enter the bilge system. Possible operations that use chemicals are: EVAP cleaning, plate cooler cleaning, air cooler cleaning, etc. Most vessels take precautions during the maintenance operations so that these substances do not enter the bilge system.

Ocean Rangers must observe and document all maintenance activities and related actions.

Photo 9: Example of leak potential into bilge

What to Check:

Monitor for hazardous or toxic substances being discharged into either wastewater streams or bilgewater. Items in the Hazardous Waste section relate to this item, see Chapter 4, Hazardous Waste; Job Aid Items 3.2.c and 3.2.e

Citations: EPA VGP 2.1.2, EPA VGP (for vessels over 500 passengers) 5.1.1.1.4, AS 46.03.710, AS 46.03.745, EPA VGP 1.2.3, 2.2.2 Bilgewater

Job Aid Item: 1.2.e

Pool /spa water discharges in Alaska waters performed **IAW VGP 5.1.1.2 and 5.1.2.3**

Background: Cruise ships have large volumes of spa and pool water. While these waters are relatively clean, they can include high concentrations of chlorine or bromine compounds which are toxic to marine life. In the case of fecal or vomit incidents, high levels of these compounds are used to sanitize the water. Accidental discharges of pool and spa water can occur due to valve malfunctions or crew error. If this compound heavy water is introduced to the wastewater system, it can damage membranes and impact biological processes.

Some vessels have dedicated tanks to hold pool, spa, and Jacuzzi waters. They can also be stored in tanks already used for other wastewater types, and could be mixed. Some vessels neutralize the pool and spa water before discharging overboard or into tanks.

Ocean Rangers need to understand these operations: how the neutralization is done, how the volume is determined and all other information. It is useful to determine if these discharges are included in the Discharge Log.

What to Check:

1. Discharges of pool and spa water overboard within 3nm.
   - If discharges occur, check that they were dechlorinated and debrominated, and if the levels were measured as required.
   - Note the position of any discharges on your report so that ADEC can determine if the location is in a prohibited area.
2. Chlorine limits are the same as the Alaska WW GP. Monitoring (testing) must be done if discharges occur within 3nm of Alaska.
3. Note: Discharges of pool and spa water are prohibited in national parks, federal wilderness areas, national wildlife refuges, marine sanctuaries, and national wild and scenic rivers. The largest prohibited area is Glacier Bay National Park. Many of these areas have boundaries that are difficult to determine.

Citations: Although this citation is for ships over 500 passengers, there are identical VGP citations for ships with 100 to 500 passengers. EPA VGP 5.1.1.2 and 5.2.1.2, EPA VGP 5.1.2.3 and 5.2.2.3

Job Aid Item: 1.2.f

Deck wash down/hull cleaning **IAW VGP 2.2.1**

2

Background: Maintenance and cleaning activities can introduce oils, grease, paints, toxic chemicals, and solid wastes into the water. The long-term concern is that paint chips and other wastes, accumulating in large quantities, will leach out toxins. Sheens have been observed from painting activities. Ship operators are careful during hull and deck maintenance and painting operations to prevent toxins entering the seawater by using tarps under painting activities.

Touch up painting on vessels, on the outside hull scantlings, are typically performed in Skagway and Juneau. Cherry pickers on the docks are a good indication the vessel may have painting maintenance scheduled while in port.

The methods and products used for deck cleaning vary. Teak decks and wood composite decks are cleaned with special cleaners. Check these products for toxic substances and phosphates.

Photo 10: Painting, with drop cloth protection

What to Check:

1. Monitor exterior cleaning and maintenance operations, when feasible
2. Check for safeguards to prevent; oil wastes, paints, and debris from entering waters
3. Check for foamy discharge, sheens, and floating waste from runoff or deck wash
4. Check for large pieces of rust, paint, metal, etc. being washed or dropped over the side
5. Check for tarp covers, paint container controls, debris collection, and rust capture controls
6. Non-toxic and “phosphate free” (below 0.5% phosphates) cleaners are to be used if water is discharged within 3nm of shore
7. Unused paint cannot be discharged into water
8. Products must be minimally-toxic and phosphate free cleaners and detergents, as defined in Appendix A of the 2013 VGP. Cleaners and detergents should not be caustic and must be biodegradable

Citation: EPA VGP 2.2.1

Job Aid Item: 1.2.g

Anchor chain and anchor washed down **IAW 33 CFR 151.2050 (e), EPA VGP 2.2.8**

Background: The spread and transfer of invasive species is a worldwide concern. Invasive species have caused economic and environmental damage.

One way to slow the spread of invasive species is to wash sediment off the anchor and anchor chain. Anchor washing typically takes place in Alaska at anchorage ports such as Sitka, and can occur at other ports. There is no requirement to log anchor wash down operations. Ocean Rangers must observe these operations as often as possible.

Photo 11: Anchor Winch

What to Check:

Anchors and anchor chains are rinsed when retrieved. The anchor chain must be "carefully and thoroughly washed down".

Citations: 33 CFR 151.2050 (e), EPA VGP 2.2.8

Job Aid Item: 1.2.h

Exhaust Gas Scrubber Discharges **IAW VGP 2.2.26**

Background: Some exhaust gas scrubbers use seawater to reduce the sulfur emissions from combustion sources. The scrubbers are a concern if not operating as designed. Look for issues including: pH outside established limits or soot and oils. The EPA established monitoring standards in the 2013 VGP.

What to Check:

- Check only if a scrubber is in operation and discharging into state waters (less than 3nm from shore). The VGP identifies monitoring requirements for scrubbers which discharge. Scrubber operations greatly expanded in 2017 with reports of foam, sheen like appearance, and discoloration of water. Issues with scrubbers were mainly observed at start up or shut down.

Citations: VGP 2.2.26 **Exhaust Gas Scrubber Wastewater Discharge**

Section 3: Permitted Vessels

2

Job Aid Item: 1.3.a

Approved VSSP is up-to-date and available onboard IAW **AS 18AAC 69.025 (f) and 33 CFR 159.317(c)**

Background: The VSSP explains how samples are taken so they are representative of a typical wastewater treatment process. Inaccuracies have been found in VSSPs, often when changes are made onboard. The VSSP must be available as a reference. The Vessel Specific Sampling Plan (VSSP) is carried onboard and is available for review.

Helpful Hints & Suggestions

There is a related safety question on sampling, see Chapter 6, Job Aid Item 5.a

What to Check:

1. For regular checks, check the VSSP if changes have been made, for example, to tanks used, or types of wastewater treated
2. The VSSP must be checked in the Once a Season Report

Citations: 18 AAC 69.025 (f) **and** 33 CFR 159.317(c)

Job Aid Item: 1.3.b

Sampling Events:

- **i.** Follow the approved VSSP and Quality Assurance Project Plan (QAPP) sampling procedures **IAW AS 18 AAC 69.025 & 030 and 33 CFR 159.317**
- **ii.** Sample results (when available same day) IAW GP limits for Fecal Coliform and Total Suspended Solids in effluent **(GP 5.3)**
- **iii.** Field test results for pH and chlorine (if sampling event is witnessed) within GP limits **(GP 5.3)**

Background: It is extremely important all samples are taken correctly and are representative of typical discharges. Sample results are used for compliance actions, future permits, and other actions by ADEC and the USCG. Ocean Rangers have an important position observing samples as they are taken. If a sample is taken incorrectly it will skew sample results, require resampling, and may result in compliance actions. An example is; a sample port that is not flushed has test results showing a much higher bacteria level than what exist in the discharge.

The QAPP is a complex document, and it is not possible to check in the field, that all elements of the QAPP are followed. The main concern is that the sample is representative and taken correctly. If there is a question please submit it as a question report. Photos are helpful, along with a full description and the sample number. There is a sample/field checklist included in the QAPP, it is very useful when checking for QAPP compliance.

The latest Quality Assurance Project Plan is included in reference files.

What to Check: (Check if a sample is taken.)

1. Does the sample valve match the location and name in the VSSP?
2. Was the vessel discharging at time of sample (for Alaska GP samples only)?
3. Does the effluent match what is discharged (same line and not mixed)?
4. Is the sample port within 50 feet of the overboard port?
5. Were field tests taken within 15 minutes of the sample (chlorine, pH, temperature)?

6. Were field tests taken with approved QAPP equipment (no test strips)?
7. Was the sample promptly cooled with ice water?
8. Any signs of potential contamination- solids or liquids entering the bottle from other sources?
9. Was sample valve disinfected and flushed prior to sampling?
10. Reasonable number of sample bottles/sample volume. The smallest sample should be about at least a liter of water and four or more bottles.
11. Was chlorine below 0.1 mg/liter (GP and USCG compliance limit based on the method detection limit)
12. Was pH between 6.0 and 9.0?
13. If fecal or TSS results are known the same day, are these results above the permit limits (40 FCU or 150 mg/L for TSS)?

Citations: AS 46.03.465 (b), 33 CFR 159.317(a), 18 AAC 69.025 (a, b & f).

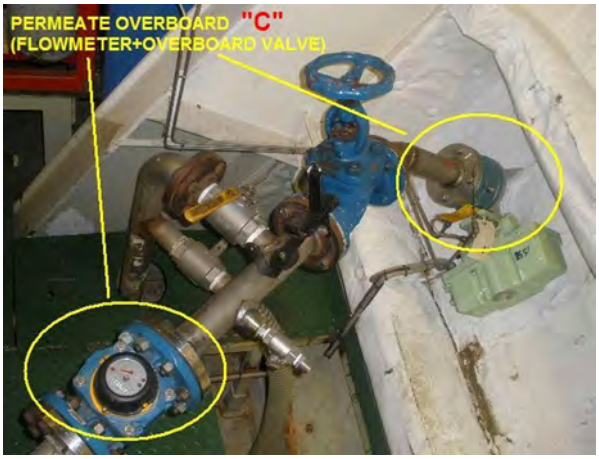


Photo 12: Overboard valve, flow meter, and Sample port

Job Aid Item: 1.3.c

Discharge log identifies daily estimated volume, date, location, average flow, and length of each stay, if discharge occurs while anchored or docked. While underway between each port estimates average flow rate, dates while en route, and average speed. Time /date is in 24hr clock format at the start (beginning) and stop (end) of each discharge I**AW 18 AAC 69.050 (c)** for continuous or automatic discharges only.

Background: These regulations only apply to continuous or automatic dischargers, stationary or underway.

- Underway only dischargers only need to be checked for the regulations that apply to underway vessels, 18 AAC 69.050 (c) 1, 2, 4.
- Continuous or automatic discharges are those where the system is pumping continuously or where the system pumps without an operator's direct input such as, from an AWTS tank that discharges when the tank reaches a preset level.

Vessels with continuous or automatic discharges; regulations divide up the voyage, into segments, by each port of call and the 24hr clock is required.

Flow Rate information is critical to determine future permit dilution (mixing zone) requirements; when combined with sample information, Flow Rate is used to determine potential environmental impacts. Vessels have different operational procedures for their AWTS while in port and while underway.

Ocean Rangers must check the vessels operational procedures and identify which sections of the AWTS are dedicated to discharge while in port and while underway. The Once a Season Report identifies the procedures used by the vessel.

Flow estimates, tank soundings and the estimated discharge volumes should be assessed and identified. “Combined” or “tandem” discharges, two tanks discharging from one pump, need to be carefully assessed for correct flow and volume information. Some vessels recirculate and have intermediate “mini tanks” between the AWTS system and the overboard port. Trace these systems and report what exactly happens in the Once a Season Report.

What to Check:

Discharge Logs:

1. Continuous or automatic discharges in Alaska:
   - Times are shown in 24hr format
   - Time and date of each stay at a port of call is identified
   - Flow rates, discharge types, and locations must also be entered
2. For each stay at port, a log must include:
   - Date
   - Flow Rate, while in port
   - Time of arrival and departure
3. Underway only continuous discharges, identify:
   - Dates en Route
   - Average Speed
   - Flow Rate
4. Check on how discharge volumes are calculated.

Citation: 18 AAC 69.050

Helpful Hints & Suggestions

It is useful to trace discharge lines and note valve settings used for each operation.

Job Aid Item: 1.3.d

The daily estimated volumes of WW discharged are recorded by type **IAW AS 46.03.465(a), 18 AAC 69.050, and 33 CFR 159.315(b)**

Background: Operators must identify volumes of wastewater discharged by type. When the regulations were adopted it was common for multiple types of effluent to be discharged in Alaska waters, for example graywater and blackwater separately. Today it is much more common for treated discharge to be from one source, the AWTS. Discharge Logs must include the volume discharged. The Once a Season Report must list the methods used to calculate volumes. Some vessels meter discharge, some estimate volumes, and some have disconnected meters and used other methods. It is important Ocean Rangers know the systems and how volumes are calculated or estimated.

What to Check:

1. If a vessel has continuous or automatic discharges in Alaska, the volume of discharges must be calculated
2. Each type of effluent discharged must be calculated

Citation: 18 AAC 69.050 (c)

Photo 13: WW flow meters

Job Aid Item: 1.3.e

Daily volumes were calculated, estimated, or metered in IAW GP 6.8.3. Onboard records describe how calculated for continuous or automatic dischargers.

Background: ADEC requires a total flow measurement from all wastewater treatment plants. The measurements are used to gauge if plant capacity was exceeded and for gathering information on total volume of treated wastewater discharged. The GP requires a meter must be used if installed; it was discovered some vessels were estimating volume, even when a meter was present and some meters were disconnected, making it difficult to quantify actual volumes discharged.

What to Check:

1. Total flow, in cubic meters a day must be measured as a parameter in the GP
2. If the ship has a meter for effluent volume, use this measurement for the total flow measurement
3. Describe the method of calculation or metering. This will be in the Discharge Log instructions

Citation: ADEC WW GP 6.8.3

Job Aid Item: 1.3.f

WW outflow quantity monitoring is functioning properly (if installed) **IAW AK GP 6.8.3**

Background: Flow meters if installed must be functioning, connected, and reliable. This is to obtain the most accurate flow and volume data possible.

What to Check:

- If daily total flow is measured with a meter, verify the meter is functioning

Citation: See 2014 GP 6.8.3

Helpful Hints & Suggestions

If the ship is non-discharging, or separates galley GW and only discharges it outside permitted waters there is no need to check this item.

Job Aid Item: 1.3.g

Food wastes and galley oils minimized in **GW IAW EPA VGP 2.2.15**

Background: Most ships separate galley graywater from their other graywater and keep it out of the AWTS system to reduce grease/cooking oils and nutrients from nearshore discharges. Oils or grease can foul the wastewater treatment system and leave a sheen. Food waste can increase effluent parameters with limits, such as; BOD, TSS, and ammonia. On most ships, food waste is collected and transported to dedicated holding tanks as a slurry, sometimes done with dedicated recycled waste water flow.

2

Many galleys and other areas of the vessels where food is processed or handled have installed grease separators, or traps. Some vessels collect the spent oils from the galley to "blend" in their HFO, for the main engines, or offload it for use as biofuel.

What to Check:

As much food and oil residue as practicable is removed from dishes before rinsing. Cooking oils are not directly added to graywater system.

Citations: EPA VGP 2.2.15

Photo 14: Pulper Equipment, galley cleaning area

Job Aid Item: 1.3.h

Sample valve and related piping is operable and **IAW approved VSSP, 18 AAC 69.030 and 33 CFR 159.317**

Background: The general permit requires that samples are representative of actual discharge, and that the sample port used matches the approved VSSP. Samples have been taken from the wrong sample valve and from a sample valve that would not represent a typical discharge.

The VSSP has the sample valve location and description, and a picture of the valve. The Ocean Ranger must check and document. Any deviation or questions regarding the sample valve need to be immediately reported and addressed. Do not rely on tags or name plates of the sample valve. The VSSP description (SB/PS and Frame location) will establish the correct valve.

What to Check:

1. Sample valve used for samples matches the valve location, name and description in the VSSP
2. Check that sample valve is connected to the treated wastewater discharge line
3. Check that the sample valve is less than 50 feet from the discharge port
4. Check for pipe looping and pipe arrangements that would lead to unrepresentative samples

Photo 15: Sample Port, with label

Citations: 18 AAC 69.030, 33 CFR 159.317 **and Vessel specific sampling plan and approved VSSP**

Job Aid Item: 1.3.i

AWTS system is capable of performing **IAW approved VSSP and GP (GP 2.3 & 8.1.1)**

Background: The AWTS must be operational to meet state permit and federal limits. These units are often made of individual components; the failure of one can lead to inadequately treated wastewater. For example; a failure of the UV system can allow high levels of bacteria to be discharged. A ruptured membrane can allow solids and bacteria to pass through in high levels. A maintenance plan is required for each ship six months after authorized to discharge by the state. Reviewing the maintenance plan will provide insight into operations of the AWTS.

What to Check:

1. AWTS is operating and has no major issues that would seriously degrade the unit's ability to meet General Permit and Federal Wastewater Limits
2. Check if the system is operated as it regularly is during sample events

Citation: AK WW GP – 2.3 & 8.1.1

Job Aid Item: 1.3.j

Observe repairs, maintenance, cleaning and other operations that may affect the WW treatment plant effluent quality. **(GP 8.1)**

Background: Repairs, maintenance, breakdown, and cleaning are necessary to keep wastewater treatment systems functioning as designed. Failure to perform these or to incorrectly perform could lead to a failure of the treatment systems and exceedances of state and federal limits. It would be difficult to check everything, but obvious failures should be noted. These regular operations are also a good opportunity to check on wastewater related questions such as VSSP checks. Checks should be made if the system is operated or maintained as it regularly is during sample events.

What to Check:

1. Observe repairs and maintenance of the AWTS, as opportunities come up
2. Watch for items that would degrade the performance of the system
3. Watch that cleaning chemicals are handled properly and not directly discharged in Alaskan waters
4. Report equipment breakdowns if discharge continue

Section 4: Non-Discharge Vessels, and Permitted Vessels in no-discharge areas

2

Job Aid Item: 1.4.a

Vessel had no discharge of wastewater in Alaska waters without GP authorization? **AS 46.03.462 (a)**

Background: Wastewater discharges in Alaskan waters require a permit. Most vessels have a valve locking procedure in place. There should be procedures and policies in place to avoid a valve opening in prohibited areas.

Photo 16: Closed discharge valve

Helpful Hints & Suggestions

While not required on the Once a Season Report, knowing the vessels locking procedure is useful information for the report.

What to Check:

Discharge Logs for:

- Any entries documenting accidental or emergency discharges
- Locations that show unpermitted WW discharge
- Watch for foam, solids, or unusual smells in the waters around the cruise ship
- If discharge occurred, fill out Incident Report

Citation: AS 46.03.462 (a), AS 46.03.463(e) **and Alaska WW GP: See authorization letter**

Job Aid Item: 1.4.b

Verify that overboard valves are closed/sealed in Alaska waters **AS 46.03.463(e)**

Background: Wastewater discharge is prohibited without a permit and in areas where not permitted. Most operators go beyond closing valves by locking valves while in Alaskan waters, if the vessel typically does not discharge.

What to Check:

1. Check for open valves on any valves that could discharge wastewater in Alaskan waters
2. Check valve opening procedures and other indicators of valve operations

Citation: AS 46.03.463 (e)

Job Aid Item: 1.4.c

BW GW holding/handling capacity is sufficient for the crew and passengers on board and the time in port, closed areas, or in Alaskan waters **AS 46.03.463 (e) and 33 CFR 159.309**

Background: If a vessel is not allowed to discharge in an area, it needs a way to keep wastewater from being discharged. Some operators have not had enough capacity and have taken measures, such as shutting laundry facilities or holding waste in garbage cans until it could be offloaded. While these are acceptable storage tactics, checks must be made to ensure the waste is handled properly.

What to Check:

- Wastewater holding tanks have sufficient capacity for time in port.

Citations: AS 46.03.463 **and** 33 CFR 159.309

Check the reference library for ships VSSPs, authorization letters, and QAPP

Chapter 3 Non-Hazardous (Solid) Wastes

General Citations

General Background:

Pollution, including the disposing of plastics and other prohibited wastes into Alaskan waters, is prohibited. Ship operators have been required to submit waste offloading plans to ADEC since 2001. This was a reaction to past activities by a few cruise ship operators. Today almost all documented cases of waste dumping have been accidental or from passenger activities. Cruise ships have implemented extensive waste minimizing (such as recycling), sorting, and storage procedures. Common practices often include:

- Presorting (by the passengers or crew) of garbage in dedicated collecting bins. For example; glass, food, metals, plastics bottles.
- Collection of the garbage in sorting rooms.
- Handling and storage of the garbage waste stream with a focus on reduction and recycling and removal of non-recyclable items and plastics.
- Processing of the waste streams for storage, offload, or incineration.
- Waste is sorted and checked by dedicated crew members. Food waste is pulped and discharged outside Alaska or dewatered and incinerated. Paper, cardboard (that is not recycled), cartons, and other waste is incinerated onboard or offloaded.
- Most garbage and hazardous waste is offloaded in Canada or Seattle. The offloading plans may include information on this.

All cruise ships must have a Nonhazardous Solid Waste Offloading Plan as required in 18 AAC 69.035. The NSWOP must describe:

- An estimate of the volume of each waste type that the operator anticipates offloading in this state or disposing into the marine waters of the state;
- The proposed offloading or disposal method;
- Name and address of each contractor to be used for offloading in this state or disposing into marine waters of the state; and
- Harbors, landfills, or other offloading or disposal facilities in the state proposed to be used by the owner or operator or agent.

Photo 17: Waste sorting area

Ships can deviate from this plan, but must report deviations by November 15th. It is recommended to become familiar with the garbage logs, and waste offload plan if onboard for a voyage. These plans vary by company and sometimes by ship.

Example 6: Example Alaska Waste Offload Plan (NWSOP)

Example Cruise Lines Non-hazardous Solid Waste Offloading Plan (NSWOP) for Ship Name operating in Alaska State waters during 2016 (from May 18, 2016 to September 15, 2016)

NSWOP: Example Ship will not discharge any non-hazardous solid waste into the state of Alaska or in Alaskan waters. Non-hazardous solid waste will be offloaded in Seattle (Washington), Victoria and Vancouver (Canada) to locally licensed and approved solid waste vendors. The procedure for offloading non-hazardous solid waste is as follows:

1) Notification is made to the local port agent in advance, for the port where the waste is intended to be landed (as noted above).
2) Pre-approved vendor is notified in advance. The vendor arranges for transportation to designated waste facility for treatment, recycling or/and disposal as applicable.
3) Before offloading, the waste is labelled and packed as per company policy and local requirements.
4) After offloading, the vendor provides waste receipts and related documents.
5) The quantities of all waste offloaded is recorded in Garbage Record Book (GRB) as per MARPOL requirements and electronic database.

Example Cruise Lines Hazardous Waste and Substance Offloading Plan (HWSOP) for Example Ship operating in Alaska State waters during 2016 (from May 18, 2016 to September 15, 2016)

HWSOP: Example Ship will not offload any hazardous waste in the state of Alaska. Hazardous waste will be offloaded in Seattle (Washington) to locally licensed and approved waste vendors. All offloading is done in compliance with applicable USA and Canadian laws as applicable. The procedure for offloading hazardous waste is as follows:

1) Notification is made to the local port agent in advance, for the port where the hazardous waste is intended to be offloaded (as noted above).
2) Pre-approved vendor is notified in advance. The vendor arranges for transportation to designated waste facility for treatment, recycling or/and disposal as applicable.
3) Before offloading, the hazardous waste is labelled and packed as per company policy, federal and local requirements.
4) On the day of offloading the vendor boards the ship and puts required labels for transportation and provides hazardous waste manifests, receipts and related documents to the Environmental and Occupational Safety Officer (EOSO).
5) The EOSO onboard the ship, verifies that proper shipping and hazardous waste codes are recorded on the manifests and receipts as applicable.
6) The quantities of all hazardous waste offloaded are recorded in a dedicated Material Transfer sheet and electronic database.
7) Copies of the shipping papers and manifests are stored onboard the ship and in the Example Cruise Line office in Miami, USA.

Section 1: Non-Hazardous Waste (Garbage) Daily

Job Aid Item: 2.1.a

Garbage logs are up to date IAW **18 AAC 69.035 and 33 CFR 151.55(b)(d)**

Background: Annex V of MARPOL contains recordkeeping requirements. These recordkeeping requirements are listed under **33 CFR 151.55**. An example log is included as Example 8 in this section.

Photo 18: Waste Storage, cool room

What to Check:

- A garbage log is maintained and up-to-date
- Any records of discharge of plastics overboard
- Disposal of materials in areas prohibited
- The methodologies used to calculate or estimate the waste volume or weight
- Log entries against the solid waste offload plan to see if there are deviations Deviations are allowed from the Alaska waste offload plan, but these need to be submitted to ADEC by November 15th.
- Record off-load information in the information section of the daily report (This will allow ADEC to check if the volumes and facilities used match the waste plans and final deviation reports)

Citations: 18 AAC 69.035 **and** 33 CFR 151.55 **Recordkeeping requirements.**

Job Aid Item: 2.1.b

Garbage (if offloaded) was offloaded **IAW Nonhazardous Solid Waste Plan (18 AAC 69.035)**

Background: All cruise ships, (over 50 passengers), are required to file a Nonhazardous Solid Waste Offloading and Disposal Plan (NSWOP). These plans must include offload estimates, methods used, names of ports used, and names of contractors. Although these plans can change, and operators can update information on a deviation report, it is important for ADEC to document deviations during the season.

What to Check:

- Name and address of each contractor used for offloading matches waste offload plans
- Adequate condition of the off-load pallets and other carriers that would prevent loss of waste or spills
- Review manifests and pickup arrangements
- Off-loads followed the NSWOP
- For spills or dumping during offloads.
- Note deviations from the plan on the daily report.
- Record offload information in the information section of the daily report. This will allow ADEC to check if the volumes and facilities used match the waste plans and final deviation reports.

Citation: 18 AAC 69.035 **Nonhazardous solid waste offloading and disposal plan.**

Job Aid Item: 2.1.c

Offload records are certified by the Master or person in charge of the vessel and are completed **IAW 33 CFR 151.55 (d)**

What to Check:

Waste offload was properly recorded

Citation: 33 CFR 151.55 (d)

Job Aid Item: 2.1.d

Shipboard garbage is handled in accordance with Garbage (waste) Management Plans. Review manifests and pick up schedule **(33 CFR 151.57)**

Background: Garbage waste management plans must be in place to demonstrate that the vessel has procedures to handle waste in large volumes. These plans are shared with the responsible persons for the waste handling onboard. The vessel plans often include the planned off-load port locations and the arrangements to offload the waste.

What to Check:

- Garbage handling is in accordance with the vessel's waste management plan, including the collection and storage of waste
- How waste streams are handled
- Shipping documents, manifests, and invoices are complete and include: location, volume, and type of waste
- Content of waste in drums or closed containers should be checked

Citations: 33 CFR 151.57 (c)

Section 2: General Non-Hazardous Waste (Garbage)

Job Aid Item: 2.2.a

Maintenance and repair conducted on equipment **IAW 33 CFR 151.63 (b(3))**

Background: This is another check for signs that garbage is not handled correctly or equipment failure will not make it possible to handle the garbage according the plan or regulations.

What to Check:

- Garbage handling equipment such as incinerators, grinders, etc. are operable
- If equipment is not functioning check for extra stored wastes, and how these wastes are handled

Citation: 33 CFR 151.63 ((b)3)

Job Aid Item: 2.2.b

Verify no plastics or synthetics are discharged overboard **IAW 33 CFR 151.67**

Background: Discharge of plastics is not allowed in any waters. Plastic items are often difficult to break down naturally and impact wildlife. Garbage sorting crews often check the garbage for disposal of plastics. This includes plastic bottles, caps, wrappings, blister cards, and other

plastics. Most vessels separate other garbage from plastics by using dedicated garbage cans; however, plastic may still end up in the garbage stream.
Most garbage is sorted in dedicated spaces. Engine room or construction wastes can be handled separately. These wastes are also subject to the plastic prohibition including; ropes with synthetic materials, carpets, packaging, and canisters.

What to Check:

Wastes are sorted and plastics are removed if wastes are disposed of overboard.

Citations: 33 CFR 151.67 **Operating requirements: Discharge of plastic prohibited.**

3

Job Aid Item: 2.2.c

Trash chutes are clean and free from oil residue that could be lost overboard (No oil stains on decks, side of hull adjacent to trash chutes) **IAW 40 CFR 110.3**

Background: Oil discharge is prohibited. This includes oils unintentionally or intentionally discarded through a trash chute.

Photo 19: Food chute

Photo 20: Food chute, silo

What to Check: Overboard trash chutes for oil stains. Look for oil stains on side of ship when this is possible. Visually check for oil materials in the trash chutes for items such as oil filters, oil bottles, and gasket materials.

Citations: 40 CFR 110.3 **Discharge of oil in such quantities as "may be harmful" pursuant to section 311(b)(4) of the Act and** AS 46.03.740

Helpful Hints & Suggestions

Some vessels do not use the garbage chute in their Alaska operations or do not use them at all. Check that locking regimes and handling procedures are in place.

Solid Waste References:

Example 7: Garbage Record Book Example

COMMONWEALTH OF DOMINICA
MARITIME ADMINISTRATION

GARBAGE RECORD BOOK

NAME OF VESSEL: _____

IMO NUMBER: _____

DISTINCTIVE NUMBERS OR LETTERS: _____

PORT OF REGISTRY: _____

TYPE: _____
(SPECIFY)

COVERING THE PERIOD: FROM _____ **TO** _____

NOTE: Every ship of 400 tons gross tonnage and above and every ship which is certified to carry 15 persons or more engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention and every fixed and floating platform engaged in exploration and exploitation of the sea-bed, shall be provided with a Garbage Record Book.

THIS ENTRY LOG MUST BE PRESERVED FOR THREE (3) YEARS FROM DATE OF LAST ENTRY

CDP-603 (11.07)

1. INTRODUCTION

In accordance with Regulation 9 of Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), a record is to be kept of each discharge operation or completed incineration. This includes discharges at sea, to reception facilities, or to other ships.

2. GARBAGE AND GARBAGE MANAGEMENT

Garbage includes all kinds of food, domestic and operational waste excluding fresh fish and parts thereof, generated during the normal operation of the vessel and liable to be disposed of continuously or periodically except those substances which are defined or listed in other annexes to MARPOL 73/78 (such as oil, sewage or noxious liquid substances).

The Guidelines for the Implementation of Annex V of MARPOL 73/78 should also be referred to for relevant information.

3

3. DESCRIPTION OF THE GARBAGE

The garbage is to be grouped into categories for the purposes of this record book as follows:

1. Plastics
2. Floating dunnage, lining, or packing material
3. Ground-down paper products, rags, glass, metal, bottles, crockery, etc.
4. Cargo residues, paper products, rags, glass, metal, bottles, crockery, etc.
5. Food waste
6. Incinerator ash

4. ENTRIES IN THE GARBAGE RECORD BOOK

1. Entries in the Garbage Record Book shall be made on each of the following occasions:

(a) When garbage is discharged into the sea:
- (i) Date and time of discharge
- (ii) Position of the ship (latitude and longitude). Note: for cargo residue discharges, include discharge start and stop positions
- (iii) Category of garbage discharged
- (iv) Estimated amount discharged for each category in m^3
- (v) Signature of the officer in charge of the operation.

(b) When garbage is discharged to reception facilities ashore or to other ships:
- (i) Date and time of discharge
- (ii) Port or facility, or name of ship
- (iii) Category of garbage discharged
- (iv) Estimated amount discharged for each category in m^3
- (v) Signature of officer in charge of the operation.

(c) When garbage is incinerated:
- (i) Date and time of start and stop of incineration
- (ii) Position of the ship (latitude and longitude)
- (iii) Estimated amount incinerated in m^3
- (iv) Signature of the officer in charge of the operation.

(d) Accidental or other exceptional discharges of garbage
- (i) Time of occurrence
- (ii) Port or position of the ship at time of occurrence
- (iii) Estimated amount and category of garbage
- (iv) Circumstances of disposal, escape or loss, the reason therefore and general remarks.

2. Receipts

The master should obtain from the operator of port reception facilities, or from the master of the ship receiving the garbage, a receipt or certificate specifying the estimated amount of garbage transferred. The receipts or certificates must be kept on board the ship with the Garbage Record Book for two years.

3. Amount of garbage

The amount of garbage onboard should be estimated in m^3, if possible separately according to category. The Garbage Record Book contains many references to estimated amount of garbage. It is recognized that the accuracy of estimating amounts of garbage is left to interpretation. Volume estimates will differ before and after processing. Some processing procedures may not allow for a usable estimate of volume, e.g. the continuous processing of food waste. Such factors should be taken into consideration when making and interpreting entries made in a record.

Example 8: Record of Garbage Discharges

RECORD OF GARBAGE DISCHARGES

Name of Ship	Distinctive Numbers or Letters:	IMO No.

Garbage Categories:
1. Plastic.
2. Floating dunnage, lining, or packing materials.
3. Ground paper products, rags, glass, metal, bottles, crockery, etc.
4. Cargo residues, paper products, rags, glass, metal, bottles, crockery, etc.
5. Food waste.
6. Incinerator ash except from plastic products which may contain toxic or heavy metal residues.

NOTE: The discharge of any garbage other than food waste is prohibited in special areas*.
Only garbage discharged into the sea must be categorized. Garbage other than category 1 discharged to a reception facility need only be listed as a total estimated amount. Discharges of cargo residues require start and stop positions to be recorded.

Date/Time	Position of Ship	Estimated amount discharged into the sea (m^3)					Estimated amount discharged to reception facilities or to other ship (m^3)		Estimated amount incinerated (m^3)	Certification / Signature
		Cat. 2	Cat. 3	Cat. 4	Cat. 5	Cat. 6	Cat. 1	Other		

*Special areas under Annex V of Marpol 73/78 are: the Mediterranean Sea area, the Baltic Sea area, the Black Sea area, the Red Sea area, the "Gulfs" area, the North Sea area, the Arctic area, the wider Caribbean Region – including the Gulf of Mexico and the Caribbean Sea.

Master's Signature	Date

Chapter 4 Hazardous Materials & Wastes

General Citations

General Background

Hazardous materials are substances or materials that could pose a safety risk or environmental damage risk unless properly stored and handled. This section of the Job Aid contains checks for environmental hazards as well as safety hazards caused by hazardous materials.

As defined in state law hazardous waste means a waste or combination of wastes that due to quantity, concentration, or physical, chemical, or infectious characteristics may:

(A) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(B) Pose a substantial present or potential hazard to human health or the environment when improperly managed, treated, stored, transported, or disposed of.

Helpful Hints & Suggestions

Some wastes are only considered hazardous if stored or disposed of in large quantities.

Table 4- Bureau of Transportation Statistics 2002 Estimates

Summary of Cruise Ship Waste Streams

Type of waste	Estimated amount generated (typical one-week voyage)	Content/type	Notes
Sewage (blackwater)	**210,000 gallons**	Wasterwater and solids from toilets.	Can introduce disease causing microorganisms and excessive nutrients to waterways.
Graywater	**1 million gallons***	Wastewater from sinks, showers, galleys, laundrys. Contains detergents, cleaners, oil and grease, metals, pesticides, medical and dental wastes.	Has potential to cause adverse effects due concentration of nutrients and oxygen-demanding substances in waste stream.
Hazardous wastes	**110 gallons**	Photo chemicals.	Can contain silver, a toxic metal
	5 gallons	Drycleaning waste (perchloroethylene and other chlorinated solvents).	Perchloroethylene is a chemical that can cause neurotoxicity and kidney effects in humans.
	10 gallons	Used paint.	
	5 gallons	Expired chemicals, including pharmaceuticals.	
	Unknown	Other wastes, such as print shop wastes.	Can contain hydrocarbons, chlorinated hydrocarbons, and heavy metals that can be harmful to humans and aquatic species.
		Used fluorescent and light bulbs.	Contain small amounts of mercury, a toxic metal.
		Used batteries.	Contain heavy metals and acids.
Solid waste	**8 tons**	Plastic*, paper, wood, cardboard, food, cans, glass. *Under international regulations, the discharge of plastics is prohibited.	May be incinerated with ash discharged at sea; some solid wastes disposed or recycled on shore. Ash can contain hazardous wastes.
Oily bilge water	**25,000 gallons**	Liquid collected in the lowest point in the boat when the boat is in its static floating position.	Under international and U.S. regulations, ships are only allowed to discharge bilge waters containing less then 15 ppm of oil.

*NOTE: The interim Alaska report states that average cruise ship discharge is 200,000 gallons per day and that a large cruise ship may discharge as much as 350,000 gallons per day of treated blackwater and graywater.

SOURCES: Bluewater Network, Petition to U.S. EPA, Mar. 17, 2000; International Council of Cruise Lines, *Cruise Industry Waste Management Practices and Procedures* , May 14, 2001; U.S. Environmental Protection Agency, *Cruise Ship White Paper*, August 22, 2000

Section 1: Hazardous Materials and Wastes Daily

Job Aid Item: 3.1.a

Vessel hazardous waste logs are up to date **IAW 33 CFR 151.55(b) & (d)**.

Background: All offloads of hazardous waste must be recorded, in a garbage record book or a log of hazardous waste offloads. Manifests are available to confirm from the records what was offloaded and the amount. Offloads of hazardous waste in Alaska are rare.

What to Check:

Garbage Record Book or a Hazardous Waste Offloads Log

- Entries are complete and entered in a timely manner
- If offloads occur include in the information section of the daily report

Citation: 33 CFR 151.55(b) & (d)

Helpful Hints & Suggestions

Some vessels do offload mattresses or other useful items for the communities in Alaska (donations). This is not hazardous waste, but often reported by the vessels to avoid confusion. Include these offload in the information section of the daily report.

4

Job Aid Item: 3.1.b

Hazardous waste was offloaded IAW the Alaska Hazardous Waste Offloading Plan, and volumes and waste types match the plan **IAW 18 AAC 69.040**

Background: Offloads of hazardous waste in Alaska are rare. When done, it needs to match the Hazardous Waste Offloading Plan submitted by the operator to DEC.

What to Check:

Waste offloads are done according to the operators Hazardous Waste Offloading Plan. If offloads occur, volumes need to be entered in information section of daily report.

Citation: 18 AAC 69.040

Job Aid Item: 3.1.c

Records reflect reasonable accumulations of waste with respect to the capacity of the vessel, its age, technologies onboard, and amount of repair/maintenance **IAW AS 46.03.296 and AS 46.03.745**

Background: For most potential hazardous waste streams, cruise ships do not generate industrial scale quantities, it is common that waste can accumulate until a reasonable quantity exists to offload. For example, it could be stored until a drum or storage unit is filled. If there is a waste stream there should be either; an accumulation onboard or a record of disposal. One way to check this is to look at what an average voyage would generate, and then compare that with accumulation or offloads. For example, a stream

of 100 liters a week should have about a 55 gallon drum every two weeks, (1 US gallon = 3.74 liters).

What to Check:

Check offload records to see entries that show:

- Offload of waste
- Waste is accumulated onboard for eventual disposal
- That off-load records volumes and weights make "sense"

Citation: AS 46.03.296 **and** AS 46.03.745

Helpful Hints & Suggestions

Sometimes vessels have a "one time" large volume offload, for example used lube oil/hydraulic oil. This is especially the case when major repairs/overhauls are performed.

Photo 11: Hazarous Waste containers

Section 2: General Hazardous Materials and Wastes

Job Aid Item: 3.2.a

Records are maintained and manifests completed for potential hazardous material and waste streams **IAW 18 AAC 69.040**

Background: Most cruise ships do not offload hazardous waste in Alaska. If they do they need to document the offloads either in their waste offload plans or in deviation reports submitted at the end of each cruise season.

What to Check:

- Manifest and records are completed for each offload
- Offload data recorded in the information sections

Citation: 18 AAC 69.040

4

Job Aid Item: 3.2.b

Shipboard garbage is properly handled all in accordance with Hazardous Material Management Plan. Review manifests and pick up schedule. **(33 CFR 151.57)**

Background: Garbage and hazardous wastes and materials should be handled properly and hazardous substances should not enter the garbage waste stream.

What to Check:

Procedures in onboard waste plans are followed, and that the agreed upon handling including loading (pick up) is according the plans.

Citations: 33 CFR 151.57

Photo 22: Hazardous Waste label

Photo 23: Drums of stored Hazardous Waste

Job Aid Item: 3.2.c

Check if there is any evidence of hazardous material being discharged overboard **(AS 46.03.296 & 46.03.745)**

Background: It is illegal to dispose of hazardous waste to water without proper treatment.

What to Check:

- Hoses-unusual connections
- Stored materials that disappear
- Unusual activities or sheens near the ship (e.g. fish and/or other wildlife leaving area or leaping out of water)
- Hazmat materials containers near overboard chutes

Citations: AS 46.03.296 **&** 46.03.745

Job Aid Item: 3.2.d

Storage handling of hazardous materials and waste is **IAW AS 46.03.296, AS 46.03.745 and 40 CFR 262.34**

Background: Disposal of hazardous waste is not allowed, including accidental disposal caused by negligent storage.

What to Check:

- Stored products could not easily be blown, washed, or drain away
- Clear labeling of the container

Citations: AS 46.03.296**,** AS 46.03.745 **and** 40 CFR 262.34

Photo 24: Mystery sheen near ship

Photo 25: Hoses checked- No connection to stored waste

Photo 26: Chemicals, properly stored in containment basin

Photo 27: Check for; leaking units, unusual hoses or drains, etc.

Job Aid Item: 3.2.e

The following (if applicable) hazardous materials and waste streams are properly handled and disposed **of IAW AS 46.03.745, AS 46.03.296, VGP, and 40 CFR 273**

i. Photo processing (VGP 1.2.3.5)
ii. X-ray equipment waste
iii. Print shop waste (inks, etchers, developers etc.)
iv. Paints, solvents, thinners
v. Fluorescent or mercury vapor bulbs
vi. Dry cleaning chemicals and wastes (e.g. PERC, Tri, lint condensate water, etc.)
vii. Batteries (universal wastes)
viii. Pharmaceuticals/narcotics
ix. Cleaning chemicals (including evaporator cleaning, electro cleaner)
x. Pyrotechnics (expired)
xi. Oily and or chemically contaminated rags, filters etc.
xii. Incinerator wastes (ashes)
xiii. Pesticides / rodent control chemicals
xiv. AWTS chemicals (such as de-scalers)
xv. Undiluted barbercide
xvi. Exhaust gas scrubber particulate sludge or slurries or filtered solids

Photo 28: Waste Collection 1

Photo 29: Waste Collection 2

Background: Cruise ships have procedures and methods for sorting and handling waste. Ocean Rangers should become familiar with these procedures. For several items, a small amount of waste into the wastewater system is acceptable. For example, a small amount of barbercide when diluted with water. Information on disposal can often be found in the labeling of the product, the MSDS, or other documentation onboard. Upon request, ADEC can provide electronic lists of hazardous constituents from the EPA.

Photo 30: Silver recovery from photo waste

Photo 21: X-Ray development waste

What to Check:

- Waste streams listed are not disposed of in the wastewater system (including accidentally drained), into the garbage stream, the bilge, or potentially overboard
- Used batteries are not mixed with other wastes and should be kept dry

Citations: AS 46.03.745, AS 46.03.296, **and** 40 CFR 273

Job Aid Item: 3.2.f

Maintenance and repair conducted on equipment involved in Hazardous Materials handling **IAW 33 CFR 151.63 (b (3))**

Background: Equipment needs regular maintenance and repairs. Equipment not functioning well should not be used when handling potentially hazardous materials.

What to Check: Equipment being used to store, transport, or process wastes are in working order.

Citations: 33 CFR 151.63 (b (3))

Photo 32: Onboard Chemical Reference Chart

Example 9- Hazardous Waste and Substance Offloading Plan (HWSOP)

No hazardous waste is offloaded in the State of Alaska. All hazardous waste is disposed of in Vancouver using Tymac or Victoria using Tervita /aka Envirosystems/ or San Francisco, Los Angeles and Seattle using Stericycle.

Comprehensive hazardous wastes policies and training programs have been designed to carefully handle, segregate, label and off load such waste products into locally approved reception facilities.

Incinerators ashes are collected, bagged and offloaded to the vendors. All our ashes are tested annually by external lab to determine if they are hazardous or non-hazardous waste, however, vendors in North America conduct their separate tests. So far no ash has been determined to be hazardous waste, however, should this happen, it would be included in the Hazardous Waste Manifest whenever that is required.

4

The different vendor's contact details are as follows:

Tymac – Vancouver
Title, address, contact info

Tervita / Envirosystems - Victoria
Title, address, contact info

Stericycle, Inc. – Seattle, San Francisco, Los Angeles
Title, address, contact info

Chapter 5 AIR Opacity

General Ciations

General Background:

All marine vessels must comply with the air emission standard found at 18 ACC 50.070, while operating in Alaska waters. Alaska is one of the few states with regulations on visible emissions from marine vessels. These regulations apply to all vessels regardless of size or type. The standard requires no greater than 20% opacity vessel smoke stacks is for three minutes, while docked or anchored. There are exemptions on the "three minutes' rule" while the vessel is maneuvering to or from anchor or dock, and for startup prior to departure.

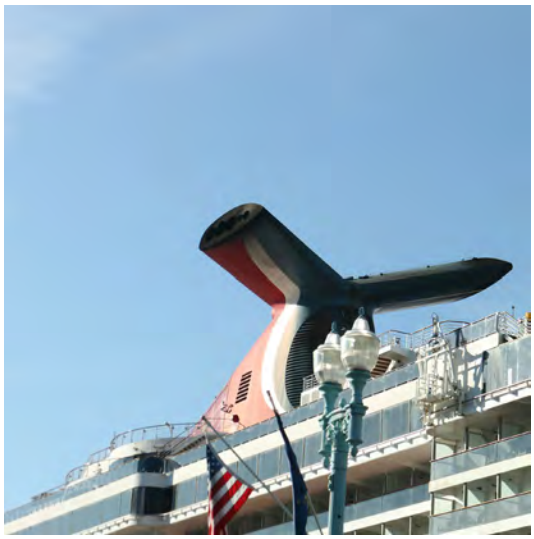


Photo 33: Low Opacity from stack

Opacity is a proxy for air pollution. There are many types of air pollution; oxides of nitrogen, sulfur, and carbon, particulates, volatile organic components, and carcinogens. It would be difficult to measure all of these parameters; visible opacity is commonly used for compliance measurements, as an indicator and type, of air pollution. Opacity is the reduction of transmitted light caused by particles, mists, or gases. It can be caused by partially burned fuel or ash from the combustion processes. Opacity was originally measured using the Ringelmann scale which used grids to compare to the opacity of the smoke. It only worked well with black smoke, and was replaced with EPA Method 9. EPA Method 9 is used to determine opacity by visual means. ADEC uses opacity as a regulatory limit for marine vessel emissions[12] (and emissions from many shore side emitters). CPVEC staff and an opacity contractor take Method

Photo 34: High opacity, thick black smoke

[12] Emissions from combustion source may include NOx, Sox, PM, VOC etc. emissions in the context of opacity is visible emissions.

9 readings in all major Alaskan cruise ports. In addition, the US Forest Service monitors opacity in Tracy Arm and the National Park Service monitors opacity in Glacier Bay where there is also a federal opacity regulation (36 CFR 13.65(b)(4)) similar to Alaska regulations.
CPVEC also receives public complaints regarding cruise ships and ferries, and self-reports of excess emissions (under 18 AAC 50.240). Ships are required to self-report to ADEC opacity exceedances if they claim the exceedance was unavoidable.
Ocean Rangers are not trained to perform opacity readings but have contributed significantly to ADEC compliance work by reporting cases of heavy smoke, soot, and equipment failures. They have also documented many vessels effectively and successfully minimizing emissions to meet the opacity limits. Continued reporting is a critical element for the cruise ship program.

Air Quality

Job Aid Item: 4.1.a

Stack emissions are minimized and monitored. Operational (combustion) procedures in place **IAW 18 AAC 50.070**

Background: Cruise Ships in Alaska often monitor air emissions using opacity meters (Continuous Opacity Monitoring System (COMS)) and with visual checks by a video camera located on the stack or in person. Most ships have procedures on keeping emissions below the regulatory limit.

Opacity meters can be useful onboard, but may not match visible opacity due to many factors including; calibration, equipment error, and installation location.

What to Check:

Procedures are in place to monitor opacity emissions and limit visible emissions over the state regulatory limit.

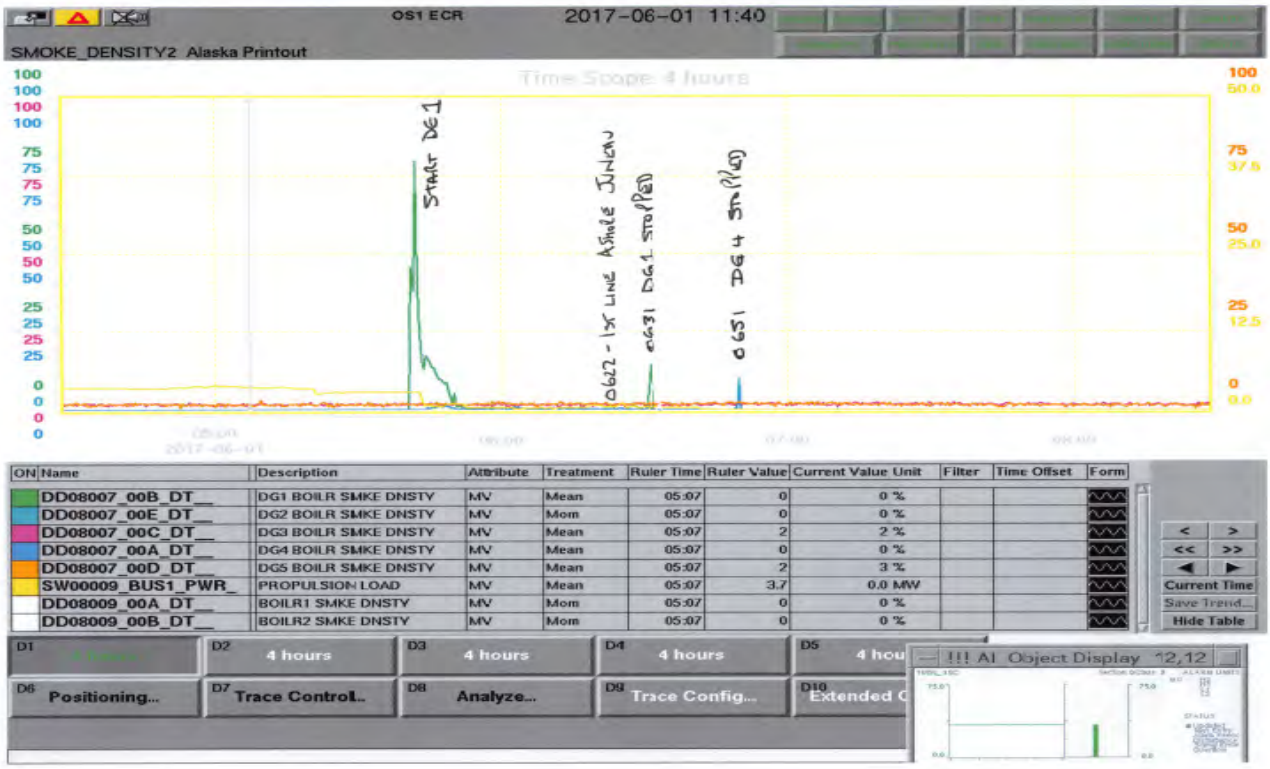
Citations: 18 AAC 50.070

Photo 35: Opacity Monitor

Helpful Hints & Suggestions

- *When multiple opacity events have occurred on the same day. Document clearly the location, date, and times of each event. A picture of the record is recommended.*
- *ADEC marine vessel opacity regulations apply to all stacks from all combustion sources installed on board of the vessel. This includes boilers, incinerators, dryers, diesel engines, gas turbines, etc. Opacity factors include operational practices, poor fuel treatment, poor*

Example 10: Sample Opacity Graph



Short summary of allowances above the opacity limit:

- Over 20% for more than 3 minutes in any hour in any operating mode
- Over 20% for any 6 minutes in an hour during startup while preparing to depart
- For the hour prior to or the hour after casting off or weighing anchor either
  - 40% limit for that hour or
  - Up to 9 minutes over 20%

Helpful Hints & Suggestions

- *Some vessel guidelines include voluntary actions to limit the incinerator use while in Port or in certain areas such as Tracy Arm. Check on the use of the incinerators.*
- *Incinerator use in port is not restricted by Alaskan law or regulations, if opacity limits are met. Many ships voluntarily limit incinerator use in port, but this is not a requirement.*
- *Vessel should have a plan or procedure on how to submit opacity self-reports and how to ensure that corrective actions*

Job Aid Item: 4.1.b

Active opacity exceedance self-reporting regimes in place **IAW 18 AAC 50.240**

Background: Cruise ships that self-report unavoidable exceedances need to prove the condition was unavoidable and take corrective actions to avoid reoccurrence.

What to Check:

This check is only needed for ships that submit self-reporting on potential opacity exceedances.

Citations: 18 AAC 50.240

Job Aid Item: 4.1.c

Incinerator operation and procedures (observed if in operation) are **IAW 18 AAC 50.050 & 070**

Background: Cruise ships use incinerators to burn paper and other materials to reduce offloads to shore. Although Ocean Rangers are not trained in Method 9, it is possible to observe for thick smoke, soot dropping from plume, opacity meters are not in alarm, or that items are not burned that create toxic smoke. Some of the items incinerated can cause higher opacity if not handled well; these include oily rags, oil filters, rubber materials, etc. Oily sludge or spent fuels have also been seen to increase opacity if not properly monitored.

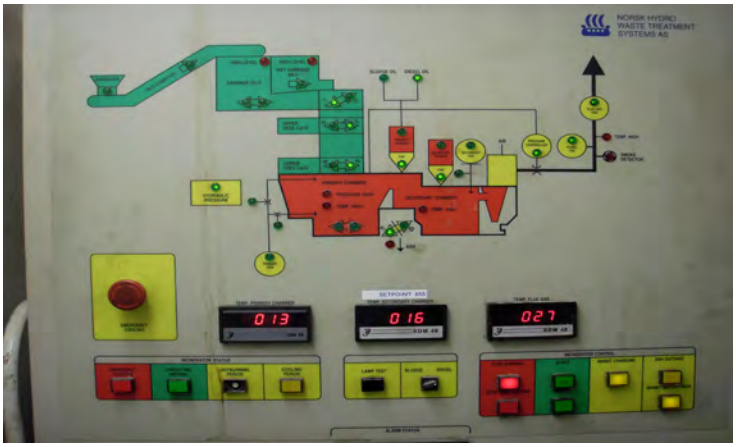


Photo 36: Incinerator Display

What to Check:

- Incinerators need to be operated below 20% opacity
- Some incinerators have emissions controls; these controls can affect opacity performance. If they are installed check how they are used.

Citations: 18 AAC 50.050 **Incinerator emission standards.**

Job Aid Item: 4.1.d

Emissions **IAW 18 AAC 50.110.** No emissions which would immediately threaten health, property, or animal life.

Background: This is a broader nuisance regulation compared with the marine vessel emissions regulation. It is also able to capture items like burning toxic substances, soot blows that create sheens or hazardous conditions, and thick smoke that creates a hazard to others. This regulation is not limited to stack emissions, but covers open burning of wastes and other potential air pollution sources.

What to Check:

- Large volumes of black or white smoke from the stacks
- Soot raining down from exhaust onto the ship, docks, or into the water and for sheens caused by soot

Citations: 18 AAC 50.110 **Air pollution prohibited**

Job Aid Item: 4.1.e

Fuel used **IAW 40 CFR 1043.60**

Background: The North America SECA is based on IMO Annex VI and is an EPA requirement. This was adopted by MARPOL in 2010. This is a requirement for all large ships operating from Cook Inlet west to Greenland. The EPA determined ships were a significant emissions source of sulfur oxides, which may cause respiratory symptoms in ports and further inland. Kodiak, Dutch Harbor, and Nome are cruise ports outside of the SECA. Sulfur levels in fuel used are related to the particle load of the exhaust and correlate to opacity levels depending on operations and maintenance.

What to Check:

Fuel Records:

- Do they match requirements of 40 CFR 1043.60 (except while in Kodiak or points west of Kodiak)?
- Check the fuel used and the sulfur content of the fuel used

Helpful Hints & Suggestions

- *Many ships have been granted exemptions from the EPA. Vessels should have documentation onboard. Some vessels are still in the process of installing SOx control (e.g. scrubber technology).*
- *Some vessels may have dual sulfur fuel types on board. Check these and verify for which sources these fuels are used. Scrubber checks fall under the EPA VGP and are found in the wastewater section.*
- *Some operators have been granted exemptions because of items such as fuel averaging. This must be documented in the seasonal report.*

Photo 37: Floating soot in pool

The seasonal report will contain information on the procedures for recording the fuel use and how it is stored and switched including:

- How are the records kept?
- Does the vessel have an exemption for the SECA?
- If there are “high sulfur” fuels on board, how are they separated from low sulfur fuels?
- How to ensure the low sulfur fuel is used in the areas where it is mandatory?
- Are there dedicated low sulfur combustion sources and high sulfur fuel switch sources?
- Describe and understand the fuel switch / fuel area regimes and how this is monitored and recorded.

Citations: 40 CFR 1043.30 **and** 40 CFR 1043.60 **Operating requirements for engines and vessels**

Photo 38: Zigzagging ship

Photo 39: Black smoke caused by failure of fuel controller

Table 2 to §1043.60 Annex VI Fuel Sulfur Limits [wt %]

Calendar years	Sulfur limit in all U.S. navigable waters and EEZ	Sulfur limit in ECA and ECA associated areas (percent)
2010–2011	4.50	1.00
2012–2014	3.50	1.00
2015–2019	3.50	0.10
2020 and later	0.50	0.10

Map 2: N.A. SECA Boundaries (from EPA)
(See Electronic library for additional ECA information)

North American ECA

The North American ECA extends to about 200 nautical miles off the coast except in the narrow areas between Florida, Cuba and Bahamas.

Figure 36. North American ECA (US EPA 2010)

Opacity References:

California Air Board Visible Emissions Handbook example pages

What is EPA Reference Method 9?

It is very important that the training and certification of VE observers is standardized, as evaluating the density of visible emissions is an activity which requires training. To ensure that reliable and repeatable VE observations can be conducted anywhere in the US, in 1974 the federal Environmental Protection Agency (EPA) adopted Reference Method 9.

The protocol for Method 9, "Visual Determination of the Opacity of Emissions From Stationary Sources," is in the Code of Federal Regulations: 40CFR Ch. I, Part 60, Appendix A, Method 9. It gives the requirements for the training and testing of VE observers, the steps to follow and the data to record while documenting a VE observation. Method 9 also gives the calibration and design specifications for the equipment used to train and certify observers.

Method 9 requires recording readings in percent opacity for both black and white plumes. VE readings are taken every 15 seconds. The VE source is in violation if the **average of any group of 24 consecutive readings** (6 minutes) taken in a 1-hour period exceeds the standard.

What are "Visible Emissions?" AIR POLLUTION !

Visible Emissions (VE) are just that - something visible emitted (coming out) from an air pollution source into the ambient (outdoor) air. Visible emissions are airborne plumes of solid and/or liquid **particles**, also known as **particulate matter (PM)**. Except for water vapor ("steam") plumes, the darker and/or denser a plume, the more PM air pollution it may contain.

Visible emissions are usually emitted from source equipment by means of an exhaust stack or duct, but they can also be **fugitive emissions** generated by materials handling, transfer, or other activities. The plume of smoke you see coming from a smokestack is a VE, as is the plume of dust behind a vehicle on an unpaved road.

Human Activities Which Produce Visible Emissions:

1. **Combustion, or Burning. A major PM source,** combustion occurs in vehicle engines, in household and industrial furnaces, incinerators, and stoves, and in the open, wherever burning occurs. **Smoke** and **exhaust** are familiar names for combustion air pollution.

2. **Attrition: wearing, or grinding down by friction.** The everyday "wearing out" of tires, shoes, clothes, etc. leaves PM everywhere. Industrial attrition processes which may emit PM into the air include milling, sanding, grinding, drilling, demolishing, spraying, and abrasive blasting.

3. **Condensation: changing from a gas to a solid or liquid.** Air pollution vapors and fumes form two ways: **evaporation** of volatile liquids at normal temperatures, and **forced vaporization** of solids or liquids using heat or pressure. Visible PM forms by the **condensation** of vapors and fumes.

Chapter 6 Safety

General Citations

This Safety chapter only includes items listed in the latest Job Aid. For personal and on the job safety, please refer to the information provided by your employer and by the vessel.
If you have any questions regarding personal safety, please contact your manager immediately.

Check your personal safety gear regularly including; head, eye, and ear protection, gloves, and flashlight.

Always be vigilant for your personal safety, and watch for safety hazards that could affect passengers and crew.

Photo 40: Safety 1

General Background:

Ocean Rangers continuous monitoring of safety concerns while performing compliance checks provide an added layer of protection for passengers, crew members, and other commercial, recreational and subsistence water users.

Many of the Job Aid Items that you will check are related to safety and sanitation. For example, wastewater limits are designed to protect recreational water users and shellfish consumers in Alaska.

Safety is the most important item an Ocean Ranger can observe and be considered at all times. Always be vigilant for your personal safety, and watch for safety hazards that could affect passengers and crew.

Check safety items daily, or as applicable. A complete safety check of the vessel will not be possible, however.

Helpful Hints & Suggestions

*All safety concerns **must** immediately be reported to the vessel's crew and your onboard contacts. Include the item in your daily report, and explain how this item was brought to the attention of onboard contacts.*

Photo 41: Safety 2, proper safety signage

Safety

Job Aid Item: 5.1.a

Observe operations (including repairs and cleaning) that may affect safety of passengers, crew, and vessel.

Background: There are many hazards on a ship that can affect the crew, passengers, and environment. Safety on board can be divided into three areas:

1. Passenger Safety, all the public areas
2. Crew Safety, all crew areas
3. Combined Safety, all other areas where passengers and crew may be exposed to hazards

Most safety concerns reported are common sense items, and are easily fixed. Examples included; fried or exposed electric cords, tripping hazards, and blockage of fire control equipment. All were safety items and must be reported immediately to the vessel's crew.

What to Check:

During daily rounds watch for unsafe conditions for either passengers or crew such as;

1. Passenger related (hotel):
   - Burnt or uninsulated electric extension cords
   - Trip hazards on deck
   - Safety signs- missing
   - Water or oil on decks (slippery)
   - Protruding electric wiring or sockets
2. Crew related:

- Trip hazards
- Storage of reactive chemicals together
- Ladders or step stools used while not secured
- Paint operations with no safety gear (fall protection)
- Rope storage on passenger decks
- Winch handle position operational instructions-missing
- Winch/capstan safety emergency stop, not labeled or identified
- Lifeboat maintenance operations ladder, not secure

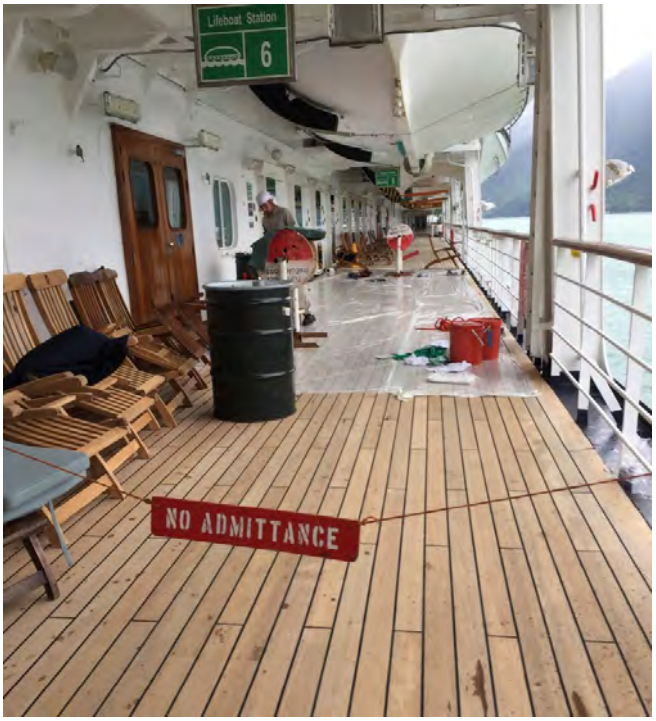


Photo 42: Safety 3, work area clearly identified

3. Engine Room:
   - Working with chemicals with no personal protection gear or ventilation
   - Deck floor plates removed- no warnings or signs
   - Open manholes- no signs
   - Watertight doors open under all vessel conditions
   - Escape hatches covered with items
   - Welding or grinding with no protection for avoidance of fire
   - Leaking water on electric control boxes
4. Crew & Passengers:
   - Overhead maintenance and repair operations with no tool and or parts fall protection
   - Working areas not fenced off or identified
   - Air hoses and electric cables, trip hazards
   - Gangway not securely attached to the vessel
   - Bulwark Openings or Fairleads, and “Rope Eye” openings

Citations: 18 AAC 69.040, 33 CFR 96.230, 33 CFR 96.310, 33 CFR 96.370

Job Aid Item: 5.1.b

Marine casualty (grounding, significant harm to the environment, loss of life of serious injury, fire, or loss of propulsion, steering, or control system that reduced maneuverability) reported **IAW 46 CFR 4.05-1 (a)(3)**

Background: Although casualties are relatively rare, there have been cases of power loss and small fires observed by Ocean Rangers. These events as required in 46 CFR4.05 must be reported by the ship to the US Coast Guard.

What to Check:

Ask if the casualty was reported:

Helpful Hints & Suggestions

► *MSDS or similar sheets can be a useful way to determine if a substance is toxic and/or hazardous when checking items in Chapter 3, Solid Waste, and must be available for waste offload plans if hazardous waste is offloaded in Alaska.*

► *Large cruise ships are foreign flagged or "flag states", there may be differences in how the information regarding safety, storage, and disposal of hazardous waste requirements are provided. For example, it may be named something other than "MSDS"*

- Note any marine casualty (as defined in 46 CFR 4.05) in the daily report so it can be checked by the USCG to verify it was reported
- Details such as time, location, number of events, and duration must be recorded. Also report on the root cause (if known)

Citation: 46 CFR 4.05-1**, Notice of marine casualty**

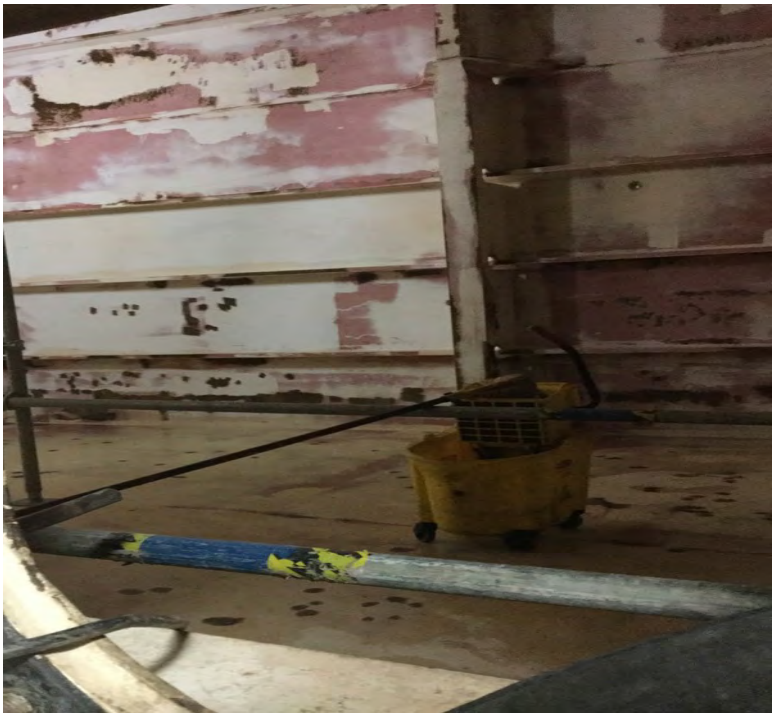


Photo 43: Safety 4, potential tripping hazard

Job Aid Item: 5.1.c

Personal Protective Equipment, use, and storage recommendations contained in MSDSs for onboard chemicals are followed IAW Material Safety Data Sheets (MSDS) **33 CFR 96.230, 33 CFR 96.310, 33 CFR 96.370**

Background: Material safety data sheets or products safety datasheets should be available for all potentially hazardous or toxic chemicals. These sheets are intended to inform the end user of hazards, physical data, and how to safely handle and use the product. They should also identify the use and need of personal protection gear.

What to Check:

- MSDS (when available) recommendations are being followed with regard to safety, storage, and disposal requirements to protect passengers and crew.
- The Safety Management System (SMS) should include information on what is required and how to find safety information

Citaton: 33 CFR 96.230**,** 33 CFR 96.310**,** 33 CFR 96.370

Chapter 7 Sanitation

General Ciations

General Background:

Sanitation is a concern with the high density of people concentrated in a small area on a ship. A problem with food preparation, drinking water, or a swimming pool could impact hundreds of passengers or crew. Operators take this issue very seriously, and have a voluntary agreement with the US Center for Diseases Control and Prevention (CDC) to check for potential problems. Results of the CDC inspection scores and identified deficiencies are posted online to give travelers an idea of the sanitation conditions present at the time of inspection. Because the CDC Vessel Sanitation Guidebook is a voluntary agreement, these standards are not translated into direct regulatory requirements but are good guidelines.

Photo 44: Pool Chemistry & Maintenance Room

Photo 45: Galley, food prep

Section 1: Potable Water

Job Aid Item: 6.1.a

Potable Water hook ups, IAW supplier (municipality or port), vessel procedures, **21 CFR 1250.86 and 21 CFR 1250.82**

Background: Potable water is one of the most basic human needs, and properly treated and clean water is necessary to avoid disease. Improperly handled water could contaminate the water supply aboard the vessel and potentially allow disease to enter a community water supply system.

Photo 46: Potable Water Connection

What to Check:

Potable water tanks are dedicated for potable water, and tanks and pipes are clearly marked.

- Check for potential sources of contamination of these tanks such as sanitary drains through the tanks (unless a pipe within a pipe).
- Check that water is disinfected in some way.
- Check that ice used in drinks or food preparation is only from potable water. Proper connection procedures are followed.

Citations: 21 CFR 1240.86 **and** 21 CFR 1250.82

Helpful Hints & Suggestions

- *Check if the correct hose is used. Often dedicated hoses (blue in color) are used for potable water bunkering. When different hose types are used, or used as extension, verify that hoses are designated and used only for potable water service*
- *Some operators have used the dock "bull-rail" to lay the hose free of the ground. Is this bull-rail contaminated with bird feces? In some cases, the hose (bending) will touch the deck or ground. This should be minimized.*

Job Aid Item: 6.1.b

Potable hose is dedicated for potable water and connections are sanitized / capped before use **IAW 18 AAC 80.015**

Background: Contamination of potable water could occur from hoses or caps used on hoses that come into contact with contaminants or the ground. If connected to a municipal system, this could contaminate that system as well. CDC recommends connections sanitized with 100 mg/L chlorine and flushing hoses.

Photo 47: Elevated Potable water hose

Photo 48: Potable Water hose & connection- Not 'free of the ground"

What to Check:

Potable water hoses are dedicated, and should be labeled, properly stored away from other hoses, etc.

- Check that connections are sanitized and capped.
- Check that hoses are flushed prior to connection and drained after use.
- Hoses should be stored so that dirt and liquids cannot collect inside.

Citation: 18 AAC 80.015

Job Aid Item: 6.1.c

Potable hose properly stored and used 'free of the ground' **IAW 18 AAC 80.015**

Background: Hoses on the ground could pick up contamination, particularly if there are leaks on the hose.

What to Check:

Hoses are elevated where possible to minimize contact with the ground.

Citations: 18 AAC 80.015

Job Aid Item: 6.1.d

Potable water system free of cross connections or has backflow prevention **IAW 18 AAC 80.025**

Background: When a ship connects to a municipal water system, there is a potential health concern for contamination if there are cross-connections on the ship, and there is no backflow protection. A backflow preventer is commonly attached to the connection on the docks utility or metering system, some vessels have their own backflow preventer. Some systems have flow direction indication, flow indicators may identify possible back flow. Back flow occurs when the pressure of the vessels potable system (tanks) is greater than the supply (shore) system pressure.

What to Check:

Backflow protection is used either at the source of the potable water or onboard before the distribution system. If there is no backflow connector, search for potential sources of cross-contamination.

Citations: 18 AAC 80.025 **&** 21 CFR 1240.86

Photo 49: Water connection at dock

Section 2: Swimming Pool Sanitation, Spa Sanitation; Safety

Job Aid Item: 6.2.a

Water is filtered in re-circulated swimming pool **IAW 21 CFR 1250.89**

Background: Pools need to be filtered to regularly clean the water to reduce sanitation issues. Recirculation also assists in helping mix water so that halogens can lower bacteria levels.

What to Check:

Swimming pools are filtered and recirculated, unless they are saltwater flow-through. Recirculation needs to occur at least every six hours.

- Check for evidence of inadequate filtration, such as sand on the bottom of the pool from failed filtration units.

Citation: 21 CFR 1250.89

Job Aid Item: 6.2.b

Free residual halogen of > 0.4 mg/ L (ppm) and pH not less than 7.0 is maintained in re-circulated swimming pools. **IAW 21 CFR 1250.89 (b)**

Background: Pools must have a level of halogens to disinfect to reduce the likelihood of spread of diseases. pH must be maintained, because low pH can interfere with the effectiveness of the halogen and cause irritation for swimmers. pH should be in the 7.0 to 7.6 range. Halogens should be in a range of 1 to 3 mg/L, but the regulation is for at least 0.4 mg/L. A cruise ship should be recording these levels for the CDC.

What to Check:

Halogen and pH are measured and are greater than 0.4 mg/L of halogen (chlorine or bromine) and pH is at least 7.0.

Citation: 21 CFR 1250.89 (b)

7

Job Aid Item: 6.2.c

Halogen test is provided and used **IAW 21 CFR 1250.89 (b)**

Background: If they are maintaining residual halogen levels they must be testing for them.

What to Check:

If halogen levels are maintained as in item 6.2.b check that a halogen test is provided. This could be a chlorine test kit, bromine test kit, or meters.

Citations: 21 CFR 1250.89 (b)

Photo 50: Chart Recorder for pH & Chlorination

Chapter 8 Oil Pollution

General Citations

General Background:

Oil pollution is covered by MARPOL Annex I along with federal and state laws regarding the discharge of oil and oily wastes. In the United States, the most general oil regulation is 40 CFR 110.3 which prohibits discharge of oil in amounts which would cause a sheen, film, or discoloration of water.

In the late 1990s and early 2000s oil pollution was in the news as several cruise operators paid fines totaling several millions of dollars for discharge of oil or oily waters. More recent cases in the general shipping community involved bypasses, sometimes called “magic pipes”, of Oily Water Separators (OWS) and false reporting in Oil Record Books (ORB).

Any sheens noted in the water need to be immediately reported to the vessel that you are reporting on. The Harardous spill and oil reporting form must also be filled out and submitted to your employer and ADEC. Many observed sheens have not been caused by a cruise ship, but either by ship related activities or other harbor activities. All spills and sheens must be reported as quickly as possible, so that a source can be determined and clean up (if possible) can begin.

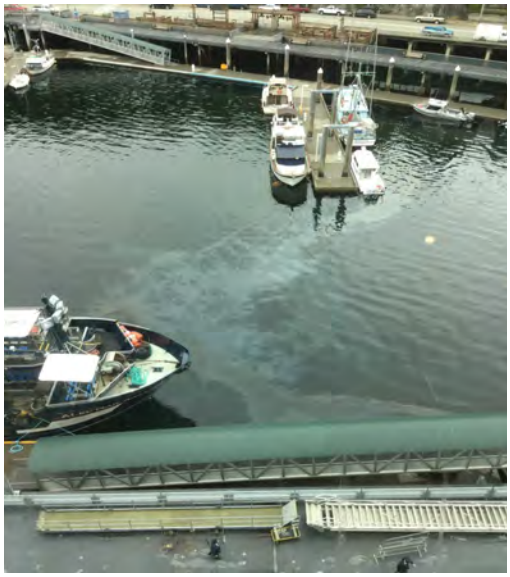


Photo 51: Oil sheen from Unknown Source

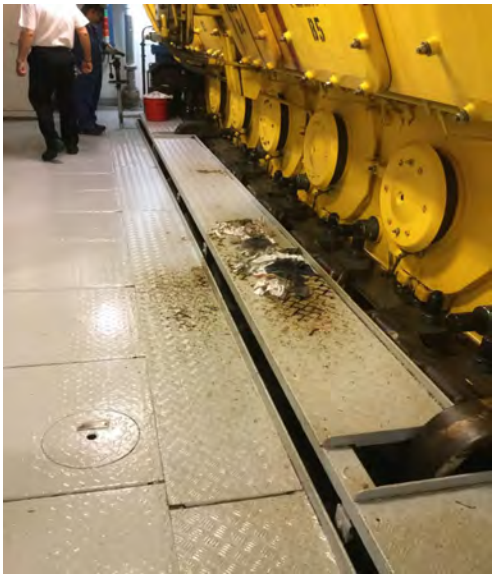


Photo 52: Internal oil leak, main engine

Oil Record Book: ORB

Oil Record Book (ORB) is kept updated on board the vessel and provides clear policy and procedures for all oil and sludge handling and all other oil discharges. The ORB is typically kept in the Engine Control Room (ECR) and is updated as operations are completed.

- Operations performed are logged in the ORB as letter codes and item numbers, as required by IMO regulations.
- Vessels offload sludge oil, often in Victoria or Vancouver BC.
- Vessels generally do not use the OWS system to discharge in Alaska waters.
- *FORM A* should include or reference "a means for retention and disposal of oil residues (sludge) Regulation 17 and bilge water holding tanks". This information tells the OR what tanks/systems are available.
- Cruise ships generally have complex oily/bilge water process systems, varying from sludge concentrators (separators) to advanced filtration processes. Take the time to check and trace these operations. (seasonal checklist item)
- Abbreviations & Symbols; Ask what the abbreviations mean and where the "key"/conventions for the abbreviations are kept, (seasonal checklist item).
- Ask where the bunker receipts are located.
- Fuel bunkering actions, including the bunkering of diesel oils and other lubrication oil products, for bulk quantities are kept in the ORB. Bunkering occurs in Alaska, but is much more frequent in Vancouver or Seattle.

Helpful Hints & Suggestions

Current IMO Annex VI requirements include fuel sulfur content limitations. Often a second Bunker sample/analysis is provided to determine fuel quality/sulfur content (Fobas etc.) See Air Section.

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Example 11: Alaska Oil Reporting Placard

IT'S THE LAW!

AS 46.03.755, 18 AAC 75.300, 75.325 and 18 AAC 78.200

REPORT OIL AND HAZARDOUS SUBSTANCE SPILLS

During Normal Business Hours

call the nearest response team office:

Central Alaska: Anchorage	**(907) 269-3063** Fax: (907) 269-7648
Northern Alaska: Fairbanks	**(907) 451-2121** Fax: (907) 451-2362
Southeast Alaska: Juneau	**(907) 465-5340** Fax: (907) 465-5245
Alaska Pipeline: Fairbanks	**(907) 451-2121** Fax: (907) 451-2362

Outside Normal Business Hours

Toll Free	**1-800-478-9300**
International	**1-907-269-0667**

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
www.dec.alaska.gov/spar/spillreport.htm

Hazardous Substance

Any hazardous substance spill, other than oil, must be reported immediately.

Oil – Petroleum Products

To Water

- Any amount spilled to water must be reported immediately.

To Land

- Spills in ***excess of 55 gallons*** must be reported immediately.
- Spills in ***excess of 10 gallons, but 55 gallons or less***, must be reported within 48 hours after the person has knowledge of the spill.
- Spills of ***1 to 10 gallons*** must be recorded in a spill reporting log submitted to ADEC each month.

To Impermeable Secondary Containment Areas

- Any spills in ***excess of 55 gallons*** must be reported within 48 hours.

Underground Storage Tank Spill Reporting

Regulated Underground Storage Tank (UST) systems are defined at 18 AAC 78.005. Releases at heating oil tanks must be reported.

- You must report a *suspected* belowground release from a UST system, in any amount, within 24 hours *(18 AAC 78.220(c))*.
- You must report if your release detection system indicates two consecutive months of invalid or inconclusive results.
- If you observe unusual operating conditions, sudden loss, erratic dispensing (slow flow/no flow) or discharge to soil or water, **report it to the UST Unit:**

907-269-3055 or 269-7679

rev. Oct/2017

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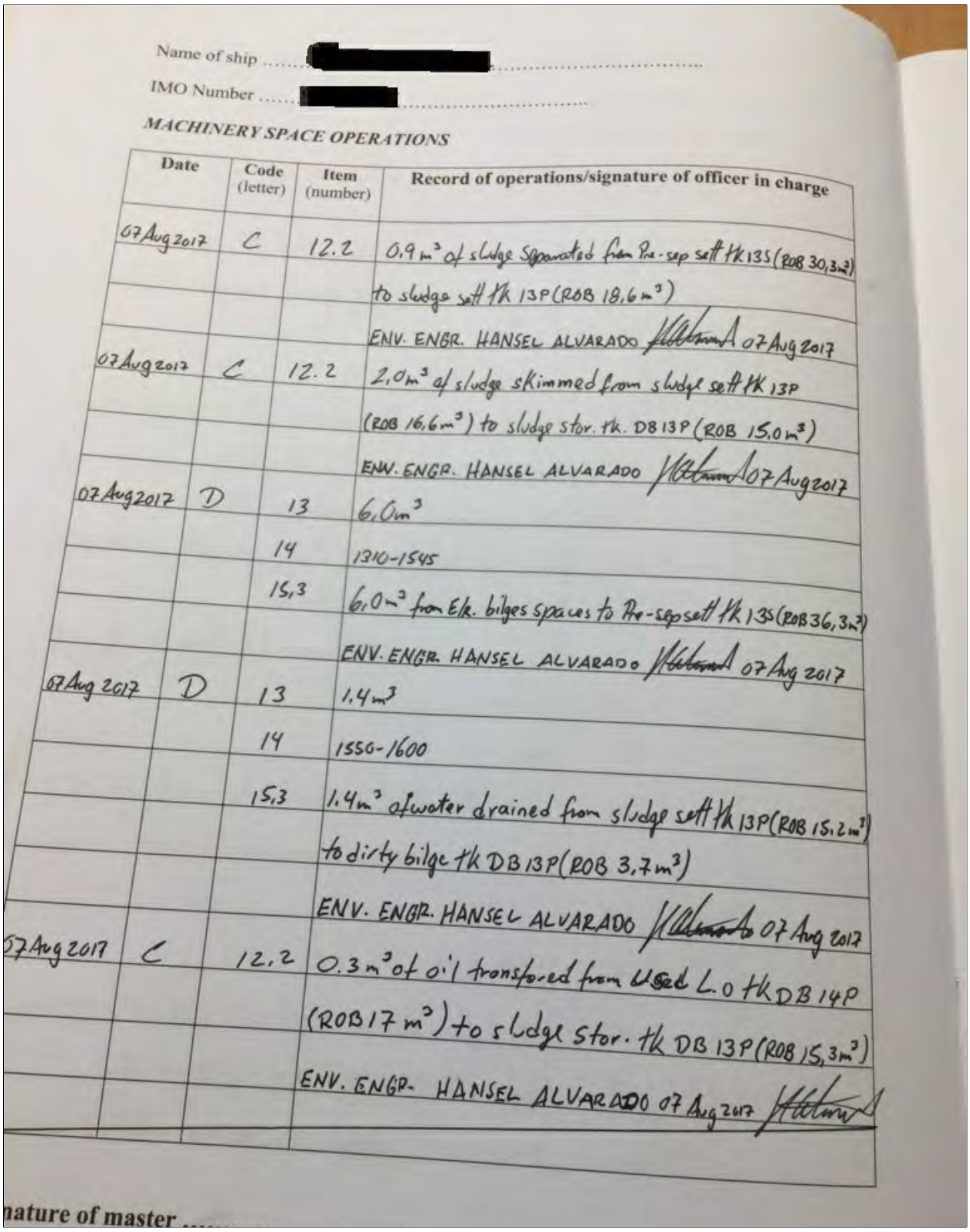
Example 12: Oil Record Book



Name of ship [redacted]

IMO Number [redacted]

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item (number)	Record of operations/signature of officer in charge
07 Aug 2017	C	12.2	0.9 m³ of sludge separated from Pre-sep sett tk 13S (ROB 30,3 m³)
			to sludge sett tk 13P (ROB 18,6 m³)
			ENV. ENGR. HANSEL ALVARADO 07 Aug 2017
07 Aug 2017	C	12.2	2,0 m³ of sludge skimmed from sludge sett tk 13P
			(ROB 16,6 m³) to sludge stor. tk. DB 13P (ROB 15.0 m³)
			ENV. ENGR. HANSEL ALVARADO 07 Aug 2017
07 Aug 2017	D	13	6,0 m³
		14	1310-1545
		15,3	6,0 m³ from E/r. bilges spaces to Pre-sep sett tk 13S (ROB 36,3 m³)
			ENV. ENGR. HANSEL ALVARADO 07 Aug 2017
07 Aug 2017	D	13	1.4 m³
		14	1550-1600
		15,3	1.4 m³ of water drained from sludge sett tk 13P (ROB 15,2 m³)
			to dirty bilge tk DB 13P (ROB 3,7 m³)
			ENV. ENGR. HANSEL ALVARADO 07 Aug 2017
07 Aug 2017	C	12.2	0.3 m³ of oil transferred from Used L.O tk DB 14P
			(ROB 17 m³) to sludge stor. tk DB 13P (ROB 15,3 m³)
			ENV. ENGR. HANSEL ALVARADO 07 Aug 2017

nature of master .....

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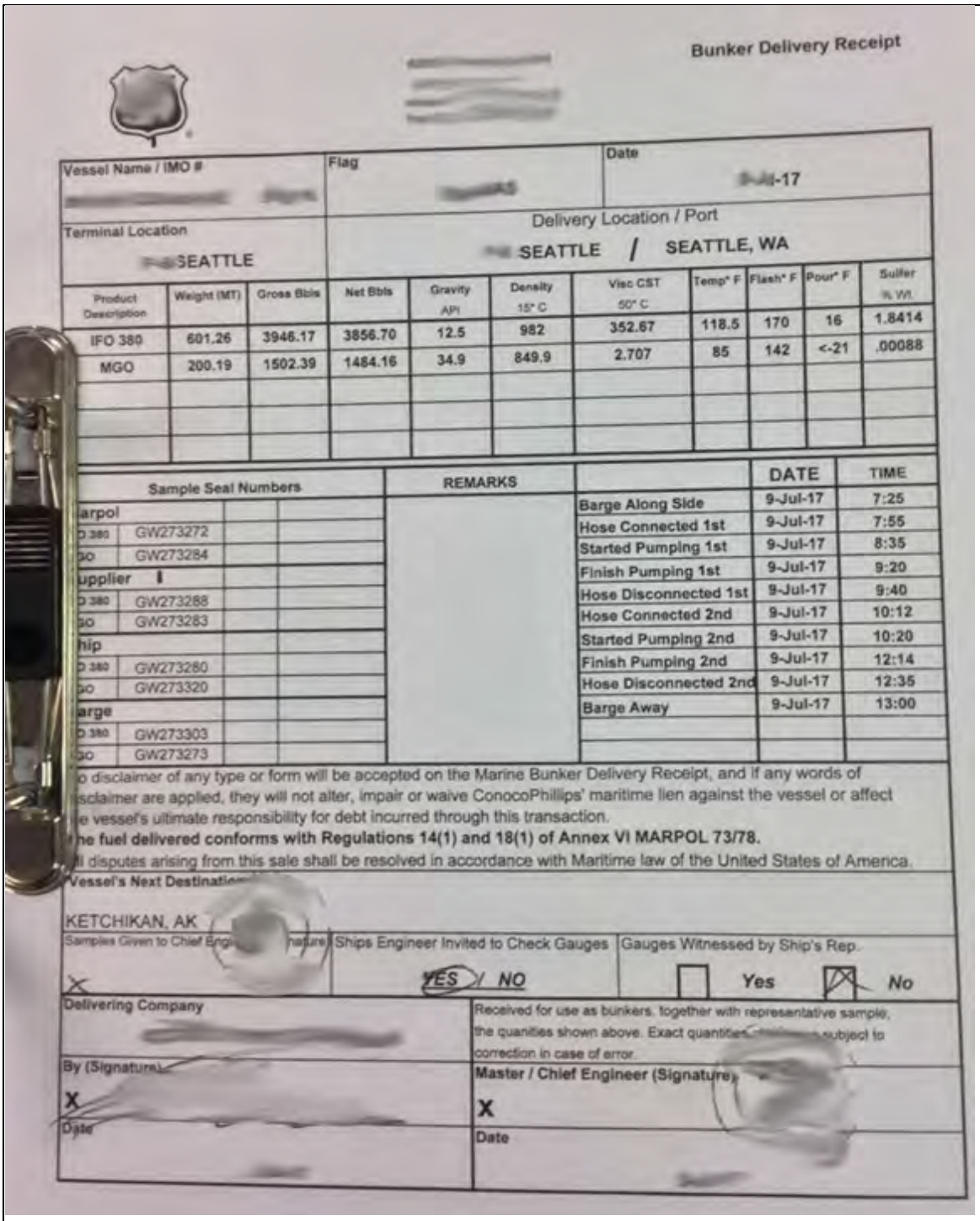
Example 13: Marine Bunker Reciept



Bunker Delivery Receipt

Vessel Name / IMO #	Flag	Date
[redacted]	[redacted]	[redacted]-17

Terminal Location	Delivery Location / Port
[redacted]SEATTLE	[redacted] SEATTLE / SEATTLE, WA

Product Description	Weight (MT)	Gross Bbls	Net Bbls	Gravity API	Density 15° C	Visc CST 50° C	Temp° F	Flash° F	Pour° F	Sulfer % Wt.
IFO 380	601.26	3946.17	3856.70	12.5	982	352.67	118.5	170	16	1.8414
MGO	200.19	1502.39	1484.16	34.9	849.9	2.707	85	142	<-21	.00088

Sample Seal Numbers			
[redacted]arpol			
[redacted]O 380	GW273272		
[redacted]GO	GW273284		
[redacted]upplier [redacted]			
[redacted]O 380	GW273288		
[redacted]GO	GW273283		
[redacted]hip			
[redacted]O 380	GW273280		
[redacted]GO	GW273320		
[redacted]arge			
[redacted]O 380	GW273303		
[redacted]GO	GW273273		

REMARKS

	DATE	TIME
Barge Along Side	9-Jul-17	7:25
Hose Connected 1st	9-Jul-17	7:55
Started Pumping 1st	9-Jul-17	8:35
Finish Pumping 1st	9-Jul-17	9:20
Hose Disconnected 1st	9-Jul-17	9:40
Hose Connected 2nd	9-Jul-17	10:12
Started Pumping 2nd	9-Jul-17	10:20
Finish Pumping 2nd	9-Jul-17	12:14
Hose Disconnected 2nd	9-Jul-17	12:35
Barge Away	9-Jul-17	13:00

[redacted]o disclaimer of any type or form will be accepted on the Marine Bunker Delivery Receipt, and if any words of [redacted]sclaimer are applied, they will not alter, impair or waive ConocoPhillips' maritime lien against the vessel or affect [redacted]e vessel's ultimate responsibility for debt incurred through this transaction.

[redacted]he fuel delivered conforms with Regulations 14(1) and 18(1) of Annex VI MARPOL 73/78.

[redacted]ll disputes arising from this sale shall be resolved in accordance with Maritime law of the United States of America.

Vessel's Next Destinatio[redacted]

KETCHIKAN, AK

Samples Given to Chief Engi[redacted]nature	Ships Engineer Invited to Check Gauges	Gauges Witnessed by Ship's Rep.
X	YES / NO	☐ Yes ☒ No

Delivering Company	Received for use as bunkers, together with representative sample, the quanities shown above. Exact quantities [redacted] subject to correction in case of error.
By (Signature) X	Master / Chief Engineer (Signature) X
Date	Date

8

Oil Water Separation Systems on board Alaska Cruise Vessels

General Information:

The Once a Season and Daily Report include check items for the OWS. The bullet list below has points of interest that are useful to understand the OWS and assist in compliance verification.

Many of the OWS checks are in the Once a Seaon Report to allow a more in-depth look at items that should not change regularly. The OWS system can be a dynamic process, and it is possible that there will be changes. Checks need to be repeated if a vessel undergoes major maintenance or changes to the piping of the oily water separation system.

Large cruise ships have dedicated oily water installation(s) to treat oily water, oily bilge water, sludges, and other waters that may contain oil by separating the oil substances from the water.

Applying simple logic to these systems- "what goes in goes out" will greatly assist in assessing operation of these installations.

Helpful Hints & Suggestions

On most cruise ships, the monitoring system on the OWS units is sealed and protected. On some there are video cameras installed to monitor close to the White Box System. The recirculation valve and controls of the OCM system are on most vessels protected by a cage.

The main component of the OWS is their treatment system which consists of collection tanks that are laid out for the settling process and/or combination of centrifuges for separation of oily water.

Points of Interest:

Pre-Treatment System:

- Are multiple tanks dedicated pre-treatment tanks? How are they arranged? Including the transfer system to OWS system.
- Check storage tank connections and plumbing to the OWS treatment. Check for locked valves/blind flanges and other piping arrangements.
- Are oil skimming arrangements used/installed in the pre-treatment system? How is skimmed oil handled?
- Are portable pumps/hose arrangements used? If so, identify from which area (source) to which tank the flow goes.
- OWS system is, in all cases, equipped with recirculation/by pass (non-discharge line) system. Where is the re-circulation/reject medium stored?

- Overflow provisions for the pre-treatment (settling tanks, etc.). Where are the overflows going?
- Are chemicals additives used in the pre–treatment process?
- Are medium transfer records (volume, change data, time) from the pre-treatment system available?

Oil Water Separation Process Components:

- OWS Dynamic process (centrifuges) can be standalone with OCM or in combination with other components.
- OWS static process (filter)
  - Components in the White Box System (WBS)
  - Discharge monitoring Oil Content Monitoring (OCM) system controls
  - Three-way valve system activated by discharge monitoring open (overboard); closed (recirculation) with flow and other controls monitoring
  - The WBS unit is in “locked cage” with key/tagging locking regime
  - Calibration records
- Inside the WBS system there is a data recorder which has local read out and data storage. On most vessels, the WBS data recorder is interfaced with the ABB/Siemens/Valmarine automation systems and data recorders/data storage is made as well.

Photo 53: Secured OWS/White Box

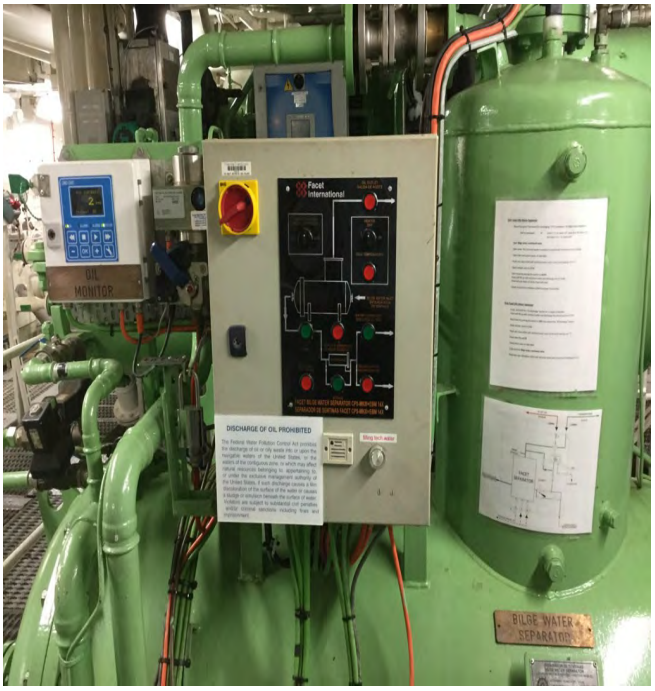


Photo 54: OWS monitor

OWS/OCM system:

Familiarize yourself with the system components.

- From which tanks is the OWS system processing?
- OCM system is locked by a dedicated responsible person?
- Is the OCM system automated?
- The OCM system includes an alarm and three-way valve open/close functions.
- Sample line from main discharge line to the OCM system. This is a small diameter line from the "inlet side" of the three-way valve to the analyzer. This sample line is relatively short and has no valves/cocks.
- When discharging oil ppm levels are recorded, this can be done using:
  - Check "Writer card"/ "strip charts" (Not many large vessels use the "writer/strip card option")
  - Electronically stored in the White box, and irelayed to the engine control room repeater system.
  - OCM data Read out or Memory read out? How is this done?
  - Recent alarms? Check alarm information time, date equipment; line item complete in printed-out format.
  - OCM system data can be read out locally; this requires opening the WBC. The responsible Officer and C/E must witness the opening and the reason for the opening. Some vessels do this for routine operations. This is the opportunity for the OR to witness readings being taken.

8

- Is memory storage history of the WBS open/close available? Ask for a demonstration.
- Are cards/hard discs/repeater print outs made of the OCM system?

- Some vessels may have a defective (under repair) closed “sealed” OWS unit. Check the paperwork and reporting to the USCG, when in Alaska waters.
- General condition of the three-way valve and activator lines (pneumatic/electronic) attached electric cabling?
- Piping from the last stage OWS/OCM is relatively small diameter. Are bypassed or blind flanges installed? Some vessels have made modifications - check.
- Some seals made of tape come loose. Please bring this to the vessel’s attention and report it.

Photo 55: Concentrated Sludge Tank

8

Photo 56: OWS separator (dynamic)

Photo 57: OWS separator/sludge treatment (dynamic) "concentrator"

Photo 58: Piping example

Photo 59: MarineFloc OWS Control panel

8

Example 14: Verification Certificate

TMS

Total Marine Solutions Inc.

Certificate Number:

Date of Verification: November

Certificate Valid For: 1 Year

Verification Certificate

Issued To:

☒ Oil Content Meter

This is to verify that the oil content meter specified below, has been tested using known solutions and adjusted in accordance with the manufacturer's instructions and has been found to be within the approved calibration limits.

Equipment	Manufacturer	Model	Serial Number	Alarm Set Point ppm	Time Delays seconds	Location
Oil Content Meter	Deckma	OMD-24	CPU: Cell:	A1. 15 ppm A2. 15 ppm	T1. 10 Sec. T2. 1 Sec.	White Box

Calibration Date 1 Year

☒ Recorder

This is to verify that the recorder referenced below has been checked and the values produced match, within acceptable limits, those of the oil content meter(s) to which it is attached.

Equipment	Manufacturer	Model #	Serial / Instrument #
Recorder	Eurotherm	6100A	

Service Engineer Name:

8

Section 1: Oil Pollution; Fuel, Daily

Job Aid Item: 7.1.a

Spills and sheens are absent **IAW AS 46.03.740 and 40 CFR 110.3**

Background: Sheens and oil spills are prohibited under state and federal law.

What to Check:

- Check for sheens and spills while boarding vessel, at the dock, and when outside.
- Oil sheens, oil fill ups, and leakage of oil in the vessel interior and exterior.
- Vessel use of bow thrusters and maneuvering appear to be operational conditions where oil sheens from leaky seals are seen first.
- Check the exterior parts of oil systems (tanks, tubes) for lost or leaking oil.
- For seals under the water line (prop shafts, stabilizers) leakage may be noticed under certain operation conditions. Most oil leakages from seals with traditional oils (not including "no sheen oils") will manifest visible sheens. However, the oil loss from leaking seals can be very small and hard to detect. Operational conditions such as shaft speed and thrust fluctuations can affect the leaking profile as well. Shaft seals may not leak at all at zero shaft speed, but leak at certain shaft speeds. Leaking inner shaft seals are indicators that something is wrong with the seals and may indicate future issues with the outer seals. EPA VGP requires the use of Environmentally Acceptable Lubricants (AEL) used in "oil to sea interfaces". The interfaces are, Controllable Pitch Propellers, Thrusters, Azipods, Rudder Bearings, Stabilizers, Stern Tubes etc. If EALs could not be used for technical reasons etc. documentation is on board that includes why the EAL could not be applied.

Citations: AS 46.03.740 **and** 40 CFR 110.3

Helpful Hints & Suggestions

- *Ocean Rangers have reported "soot", floating "soot balls", and "oily specks" from exhaust gas scrubber discharges. The exhaust scrubber has a relatively large discharge volume. Systems upsets, transient loads, and ill-functioning scrubber components may cause the discharge of soot and oil in the scrubber effluent. Often these discharges of oil soot are not continuous and show up on the surface of the discharge area.*
- *For vessels equipped with "open loop" scrubbers, there may be "process chemicals" used to support scrubber oil/soot/particle separation process.*
- *Some vessels record their low sulfur fuel bunkers in separate recording system. Not all vessels record this in the ORB.*

8

Job Aid Item: 7.1.b

Vessel Oil Discharge Record Book is available and up to date **IAW 33 CFR 151.25(h)**. The Oil Discharge Record Book must contain entries for each discharge (including automated discharge) and offload including OWS discharge events **IAW 33 CFR 151.25(d)**

Background: See Vessel Oil Record Book and OWS description under general information.

What to Check: Oil Record Book is up to date and filled in as operations are conducted. Check alarm logs and automated logs for OWS items or other discharges not listed in ORB or WW log.

Citations: 33 CFR 151.25(h) & (d)

Job Aid Item: 7.1.c

Oil Discharge Record Book contains entries for each internal transfer for cleaning or ballasting of fuel tanks **IAW 33 CFR 151.25(d)**

Background: See ORB general information.

Helpful Hints & Suggestions

Attention to the EAL use and in which equipment this type of lubricant is used.

- *Lubrication/Oil card identification?*
- *Oil / Lubricant EAL type on tanks signs?*

What to Check:

Check that the ORB includes internal transfers.

- Do the entries add up?
- Off loads of oil / used lubrication oil must also be reported in the offload reporting.
- Bunkers actions up to date filled in? Volume? Type / Quality of the fuels? Bunker receipt? Fuel sample analysis?
- Check how volumes are calculated and determined. Are procedures in place?

Citations: 33 CFR 151.25(d)

Job Aid Item: 7.1.d

Head tanks levels for oil to sea interface indicate no oil loss into the sea (e.g. shaft seals, stabilizer systems, thrusters etc.) **IAW AS 46.03.740 and 40 CFR 110.3**

Background: Familiarize yourself with the oil to sea system. Some vessels have rather complicated oil to sea seal systems. Small volumetric changes happen based on temperature changes. Loss of oil may be noticed when tank levels drop below the sight glass or sight glass mark. Often a tank level alarm is installed and activated when low levels are encountered. Often crew estimate the oil added by using hand oil can volumes, using dipsticks, or measure on the sight glass the new level or level increase after the fill up. Some vessels have had water ingress, or leaking internal seals; these could be precursors to or are indictors of seawater side shaft seal troubles. Some operators separate and recycle oil, adding new oil to the reservoir. Monitoring the added oil and oily water sludge volumes are good indicators of how much oil is added. The internal leak volume should be accounted for.

What to Check:

- Check levels under several operating conditions, seas, port, maneuvering, etc.
  - Are the tank valves open during the vessel operation?
  - Are the tank valves intermittently closed or opened?
- Check how the tanks are filled up and kept on level.
  - How is it established when the oil fills up in the tanks?
  - Is overflow piping connected to the tanks?
- Check for presence of air pumps/hoses/oil drums in the vicinity of the tank system.
  - Are levels of oil tanks recorded in alarm log?
- Engine room logs
- What is the history of the item
- Log books/recording where are the oil changes/fill ups recorded
- What type of oil is used?
- Is an oil switch made compared to the previously used oil?
- How is the "consumed" oil volume determined?

Citations: AS 46.03.740 **and** 40 CFR 110.3

Photo 60: Oil to Sea gravity tanks

8

Section 2: Oil Pollution; Oily Water Separators (OWS), 33 CFR 155.360 /370, 33 CFR 151.10

Job Aid Item: 7.2.a

Changes to the OWS or OWS piping, make sense **IAW 33 CFR 151.10**

Background: Changes or alterations of piping are possible indicators of "magic piping" and the OWS was not used for oily water discharges. This item is an update to the seasonal in-depth checks, to see if any changes have been made since reported. The seasonal report is a useful reference.

What to Check:

OWS status in general:

- Scraped nuts or bolt heads, missing washers, and fresh fixed piping are suspect.
- Blind flanges, connectors, and hoses are possible indicators of non-original OWS discharge piping lay out.
- Compare the system with as-built drawing and trace the piping.
- New pipe sections, flexible sections, and blind flanges/spectacles (combined blind flange/open flange pieces) can be suspect.
- New paint can be present, but check if other changes were made that could be hidden by paint.

Citations: 33 CFR 151.10

Job Aid Item: 7.2.b

OWS units are processing from a contaminated source, if OWS is in use **IAW 33 CFR 151.10**

Background: The OWS is used to process oily water and bilge water. Vessels that burn oil will have oily sludges. To make sure that the oily wastes are discharged correctly, an OWS system must be used and operable.

What to Check:

Operable OWS system including associated systems, tanks etc.

- Be familiar with the entire system and how the system is operated
- Check for OWS piping, storage tanks; how the influent is processed and where it originated from.

Citations: 33 CFR 151.10

Job Aid Item: 7.2.c

Oil content meters have similar or same readings on units with multiple oil content meters **IAW 33 CFR 151.10**

Background: OWS oil content metering should be functional within the set parameters, (calibrations).

What to Check:

- If multiple oil content meters are installed, the meter should give similar reading over the same sample flow.
- Calibration records should include the oil content meter checks and findings including the calibration actions and ranges.
- Recordings monitoring results of the readings

Citations: 33 CFR 151.10

Job Aid Item: 7.2.d

Sample analyzed by OWS meter is from OWS discharge **IAW 33 CFR 155.370(a) and 33 CFR 151.10**

Background: OWS treated flow should be the flow which is used for compliance-measured oil content.

What to Check:

The treated flow outlet from OWS to the discharge is sampled by the OWS oil content meter. Ensure sample analyzed by OWS meter is OWS output, (trace sample line for presence of unacceptable clean water connection), piping in place to the meter.

Citations: 33 CFR 155.370 and 33 CFR 151.10

Job Aid Item: 7.2.e

Oil dispersants are not used in oil tanks or lubrication systems **IAW 40 CFR 110.4 and VGP 2.2.9**

Background: Oil dispersants can remove an oil sheen, when oil is being discharged to waters. Emulsifiers can be used to cause oil or grease to sink instead of float, which reduces the likelihood of an oil loss being detected and create more difficult conditions for clean-up.

What to Check:

- Check for dispersants added to oil tanks or lubrication systems such as shaft seals. Check when tanks are filled.
- Check for possible chemical dosing systems. (Not to be confused with the cleaning system of the OWS itself.)

Citations: 40 CFR 110.4 **Dispersants and** EPA VGP 2.2.9

Job Aid Item: 7.2.f

OWS system and OWS meters are free of obvious electrical bypasses, jumpers, extra switches on unit or meter control panel **IAW 33 CFR 155.370(a) and 33 CFR 151.10**

What to Check:

Check for any unusual connections on or around the meter control panel that could bypass the system, or provide false or inaccurate readings. Observe if there are obvious electrical bypasses, jumpers, extra switches on unit or meter control panel.

Citations: 33 CFR 155.370 and 33 CFR 151.10

Job Aid Item: 7.2.g

OWS has automatic re-circulate (3-way valve) or it shuts down when > 15 ppm. Valve is operated properly **IAW 33 CFR 155.370 a(3))**

What to Check:

Understand the three-way valve pipe connections and re-circulation system/tank system

- How is the three-way valve activation done
- How is the valve operated
- What safety measures are in place when air pressure electric failure occurs to the valve (Normally closed?)
- Are valve activation controls bypassed or feed by outside (non OWS) source
- Visually observe that there is an automatic re-circulate (3-way valve) or shuts down when > 15 ppm. Observe proper operation of valve in use

Citations: 33 CFR 155.370 and 33 CFR 151.10

Job Aid Item: 7.2.h

System back flush or oil purge cycle (if used) properly operates **IAW 33 CFR 155.370(a)**

Background: OWS functional check. In order to make sure that the oily wastes are discharged correctly an OWS system must be used and operable. These items are most likely to be witnessed when the OWS is operated.

What to Check:

Observe for proper operation of system back flush or oil purge cycle if in use. When back flush is performed, monitor system parameters controls.

- Where is the back flush routed too?
- Are the operational modes displayed?
- Is the purge cycle working?

Citations: 33 CFR 155.370

Job Aid Item: 7.2.i

Processed water is free of gross contamination (sheen or visible oil) **IAW AS 46.03.740 and 40 CFR 110.3**

Background: Gross contamination is in fact a malfunctioning OWS. The OWS discharge is on most large vessels under the water line and may be hard to witness sheens (if any).

What to Check:

Visually observe processed water for gross contamination, (sheen or visible oil), during operation of OWS. The oil content meter should provide alarms if there is a sheen.

Citations: AS 46.03.740 **and** 40 CFR 110.3

Job Aid Item: 7.2.j

Vessel has no indications of OWS bypasses or direct discharges of oil **IAW 40 CFR 110.3**

Background: This is a general check of connections that could bypass the OWS and/or directly discharge oily water overboard. Pumps and hoses could also be an indication the OWS is not properly operating, and additional tanks are being used to store oily water.

What to Check:

- Check for out of place hoses, portable pumps, open manholes, fittings, and connections in areas with stored oil or oily wastes that were not included in the design of the vessel
- Check for hoses between tanks, unusual connections, portable pumps, etc. of unknown use and origin.
- Check for connections to bilge or overboard.

Citations: 40 CFR 110.3

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Section 3: Bilges, 33 CFR 155.770

General Background

Oil or hazardous materials in a bilge are a potential source of pollution if not properly treated. Even if properly treated, too much waste could reduce the effectiveness of treatment. Some materials could be put into the bilge that equipment is not designed to handle- such as from the wastewater system. Large amounts of oil or hazardous waste have been identified by Ocean Rangers as a possible safety hazard when fumes or vapors accumulate.

Job Aid Item: 7.3.a

Machinery bilge spaces free from excess contamination of oil or hazardous materials **IAW 33 CFR 155.770**

What to Check:

- Machinery bilge spaces for contamination with oil or hazardous materials
- For sheens, sludge, odd odors, or unusual stains

Citations: 33 CFR 155.770

Job Aid Item: 7.3.b

Bulkheads, piping, structures, within rose boxes free from excess contamination/oil residues **IAW 33 CFR 155.770**

What to Check: Check for sheens, sludge, odd odors, or unusual stains.

Job Aid Item: 7.3.c

Machinery free of excess oil leakage (e.g. boiler water blow down/wash waters) **IAW 33 CFR155.770**

What to Check:

- Check for leakage from systems and engines into machinery spaces (e.g boiler water blow down/wash waters?)
- Check for sheens, sludge, odd odors, or unusual stains

Citations: 33 CFR 155.770

Job Aid Item: 7.3.d

Oil and hazardous materials are not directly discharged into the bilges **IAW 33 CFR 155.770**

What to Check:

- Oil usage; quantities, where lost, consumed or in bilges
- Direct discharge of oil or wastes into bilges
- Oil record book and other sources for information for amounts of oil lost into bilge and recovered sludge/oily water

Citations: 33 CFR 155.770

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Job Aid Item: 7.3.e

Oily water separator and related equipment free from detergent used to remove appearance of sheen **IAW 40 CFR 110.4 and** VGP 2.2.2

Background: Dispersants used in the bilge or oily water separator could interfere with the effectiveness of equipment removing oil. This could allow oily water to be discharged.

What to Check:

Check for detergent use in or near bilges and OWS equipment. Like chemicals/dosing equipment and other suspect liquids and chemicals/additives.

Citations: 40 CFR 110.4 **and** VGP 2.2.2

Helpful Hints & Suggestions

Some vessels are operating in Alaska waters (SOX control area) on low sulfur fuel (distillate). These low sulfur fuel operated vessels may produce significant less fuel sludge than vessels operating on Residual fuels.

Job Aid Item: 7.3.f

Overboard valves on bilge, bilge ballast salt-water service are locked/controlled **IAW 40 CFR 110.3**

Background: Discharge valves/overboard valves are important for discharge operations. Operation of these valves will trigger overboard discharges.

What to Check:

Check for unlocked/uncontrolled overboard valves on bilge, bilge ballast salt water service. Valve (tag) should be of lasting material.

- Are locking devices in place?
- Who is responsible for these opening / locking regimes?
- For manual operated valves how is locking/closing performed and tracked/verified?
- For remote operated valve how is locking performed and tracked?

Citations: 40 CFR 110.3

Photo 61: OWS overboard discharge valve- Closed

8

Section 4: Oil Sludge Handling, 33CFR155.370 (b)

Job Aid Item: 7.4.a

Sludge and spent lube oils are offloaded or properly destroyed and/or recycled onboard **IAW 33 CFR 151.25**

Background: Fuel burning ships will produce sludge. A de minimis is used to verify that sludge is produced and should be counted for or demonstrated. Sludge produced should be accounted for by the amount burned or stored in tanks. No offloads of sludge could indicate an issue.

What to Check:

Sludge handling records account for the volumes reasonably expected to be produced. Check the oil record book and manifests for accepted sludge materials onshore.

- Check the sludge handling record keeping for sludge/spent lube oils sent to shore based facilities (offload)
- Check if estimated quantities of sludge produced are normal or excessive (fuel sludge production can exceed 2% total fuel use)

Citations: 33 CFR 151.25

Helpful Hints & Suggestions

Pay attention to the oil and lubricant use in the lifeboat systems.
In 2015, oil leakages/deck spills were reported. This was related to the repair/maintenance operations.
Check regularly on oil/grease items for lifeboat systems.

Job Aid Item: 7.4.b

Sludge handling and sludge waste incineration process records are properly kept **IAW 40 CFR 110.3 and 33 CFR 151.25**

Background: Sludge should be accounted for. If combusted, the volume accounted for should be a reasonable amount. Check that records are properly kept. Some vessels have burned sludge in their boilers, sometimes resulting in poor opacity performance. Most engine manufacturers do not allow burning of sludge in the engine.

What to Check:

- Is the incinerator suitable to combust sludge? If so, is co-firing diesel needed? (Diesel fuel consumption log)
- Are records included up to date for this use
- Is the sludge transfer system tank to incinerator system in working order
- Check furnace evidence in use for oil sludge
- Records of inspections and tests are up to date
- If sludge is incinerated, check how metering of the sludge is performed

Citations: 40 CFR 110.3 **and** 33 CFR 151.25

8

Job Aid Item: 7.4.c

Sludge is correctly handled when it is blended with fuels and blending is recorded **IAW 40 CFR 1043.60 and 33 CFR 151.25**

Background: Sludge should be accounted for to show no improper discharge overboard. Burning of sludge must be consistent with federal air regulations regarding NOx and SOx rules.

What to Check:

- Check oil record book and fuel consumption logs
- Check record keeping and metering estimates of sludge blends
- Check that the fuel/sludge blends (mix) is used

Citations: 40 CFR 1043.60 **and** 33 CFR 151.25

Photo 62: Oil Sludge Drums, stored for offload

8

Section 5: Lifeboats; Security Vessels; Tender Boats; Deck 40 CFR 110.3

Job Aid Item: 7.5.a

Vessel's mechanical and bilge systems are free of oil and/or grease that could enter the water **IAW 40 CFR 110.3**

Background: Small vessels used by the cruise ship in regular or emergency operations are potential sources of oil to water.

What to Check:

- Check lifeboat/tender vessel engineering systems are oil or grease leak & drip free
- Check that bilges are clean of excess oil. When available, visually check the bilges of vessels operated by the cruise ship. No direct discharge from bilges to overboard if oil is present.
- Check decks under stowed tenders and boats for signs of oil spills or oil stains. Include a visual inspection for greased gobs/drops on decks.

Helpful Hints & Suggestions

Bunkering low sulfur distillate fuels is done by fuel truck transfer to the vessels. The fuel truck using often portable fuel booster pumps to transfer the fuel from the tank truck to the vessels.

Photo 63: Lifeboats, extended for drill

- Check hose connector oil sweating/leaks and containment areas. Winch equipment containment should be oil free, some vessels have outrigger davits that are hydraulically operated.
- Steel rope should be checked for grease gobs and for overfilled rope lubricators

Citations: 40 CFR 110.3

Job Aid Item: 7.5.b

Oil and grease from topside equipment is handled correctly **IAW VGP 2.2.1.**

Background: Equipment such as winches and motors used to lower and raise lifeboats and tenders are a potential source or oil or grease into water, either directly running off or during cleaning activities.

What to Check:

- Check oil and grease from topside equipment, (winches, motors etc.)
- Visually check for oil spills on decks near machinery. If drip pans are available, check that there are procedures for draining and cleaning the pans.

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Citation: EPA VGP 2.2.1 **(first part)**

Job Aid Item: 7.5.c

Special actions (such as bunkering of tenders) prevent spills and tank overflows, etc. **IAW 40 CFR 110.3 and VGP 2.1.3**

Background: Procedures/operations should be laid out in such way the spill overflows are prevented. Most of the elements are already integrated in the vessel oil storage handling designs to prevent spills and tank overflows.

What to Check:

- Check if special actions are taken, for example, during bunkering fuel oils. In Alaska bunkering activities have increased with the sulfur ECA. Some vessels that used their passenger tender boats frequently in Alaska may fuel up these in Alaska.
- Check on spill prevention measures, containments, tank level monitoring, and how the fuel bunkering is done for the lifeboats/tender vessels.
- Fuel transfers need to be done very carefully
    1. How are tank volumes calculated/measured?
    2. Are systems and procedures in place?
    3. Are tanks equipped with fuel overflow (captive) systems?
    4. Are tank level monitoring alarms in place and operable?
    5. Does the overflow tank have level alarms that are operable and recorded?
- Is a communication system from deck (bunker station) to other parts of the system (manifold) in place?
- Are general operation procedures in place?

Citations: 40 CFR 110.3 **and** VGP 2.1.3

8

Section 6: Oil to Sea Interface, 40 CFR 110.3 & AS 46.03.740

Job Aid Item: 7.6.a

Oil lubricated stern tubes, bow and stern thruster seals, fin-stabilizers, steering gear, azipods etc. **IAW VGP 2.2.9.**

Photo 64: AZIPOD interface to sea head tanks & outer stern tube seals

Background: Any oil to sea interface is a potential source of oil leaking to seawater. Ocean Rangers have reported a number of seal and azipod leaks. These leaks can start as a small volume and increase over time.

What to Check:

- Check oil lubricated stern tubes, bow and stern thruster seals, fin-stabilizers, steering gear, azipods etc.
- Check header tank levels under several operation conditions, seas, port, maneuvering etc.
- Check records of fill up volumes and frequency
- Check for evidence of seawater intrusion into these oil to sea interfaces, such as draining of seawater from systems. The spent oil is counted for and should show up somewhere in the ORB.
- Check whether the oil is incinerated or offloaded, it will need to be recorded in the ORB

Citations: VGP 2.2.9

Job Aid Item: 7.6.b

Lube oil consumption, oil records and type of oil used are recorded **IAW 33 CFR 151.25**

What to Check:

- Lube oil consumption oil records and type of oil used
- Records back to early in the season to identify consumption trends
- On emergency diesels and diesels on tenders and lifeboats; Monitor how small engine lube oil changes oil volumes are counted for, recorded, and the handling of the spent oil

Citations: 33 CFR 151.25

Helpful Hints & Suggestions

- *Sudden increases of lube oil in the stern tube may indicate an oil leak.*
- *Some vessels keep records of the oil drum stores; such records are extremely helpful to determine which oils are used on board. Some lubricants are combusted in the diesel engines. A good example is the engines with dedicated cylinder lubrication systems.*

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Job Aid Item: 7.6.c

Mechanical systems with oil to sea interface are free from unusual loss of lubricant **IAW 40 CFR 110**

Background: Non “first supplied” piping conveyance systems (as built) are suspicious. However, a change of operations may necessitate the use of hosed and temporary piping systems. If such system is found, document and ask about it. Portable pumps connected to nipples/rerouting of liquids to other tanks should be investigated. In any case, document (photos) and describe the system. You may find oil drums (storage) and fill apparatus to keep the oil gravity tanks at level. In case systems should function without regular refilling, the designers most likely did not design in the as-built concepts a permanent fill option. In these cases, whether temporary or homemade permanent, further investigation is warranted.

Photo 65: Temporary Oil filtration or Pumping system

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What to Check:

- Check for the presence of portable pumps, hoses, drums and other equipment necessary to refill systems equipment
- Non-shipyard valves, welded on connectors and flanges
- Hose and connecting parts stored or in place adjacent to refill
- Different pipe material quality flanging as remainder of the system
- Poorly routed homemade bends or mediocre welding work on piping
- Improperly bracketed piping sections
- Drums empty or filled?
    1. How are full drums removed after fill up?
    2. What medium is transferred?
    3. From which system to which other system?
    4. Who operates the systems and when is the system operated?
    5. Are records kept? If so, what is included in the records?
    6. How are transferred volumes estimated?

Citations: 40 CFR 110

ALASKA DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

OIL & HAZARDOUS SUBSTANCE SPILL NOTIFICATION FORM INSTRUCTIONS

PERSON REPORTING

Name of the person reporting the spill to ADEC.

PHONE NUMBER

Contact number of the person reporting the spill.

REPORTED HOW?

Phone – If you reported a spill during normal business hours.

Fax – If you reported a spill by faxing in the spill report form.

PERS – If you reported a spill after hours to 1-800-478-9300. (**P**rofessional **E**mergency **R**esource **S**ervices)

DATE/TIME OF SPILL

Date and time of when the spill incident occurred.

DATE/TIME DISCOVERED

Date and time of when the spill was discovered.

DATE/TIME REPORTED

Date and time of when the spill incident was notified to ADEC.

LOCATION/ADDRESS

Spill incident location.

SUBSTANCE TYPE SPILLED

CR – Crude (Crude Oil)
EHS – Extremely Hazardous Substance (Aldrin, Ammonia<Chlorine, Formaldehyde, etc.)
HS – Hazardous Substance (Acid, Arsenic, Bases, Corrosion Inhibitor, Dioxin, Glycol, etc.)
NC – Non Crude Oil (Aviation Fuel, Bilge Oil, Diesel, Lube Oil, Hydraulic Oil, etc.)
PW – Process Water
UNK – Unknown

8

RODUCT SPILLED

ame of the spilled product.

QUANTITY SPILLED

Amount released to the environment.

QUANTITY CONTAINED

Product contained that is recoverable. If 50 gallons of 100 gallon spilled was in a secondary containment (non permeable containment), you would write 50 gallons in this field. If 2 gallons of 5 gallons spill was contained using a boom, you would write 2 gallons in this field.

QUANTITY RECOVERED

Amount of free product that was recovered.

QUANTITY DISPOSED

Amount of free product that was recovered for disposal.

POTENTIAL RESPONSIBLE PARTY

Name/Business – Name of individual or business responsible for the spill incident.

Mailing Address – Mailing address for correspondence.

Contact Name/Number – Name and number of the person who will be the main point of contact for the spill incident.

PRP (POTENTIAL RESPONSIBLE PARTY) TYPE

Select from the list.

FACILITY TYPE

Select from the list.

SOURCE OF SPILL

Indicate where the spilled product came from.

SOURCE CLASSIFICATION

Select from the list.

CAUSE OF SPILL

Indicate what caused the spill incident.

CAUSE CLASSIFICATION

Select from the list.

CLEANUP ACTIONS

Describe action taken to cleanup the spill.

DISPOSAL METHOD AND LOCATION

State how the waste will be handled. If the contaminated items are shipped or taken to another facility, a copy of the waste manifest must be submitted to ADEC.

SURFACE AREA AFFECTED

Indicate the size of affected area (e.g. 20 x 20 ft).

SURFACE TYPE

Describe the surface that was impacted by the discharge (e.g. Wide Bay, asphalt, gravel, snow, etc.).

Chapter 9 Additional Information

Section A. State & Federal Citations

Section B. Wastewater Schematics

Section C. Terms & Definitions

A. Citations:

Chapter 1 Reporting Information

Federal Regulations:

42 CFR §71.21 Radio report of death or illness

(a) The master of a ship destined for a U.S. port shall report immediately to the quarantine station at or nearest the port at which the ship will arrive, the occurrence, on board, of any death or any ill person among passengers or crew (including those who have disembarked or have been removed) during the 15- day period preceding the date of expected arrival or during the period since departure from a U.S. port (whichever is shorter).

(c) In addition to paragraph (a) of this section, the master of a ship carrying 13 or more passengers must report by radio 24 hours before arrival the number of cases (including zero) of diarrhea in passengers and crew recorded in the ship's medical log during the current cruise. All cases of diarrhea that occur after the24 hour report must also be reported not less than 4 hours before arrival.

9a

Chapter 2 Wastewater

General Permit:

See the individual Job Aid Item number and the Electronic Copy of the Vessel General Permit.

Job Aid Items: 1.1.c, 1.1.d, 1.1.e, 1.4.a

AS 46.03.462 (a & b). Terms and conditions of discharge permits.

(a) An owner or operator may not discharge any treated sewage, graywater, or other wastewater from a commercial passenger vessel into the marine waters of the state unless the owner or operator

(1) obtains a permit under AS 46.03.100 , which shall comply with the terms and conditions of vessel discharge requirements specified in (b) of this section; or

(2) has a plan approved by the department under (c) of this section.

(b) The minimum standard terms and conditions for all discharge permits authorized under this section require that the owner or operator

(1) may not discharge untreated sewage, treated sewage, graywater, or other wastewaters in a manner that violates any applicable state or federal law governing the disposal or discharge of solid or liquid waste material;

(2) shall maintain records and provide the reports required under AS 46.03.465(a);

(3) shall collect and test samples as required under AS 46.03.465 (b) and (d) and provide the reports with respect to those samples required by AS 46.03.475 (c);

(4) shall report discharges in accordance with AS 46.03.475 (a);

(5) shall allow the department access to the vessel at the time samples are taken under AS 46.03.465 for purposes of taking the samples or for purposes of verifying the integrity of the sampling process; and

(6) shall submit records, notices, and reports to the department in accordance with AS 46.03.475 (b), (d), and (e).

Job Aid Items: 1.1.c, 1.4.a, b, and c

AS. 46.03.463. Prohibited discharges; limitations on discharges.

(a) Except as provided in (h) of this section, a person may not discharge untreated sewage from a commercial passenger vessel into the marine waters of the state.

(b) Except as provided in (h) of this section, a person may not discharge sewage from a commercial passenger vessel into the marine waters of the state that has suspended solids greater than 150 milligrams per liter or a fecal coliform count greater than 200 colonies per 100 milliliters except that the department may by regulation adopt a protocol for retesting for fecal coliform, if this discharge limit for fecal coliform is exceeded, under which a discharger will be considered to be in compliance with the fecal coliform limit if the geometric mean of fecal coliform count in the samples considered under the protocol does not exceed 200 colonies per 100 milliliters.

(c) Except as provided in (h) of this section, a person may not discharge graywater or other wastewater from a commercial passenger vessel into the marine waters of the state that has suspended solids greater than 150 milligrams per liter or a fecal coliform count greater than

9a

200 colonies per 100 milliliters except that the department may by regulation adopt a protocol for retesting for fecal coliform, if this discharge limit for fecal coliform is exceeded, under which a discharger will be considered to be in compliance with the fecal coliform limit if the geometric mean of fecal coliform count in the samples considered under the protocol does not exceed 200 colonies per 100 milliliters.
(d) *[Repealed, Sec. 5, 2006 Primary Election Ballot Measure No. 2].*
(e) An owner or operator may not discharge any treated sewage, graywater, or other wastewater from a large commercial passenger vessel into the marine waters of the state unless the owner or operator obtains a permit under AS 46.03.100 and 46.03.462, and provided that the vessel is not in an area where the discharge of treated sewage, graywater, or other wastewaters is otherwise prohibited.
(f) Except as provided in (h) of this section, a person may not discharge sewage from a small commercial passenger vessel unless the sewage has been processed through a properly operated and properly maintained marine sanitation device.
(g) *[Repealed, Sec. 5, 2006 Primary Election Ballot Measure No. 2].*
(h) The provisions of (a) - (f) of this section do not apply to discharges made for the purpose of securing the safety of the commercial passenger vessel or saving life at sea if all reasonable precautions have been taken for the purpose of preventing or minimizing the discharge.

Job Aid Items: 1.1a, 1.3.b, 1.3.c, 1.3.d, 1.3.h

AS 46.03.465. Information-gathering requirements.

(a) The owner or operator of a commercial passenger vessel shall maintain daily records related to the period of operation while in the state, detailing the dates, times, and locations, and the volumes and flow rates of any discharges of sewage, graywater, or other wastewaters into the marine waters of the state, and provide electronic copies of those records on a monthly basis to the department not later than five days after each calendar month of operation in state waters.
(b) While a commercial passenger vessel is present in the marine waters of the state, the owner or operator of the vessel shall provide an hourly report of the vessel's location based on Global Positioning System technology and collect routine samples of the vessel's treated sewage, graywater, and other wastewaters being discharged into marine waters of the state with a sampling technique approved by the department.
(c) While a commercial passenger vessel is present in the marine waters of the state, the department, or an independent contractor retained by the department, may collect additional samples of the vessel's treated sewage, graywater, and other wastewaters being discharged into the marine waters of the state.
(d) The owner or operator of a vessel required to collect samples under (b) of this section shall ensure that all sampling techniques and frequency of sampling events are approved by the department in a manner sufficient to ensure demonstration of compliance with all discharge requirements under AS 46.03.462.
(e) The owner or operator of a commercial passenger vessel shall pay for all reporting, sampling, and testing of samples under this section.
(f) If the owner or operator of a commercial passenger vessel has, when complying with another state or federal law that requires substantially equivalent information gathering, gathered the information required under (a), (b), or (d) of this section, the owner or operator

shall be considered to be in compliance with that subsection so long as the information is also provided to the department.

AS 46.03.490. Definitions. (abridged)

(3) "discharge" means any release, however caused, from a commercial passenger vessel, and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying;

(6) "graywater" means galley, dishwasher, bath, and laundry waste water;

(8) "marine waters of the state" means all waters within the boundaries of the state together with all of the waters of the Alexander Archipelago even if not within the boundaries of the state;

(10) "other wastewater" means graywater or sewage that is stored in or transferred to a ballast tank or other holding area on the vessel that may not be customarily used for storing graywater or sewage;

(12) "sewage" means human body wastes and the wastes from toilets and other receptacles intended to receive or retain human body waste;

(14) "treated sewage" means sewage that meets all applicable effluent limitation standards and processing requirements of 33 U.S.C. 1251 - 1376 (Federal Water Pollution Control Act), as amended, the federal cruise ship legislation, and regulations adopted under 33 U.S.C. 1251 - 1376 or under the federal cruise ship legislation;

(15) "untreated sewage" means sewage that is not treated sewage;

Job Aid Item: 1.1.d

33 CFR 159.307 Untreated sewage.

No person shall discharge any untreated sewage from a cruise vessel into the applicable waters of Alaska.

Job Aid Items: 1.1.d, 1.4.c

33 CFR 159.309 Limitations on discharge of treated sewage or graywater.

(a) No person shall discharge treated sewage or graywater from a cruise vessel into the applicable waters of Alaska unless:

(1) The cruise vessel is underway and proceeding at a speed of not less than six knots;

(2) The cruise vessel is not less than one nautical mile from the nearest shore, except in areas designated by the Coast Guard in consultation with the State of Alaska;

(3) The discharge complies with all applicable cruise vessel effluent standards established pursuant to Pub. L. 106–554 and any other applicable law, and

(4) The cruise vessel is not in an area where the discharge of treated sewage or graywater is prohibited.

(b) Until such time as the Administrator promulgates regulations addressing effluent quality standards for cruise vessels operating in the applicable waters of Alaska, treated sewage and graywater may be discharged from vessels in circumstances otherwise prohibited under paragraph (a)(1) and (2) of this section provided that:

(1) Notification to the Captain of the Port (COTP) is made not less than 30 days prior to the planned discharge, and such notice includes results of tests showing compliance with this section;

(2) The discharge satisfies the minimum level of effluent quality specified in 40 CFR 133.102;

9a

(3) The geometric mean of the samples from the discharge during any 30-day period does not exceed 20 fecal coliform/100 milliliters (ml) and not more than 10 percent of the samples exceed 40 fecal coliform/100 ml;
(4) Concentrations of total residual chlorine do not exceed 10.0 micrograms per liter (µgm/l);
(5) Prior to any such discharge occurring, the owner, operator or master, or other person in charge of a cruise vessel, can demonstrate to the COTP that test results from at least five samples taken from the vessel representative of the effluent to be discharged, on different days over a 30-day period, conducted in accordance with the guidelines promulgated by the Administrator in 40 CFR part 136, which confirm that the water quality of the effluents proposed for discharge is in compliance with paragraphs (b)(2), (3) and (4) of this section; and
(6) To the extent not otherwise being done by the owner, operator, master or other person in charge of a cruise vessel, pursuant to §159.317 of this subpart, the owner, operator, master or other person in charge of a cruise vessel shall demonstrate continued compliance through sampling and testing for conventional pollutants and residual chlorine of all treated sewage and graywater effluents periodically as determined by the COTP.

Job Aid Items: 1.1.a, 1.3.d

33 CFR 159.315 Sewage and graywater discharge record book.

(a) While operating in the applicable waters of Alaska each cruise vessel shall maintain, in English, a legible Sewage and Graywater Discharge Record Book with the vessel's name and official number listed on the front cover and at the top of each page.
(b) Entries shall be made in the Sewage and Graywater Discharge Record Book whenever any of the following is released into the applicable waters of Alaska:
(1) Treated or untreated sewage;
(2) Graywater; or
(3) Sewage and graywater mixture.
(c) Each entry in the Sewage and Graywater Discharge Record Book shall, at a minimum, contain the following information:
(1) Name and location of each discharge port within the ship;
(2) Date the start of discharge occurred;
(3) Whether the effluent is treated or untreated sewage, graywater, or a sewage and graywater mixture and type of treatment used;
(4) Time discharge port is opened;
(5) Vessel's latitude and longitude at the time the discharge port is opened;
(6) Volume discharged in cubic meters;
(7) Flow rate of discharge in liters per minute;
(8) Time discharge port is secured;
(9) Vessel's latitude and longitude at the time the discharge port is secured; and
(10) Vessel's minimum speed during discharge.
(d) In the event of an emergency, accidental or other exceptional discharge of sewage or graywater, a statement shall be made in the Sewage and Graywater Discharge Record

Book of the circumstances and reasons for the discharge and an immediate notification of the discharge shall be made to the COTP.

(e) Each entry of a discharge shall be recorded without delay and signed and dated by the person or persons in charge of the discharge concerned and each completed page shall be signed and dated by the master or other person having charge of the ship.

(f) The Sewage and Graywater Discharge Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times and shall be kept on board the ship.

(g) The master or other person having charge of a ship required to keep a Sewage and Graywater Discharge Record Book shall be responsible for the maintenance of such record.

(h) The Sewage and Graywater Discharge Record Book shall be maintained on board for not less than three years.

Job Aid Item: 1.3.b, 1.3.h

33 CFR 159.317 Sampling and Reporting

(a) The owner, operator, master or other person in charge of a cruise vessel that discharges treated sewage and/or graywater in the applicable waters of Alaska shall;

(1) Not less than 90 days prior to each vessel's initial entry into the applicable waters of Alaska during any calendar year, provide to the COTP certification of participation under a Quality Assurance/Quality Control Plan (QA/QCP) accepted by the COTP for sampling and analysis of treated sewage and/or graywater for the current operating season;

(2) Not less than 30 days nor more than 120 days prior to each vessel's initial entry into the applicable waters of Alaska during any calendar year, provide a certification to the COTP that the vessel's treated sewage and graywater effluents meet the minimum standards established by the Administrator, or in the absence of such standards, meet the minimum established in §159.319 of this subpart;

(3) Within 30 days of each vessel's initial entry into the applicable waters of Alaska during any calendar year, provide to the COTP a Vessel Specific Sampling Plan (VSSP) for review and acceptance, and undergo sampling and testing for conventional pollutants of all treated sewage and graywater effluents as directed by the COTP;

(4) While operating in the applicable waters of Alaska be subject to unannounced sampling of treated sewage and graywater discharge effluents, or combined treated sewage/graywater discharge effluents for the purpose of testing for a limited suite, as determined by the Coast Guard, of priority pollutants;

(5) While operating in the applicable waters of Alaska be subject to additional random sampling events, in addition to all other required sampling, of some or all treated sewage and graywater discharge effluents for conventional and/or priority pollutant testing as directed by the COTP;

(6) Ensure all samples, as required by this section, are collected and tested by a laboratory accepted by the Coast Guard for the testing of conventional and priority pollutants, as defined by this subpart, and in accordance with the cruise vessel's Coast Guard accepted QA/QCP and VSSP;

(7) Pay all costs associated with development of an acceptable QA/QCP and VSSP, sampling and testing of effluents, reporting of results, and any additional environmental

9a

record keeping as required by this subpart, not to include cost of federal regulatory oversight.

(b) A QA/QCP must, at a minimum include:

(1) Sampling techniques and equipment, sampling preservation methods and holding times, and transportation protocols, including chain of custody;

(2) Laboratory analytical information including methods used, calibration, detection limits, and the laboratory's internal QA/QC procedures;

(3) Quality assurance audits used to determine the effectiveness of the QA program; and

(4) Procedures and deliverables for data validation used to assess data precision and accuracy, the representative nature of the samples drawn, comparability, and completeness of measure parameters.

(c) A VSSP is a working document used during the sampling events required under this section and must, at a minimum, include:

(1) Vessel name;

(2) Passenger and crew capacity of the vessel;

(3) Daily water use of the vessel;

(4) Holding tank capacities for treated sewage and graywater;

(5) Vessel schematic of discharge ports and corresponding sampling ports;

(6) Description of discharges; and

(7) A table documenting the type of discharge, type of sample drawn (grab or composite), parameters to test for (conventional or priority pollutants), vessel location when sample drawn, date and time of the sampling event.

(d) Test results for conventional pollutants shall be submitted within 15 calendar days of the date the sample was collected, and for priority pollutants within 30 calendar days of the date the sample was collected, to the COTP directly by the laboratory conducting the testing and in accordance with the Coast Guard accepted QA/QCP.

(e) Samples collected for analysis under this subpart shall be held by the laboratory contracted to do the analysis for not less than six months, or as directed by the COTP.

(f) Reports required under this section may be written or electronic. If electronic, the reports must be in a format readable by Coast Guard and Alaska Department of Environmental Conservation data systems.

Job Aid Item: 1.3.b, 1.3.h

33 CFR 159.319 Fecal coliform and total suspended solids standards.

(a) *Treated sewage effluent discharges.* Until such time as the Administrator promulgates effluent discharge standards for treated sewage, treated sewage effluent discharges in the applicable waters of Alaska shall not have a fecal coliform bacterial count of greater than 200 per 100 ml nor total suspended solids greater than 150 mg/l.

(b) *Graywater effluent discharges.* [Reserved]

9a

Job Aid Item: 1.3.a

18 AAC 69.025 a, b & f, Plan of sampling techniques and analytical testing methods

(a) On or before March 1 of each calendar year, except in a calendar year in which a plan is valid for the calendar year under (c) of this section, an owner or operator who intends to cause or allow sewage, graywater, or other wastewater to be discharged into the marine waters of the state shall submit a plan of sampling techniques and analytical testing methods to be used for purposes of AS 46.03.465. The plan must include

(1) the quality assurance and quality control measures to be used during sample collection, analysis, and reporting undertaken to comply with AS 46.03.465;

(2) a detailed description of sampling techniques, analytical testing methods, and equipment, including information about sampling preservation methods, sample holding times, transportation protocols, and the chain of custody;

(3) laboratory analytical information, including methods used, calibration, detection limits, and the laboratory's quality assurance and quality control measures;

(4) procedures for quality assurance and quality control audits used to determine the effectiveness of the plan; and (5) procedures for data validation used to assess precision, accuracy, representativeness, comparability, and completeness of the measured parameters in the data obtained from the samples.

(b) Sampling under AS 46.03.465 may not occur before the department approves a plan of sampling techniques and analytical testing methods.

(f) The owner or operator shall maintain a copy of the valid, approved plan of sampling techniques and analytical testing methods on board each vessel that the owner or operator causes or allows to be operated in the marine waters of the state. (Eff. 11/15/2002, Register 164)

Job Aid Item: 1.3.b, 1.3.h

18 AAC 69.030. Vessel specific sampling plan. (applicable parts)

(a) An owner or operator who intends to cause or allow the discharge of sewage, graywater, or other wastewater into the marine waters of the state shall submit a vessel specific sampling plan no later than 21 days before sampling required under AS 46.03.465 is to occur.

(b) A vessel specific sampling plan must include

(7) a vessel schematic of discharge ports and corresponding sampling ports;

(10) a table documenting

(A) the discharge type;

(B) whether the type of sample to be collected is grab or composite;

(C) parameters to be tested for each sample;

(D) the location on the vessel where each sample is to be collected;

9a

Job Aid Item: 1.1.a, 1.3.c, 1.3.d

18 AAC 69.050. Treated sewage, graywater, and other wastewater discharge records and report.

(a) An owner or operator shall maintain records required by AS 46.03.465(a) on board the vessel for 12 months, detailing each discharge of treated sewage, graywater, or other wastewater into the marine waters of the state.

(b) For an intermittent discharge of treated sewage, graywater, or other wastewater into the marine waters of the state, the records required by AS 46.03.465(a) must include the

(1) date, time, latitude, and longitude when and where the discharge started and ended;

(2) overboard discharge port through which the discharge occurred;

(3) type of discharge;

(4) volume and average discharge rate for each overboard discharge port;

(5) minimum vessel speed during discharge; and

(6) signature of the individual in charge of discharge operations and the date when that individual signed the discharge record.

(c) For an automatic or continuous discharge, in port, at anchorage, or underway, of treated sewage, graywater, or other wastewater into the marine waters of the state, the records required by AS 46.03.465(a) must describe for each voyage

(1) the daily estimated volume of discharge by type;

(2) a description of how the daily volume by discharge type was estimated;

(3) for each stay that a vessel makes at an anchorage or dock, the

(A) date of the stay;

(B) time expressed in a 24-hour clock format at the beginning and end of each docking or anchorage;

(C) latitude and longitude of the stay; and

(D) estimated average flow rate of discharge by type of discharge; and

(4) for each vessel route while the vessel is underway between each stay identified in (3) of this subsection, the

(A) dates while en route;

(B) time expressed in a 24-hour clock format at the beginning and end of each vessel route;

(C) vessel's average speed; and

(D) estimated average flow rate of discharge by type of discharge.

(d) Within 21 days after receipt of a written or electronic request from the department, an owner or operator shall submit copies of the requested treated sewage, graywater, or other wastewater records, or a report in a format requested by the department.

Job Aid Item: 1.2.a

EPA VGP 2.2.6 Boiler/Economizer Blowdown

9a

You must minimize the discharge of boiler/economizer blowdown in port if chemicals or other additives are used to reduce impurities or prevent scale formation. For vessels, greater than 400 gross tons, which leave the territorial sea at least once per week, boiler/economizer blowdown may not be discharged in waters subject to this permit, unless:

• The vessel remains within waters subject to this permit for a longer period than the necessary duration between blowdown cycles;
• The vessel needs to conduct blowdown immediately before entering drydock; or
• For safety purposes.

For all vessels, boiler/economizer blowdown may not be discharged in waters referenced in Appendix G except for safety purposes. Furthermore, boiler/economizer blowdown should be discharged as far from shore as practicable.

Job Aid Item: 1.2.b

EPA VGP 2.2.0 Seawater Piping Biofouling Prevention

Seawater piping biofouling chemicals subject to FIFRA registration (see 40 CFR §152.15) must be used in accordance with their FIFRA label. No pesticides or chemicals banned for use in the United States may be discharged into waters subject to this permit.

Vessel owner/operators must use the minimum amount of biofouling chemicals needed to keep fouling under control. Discharges containing active agents must contain as little chlorine as possible.

Vessel owner/operators must remove fouling organisms from seawater piping on a regular basis and dispose of removed substances in accordance with local, state, and federal regulations. Removed fouling organisms shall not be discharged into waters subject to this permit and EPA recommends that if discharged into any waters, should be discharged more than 50 nm from shore. Vessel owner/operators should remove any organisms while at sea where technically feasible to reduce the risk of invasive species introduction in ports.

Job Aid Item: 1.2.c

EPA VGP 2.2.7 Cathodic Protection

Cathodic protection must be maintained to prevent the corrosion of the ship's hull. The discharge of zinc, magnesium, and aluminum are expected from properly functioning cathodic protection sacrificial electrodes. However, vessel operators must minimize the flaking of large, corroded portions of these anodes. Sacrificial anodes must not be used more than necessary to adequately prevent corrosion of the vessel's hull, sea chest, rudder, and other exposed areas of the vessel. Vessel operators must appropriately clean and/or replace these anodes during periods of maintenance (such as drydocking), so that release of these metals to waters is minimized. Furthermore, when feasible, sacrificial anodes should be flush-fitted to the hull, or vessel operators must fill the space between the anode and hull backing to remove the potential for hotspots for fouling organisms.

Vessel operators should note that magnesium is less toxic than aluminum and aluminum is less toxic than zinc. If vessel operators use sacrificial electrodes, they must select electrode devices with metals that are less toxic to the extent technologically feasible and economically practicable and achievable. For vessels that spend the majority of their time in freshwater, if aluminum or zinc is selected, the vessel owner/operator must document in their recordkeeping documentation why the use of magnesium is not appropriate. Likewise, for vessels that spend the majority of their time in saltwater, if vessel zinc is selected, the vessel owner/operator must document why aluminum is not selected. The documentation requirement is applicable after

9a

the vessel's first drydocking after December 19, 2013 (e.g., if the vessel drydocks in 2015, the requirement is applicable for that vessel starting in 2015).
EPA recommends, particularly for new vessels, the use of Impressed Current Cathodic Protection (ICCP) in place of or to reduce the use of sacrificial electrodes when technologically feasible (e.g., adequate power sources, appropriate for vessel hull size and design), safe, and adequate to protect against corrosion. If vessel operators use ICCP, they must maintain dielectric shields to prevent flaking.

Job Aid Item: 1.2.d

EPA VGP 2.1.2 Toxic and Hazardous Materials

Where consistent with vessel design and construction, you must locate toxic and hazardous materials in protected areas of the vessel to minimize exposure to ocean spray and precipitation, unless the Master determines this would interfere with essential vessel operations or safety of the vessel or doing so would violate any applicable regulations promulgated by the Secretary of the Department in which the Coast Guard is operating that establish specifications for safe transportation, handling, carriage, and storage of pollutants (see Part 2.1.5). Any discharge made for the foregoing reasons must be documented consistent with Part 4.2. You must ensure that toxic and hazardous materials are in appropriate sealed containers constructed of a suitable material, labeled, and secured. Containers must not be overfilled and incompatible wastes should not be mixed. Exposure of containers to ocean spray or precipitation must be minimized. Jettisoning of containers holding toxic or hazardous material is not authorized by this permit.

Job Aid Item: 1.2.d

EPA VGP (for vessels over 500 passengers) 5.1.1.1.4 Other Materials

Waste from mercury-containing products, dry cleaners or dry cleaner condensate, photo processing labs, medical sinks or floor drains, chemical storage areas, and print shops using traditional or non-soy-based inks and chlorinated solvents must be prevented from entering the ship's graywater, blackwater, or bilgewater systems if water from these systems will be discharged into waters subject to this permit. Preventing these wastes from entering these systems can be accomplished by plugging all drains that flow to the graywater, blackwater, or bilge systems in areas where these wastes are produced and creating alternate waste receptacles or replumbing drains to appropriate holding tanks.
Vessel owners/operators must not discharge any toxic or hazardous materials, including products containing acetone, benzene, or formaldehyde into salon and day spa sinks or floor drains if those sinks or floor drains lead to any system which will be discharged into waters subject to this permit. This includes using these materials on passengers (or crew) and rinsing residuals into these sinks. Alternate waste receptacles or holding tanks must be used for these materials. Additions of these materials to any systems which will discharge into waters subject to this permit is a permit violation.

Job Aid Item: 1.2.d

AS 46.03.710. Pollution prohibited.

A person may not pollute or add to the pollution of the air, land, subsurface land, or water of the state.

Job Aid Item 1.2.d

AS 46.03.745. Hazardous substance release.

Except for a controlled release, the reporting of which is the subject of an agreement with the commissioner under AS 46.09.010 (b), a person may not cause or permit the release of a hazardous substance as defined in AS 46.09.900.

Job Aid Item: 1.2.d

EPA VGP 1.2.3 Limitations on Coverage:

1.2.3.3 Used or Spent Oil

Discharges of used or spent oil no longer being used for their intended purposes are not eligible for coverage under this permit.

1.2.3.5 Photo processing effluent

Discharges from photo-processing operations are not eligible for coverage under this permit.

1.2.3.6 Effluent from Dry Cleaning Operations

Discharges of spent or unused effluent from dry cleaning operations are not eligible for coverage under this permit. This includes any spent or unused tetrachloroethylene (perchloroethylene) from these operations.

1.2.3.7 Discharges of Medical Waste and Related Materials

Discharges of medical waste as defined in 33 U.S.C. 1362(20) are not eligible for coverage under this permit. Discharges of spent or unused pharmaceuticals, formaldehyde or other biohazards no longer being used for their intended purposes are not eligible for coverage under this permit.

For purposes of the VGP, the liquid produced by dialysis treatment of humans is not deemed to be “medical waste,” and, like other human body waste, is subject to regulation under CWA § 312 if introduced into marine sanitation devices, or under VGP Part 2.2.25 if added to a blackwater system combined with a graywater system. The direct overboard discharge of such liquid without treatment is not authorized by the VGP.

1.2.3.8 Discharges of Noxious Liquid Substance Residues

Discharges of noxious liquid substance residues subject to 33 CFR Part 151, Subpart A or 46 CFR §153.1102 are not eligible for coverage under this permit.

1.2.3.9 Tetrachloroethylene (Perchloroethylene) and Trichloroethylene (TCE) Degreasers

Discharges of tetrachloroethylene and trichloroethylene (TCE) degreasers or other products containing tetrachloroethylene or trichloroethylene are not eligible for coverage under this permit.

9a

Job Aid Item: 1.2.d, 7.3.e

2.2.2 Bilgewater (excerpt)

All bilgewater discharges must be in compliance with the regulations in 40 CFR Parts 110 (Discharge of Oil), 116 (Designation of Hazardous Substances), and 117 (Determination of Reportable Quantities for Hazardous Substances) and 33 CFR §151.10 (Control of Oil Discharges). In addition:

- Vessel operators may not use dispersants, detergents, emulsifiers, chemicals, or other substances that remove the appearance of a visible sheen1 in their bilgewater discharges. This requirement does not prohibit the use of these materials in machinery spaces for the purposes of maintaining or cleaning equipment.
- Except in the case of flocculants or other required additives (excluding any dispersants or surfactants) used to enhance oil/water separation during processing (after bilgewater has been removed from the bilge), vessel operators may not add substances that drain to the bilgewater that are not produced in the normal operation of a vessel. The use of oil solidifiers, flocculants, or other required additives are allowed only as part of an oil water separation system provided they do not alter the chemical make-up of the oils being discharged and any discharge of such materials into waters subject to this permit must be minimized. Routine cleaning and maintenance activities associated with vessel equipment and structures are considered to be normal operation of a vessel if those practices fall within normal marine practice.
- All vessels must minimize the discharge of bilgewater into waters subject to this permit. This can be done by minimizing the production of bilgewater, disposing of bilgewater on shore where adequate facilities exist, or discharging into waters not subject to this permit (i.e., more than 3 nautical miles [nm] from shore) for vessels that regularly travel into such waters. Though not regulated under this permit, EPA notes that discharges of bilgewater outside waters subject to this permit (i.e., more than 3 nm from shore) are regulated under Annex I of the International Convention for the Prevention of Pollution from Ships as implemented by the Act to Prevent Pollution from Ships and U.S. Coast Guard regulations found in 33 CFR part 151.
- Vessels greater than 400 gross tons shall not discharge untreated oily bilgewater (i.e., bilgewater not treated with an onboard separator or bilgewater with a concentration of oil greater than 15 ppm) into waters subject to this permit.
- Vessels greater than 400 gross tons that regularly sail outside the territorial sea (at least once per month) shall not discharge treated bilgewater within 1 nm of shore if technologically feasible (e.g., holding would not impact safety and stability, would not contaminate other holds or cargo, or would not interfere with essential operations of the vessel). Any discharge which is not technologically feasible to avoid must be documented as part of the requirements in Part 4.2 and reported to EPA as part of the vessel's annual report.
- Vessels greater than 400 gross tons shall not discharge treated bilgewater into waters referenced in Appendix G unless the discharge is necessary to maintain the safety and stability of the ship. Any discharge of bilgewater into these waters must be documented as part of the recordkeeping requirements in Part 4.2 and reported to EPA as part of the vessel's annual report.

9a

- For vessels, greater than 400 gross tons that regularly sail outside the territorial sea (at least once per month), if treated bilgewater is discharged into waters subject to this permit, it must be discharged when the vessel is underway (sailing at speeds greater than 6 knots), unless doing so would threaten the safety and stability of the ship. EPA notes that vessel operators may also choose to dispose of bilgewater on shore where adequate facilities exist. Any discharge which is made for safety reasons must be documented as part of the requirements in Part 4.2 and reported to EPA as part of the vessel's annual report.

Job Aid Item: 1.2.e

EPA VGP 5.1.1.2 (and 5.2.1.2) Pool and Spa Discharges

Discharges of pool or spa water to waters listed in Appendix G are not authorized under this permit. Discharges from pools and spas are authorized into non-Appendix G waters subject to this permit, provided pool and spa water to be discharged is dechlorinated and/or debrominated, and discharge occurs while the vessel is underway. To be considered dechlorinated, the total residual chlorine in the pool or spa effluent must be less than 100 µg/l if the pool or spa water is discharged without going through an Advanced Wastewater Treatment System (AWTS). To be considered debrominated, the total residual oxidant in the pool or spa effluent must be below 25 µg/l if the pool or spa water is discharged without going through an AWTS. Pool and spa water may be added to the graywater treatment systems; however, any resultant discharge must meet all standards and requirements found in Part 5.1.1.1 and must be dechlorinated and/or debrominated as applicable.

Job Aid Item: 1.2.e

EPA VGP 5.1.2.3 (and 5.2.2.3) Treated Pool and Spa Discharges

Vessel owners/operators must monitor chlorine or bromine concentrations (as applicable) in pool or spa water before every discharge event using sufficiently sensitive 40 CFR Part 136 methods if they will discharge these streams directly into waters subject to this permit to ensure that the dechlorination/debromination process is complete. If vessel owners/operators are monitoring bromine concentrations, they may use a field test kit which uses the colorimetric method in lieu of 40 CFR Part 136 methods to ensure waters have been debrominated, provided that test kit has a method detection limit no higher than 50 µg/l. You must record the location of the discharge, the estimated volume of the discharge, and the concentration of chlorine or bromine (as applicable). Records of this monitoring must be kept with other graywater monitoring records.

For chlorine, analytical results below the method detection limit shall be deemed compliant with the effluent limits, provided the permittee uses a testing method with a detection limit no higher than 10.0 µg/L under ideal conditions. EPA recommends Method SM4500-CL G (DPD Colorimetric Method) for these purposes as it is able to reach 10 µg/L under ideal conditions and so meets these requirements. SM4500-Cl G is typically the method that ADEC/USCG uses for compliance monitoring. For bromine, analytical results below the method detection limit shall be deemed compliant with the effluent limits, provided the permittee uses a testing method with a detection limit no higher than 50.0 µg/l.

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Job Aid Item: 1.2.f, 7.5.b

EPA VGP 2.2.1 Deck Washdown and Runoff and Above Water Line Hull Cleaning

Vessel owner/operators must minimize the introduction of on-deck debris, garbage, residue and spill into deck washdown and runoff discharges. Before deck washdowns occur, you must broom clean (or equivalent) exposed decks or use comparable management measures and remove all existing debris. When required by their class societies (e.g., oil tankers), their flag Administrations, or the U.S. Coast Guard, vessels must be fitted with and use perimeter spill rails and scuppers to collect the runoff for treatment. Where feasible, machinery on deck must have coamings or drip pans where necessary to collect any oily discharge that may leak from machinery and prevent spills. The drip pans must be drained to a waste container for proper disposal and/or periodically wiped and cleaned. Additionally, to reduce the risk of any leakage or spills of harmful oils into the aquatic environment, EPA strongly encourages the use of environmentally acceptable lubricants in all above deck equipment. The presence of floating solids, visible foam, halogenated phenol compounds, and dispersants, or surfactants in deck washdowns must be minimized. Vessel owners/operators must minimize deck washdowns while in port.

Vessel owners/operators must maintain their topside surface and other above water line portions of the vessel to minimize the discharge of rust (and other corrosion by-products), cleaning compounds, paint chips, non-skid material fragments, and other materials associated with exterior topside surface preservation. Furthermore, vessel owners/operators must minimize residual paint droplets from entering waters subject to this permit whenever they are conducting maintenance painting. Possible minimization techniques include, but are not limited to, avoiding paint spraying in windy conditions or avoiding overapplication of paint. This permit does not authorize the disposal of unused paint into waters subject to this permit.

If deck washdowns or above water line hull cleaning will result in a discharge, they must be conducted with “minimally-toxic” and “phosphate free” cleaners and detergents as defined in Appendix A of this permit. Furthermore, cleaners and detergents should not be caustic and must be biodegradable.

Definitions:

“Minimally-Toxic Soaps, Cleaners, and Detergents” means any substance or mixture of substances which has an acute aquatic toxicity value (LE50) corresponding to a concentration greater than 10 ppm and does not produce “byproducts” with an acute aquatic toxicity value (LE50) less than 10 ppm. EPA expects that minimally-toxic soaps, cleaners, and detergents will contain little to no nonylphenols.

“Phosphate Free” soaps, cleaners, and detergents means these materials which contain, by weight, 0.5 percent or less of phosphates or derivatives of phosphates.

Job Aid Item: 1.2.g

EPA VGP 2.2.8 (Chain Locker effluent)

The anchor chain must be carefully and thoroughly washed down (i.e., more than a cursory rinse) as it is being hauled out of the water to remove sediment and marine organisms. In addition, chain lockers must be cleaned thoroughly during dry-docking to eliminate accumulated sediments and any potential accompanying pollutants. For vessels that regularly sail outside waters subject to this permit (at least once a month), if technically feasible,

periodically clean, rinse, and/or pump out the space beneath the chain locker prior to entering waters subject to this permit (preferably mid-ocean) if the anchor has been lowered into any nearshore waters. Furthermore, for vessels that leave waters subject to this permit at least once per month, chain lockers shall not be rinsed or pumped out in waters subject to this permit, unless not emptying them would compromise safety. Such a safety claim must be documented in the vessel's recordkeeping documentation consistent with Part 4.2.

33 CFR 151.2050 Additional requirements - nonindigenous species reduction practices.

The master, owner, operator, agent, or person in charge of any vessel equipped with ballast water tanks that operates in the waters of the United States must follow these practices:

(a) Avoid the discharge or uptake of ballast water in areas within, or that may directly affect, marine sanctuaries, marine preserves, marine parks, or coral reefs.

(b) Minimize or avoid uptake of ballast water in the following areas and situations:

(1) Areas known to have infestations or populations of harmful organisms and pathogens (e.g., toxic algal blooms).

(2) Areas near sewage outfalls.

(3) Areas near dredging operations.

(4) Areas where tidal flushing is known to be poor or times when a tidal stream is known to be turbid.

(5) In darkness, when bottom-dwelling organisms may rise up in the water column.

(6) Where propellers may stir up the sediment.

(7) Areas with pods of whales, convergence zones, and boundaries of major currents.

(c) Clean the ballast tanks regularly to remove sediments. Sediments must be disposed of in accordance with local, State, and Federal regulations.

(d) Discharge only the minimal amount of ballast water essential for vessel operations while in the waters of the United States.

(e) Rinse anchors and anchor chains when the anchor is retrieved to remove organisms and sediments at their places of origin.

(f) Remove fouling organisms from the vessel's hull, piping, and tanks on a regular basis and dispose of any removed substances in accordance with local, State and Federal regulations.

(g) Maintain a ballast water management (BWM) plan that has been developed specifically for the vessel and that will allow those responsible for the plan's implementation to understand and follow the vessel's BWM strategy and comply with the requirements of this subpart. The plan must include -

(1) Detailed safety procedures;

9a

(2) Actions for implementing the mandatory BWM requirements and practices;

(3) Detailed fouling maintenance and sediment removal procedures;

(4) Procedures for coordinating the shipboard BWM strategy with Coast Guard authorities;

(5) Identification of the designated officer(s) in charge of ensuring that the plan is properly implemented;

(6) Detailed reporting requirements and procedures for ports and places in the United States where the vessel may visit; and

(7) A translation of the plan into English, French, or Spanish if the vessel's working language is another language.

(h) Train the master, operator, person in charge, and crew on the application of ballast water and sediment management and treatment procedures.

(i**)** When discharging ballast water to a reception facility in the United States, discharge only to reception facilities that have an NPDES permit to discharge ballast water.

Job Aid Item: 1.2.h

VGP 2.2.26 Exhaust Gas Scrubber Wastewater Discharge

Exhaust gas scrubber washwater discharge must not contain oil, including oily mixtures, in quantities that may be harmful as determined in accordance with 40 CFR Part 110. Sludge or residues generated in treating exhaust gas scrubber washwater discharge must not be discharged in waters subject to this permit and must be delivered ashore to adequate reception facilities.

In addition, owner/operators of vessels with exhaust gas cleaning systems that result in washwater discharges must meet the numeric effluent limits found in Part 2.2.26.1 and the monitoring requirements found in Part 2.2.26.2 this permit. These limits are consistent with the IMO washwater guidelines set forth in section 10 for Exhaust Gas Cleaning (EGC) Systems (resolution MEPC.184(59)). Among other things, these guidelines recommend the establishment of limits for concentrations of pollutants in the effluent.

Job Aid Item: 1.3.g

EPA VGP 2.2.15 Graywater, Excerpt:

“If graywater will be discharged in waters subject to this permit, the introduction of kitchen oils to the graywater system must be minimized. When cleaning dishes, you must remove as much food and oil residue as practicable before rinsing dishes. Oils used in cooking shall not be added to the graywater system. Oil from the galley and scullery shall not be discharged in quantities that may be harmful as defined in 40 CFR Part 110.”

Job Aid Item: 1.3.e

EPA VGP 6.8.3

Total flow shall be monitored and recorded daily. If a permitted vessel has a meter installed that measures total daily flow, the permittee shall report the actual flow meter results (not estimations) on the Discharge Monitoring Report.

9a

Chapter 3 Hazardous Materials and Wastes

Job Aid Item: 2.1.a, 2.1.c (d), 3.1.a

33 CFR 151.55 Recordkeeping requirements.

(a) This section applies to the following:

(1) Every manned oceangoing ship (other than a fixed or floating platform) of 400 gross tons and above that is engaged in commerce and that is documented under the laws of the United States or numbered by a State.

(2) Every manned fixed or floating platform subject to the jurisdiction of the United States.

(3) Every manned ship that is certified to carry 15 passengers or more engaged in international voyages.

(b) The master or person in charge of each ship under paragraph (a)(1), (a)(2), or (a)(3) of this section shall ensure that a written record is maintained on the ship of each of the following garbage discharge or disposal operations:

(1) Discharge overboard.

(2) Discharge to another ship.

(3) Discharge to a reception facility.

(4) Incineration on the ship.

(c) The record under paragraph (b) of this section must contain the following information on each discharge or disposal operation:

(1) The type of operation as described under paragraphs (b)(1) through (b)(4) of this section.

(2) The date and time of the operation.

(3) If the operation was conducted at a port, the name of the port.

(4) If the operation was not conducted at a port, the latitude and longitude of the location where the operation was conducted and the estimated distance of that location from shore. If the operation involved off-loading to another ship, the identity of the receiving ship by name and official number.

(5) The amount of garbage involved, described by volume in cubic meters.

(6) For discharges into the sea, a description of the contents of the garbage, described by the following categories:

(i) Plastic material.

(ii) Floating dunnage, lining, or packing material.

(iii) Ground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.

(iv) Unground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.

(v) Victual wastes.

(vi) Incinerated ash.

(vii) Incinerated plastic residue.

(d) The record under paragraph (b) of this section must be prepared at the time of the operation, certified as correct by the master or person in charge of the ship, maintained on the ship for two years following the operation, and made available

9a

for inspection by the Coast Guard.

Job Aid Item: 2.1.b

18 AAC 69.035. Nonhazardous solid waste offloading and disposal plan.

(a) As part of the plan required under AS 46.03.475(e)(1), that describes a vessel's policies and procedures for offloading in this state or disposing into the marine waters of the state of nonhazardous solid waste other than sewage, the owner or operator shall include, for each vessel that the owner or operator intends to operate, or cause or allow to operate,

(1) an estimate of the volume of each waste type that the owner or operator anticipates offloading in this state or disposing into the marine waters of the state;

(2) the proposed offloading or disposal method;

(3) the name and address of each contractor to be used for offloading in this state or disposing into marine waters of the state; and

(4) the harbors, landfills, or other offloading or disposal facilities in the state proposed to be used by the owner or operator or an agent of the owner or operator.

(b) A plan required under AS 46.03.475(e)(1) must be submitted on or before March 1 of each calendar year. (Eff. 11/15/2002, Register 164)

Job Aid Item: 2.1.d, 3.2.b

33 CFR 151.57 (c)

(c) Each waste management plan under paragraph (b) of this section must be in writing and—

(1) Provide for the discharge of garbage by means that meet Annex V of MARPOL 73/78, the Act, and §§151.51 through 151.77;

(2) Describe procedures for collecting, processing, storing, and discharging garbage; and

(3) Designate the person who is in charge of carrying out the plan.

Job Aid Item: 2.2.a, 3.2.f

33 CFR 151.63 ((b)3)

(3) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters.

Job Aid Item: 2.2.b

33 CFR 151.67 Operating requirements: Discharge of plastic prohibited.

No person on board any ship may discharge into the sea, or into the navigable waters of the United States, plastic or garbage mixed with plastic, including, but not limited to, synthetic

9a

ropes, synthetic fishing nets, and plastic garbage bags. All garbage containing plastics requiring disposal must be discharged ashore or incinerated.

Definition of Plastics from 33 CFR 151: *Plastic* means any garbage that is solid material that contains, as an essential ingredient, one or more synthetic organic high polymers, and that is formed or shaped either during the manufacture of the polymer or polymers or during fabrication into a finished product by heat or pressure or both. “Degradable” plastics, which are composed of combinations of degradable starches and are either (a) synthetically produced or (b) naturally produced but harvested and adapted for use, are plastics under this part. Naturally produced plastics such as crab shells and other types of shells, which appear normally in the marine environment, are not plastics under this part.

Note: Plastics are used for a variety of marine applications including, but not limited to: food wrappings, products for personal hygiene, packaging (vapor proof barriers, bottles, containers, and liners), ship construction (fiberglass and laminated structures, siding, piping insulation, flooring, carpets, fabrics, adhesives, and electrical and electronic components), disposable eating-utensils and cups (including styrene products), bags, sheeting, floats, synthetic fishing nets, monofilament fishing line, strapping bands, hardhats, and synthetic ropes and lines.

40 CFR 110.3 Discharge of oil in such quantities as “may be harmful” pursuant to section 311(b)(4) of the Act.

For purposes of section 311(b)(4) of the Act, discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

(a) Violate applicable water quality standards; or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

AS 46.03.740. Oil pollution.

A person may not discharge, cause to be discharged, or permit the discharge of petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or a residuary product of petroleum, into, or upon the waters or land of the state except in quantities, and at times and locations or under circumstances and conditions as the department may by regulation permit or where permitted under art. IV of the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended.

Chapter 4 Hazardous Waste

General Citations:

AS 46.03.296. Disposal of hazardous wastes.

(a) It is unlawful to dispose of hazardous wastes in the state unless

(1) the waste has been treated and disposed of in a manner that uses the maximum degree of reduction of the harmful qualities of a hazardous waste that is subject to this chapter and that the department, on a case-by-case basis, determines is achievable for the hazardous waste by application of production processes and available methods, systems, and techniques, taking into account energy, environmental, and economic impacts and other costs; and

(2) the waste is disposed of in a manner that will ensure the protection of human health, livestock, wildlife, property, and the environment.

(b) The department shall adopt regulations in accordance with AS 44.62 (Administrative Procedure Act) for the treatment, storage, and disposal of hazardous wastes to ensure the protection of human health, livestock, wildlife, property, and the environment.

AS 46.03.710. Pollution prohibited.

A person may not pollute or add to the pollution of the air, land, subsurface land, or water of the state.

AS 46.03.745. Hazardous substance release.

Except for a controlled release, the reporting of which is the subject of an agreement with the commissioner under AS 46.09.010 (b), a person may not cause or permit the release of a hazardous substance as defined in AS 46.09.900.

Statute Definitions (46.03.900):

(9) "hazardous waste" means a waste or combination of wastes that because of quantity, concentration, or physical, chemical, or infectious characteristics may

(A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly managed, treated, stored, transported, or disposed of;

(20) "pollution" means the contamination or altering of waters, land, or subsurface land of the state in a manner which creates a nuisance or makes waters, land, or subsurface land unclean, or noxious, or impure, or unfit so that they are actually or potentially harmful or detrimental or injurious to public health, safety, or welfare, to domestic, commercial, industrial, or recreational use, or to livestock, wild animals, bird, fish, or other aquatic life;

18 AAC 69.040. Hazardous waste and hazardous substance offloading plan.

(a) As part of the plan required under AS 46.03.475(e)(2), that describes a vessel's policies and procedures for offloading of hazardous waste or a hazardous substance from a vessel while that vessel is operating in the marine waters of the state, and to the extent that the offloading is not covered by a report or notice submitted under AS 46.03.475(d), the owner or operator shall include, for each vessel that the owner or operator intends to operate, or cause or allow to operate, and for each hazardous waste or hazardous substance anticipated to be offloaded,

9a

(1) an estimate of the volume and type of each waste or substance;
(2) the proposed offloading method;
(3) material safety information provided by the manufacturer, if applicable;
(4) the name and address of each contractor to be used for offloading;
(5) the controlled storage, processing, or disposal facilities or treatment works proposed to be used; and
(6) a description of vessel crew training in offloading procedures.

(b) A plan required under AS 46.03.475(e)(2) must be submitted on or before March 1 of each calendar year.

AS 46.03.475 Reporting Requirements

(d) If the owner or operator of a commercial passenger vessel operating in the marine waters of the state is required by the laws of the United States or by the laws of Canada or of a province or territory of Canada to file a report or provide notice of a discharge or offloading of a hazardous waste, as defined in AS 46.03.900, or of a hazardous substance, as defined in AS 46.03.826, that was generated, discharged, or offloaded while the vessel was operating in the marine waters of the state, the owner or operator shall submit to the department a copy of the report or notice within 21 days after having provided the report or notice to an agency of the government of the United States or to an agency of the government of Canada or of a province or territory of Canada.

33 CFR 151.55 Recordkeeping requirements.

(a) This section applies to the following:
(1) Every manned oceangoing ship (other than a fixed or floating platform) of 400 gross tons and above that is engaged in commerce and that is documented under the laws of the United States or numbered by a State.
(2) Every manned fixed or floating platform subject to the jurisdiction of the United States.
(3) Every manned ship that is certified to carry 15 passengers or more engaged in international voyages.

(b) The master or person in charge of each ship under paragraph (a)(1), (a)(2), or (a)(3) of this section shall ensure that a written record is maintained on the ship of each of the following garbage discharge or disposal operations:
(1) Discharge overboard.
(2) Discharge to another ship.
(3) Discharge to a reception facility.
(4) Incineration on the ship.

(c) The record under paragraph (b) of this section must contain the following information on each discharge or disposal operation:
(1) The type of operation as described under paragraphs (b)(1) through (b)(4) of this section.
(2) The date and time of the operation.
(3) If the operation was conducted at a port, the name of the port.
(4) If the operation was not conducted at a port, the latitude and longitude of the location where the operation was conducted and the estimated distance of that

location from shore. If the operation involved off-loading to another ship, the identity of the receiving ship by name and official number.

(5) The amount of garbage involved, described by volume in cubic meters.

(6) For discharges into the sea, a description of the contents of the garbage, described by the following categories:

(i) Plastic material.

(ii) Floating dunnage, lining, or packing material.

(iii) Ground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.

(iv) Unground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.

(v) Victual wastes.

(vi) Incinerated ash.

(vii) Incinerated plastic residue.

(d) The record under paragraph (b) of this section must be prepared at the time of the operation, certified as correct by the master or person in charge of the ship, maintained on the ship for two years following the operation, and made available for inspection by the Coast Guard.

33 CFR 151.57 Waste management plans.

(a) This section applies to the following:

(1) Each manned oceangoing ship (other than a fixed or floating platform) of 40 feet or more in length that is documented under the laws of the United States or numbered by a state and that either is engaged in commerce or is equipped with a galley and berthing.

(2) Each manned fixed or floating platform that is—

(i) Documented under the laws of the United States; or

(ii) Operating under the authority of the United States, including, but not limited to, a lease or permit issued by an agency of the United States.

(b) The master or person in charge of a ship under paragraphs (a)(1) and (a)(2) of this section shall ensure that the ship is not operated unless a waste management plan meeting paragraph (c) of this section is on the ship and that each person handling garbage follows the plan.

(c) Each waste management plan under paragraph (b) of this section must be in writing and—

(1) Provide for the discharge of garbage by means that meet Annex V of MARPOL 73/78, the Act, and §§151.51 through 151.77;

(2) Describe procedures for collecting, processing, storing, and discharging garbage; and

(3) Designate the person who is in charge of carrying out the plan.

33 CFR 151.63 Shipboard control of garbage.

(a) The master, operator, or person who is in charge of a ship shall ensure that all garbage is discharged ashore or in accordance with §§151.66–151.73.

(b) The following factors, among others, may be considered by enforcement personnel in evaluating compliance with §§151.51 through 151.77:

(1) Records, including receipts, of garbage discharges at port reception facilities.

(2) Records under §151.55 or log entries of garbage discharges.

9a

(3) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters.
(4) The presence of and adherence to a written shipboard waste management plan.
(5) The absence of plastics in ship stores.
(6) Ongoing educational programs to train shipboard personnel of garbage handling procedures and the need for these.
(7) The presence of shipboard spaces used for collecting, processing, storing and discharging ship-generated garbage.

(c) The master, operator, or person who is in charge of a ship shall ensure that if garbage is transported from a ship by shipboard personnel, it is properly deposited into a port or terminal's reception facility.

33 CFR 151.67 Operating requirements: Discharge of plastic prohibited.

No person on board any ship may discharge into the sea, or into the navigable waters of the United States, plastic or garbage mixed with plastic, including, but not limited to, synthetic ropes, synthetic fishing nets, and plastic garbage bags. All garbage containing plastics requiring disposal must be discharged ashore or incinerated.

40 CFR 262.34 Accumulation time.

(a) Except as provided in paragraphs (d), (e), and (f) of this section, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that:

(1) The waste is placed:

(i) In containers and the generator complies with the applicable requirements of subparts I, AA, BB, and CC of 40 CFR part 265; and/or

(ii) In tanks and the generator complies with the applicable requirements of subparts J, AA, BB, and CC of 40 CFR part 265 except Sec. Sec. 265.197(c) and 265.200; and/or

(iii) On drip pads and the generator complies with subpart W of 40 CFR part 265 and maintains the following records at the facility:

(A) A description of procedures that will be followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days; and

(B) Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal; and/or

(iv) The waste is placed in containment buildings and the generator complies with subpart DD of 40 CFR part 265, has placed its professional engineer certification that the building complies with the design standards specified in 40 CFR 265.1101 in the facility's operating record no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit. The owner or operator shall maintain the following records at the facility:

(A) A written description of procedures to ensure that each waste volume remains in the unit for no more than 90 days, a written description of the waste generation and management practices for the facility showing that they are consistent with respecting the 90-day limit, and documentation that the procedures are complied with; or

(B) Documentation that the unit is emptied at least once every 90 days.

Chapter 5 AIR Opacity

Job Aid Item: 4.1.a

18 AAC 50.070. Marine vessel visible emission standards.

Within three miles of the Alaska coastline, visible emissions, excluding condensed water vapor, may not reduce visibility through the exhaust effluent of a marine vessel by more than 20 percent except as follows:

(1) while at berth or at anchor, visibility may be reduced by up to 100 percent for periods aggregating no more than

(A) three minutes in any one hour; and

(B) an additional three minutes during initial startup of a vessel; for purposes of this subparagraph, "initial startup" includes the period during which a vessel is testing equipment in preparation to casting off or weighing anchor;

(2) during the hour immediately after weighing anchor or casting off, visibility may be reduced under one, but not both, of the following options:

(A) visibility may be reduced by up to 40 percent for that entire hour; or

(B) visibility may be reduced by up to 100 percent for periods aggregating no more than nine minutes during that hour;

(3) during the hour immediately before the completion of all maneuvers to anchor or make fast to the shore, visibility may be reduced under one, but not both, of the following options:

(A) visibility may be reduced by up to 40 percent for that entire hour; or

(B) visibility may be reduced by up to 100 percent for periods aggregating no more than nine minutes during that hour; and

(4) at any time not covered by (1) - (3) of this section, visibility may be reduced by up to 100 percent for periods aggregating no more than three minutes in any one hour.

Authority: AS 46.03.020 AS 46.14.030 Sec. 30, ch. 74, SLA 1993AS 46.14.010

Job Aid Item: 4.1.b

18 AAC 50.240. EXCESS EMISSIONS

(a) In an enforcement action, the owner, operator, or permittee has the burden of proving that excess emissions were unavoidable. This demonstration is a condition to obtaining relief under (d), (e), and (f) of this section.

(b) Excess emissions determined to be unavoidable under this section will be excused and are not subject to penalty. This section does not limit the department's power to enjoin the emission or require corrective action.

(c) Excess emissions that present a potential threat to human health or safety or that the owner, operator, or permittee believes to be unavoidable must be reported to the department as soon as possible. Unless otherwise specified in the facility's permit, other excess emissions must be reported within 30 days after the end of the month during which the emissions occurred or as part of the next routine emission monitoring report, whichever is sooner. If requested by the department, the owner, operator, or permittee shall submit a full written

9a

report that includes the known causes, the corrective actions taken, and the preventive measures to be taken to minimize or eliminate the chance of recurrence.
(d) Excess emissions due to startup or shutdown will be considered unavoidable if the owner, operator, or permittee reports them as required under (c) of this section and demonstrates that:

(1) **T**he excess emissions could not have been prevented through careful planning and design; and

(2) If a bypass of control equipment occurred, the bypass was necessary to prevent loss of life, personal injury, or severe property damage.

(e) Excess emissions due to scheduled maintenance will be considered unavoidable if the owner, operator, or permittee reports them as required under (c) of this section and demonstrates that the excess emissions could not have been avoided through reasonable design, better scheduling for maintenance, or better operation and maintenance practices.
(f) Excess emissions due to upsets will be considered unavoidable if the owner, operator, or permittee reports them as required under (c) of this section and demonstrates that

(1) the event was not caused by poor or inadequate design, operation, or maintenance or by any other reasonably preventable condition;

(2) the event was not of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(3) when the operator knew or should have known that an emission standard or permit condition was being exceeded, the operator took immediate and appropriate corrective action in a manner consistent with good air pollution control practice for minimizing emissions during the event, taking into account the total emissions impact of the corrective action, including slowing or shutting down the source as necessary to minimize emissions.

(g) A demonstration under (d), (e), or (f) of this section must be supported by records made at the time the excess emissions occurred.

Job Aid Item: 4.1.c

18 AAC 50.050 Incinerator emission standards.

(a) Visibility through the exhaust effluent of an incinerator, including an air curtain incinerator, may not be reduced by visible emissions, excluding condensed water vapor, by more than 20 percent averaged over any six consecutive minutes.

18 AAC 50.070- see item 4.1.a- Note same % as Incinerator standards.

Job Aid Item: 4.1.d

18 AAC 50.110. Air pollution prohibited.

No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

Job Aid Item: 4.1.e

40 CFR 1043.30 General obligations.

(e) The following requirements apply to Party vessels, including U.S.-flagged vessels:

(1) The requirements specified in Annex VI apply for vessels subject to this part for operation in U.S. navigable waters or the U.S. EEZ. (See §1043.60 for a summary of the standards included in these requirements.)

(2) Vessels operating in an ECA must also comply with the requirements of Annex VI applicable to operation in an ECA.

(3) Vessels operating in waters of an ECA associated area must also comply with the requirements in §1043.60.

(f) The following requirements apply to non-Party vessels:

(1) Non-Party vessels operating in U.S. navigable waters or the U.S. EEZ must comply with the operating and recordkeeping requirements of the 2008 Annex VI (incorporated by reference in §1043.100) related to Regulations 13, 14 and 18 of the 2008 Annex VI. This paragraph (f)(1) does not address requirements of other portions of Annex VI.

(2) Non-Party vessels operating in an ECA or ECA associated area must also comply with the requirements in §1043.60.

40 CFR 1043.60 Operating requirements for engines and vessels subject to this part.

This section specifies the operating requirements of this part. Note that it does not limit the operating requirements of APPS or Annex VI that are applicable to U.S.-flagged vessels outside of U.S. domestic waters.

(b) Except as specified otherwise in this part, fuel sulfur limits apply to all vessels

Table 2 to §1043.60 Annex VI Fuel Sulfur Limits [wt %]

Calendar years	Sulfur limit in all U.S. navigable waters and EEZ	Sulfur limit in ECA and ECA associated areas (percent)
2010–2011	4.50	1.00
2012–2014	3.50	1.00
2015–2019	3.50	0.10
2020 and later	0.50	0.10

(c) Operators of non-Party vessels must comply with the requirements of paragraphs (a) and (b) of this section as well as other operating requirements and restrictions specified in 2008 Annex VI (incorporated by reference in §1043.100) related to Regulations 13, 14, and 18.

9a

Chapter 6 Safety

Job Aid Item: 5.1.b

46 CFR 4.05-1, Notice of Marine Casualty

(a) Immediately after the addressing of resultant safety concerns, the owner, agent, master, operator, or person in charge, shall notify the nearest Marine Safety Office, Marine Inspection Office or Coast Guard Group Office whenever a vessel is involved in a marine casualty consisting in--

(1) An unintended grounding, or an unintended strike of (allision with) a bridge;

(2) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of paragraphs (a) (3) through (8);

(3) A loss of main propulsion, primary steering, or any associated component or control system that reduces the maneuverability of the vessel;

(4) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure of or damage to fixed fire-extinguishing systems, lifesaving equipment, auxiliary power-generating equipment, or bilge-pumping systems;

(5) A loss of life;

(6) An injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unfit to perform his or her routine duties; or

(7) An occurrence causing property-damage in excess of $25,000, this damage including the cost of labor and material to restore the property to its condition before the occurrence, but not including the cost of salvage, cleaning, gas-freeing, drydocking, or demurrage.

(8) An occurrence involving significant harm to the environment as defined in Sec. 4.03-65.

(b) Notice given as required by 33 CFR 160.215 satisfies the requirement of this section if the marine casualty involves a hazardous condition as defined by 33 CFR 160.203.

(c) Except as otherwise required under this subpart, if the marine casualty exclusively involves an occurrence or occurrences described by paragraph (a)(8) of this section, a report made pursuant to 33 CFR 153.203, 40 CFR 117.21, or 40 CFR 302.6 satisfies the immediate notification requirement of this section.

Definition of significant harm 46 CFR 4.03-65

Significant harm to the environment means—

(a) In the navigable waters of the United States, a discharge of oil as set forth in 40 CFR 110.3 or a discharge of hazardous substances in quantities equal to or exceeding, in any 24-hour period, the reportable quantity determined in 40 CFR part 117;

(b) In other waters subject to the jurisdiction of the United States, including the EEZ—

(1) A discharge of oil in excess of the quantities or instantaneous rate permitted in 33 CFR 151.10 or 151.13 during operation of the ship; or

(2) A discharge of noxious liquid substances in bulk in violation of §§153.1126 or 153.1128 of this chapter during the operation of the ship; and

9a

(c) In waters subject to the jurisdiction of the United States, including the EEZ, a probable discharge of oil, hazardous substances, marine pollutants, or noxious liquid substances. The factors you must consider to determine whether a discharge is probable include, but are not limited to—

(1) Ship location and proximity to land or other navigational hazards;
(2) Weather;
(3) Tide current;
(4) Sea state;
(5) Traffic density;
(6) The nature of damage to the vessel; and
(7) Failure or breakdown aboard the vessel, its machinery, or equipment.

Job Aid Item: 3.1.b, 3.2.a, 5.1.c

18 AAC 69.040. Hazardous waste and hazardous substance offloading plan. (Excerpt)

(a) As part of the plan required under AS 46.03.475(e)(2), that describes a vessel's policies and procedures for offloading of hazardous waste or a hazardous substance from a vessel while that vessel is operating in the marine waters of the state, and to the extent that the offloading is not covered by a report or notice submitted under AS 46.03.475(d), the owner or operator shall include, for each vessel that the owner or operator intends to operate, or cause or allow to operate, and for each hazardous waste or hazardous substance anticipated to be offloaded,
(3) material safety information provided by the manufacturer, if applicable;

33 CFR 96.230 What objectives must a safety management system meet?

The safety management system must:

(a) Provide for safe practices in vessel operation and a safe work environment onboard the type of vessel the system is developed for;

(b) Establish and implement safeguards against all identified risks;

(c) Establish and implement actions to continuously improve safety management skills of personnel ashore and aboard vessels, including preparation for emergencies related to both safety and environmental protection; and

(d) Ensure compliance with mandatory rules and regulations, taking into account relevant national and international regulations, standards, codes and maritime industry guidelines, when developing procedures and policies for the safety management system.

33 CFR 96.310 Who does this subpart apply to?

This subpart applies:

(a) If you are a responsible person who owns a vessel(s) registered in the U.S. and engaged on a foreign voyage(s), or holds certificates or endorsement of such voyages;

(b) If you are a responsible person who owns a vessel(s) registered in the U.S. and volunteer to meet the standards of this part and Chapter IX of SOLAS;

(c) To all foreign vessels engaged on a foreign voyage, bound for ports or places under the jurisdiction of the U.S., and subject to Chapter IX of SOLAS; or

(d) If you are a recognized organization authorized by the U.S. to complete safety management audits and certification required by this part.

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33 CFR 96.370 What are the requirements for vessels of countries not party to Chapter IX of SOLAS?

(a) Each foreign vessel which carries more than 12 passengers, or is a tanker, bulk freight vessel, freight vessel, or self-propelled mobile offshore drilling unit of 500 gross tons or more, operated in U.S. waters, under the authority of a country not a party to Chapter IX of SOLAS must—

(1) Have on board valid documentation showing that the vessel's company has a safety management system which was audited and assessed, consistent with the International Safety Management Code of IMO Resolution A.741(18);

(2) Have on board valid documentation from a vessel's Flag Administration showing that the vessel's safety management system was audited and assessed to be consistent with the International Safety Management Code of IMO Resolution A.741(18); or

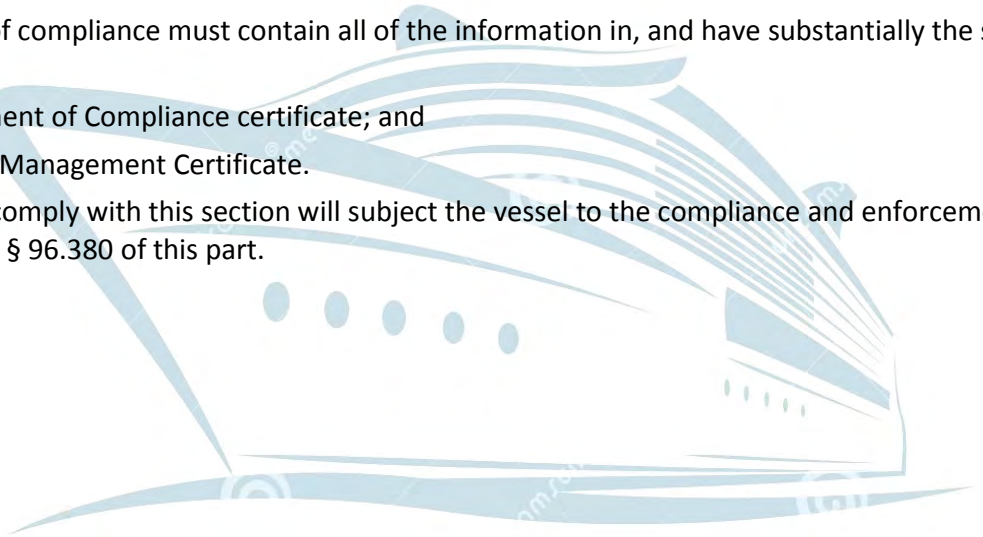
(3) Show that evidence of compliance was issued by either a government that is party to SOLAS or an organization recognized to act on behalf of the vessel's Flag Administration.

(b) Evidence of compliance must contain all of the information in, and have substantially the same format as a—

(1) Document of Compliance certificate; and

(2) Safety Management Certificate.

(c) Failure to comply with this section will subject the vessel to the compliance and enforcement procedures of § 96.380 of this part.



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Chapter 7 Sanitation

21 CFR 1240.80 General requirements for water for drinking and culinary purposes.

Only potable water shall be provided for drinking and culinary purposes by any operator of a conveyance engaged in interstate traffic, except as provided in § 1250.84(b) of this chapter. Such water shall either have been obtained from watering points approved by the Commissioner of Food and Drugs, or, if treated aboard a conveyance, shall have been subjected to treatment approved by the Commissioner of Food and Drugs.

21 CFR 1250.80 Applicability.

The sanitation facilities and the sanitary conditions on vessels engaged in interstate traffic shall comply with the requirements prescribed in this subpart, provided that no major structural change will be required on existing vessels.

Job Aid Item: 6.1.a

21 CFR 1250.82 Potable water systems.

The following conditions must be met by vessel water systems used for the storage and distribution of water which has met the requirements of Sec. 1240.80 of this chapter.

(a) The potable water system, including filling hose and lines, pumps, tanks, and distributing pipes, shall be separate and distinct from other water systems and shall be used for no other purposes.

(b) All potable water tanks shall be independent of any tanks holding nonpotable water or other liquid. All potable water tanks shall be independent of the shell of the ship unless (1) the bottom of the tank is at least 2 feet above the maximum load water line, (2) the seams in the shell are continuously welded, and (3) there are no rivets in that part of the shell which forms a side of a tank. A deck may be used as the top of a tank provided there are no access or inspection openings or rivets therein, and the seams are continuously welded. No toilet or urinal shall be installed immediately above that part of the deck which forms the top of a tank. All potable water tanks shall be located at a sufficient height above the bilge to allow for draining and to prevent submergence in bilge water.

(c) Each potable water tank shall be provided with a means of drainage and, if it is equipped with a manhole, overflow, vent, or a device for measuring depth of water, provision shall be made to prevent entrance into the tank of any contaminating substance. No deck or sanitary drain or pipe carrying any non-potable water or liquid shall be permitted to pass through the tank.

(d) Tanks and piping shall bear clear marks of identification.

(e) There shall be no backflow or cross connection between potable water systems and any other systems. Pipes and fittings conveying potable water to any fixture, apparatus, or equipment shall be installed in such way that backflow will be prevented. Waste pipes from any part of the potable water system, including treatment devices, discharging to a drain, shall be suitably protected against backflow.

9a

(f) Water systems shall be cleaned, disinfected, and flushed whenever the Commissioner of Food and Drugs shall find such treatment necessary to prevent the introduction, transmission, or spread of communicable diseases.

21 CFR 1250.83 Storage of water prior to treatment.

The following requirements with respect to the storage of water on vessels prior to treatment must be met in order to obtain approval of treatment facilities under Sec. 1240.90 of this chapter.

(a) The tank, whether independent or formed by the skin of the ship, deck, tank top, or partitions common with other tanks, shall be free of apparent leakage.

(b) No sanitary drain shall pass through the tank.

(c) The tank shall be adequately protected against both the backflow and discharge into it of bilge or highly contaminated water.

21 CFR 1250.84 Water in galleys and medical care spaces.

(a) Potable water, hot and cold, shall be available in the galley and pantry except that, when potable water storage is inadequate, nonpotable water may be piped to the galley for deck washing and in connection with garbage disposal. Any tap discharging nonpotable water which is installed for deck washing purposes shall not be more than 18 inches above the deck and shall be distinctly marked ``For deck washing only''.

(b) In the case of existing vessels on which heat-treated wash water has been used for the washing of utensils prior to the effective date of the regulations in this part, such water may continue to be so used provided controls are employed to insure the heating of all water to at least 170 deg. F before discharge from the heater.

(c) Potable water, hot and cold, shall be available in medical care spaces for hand-washing and for medical care purposes excluding hydrotherapy.

21 CFR 1250.85 Drinking fountains and coolers; ice; constant temperature bottles.

(a) Drinking fountains and coolers shall be constructed of impervious, nonoxidizing material, and shall be so designed and constructed as to be easily cleaned. The jet of a drinking fountain shall be slanting and the orifice of the jet shall be protected by a guard in such a manner as to prevent contamination thereof by droppings from the mouth. The orifice of such a jet shall be located a sufficient distance above the rim of the basin to prevent backflow.

(b) Ice shall not be permitted to come in contact with water in coolers or constant temperature bottles.

(c) Constant temperature bottles and other containers used for storing or dispensing potable water shall be kept clean at all times and shall be subjected to effective bactericidal treatment after each occupancy of the space served and at intervals not exceeding one week.

9a

Job Aid Item: 6.1.a

21 CFR 1250.86 Water for making ice.

Only potable water shall be piped into a freezer for making ice for drinking and culinary purposes.

Job Aid Item: 6.1.b, 6.1.c

18 AAC 80.015

Well protection, source water protection, and well decommissioning.

(a) A person may not

(1) cause pollution or contamination to enter a public water system; or

(2) create or maintain a condition that has a significant potential to cause or allow the pollution or contamination of a public water system.

Job Aid Item: 6.1.d

18 AAC 80.025 Cross-connections prohibited and backflow protection

(a) A person may not construct, install, or use of a cross-connection in a public water system, or allow a water system that contains a cross-connection to connect to a public water system.

(b) If the department determines that a facility has the potential to contaminate a public water system through backflow, the owner of the public water system shall install, maintain, and test on the water service line to and at other locations in that facility, a backflow prevention device that conforms to ANSI/AWWA Standards C510-97, *Double Check Valve Backflow Prevention Assembly,* or C511-97, *Reduced-Pressure Principle Backflow Prevention Assembly,* adopted by reference in 18 AAC 80.010(b). The owner of the public water system may delegate the installation, maintenance, and testing of the backflow prevention device to the operator of the facility that poses the risk. This delegation does not relieve the owner of the public water system of the responsibility to install, maintain, and test the backflow prevention device.

21 CFR 1240.86 Protection of pier water system.

No vessel engaged in interstate traffic shall make a connection between its non-potable water system and any pier potable water system unless provisions are made to prevent backflow from the vessel to the pier.

Job Aid Item: 6.2.a, 6.2.b, 6.2.c

21 CFR 1250.89

(a) Fill and draw swimming pools shall not be installed or used.

(b) Swimming pools of the recirculation type shall be equipped so as to provide complete circulation, replacement, and filtration of the water in the pool every six hours or less. Suitable means of chlorination and, if necessary, other treatment of the water shall be provided to maintain the residual chlorine in the pool water at not less than 0.4 part per million and the pH (a measure of the hydrogen ion concentration) not less than 7.0.

(c) Flowing-through types of salt water pools shall be so operated that complete circulation and replacement of the water in the pool will be effected every 6 hours or less. The water delivery pipe to the pool shall be independent of all other pipes and shall originate at a point where maximum flushing of the pump and pipe line is effected after leaving polluted waters.

9a

Chapter 8 Oil Pollution

General Citations

State of Alaska:

AS 46.03.740. OIL POLLUTION.

A person may not discharge, cause to be discharged, or permit the discharge of petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or a residuary product of petroleum, into, or upon the waters or land of the state except in quantities, and at times and locations or under circumstances and conditions as the department may by regulation permit or where permitted under art. IV of the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended.

AS 46.03.745. HAZARDOUS SUBSTANCE RELEASE.

See Chapter 2, Job Aid Item 1.2.d

18 AAC 75.300. Discharge or release notification; reporting requirements.

(a)Subject to (b), (c), and (g) of this section, a person in charge of a facility or operation shall notify the department by telephone, and immediately afterwards send the department a written notice by facsimile, hand delivery, or firstclass mail, informing the department about a discharge or release of a hazardous substance at or from the facility or operation as follows:

(1) as soon as the person has knowledge of a

(A) discharge or release of a hazardous substance other than oil;

(B) discharge or release of oil to water; or

(C) discharge or release, including a cumulative discharge or release, of oil in excess of 55 gallons solely to land outside an impermeable secondary containment area or structure; and

Definitions in AS 46.03.826

"oil" means a derivative of a liquid hydrocarbon and includes crude oil, lubricating oil, sludge, oil refuse or another petroleum-related product or by-product;

"hazardous substance" means

(A) an element or compound which, when it enters into the atmosphere or in or upon the water or surface or subsurface land of the state, presents an imminent and substantial danger to the public health or welfare, including but not limited to fish, animals, vegetation, or any part of the natural habitat in which they are found;

(B) oil; or

(C) a substance defined as a hazardous substance under 42 U.S.C. 9601(14);

in AS 46.03.900

(4) "hazardous substance" means (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation, or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 U.S.C. 9601 - 9657 (Comprehensive Environmental Response,

9a

Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated refined oil;
(6) "release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, except that "release" does not include a permitted release or an act of nature;

Federal Citations:

40 CFR 110.3 Discharge of oil in such quantities as ‘‘may be harmful’’ pursuant to section 311(b)(4) of the Act.

For purposes of section 311(b)(4) of the Act, discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

(a) Violate applicable water quality standards; or

(b) Cause a film or sheen upon or dis-coloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

40 CFR 110.4 Dispersants.

Addition of dispersants or emulsifiers to oil to be discharged that would circumvent the provisions of this part is prohibited.

40 CFR 110.5 Discharges of oil not determined ‘‘as may be harmful’’ pursuant to Section 311(b)(3) of the Act.

Notwithstanding any other provisions of this part, the Administrator has not determined the following discharges of oil ‘‘as may be harmful’’ for purposes of section 311(b) of the Act:

(a) Discharges of oil from a properly functioning vessel engine (including an engine on a public vessel) and any discharges of such oil accumulated in the bilges of a vessel discharged in compliance with MARPOL 73/78, Annex I, as provided in 33 CFR part 151, subpart A;

(b) Other discharges of oil permitted under MARPOL 73/78, Annex I, as provided in 33 CFR part 151, subpart A; and

(c) Any discharge of oil explicitly permitted by the Administrator in connection with research, demonstration projects, or studies relating to the prevention, control, or abatement of oil pollution.

33 CFR 151.10 (b) Control of oil discharges.

(b) When within 12 nautical miles of the nearest land, any discharge of oil or oily mixtures into the sea from a ship other than an oil tanker or from machinery space bilges of an oil tanker is prohibited except when all of the following conditions are satisfied—

(1) The oil or oily mixture does not originate from cargo pump room bilges;

(2) The oil or oily mixture is not mixed with oil cargo residues;

(3) The oil content of the effluent without dilution does not exceed 15 ppm;

(4) The ship has in operation oily-water separating equipment, a bilge monitor, bilge alarm, or combination thereof as required by part 155 subpart B of this chapter; and

(5) The oily-water separating equipment is equipped with a 15-ppm bilge alarm; for U.S. inspected ships, approved under 46 CFR 162.050 and for U.S. uninspected ships and

foreign ships, either approved under 46 CFR 162.050 or listed in the current International Maritime Organization (IMO) Marine Environment Protection Committee (MEPC) Circular summary of MARPOL 73/78 approved equipment.

Note: In the navigable waters of the United States, the Federal Water Pollution Control Act (FWPCA), section 311(b)(3) and 40 CFR Part 110 govern all discharges of oil or oily-mixtures.

(c) The overboard discharge of any oil cargo residues and oily mixtures that include oil cargo residues from an oil tanker is prohibited, unless discharged in compliance with part 157 of this chapter.

33 CFR 151.10 (f) Control of oil discharges.

(f) The person in charge of an oceangoing ship that cannot discharge oily mixtures into the sea in compliance with paragraphs (a), (b), (c), or (d) of this section must ensure that those oily mixtures are—

(1) Retained on board; or

(2) Discharged to a reception facility. If the reception facility is in a port or terminal in the United States, each person who is in charge of each oceangoing tanker or any other oceangoing ship of 400 gross tons or more shall notify the port or terminal, at least 24 hours before entering the port or terminal, of—

(i) The estimated time of day the ship will discharge oily mixtures;

(ii) The type of oily mixtures to be discharged; and

(iii) The volume of oily mixtures to be discharged.

(g) No discharge into the sea shall contain chemicals or other substances introduced for the purpose of circumventing the conditions of discharge specified in this regulation.

Note: There are Federal, state, or local laws or regulations that could require a written description of the oil residues and oily mixtures to be discharged. For example, a residue or mixture containing oil might have a flashpoint less than 60 °C (140 °F) and thus have the characteristic of ignitability under 40 CFR261.21, which might require a description of the waste for a manifest under 40 CFR Part 262, subpart B. Occupational safety and health concerns may be covered, as well as environmental ones.

The notice required in this section is in addition to those required by other Federal, state, and local laws and regulations. Affected persons should contact the appropriate Federal, state, or local agency to determine whether other notice and information requirements, including 40 CFR Parts 262 and 263, apply to them.

Definitions (federal- 33 CFR 151.05):

Oil means petroleum whether in solid, semi-solid, emulsified, or liquid form, including but not limited to, crude oil, fuel oil, sludge, oil refuse, oil residue, and refined products, and, without limiting the generality of the foregoing, includes the substances listed in Appendix I of Annex I of MARPOL 73/78. “Oil” does not include animal and vegetable based oil or noxious liquid substances (NLS) designated under Annex II of MARPOL 73/78.

Oily mixture means a mixture, in any form, with any oil content. “Oily mixture” includes, but is not limited to—

(1) Slops from bilges;

(2) Slops from oil cargoes (such as cargo tank washings, oily waste, and oily refuse);

(3) Oil residue; and

(4) Oily ballast water from cargo or fuel oil tanks.

Discharge means any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include—

(1) Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on 13November 1972; or

(2) Release of oil or oily mixtures directly arising from the exploration, exploitation and associated off-shore processing of sea-bed mineral resources.

33 CFR 151.25 Oil Record Book

(a) Each oil tanker of 150 gross tons and above, ship of 400 gross tons and above other than an oil tanker, and manned fixed or floating drilling rig or other platform shall maintain an Oil Record Book Part I (Machinery Space Operations). An oil tanker of 150 gross tons and above or a non-oil tanker that carries 200 cubic meters or more of oil in bulk, shall also maintain an Oil Record Book Part II (Cargo/Ballast Operations).

(b) An Oil Record Book printed by the U.S. Government is available to the masters or operators of all U.S. ships subject to this section, from any Coast Guard Sector Office, Marine Inspection Office, or Captain of the Port Office.

(c) The ownership of the Oil Record Book of all U.S. ships remains with the U.S. Government.

(d) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following machinery space operations take place on any ship to which this section applies—

(1) Ballasting or cleaning of fuel oil tanks;

(2) Discharge of ballast containing an oily mixture or cleaning water from fuel oil tanks;

(3) Disposal of oil residue; and

(4) Discharge overboard or disposal otherwise of bilge water that has accumulated in machinery spaces.

(e) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following cargo/ballast operations take place on any oil tanker to which this section applies—

(1) Loading of oil cargo;

(2) Internal transfer of oil cargo during voyage;

(3) Unloading of oil cargo;

(4) Ballasting of cargo tanks and dedicated clean ballast tanks;

(5) Cleaning of cargo tanks including crude oil washing;

(6) Discharge of ballast except from segregated ballast tanks;

(7) Discharge of water from slop tanks;

(8) Closing of all applicable valves or similar devices after slop tank discharge operations;

(9) Closing of valves necessary for isolation of dedicated clean ballast tanks from cargo and stripping lines after slop tank discharge operations; and

(10) Disposal of oil residue.

9a

(f) Entries shall be made in the Oil Record Book on each occasion, on a tank-to tank basis if appropriate, whenever any of the following operations take place on a fixed or floating drilling rig or other platform to which this section applies—

(1) Discharge of ballast or cleaning water from fuel oil tanks; and

(2) Discharge overboard of platform machinery space bilge water.

(g) In the event of an emergency, accidental or other exceptional discharge of oil or oily mixture, a statement shall be made in the Oil Record Book of the circumstances of, and the reasons for, the discharge.

(h) Each operation described in paragraphs (d), (e) and (f) of this section shall be fully recorded without delay in the Oil Record Book so that all the entries in the book appropriate to that operation are completed. Each completed operation shall be signed by the person or persons in charge of the operations concerned and each completed page shall be signed by the master or other person having charge of the ship.

(i) The Oil Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times and shall be kept on board the ship.

(j) The master or other person having charge of a ship required to keep an Oil Record Book shall be responsible for the maintenance of such record.

(k) The Oil Record Book for a U.S. ship shall be maintained on board for not less than three years.

(l) This section does not apply to a barge or a fixed or floating drilling rig or other platform that is not equipped to discharge overboard any oil or oily mixture.

(m) This section does not apply to a fixed or floating drilling rig or other platform that is operating in compliance with a valid National Pollutant Discharge Elimination System (NPDES) permit.

Oil Water Separation Systems

33 CFR 155.370

Oily mixture (bilge slops)/fuel oil tank ballast water discharges on oceangoing ships of 10,000 gross tons and above and oceangoing ships of 400 gross tons and above that carry ballast water in their fuel oil tanks.

(a) No person may operate an oceangoing ship of 10,000 gross tons and above, or any oceangoing ship of 400 gross tons and above, that carries ballast water in its fuel oil tanks, unless it has—

(1) Approved 15 ppm oily-water separating equipment for the processing of oily mixtures from bilges or fuel oil tank ballast;

(2) A bilge alarm; and

(3) A means for automatically stopping any discharge of oily mixture when the oil content in the effluent exceeds 15 ppm.

(4) For equipment installed after 2004 to be approved under paragraph (a) of this section, it must meet current standards in 46 CFR part 162, subpart 162.050 by the date set forth in paragraphs (a)(4)(i) and (a)(4)(ii) of this section, unless the equipment is installed on a ship constructed before 2005 and it would be unreasonable or impracticable to meet those current standards.

(i) A ship entering international service for the first time since 2004, must comply with the requirements of paragraph (a)(4) of this section by the date of its initial survey prior to receiving its International Oil Pollution Prevention (IOPP) certificate.

(ii) Any ship, other than a ship described in paragraph (a)(4)(i) of this section, must comply with the requirements of paragraph (4) of this section by the date of the ship's first drydock after October 13, 2009.

(b) No person may operate a ship under this section unless it is fitted with a tank or tanks of adequate capacity to receive the oil residue that cannot be dealt with otherwise.

(1) In new ships, such tanks shall be designed and constructed to facilitate cleaning and the discharge of the oil residue to reception facilities. Existing ships shall comply with this requirement as far as reasonable and practicable.

(2) Tanks used for oily mixtures on ships certificated under 46 CFR Chapter I shall meet the requirements of 46 CFR 56.50-50(h) for isolation between oil and bilge systems.

(c) No person may operate a ship under this section unless it is equipped with a pipeline to discharge oily mixtures to a reception facility.

(d) This section does not apply to a barge that is not equipped with an installed bilge pumping system for discharge into the sea.

(e) This section does not apply to a fixed or floating drilling rig or other platform, except as specified in § 155.400(a)(2).

33 CFR 155.380

Oily water separating equipment and bilge alarm approval standards.

(a) On U.S. inspected ships, oily water separating equipment and bilge alarms must be approved under 46 CFR 162.050.

(b) On U.S. uninspected ships and foreign ships, oily water separating equipment and bilge alarms must be approved under either 46 CFR 162.050 or MARPOL 73/78 Annex I.

33 CFR 155.770

Draining into bilges.

No person may intentionally drain oil or hazardous material from any source into the bilge of a vessel.

Job Aid Item: 7.2.e

EPA VGP 2.2.9 Controllable Pitch Propeller and Thruster Hydraulic Fluid and Other Oil-to-Sea Interfaces Including Lubrication Discharges from Paddle Wheel Propulsion, Stern Tubes, Thruster Bearings, Stabilizers, Rudder Bearings, Azimuth Thrusters, Propulsion Pod Lubrication, and Wire Rope and Mechanical Equipment Subject to Immersion

The protective seals on controllable pitch propellers, azimuth thrusters, propulsion pods, rudder bearings, or any other oil-to-sea interfaces must be maintained in good operating order to minimize the leaking of hydraulic oil or other oils. The vessel owner/operator must not discharge oil in quantities that may be harmful as defined in 40 CFR Part 110 from any oil-to-sea interface. If possible, maintenance activities on controllable pitch propellers, thrusters, and other oil-to-sea interfaces should be conducted when a vessel is in drydock.

Minimize maintenance activities on stern tube seals when a vessel is outside of drydock. If maintenance or emergency repair must occur on stern tubes or other oil-to-sea interfaces which have a potential to release oil in quantities that may be harmful as defined in 40 CFR Part

9a

110, appropriate spill response equipment (e.g., oil booms) must be used to contain any oil leakage. Operators of the vessel must have ready access to spill response resources to clean up any oil spills.
After applying lubrication to wire rope and mechanical equipment subject to immersion, wire ropes, and other equipment must be thoroughly wiped down to remove excess lubricant unless doing so is deemed unsafe by the Master of the vessel.
All vessels must use an EAL in all oil to sea interfaces, unless technically infeasible.
"Environmentally acceptable lubricants" means lubricants that are "biodegradable" and "minimally-toxic" and are "not bioaccumulative" as defined in Appendix A of this permit. For purposes of requirements related to EALs, technically infeasible means that no EAL products are approved for use in a given application that meet manufacturer specifications for that equipment, products which come pre- lubricated (e.g., wire ropes) have no available alternatives manufactured with EALs, products meeting a manufacturers specification are not available within any port in which the vessel calls, or change over and use of an EAL must wait until the vessel's next drydocking.
If a vessel is unable to use an EAL, you must document in your recordkeeping documentation consistent with Part 4.2 why you are unable to do so, and must report the use of a non-environmentally acceptable lubricant to EPA in your Annual Report. Use of an environmentally acceptable lubricant does not authorize the discharge of any lubricant in a quantity that may be harmful as defined in 40 CFR Part 110.
EPA recommends that all new build vessel operators endeavor to use seawater-based systems for their stern tube lubrication to eliminate the discharge of oil from these interfaces to the aquatic environment.

Job Aid Item 7.5.c

VPG 2.1.3 Fuel Spills/Overflows

Fuel spills or overflows must not result in a discharge of oil in quantities that may be harmful, pursuant to 40 CFR Part 110. You must conduct all fueling operations using control measures and practices designed to minimize spills and overflows and ensure prompt containment and cleanup if they occur. Vessel operators must not overfill fuel tanks. For vessels with interconnected fuel tanks, fueling must be conducted in a manner that prevents overfilling and release from the system to the environment.
Vessels with air vents from fuel tanks must use spill containment or other methods to prevent or contain any fuel or oil spills. Large-scale fuel spills or overflows are not incidental to the normal operation of the vessel and are not authorized by this permit.
The following requirements apply to fueling of auxiliary vessels such as lifeboats, tenders or rescue boats deployed from "host" vessels subject to this permit:

- While fueling, examine the surrounding water for the presence of a visible sheen. If a visible sheen is observed, as a result of your fueling, it must be cleaned up immediately.
- It is important to know the capacity of the fuel tanks before you begin fueling in order to prevent unintentionally overfilling the tank.
- Prevent overfilling and do not top off your fuel tanks.
- When possible, fill fuel tanks while boat is on shore or recovered from the water.

- When possible, fill portable tanks on shore or on the host vessel, not on the auxiliary vessel.
- Use an oil absorbent material or other appropriate device while fueling the auxiliary vessel to catch drips from the vent overflow and fuel intake.
- Regularly inspect the fuel and hydraulic systems for any damage or leaks.

Owner/operators shall ensure that all crew responsible for conducting fueling operations are trained in methods to minimize spills caused by human error and/or the improper use of equipment.

9a

B. Wastewater Schematics

Wastewater Treatment Systems, AWTS

General Descriptions:

A Marine Sanitation Device (MSD) is a USCG and MARPOL regulatory description of a system designed to treat sewage to specific levels of effluent quality. MSD systems are relatively simple and often laid out for small capacities.

There are 2-types of MSDs:

- MSD II systems are required to meet limits of 200 fecal bacteria units and 150 mg/L of total suspended solids during certification.
- MSD III, systems are designed for no discharge overboard; either holding and reusing the water or boiling off the water and incinerating the waste.

Most marine engineers have worked with MSD II systems onboard cargo and other vessels. ADEC and the USCG found that MSD IIs on cruise ships often did not meet the certification limits, which led to the creation of special MSD II systems that are designed for treating for biochemical oxygen demand, removing most solids, and discharging at low levels of chlorine and are called Advanced Water Treatment Systems or AWTS.

Some AWTS systems utilize parts of the early MSD II systems, and are regarded as upgraded. Graywater is also treated with these systems. The AWTS systems are often microbiological processes, where bugs do the work and use ultraviolet light (UV) or ozone to kill any remaining bacteria after treatment. These systems also have the potential to reduce other pollutants.

When looking at the WW treatment elements it is often easier to understand the system by looking at specific parts. Some process components are integrated in the ship systems, like process tanks. A sound understanding of the AWTS system can be obtained by asking questions, reading the Vessel Specific Sampling Plan (VSSP) and onboard AWTS documentation, and by observing AWTS during operations and maintenance.

In general, the WW treatment processes onboard are into split the following categories:

- **Prescreening:** Removal of solids and other large waste items that are not allowed in the treatment system
- **Biological and Mechanical Treatment:** First stage and second stage bioreactor including membranes, flotation, or other filtration methods
- **Polishing:** After treatment process, using UV or ozone, and sometimes ion exchange

9b

There are several types of AWTS systems, each has its own specifics. For example, Zenon and Hamworthy systems rely on membranes, but those membranes are different. Rochem graywater systems use reverse osmosis technology.

By checking the process elements, Ocean Rangers will get an understanding of the AWTS installation and operation, making effective compliance verification and reporting easier.

Helpful Hints & Suggestions

- ► *The VSSP often describes the AWTS system and arrangements*
- ► *Non-discharging vessels may not have an AWTS or an operable AWTS. However, there must a MSD II (for blackwater) onboard (IMO Annex V)*

Tips for quick familiarization of the AWTS process:

- Follow the influent flow and the steps the influent takes.
    1. What goes in and out? A quick sketch can help to visualize the process.
- What is added besides the influent to the WW to process?
    1. Are there other WW flows?
    2. Are process chemicals added?
- Piece the parts together that play a role in the process as well as the circulation flows.
    1. Check on why process parts / elements are used
    2. Are there process conditions that trigger additional process chemicals?
- Vessels sometimes use other names for AWTS process components than what they actually are, for example a screen press is sometimes called “the wormer” or “the weir”.
- Check the AWTS system with the VSSP description.
    1. Some VSSPs are very detailed.
- Some Vendor descriptions are general, or ship installation specific.
    1. If you notice differences compared to the VSSP or other AWTS installation descriptions ask and document the results.

Putting the AWTS in context:

- AWTS performance is heavily dependent on the system status, maintenance, and operations.
- Check on what the AWTS systems really process
    1. Tank arrangements, daily operations should reflect the process of the AWTS.
- Always report AWTS observations in context with the where, when, and why.
- Do not hesitate to ask questions about the AWTS operations.
    1. If these operations are changed or altered, document the changes.
- If the VSSP contains discrepancies or errors, report these immediately and provide the corrected or revised information.

9b

AWTS Systems in Alaska in 2017

AWTS	Treatment				Permitted Vessels in 2017	Installations in Alaska in 2017
	Primary Solids Separation	Secondary Microbial Oxidation	Tertiary Clarification	Disinfection		
Hamworthy Bioreactor MBR	Screen Press	Aerobic Biological Oxidation (Membrane Bioreactor)	Ultrafiltration Membranes	UV	11	11
Scanship	Wedgewire Screen	Aerobic Biological Oxidation (Moving Bed Bioreactor)	Dissolved Air Flotation (DAF) / Polishing Filter	UV	4	4
Zenon	Coarse Screen	Aerobic Biological Oxidation (Membrane Bioreactor)	Ultrafiltration Membranes	UV	2	3
Rochem	Vibratory Screens	Low Pressure Reverse Osmosis (LPRO)	Reverse Osmosis Membranes	UV	0	0
Rochem Bio-Filt	Vibratory Screens	Aerobic Biological Oxidation (Membrane Bioreactor)	Ultrafiltration Membranes	UV	2	0
Marisan 250	Coarse Screen	Chemical Coagulation	Dissolved Air Flotation (DAF) / Microfiltration	Ozone	1*	1
Hydroxyl Cleansea	Coarse Drum Filter	Aerobic Biological Oxidation (Moving Bed Bioreactor)	Dissolved Air Flotation (DAF) / Polishing Filter	UV	0	1
Triton Water MBR	Screening	Aerobic Biological Oxidation (Membrane Bioreactor)	Ultra-filtration / Ion Exchange	UV	1	1
DeNora Ozone AWWTP	Screening, magnetic filter	Ozone (system treats graywater only)	Ultrafiltration	Ozone in 2nd stage, UV in 3rd stage	1	1

* The Emerald Princess and Silver Shadow did not discharge in 2017, but were permitted to.

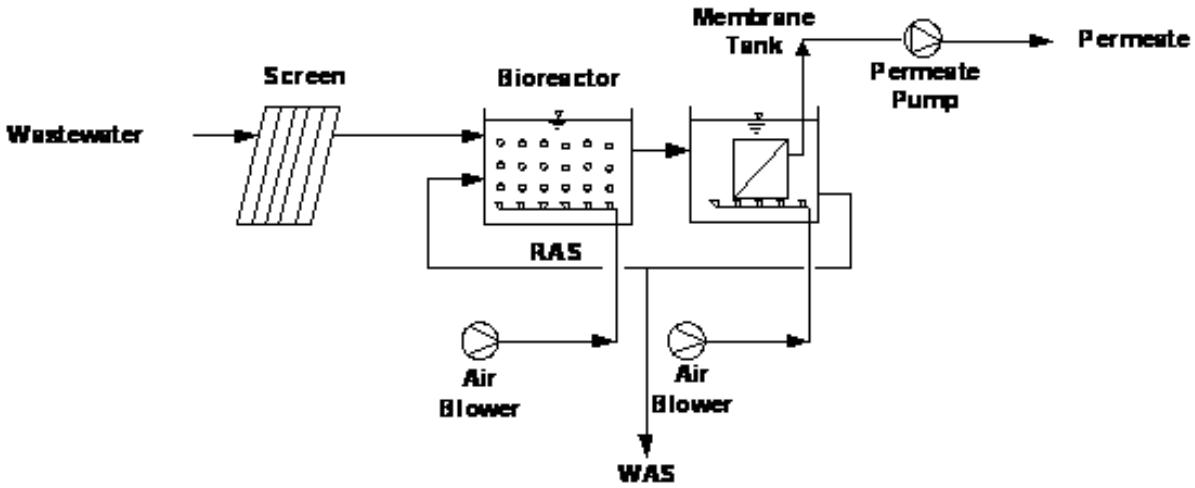
9b

There are two main types of AWTS used in Alaska:

- MBR, membrane bioreactors
- MBBR, moving bed bioreactors

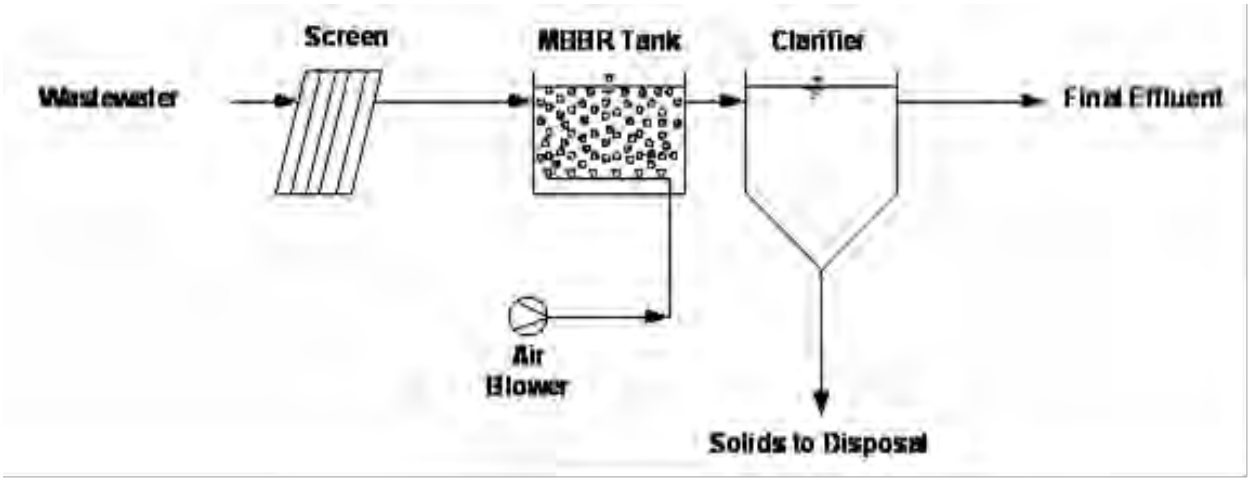
An MBR has a bioreactor followed by a membrane filtration system. MBR systems are manufactured by Zenon and Hamworthy.

Figure 1: Membrane Bioreactor (MBR)



MBBR uses media such as plastic balls to provide a surface for biomass growth, which can be followed by filtration. Scanship manufactures a MBBR.

Figure 1: Moving Bed Bioreactor (MBBR)



9b

Hamworthy AWTS

Vessels using a Hamworthy MBR, include:

- Disney Wonder
- Coral Princess
- Eurodam
- Golden Princess- split system with modifications
- Grand Princess- split system
- Island Princess
- Nieuw Amsterdam
- Ruby Princess- split system
- Star Princess- split system
- Seabourn Sojourn

This system uses biological digestion to reduce BOD along with ultrafiltration membranes to reduce solids discharged. UV units are used to kill remaining bacteria and growth in the pipes. All Hamworthy units have basically the same MBR technology. However, the layout and inter-stage filter function can vary per installation (generation). There are at least three generations of Hamworthy systems currently in use.

Blackwater is delivered directly from the collecting EVAC tanks to the MBRs. Graywater from accommodations is delivered from the dedicated graywater collection tanks and then to one of two MBR buffer tanks where the graywater is provided with some aerobic aeration through the usage of blowers. The graywater and blackwater are then mixed into a common line before entering the MBRs. Graywater from the galleys and laundry are not treated by the MBRs and is held in double bottom tanks.

The Hamworthy system has an MBR 1st stage Screen Press Waterlink, which filters paper, and other solids called *screenings* out of the feed.

Helpful Hints & Suggestions

- *Some systems are configured differently such as the Golden Princess, and systems can have 2 or 3 MBRs*
- *There are several types, or generations, of MBR systems in use*

The dry waste outlet screenings are collected and placed into a bagging unit. The bagging is manually removed throughout the day and delivered to the incinerator.

The feed then flows into the 1st stage of the bioreactor which operates as an aerobic biological treatment system. Incoming feed enters a high-strength biomass, with a diverse microbial ecology that breaks down and consumes the raw sewage and graywater mix.

The by-products of consumption are water and carbon dioxide; the water passes through the membrane and is discharged, the carbon dioxide is vented to the atmosphere, along with the air that is used for the aeration of the biomass. The air supply to the biomass is by fine-bubble diffusers, and lowers the chemical oxygen demand.

9b

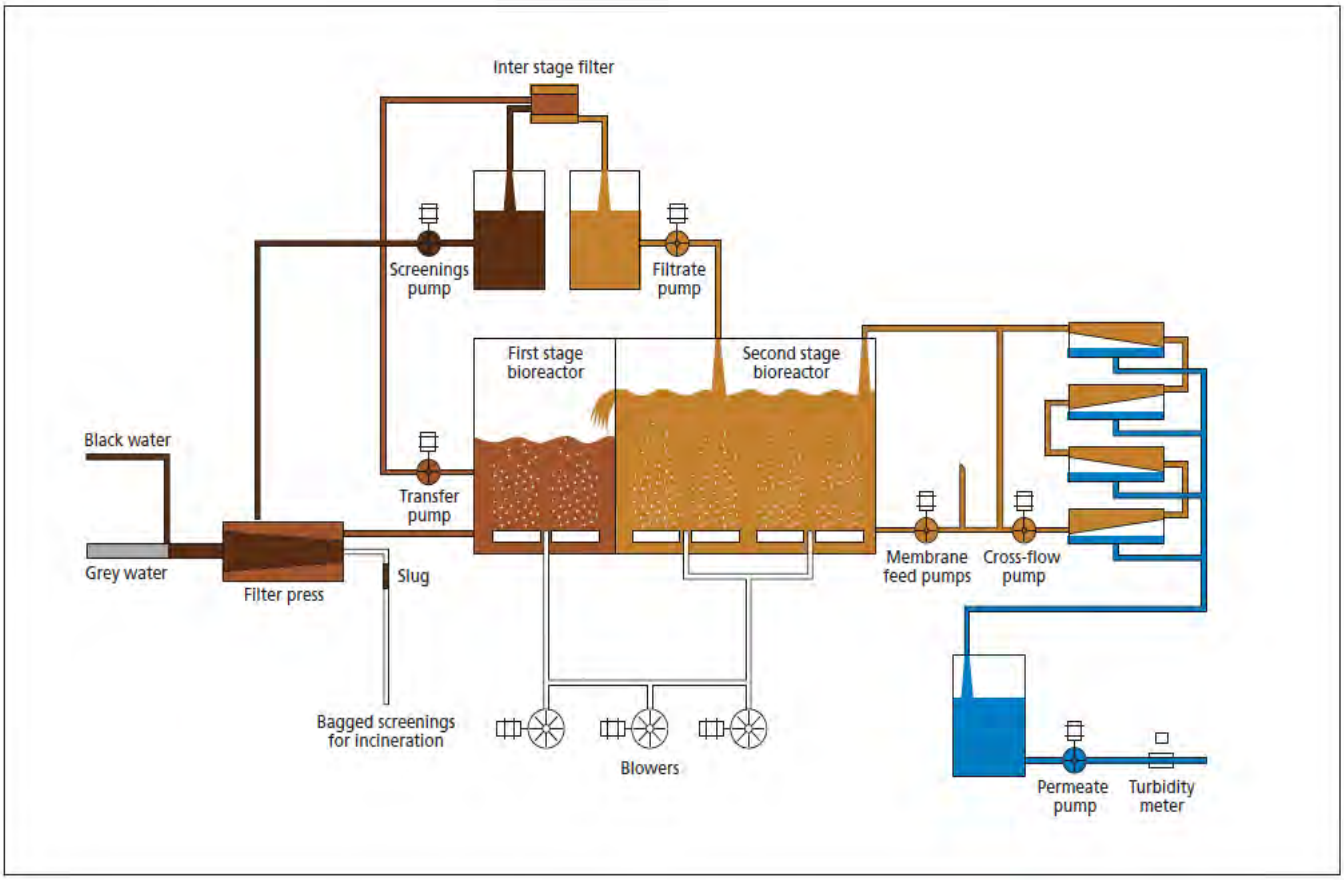
From the 1st stage of the bioreactor further filtering is completed in each of the two Russel type bag filters. Any further solids are then redirected back to Screen Press Waterlink, and remaining filtrate is pumped to the 2nd stage of the bioreactor where further aeration is completed.

The 2nd stage of the bioreactor is then pumped down via cross-flow pumps which deliver feed to the membrane modules. The final effluent is then pumped from the membranes into a permeate tank where it is then circulated thru an UV system for further disinfection before it is finally pumped overboard to further eliminate any potential fecal coliform.

Helpful Hints & Suggestions

- *Hamworthy AWTS systems have different generations/types (e.g. Mark I, II, and III). The Disney Wonder AWTS is of the latest generation Hamworthy AWTS. From type to type there are small technical differences such as interstage filters, circulation ratio, etc.*
- *Hamworthy AWTS are on some installations (PCL fleet) split into two distinct parts: 1) section for treatment of BW; 2) section for treatment of GW. Note WW volumes treated for each Sections.*
- *BW is often diluted with a certain volume of GW. This is to make the BW more process-able. The approved VSSP often includes the GW dilution volume. This is important for the representative sampling.*
- *Multi AWTS trains. Some AWTS systems consists of more than one block/section /train. See VSSP document. Include in the sampling event which "train" is operated (representative sampling).*

Figure 3: Hamworthy process diagram



9b

Zenon AWTS

Vessels using a Zenon aerated membrane treatment system include:Infinity (not discharging in AK)

- Volendam
- Zaandam

The Zenon system is also an MBR system. Using an aerated membrane treatment that involves an integrated system of biological process (digestion) and filtration to process BW and GW. ZeeWeed filtration membrane modules are used, a barrier prevents passage of contaminants and solids. [0.035 micron/one micron = a millionth of a meter]

For all AK trade vessels, Zenon AWTS systems using the Zeeweed membranes are not directly visible, like Hamworthy AWTS membranes. On most vessels, the membrane installation has been semi-or totally integrated with existing tanks/spaces during retrofit.

All GW from the accommodation, plus other GW from laundry & Somat, is collected in the equalization or holding tanks. This WW is then pumped, with the GW, to the Masko-Zoll filters. BWr is pumped from the evac units to mix just before the Masko-Zoll filters.

Helpful Hints & Suggestions

Zenon AWTS system had aerated solids tanks initially installed. To maintain a level of "solid quality" level aeration is necessary.

- *Is aeration still applied and sufficient?*
- *Are other tanks used that are not aerated for the storage of solids?*

1st Process – Solid Filters

This mixed stream of BW and GW is filtered in the Masko-Zoll screens, screened water then runs into a tank. Plastics and other solids that are filtered produce a waste stream, called solid waste, that is stored in a tank. The solid waste is landed ashore approximately every 4 weeks.

2nd Process – Biological

The biological process occurs in the bioreactor and in the membrane tank. Screened BW and GW, called screened raw water, is pumped out of tank into the bioreactor. The water in the bioreactor is now known as biomass. In the bioreactor, bacteria eat the waste products and convert them into CO2, H2O, other products, and heat. It is necessary to remove biomass daily to keep the bacteria at the correct level. Biomass waste is transferred to DB tank. It is legally regarded as untreated BW and therefore may only be pumped directly overboard when >12nm from shore and underway.

3rd Process -Ultra filtration

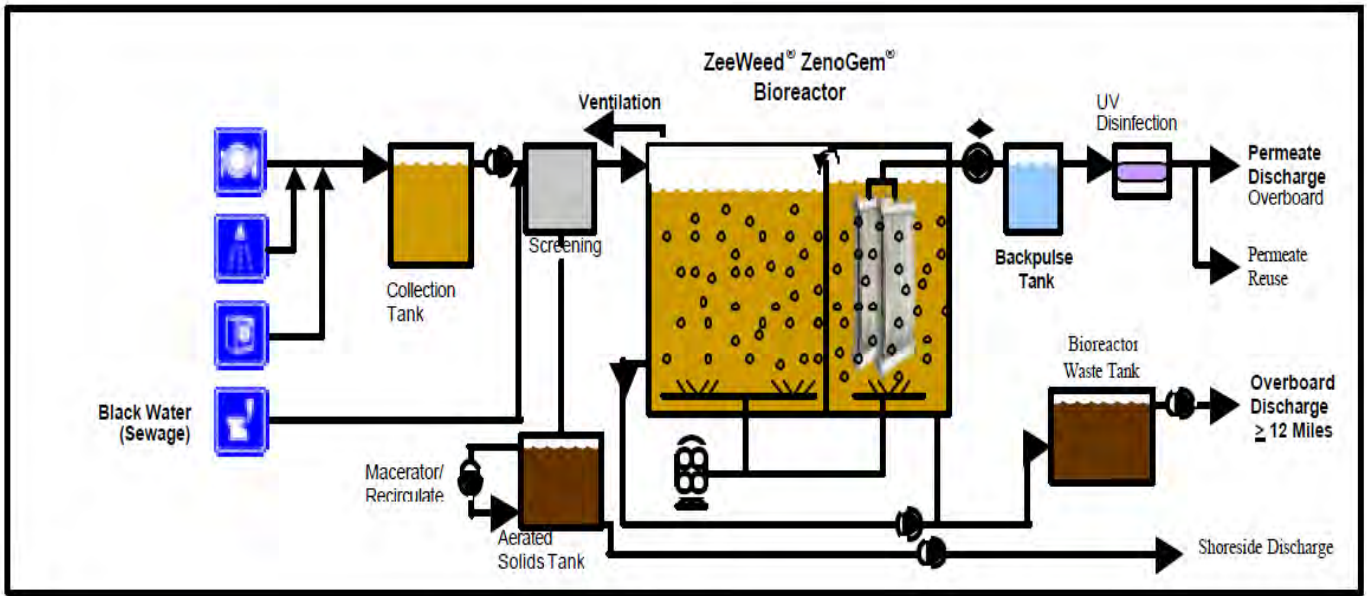
The biomass is pumped out from the bioreactor using the recirculation pumps and into the membrane tank. It then overflows back into the bioreactor where it is subject to further biological process. Ultra-filtration occurs in the membrane tank. Here permeate, ultra-filtered water, is drawn out of the biomass through the millions of microscopic pores in the membrane fibers, that look like hollow spaghetti, by the process/permeate pumps. These

pumps create a very low vacuum inside the fibers of the membranes. The permeate is first used for filling up the back-pulse tanks. At 10 minute intervals, this process reverses and permeate is taken out of the back-pulse tanks and is pumped back through the membranes. This is done to clean the pores in the membrane fibers.

4th Process – UV filter

Permeate that is not used in the back-pulse tanks then passes through a UV filter. The UV-unit is used for final disinfection before the water is used as technical water, pumped into the main ballast or discharged overboard where allowed.

Figure 4: Zenon process diagram



9b

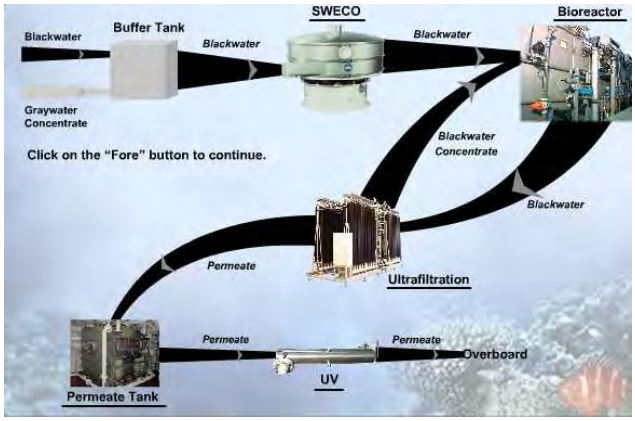
Rochem AWTS

The Rochem Low Pressure Reversed Osmosis (ROCHEM LPRO 120-10) is no longer used for discharges in Alaska but may be onboard some vessels. The Rochem Biol-filt system has been used by some ships for Alaska discharges, most recently by Ponant.

The ROCHEM AWTS BW Plant treats BW and some GW in a bioreactor system, using membrane ultra-filtration, and ultraviolet UV disinfection. The plant treats GW by reverse osmosis (RO) in plants still in use.

The RO system is similar to the RO systems that are used onboard for the production of fresh water from seawater (desalination). Only the size and influent preparation is different. These systems are modular and easy to track and follow.

The Rochem systems are, on most vessels, modular installed. Some vessels (e.g. Westerdam) updated their WW treatment installation by installation of new RO system of the Veolia brand.



Rochem BW treatment system, (Science Panel Report)

This RO system make uses of existing installation parts and piping. The “non-modular” systems are more complex to visually follow and inspect, however the RO principles are still the same.

9b

Scanship AWTS

Vessels using the Scanship system include:

- Norwegian Jewel
- Norwegian Pearl
- Norwegian Sun
- Seven Seas Navigator

ScanShip is the AWT system that does not rely on membrane or RO technology. It is an open system, with some vessels having process elements integrated with the Scanship AWTS system, it is very simple and easy to follow.

Scanship has advanced integrated data collection, the major process parameters; pH, TSS, chemical use/dosage, and other process parameters are recorded.

The data can be directly read out and stored, and available for review (intranet). Several phases of the process have data collection points. In most cases the major process parameters are recorded on the sampling custody form for future reference. This is not a regulatory requirement, but it shows that some operators take their AWTS performance very seriously.

Helpful Hints & Suggestions

Some vessels with Scanship AWTS system monitor and record the AWTS process settings on the sample custody form to check on the sample results/process settings/performance.

The Scanship AWTS stems uses a five-step process:

1. Screening
2. Biological
3. Floatation
4. Polishing
5. Disinfection

A typical Scanship process onboard a ship works by;

- Collecting galley water, GW, and laundry water in GW collection tanks
- BW is held in the vacuum units
- GW and BW are pumped to coarse drum screens that remove and sends sludge and particles to thesludge holding tank, this is called *bio-sludge*.
- After the drum screens, the water is sent to a small buffer tank, and then pumped to a mixing tank
- The water is pumped to Bio Tank 1, then to Bio Tank 2
- Polymer and coagulant is added into the water and pumped into the floatation module, where more sludge is separated, using dissolved air and pumped to a tank
- The water goes from the flotation module into the polishing screen, where it is finely filtered before passing through the UV units.

9b

If the treated water after the UV Units is within the limits of the turbidity meter/ TSS (<30 mg/l limit setting) it is pumped into holding tanks or allowed to go overboard if discharge is permitted at that time.
If the treated water is not within the limits (TSS >30 mg/l or high or low pH), the water is re-circulated back to the mixing tank for re-treatment.

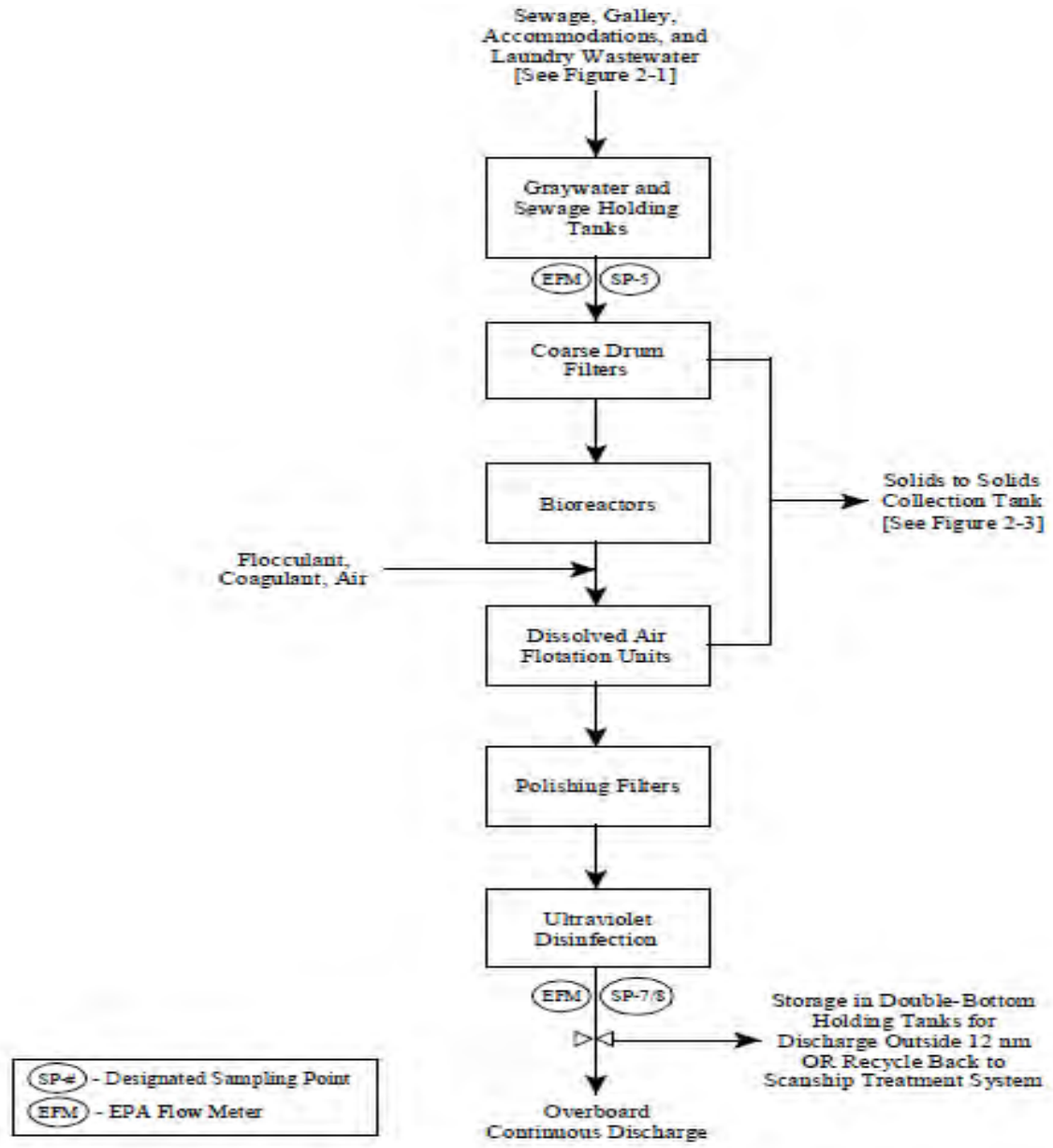


Figure 2-2. Scanship Treatment System, Norwegian Star

Simplified diagram of the Norwegian Star Scanship treatment system. See Table 2-1 for a list of wastewater streams in each wastewater source, and Figure 2-1 for their collection and conveyance to the treatment system. Note that Figure 2-2 has been modified to prevent disclosure of material for which a claim of CBI has been made.

Scanship Diagram (From EPA 2004 report)

9b

Hydroxyl CleanSea System

Vessels using the Hydroxyl CleanSea System include:

- Millennium (not discharging in AK)

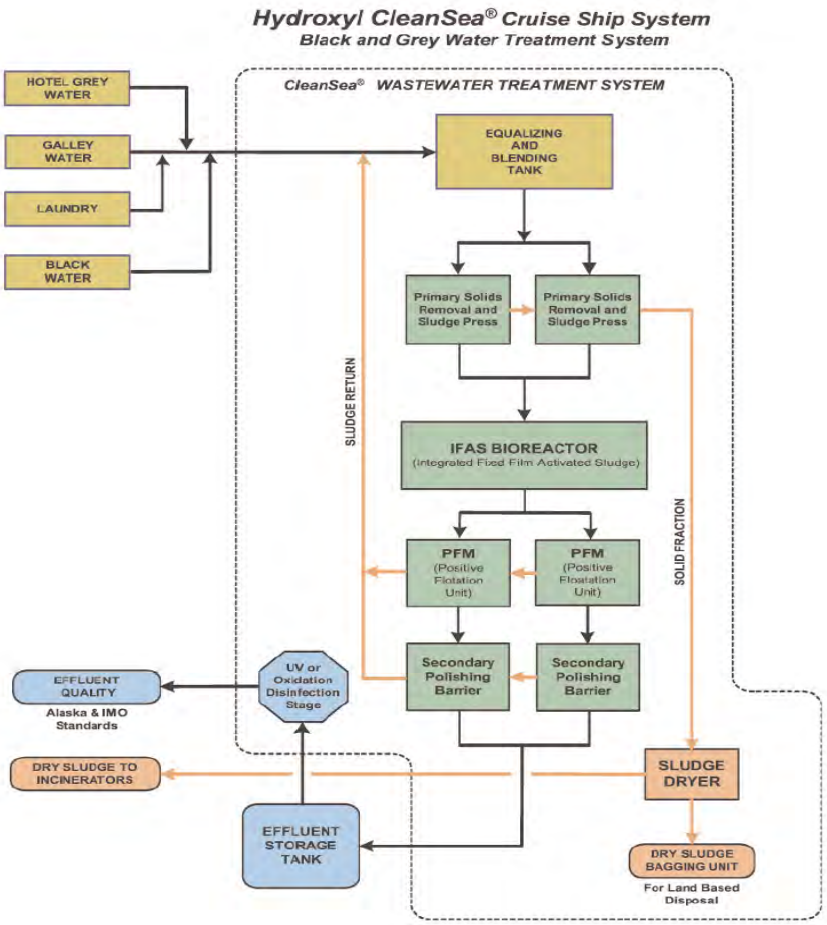
GW and BW from mixing tanks is filtered by two screen filters; the filtered WW is then introduced into the bioreactors. The solids, collected by the primary screen filters, are transferred by the solids transfer pump into the bio-residue tank.

The solids collected in the bio-residue tank are transferred by the sludge transfer pump into the dewatering units, called SOMAT, and a chemical polymer is used to separate solids from the water. The solids are moved into the solids collecting tank of the SOMAT system, then transferred into the incinerator.

The water that remains from the separation, is transferred by gravity into the mixing tank.

The bioreactors use free-floating plastic media. The WW is treated and then sent to dissolved air floatation units for solids removal.

The treated water passes through UV units before it is discharged or held in tanks.



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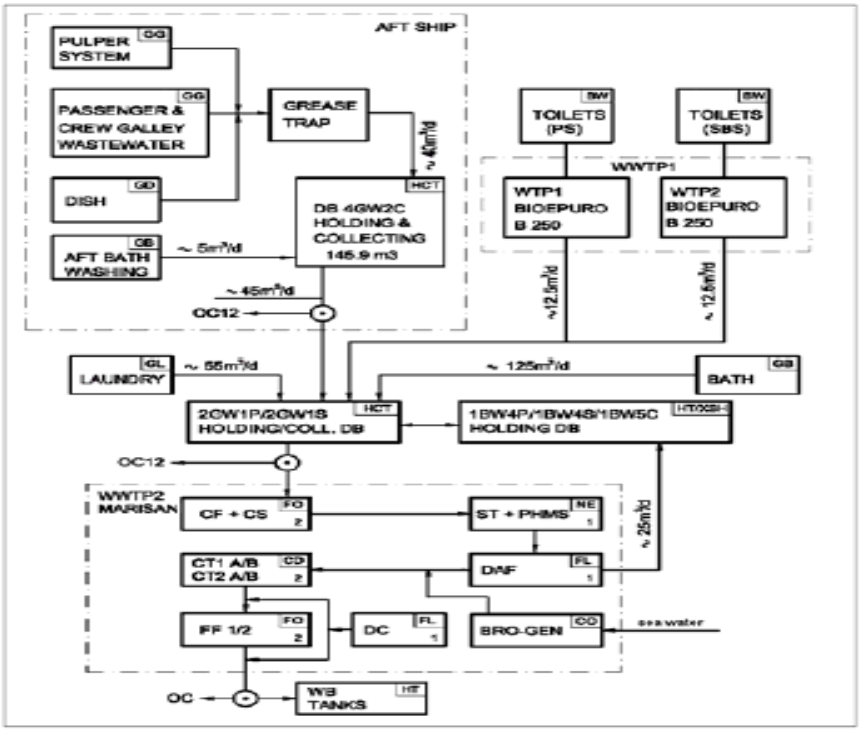
Marisan AWTS

Vessels using the Marisan System include:

- Silver Shadow (permitted but not currently discharging)



Silver Shadow VSSP diagram

BW is treated by two Sewage Treatment Units, BIOEPURO B250, its effluent is mixed with GW (coming from accommodations, galleys, and laundry) and treated by AWWTP MariSanTM 250.

Triton AWTS

Vessels using the Triton System include:

- Regatta

Regatta installed a new AWTS in 2011. This system was unique in the use of an ion-exchange system to reduce metals, and its improved configuration and processes to help reduce ammonia. In the Triton Water Membrane Reactor process, the membranes are submerged into an activated sludge reactor. Treated water is extracted through the membranes with a vacuum pump. Continuous flow passes over the membrane plates. Air is used to keep the membrane surfaces free of fouling, resulting in high flux rates.

Regatta Ion Exchange tanks

9b

C: Terms, Abbreviations & Acronyms

15 PPM Alarm: An alarm that activates when the effluent passing though oil-filtering equipment exceeds 15 parts per million (ppm) of oil.

Agent: Vessel representative hired by the ship's owners. Ship's agent may be tasked with various jobs such as: ensuring proper vessel documentation and compliance.

Alaska Waters: For wastewater from large cruise ships means all waters within the boundaries of the state together with all of the waters of the Alexander Archipelago even if not within the boundaries of the state.

Alexander Archipelago Waters: These are the “inside waters” of Southeast Alaska, even when more than 3 nm from land. Please see the list in the General Permit or statutes for a complete description of boundaries.

Automatic Stopping Device: Is a control mechanism that ensures discharge of an oily water separator is stopped when the oil content of the effluent exceeds 15 parts per million (PPM). The automatic stopping device may be initiated by the operation of the oil content meter.

AWTS: Advanced Wastewater Treatment System. A wastewater treatment system designed to treat wastewater to both MSD and secondary treatment standards. The secondary treatment standards require a higher removal of solids and nutrients (as measured by BOD) than a basic MSD. Most AWTS systems contain mechanical separation of solids by filtering or settling, a biological process to digest organic wastes, and a UV or ozone system to kill bacteria without using chlorine.

Bacteria: (Singular: bacterium) Microscopic living organisms that can aid in pollution control by metabolizing organic matter in sewage, oil spills or other pollutants. However, bacteria in soil, water or air can also cause human, animal and plant health problems.

Ballast: Used to improve the stability and control the draft of a ship.

BAT/BACT: Best Available Technology or Best Available Control Technology. The best available economically achievable performance for control of pollutants. This can include changes to process operations and internal controls.

Black Water (sewage) Examples - possible sources toilets, urinals and drainage from medical facilities (U.S. restriction).

Bilge Water: Water that collects in the lowest inner part of a ship's hull. Bilge water is frequently contaminated with oil and other lubricants from the engine room. Under various national and international standards, discharged bilge water must not exceed a certain maximum oil concentration (for example, 15 parts per million).

Biological Oxygen Demand (BOD): An indirect measure of the concentration of biologically degradable material present in organic wastes. It usually reflects the amount of oxygen consumed in five days by biological processes breaking down organic waste.

Black Water: Water contaminated with human waste, collected from shipboard toilets. Under various national and international standards, black water must be treated before being discharged from a vessel.

Chemical Oxygen Demand (COD): A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water.

COC (chain of custody) Form used in sampling to establish a record of control and transfer of samples. May also contain useful information about the sample.

COMS: Continuous Opacity Meters. A system that electronically reads (with sensors) the density of the smoke in the stacks, and records the findings (as % opacity). Often these systems can generate opacity thresholds / alarms.

Conductivity: A measure of the ability of a solution to carry an electrical current.

Conventional Parameters: Pollutants typical of municipal sewage. BOD, TSS, bacteria, oil and grease, and pH are defined as conventional by EPA. ADEC and USCG added suspended solids, ammonia, conductivity, chlorine, ammonia, phosphorus, total organic carbon, and chemical oxygen demand to the list of conventional parameters.

CVE: Control Verification Examination is the examination of vessel for compliance with SOLAS requirements and applicable U. S. regulations. More properly referred to as the Passenger Vessel Certificate of Compliance Examination.

Discharge: means any release, however caused, from a commercial passenger vessel, and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying.

Dispersion: The breaking up of an oil slick into small droplets which are mixed into the water column as a result of breaking waves and other sea surface turbulence.

DMR: Discharge Monitoring Report, a report submitted to ADEC listing wastewater sample results and any violations of the General Permit, VSSP, or QAPP.

Effluent: To flow out. (Waste material, refuse, and sewage)

Emulsification: The formation of a water - in - oil mixture. In the environment, the tendency for emulsification to occur varies with different oils and is much more likely to occur under high-energy conditions (wind and waves). Emulsions may also be formed by surfactants, including detergents, which cause the oil and water to mix, or by mechanical means such as pressure washing or pump action.

ECA: Emissions Control Area.

EPA VGP: The Environmental Protection Agencies Vessel General Permit.

Equipment having an oil to sea interface: Equipment that uses a seal to prevent leakage of oil into the sea. Examples, oil-lubricated stern tube seals, hydraulically-driven stabilizer fin seals, bow and stern thruster seals. An indicator that system seals are leaking to the sea may be evidence of frequent filling of system reservoirs, presence of barrels, drums, hoses, pumps, and other equipment/supplies/arrangements necessary to refill systems. Some ships' SMS or environmental compliance programs may require that records of refilling such systems are kept. If so, these records should be checked.

Fecal Coliform Bacteria: Bacteria found in the intestinal tracts of mammals. Their presence in water or sludge is an indicator of pollution and possible contamination by pathogens.

Garbage (from 33 CFR 151): *Garbage* means all kinds of victual, domestic, and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically, except dishwater, graywater, and those substances that are defined or listed in other Annexes to MARPOL 73/78.

General Permit: The State of Alaska General Permit for the Marine Discharge of Treated Sewage and Treated Graywater from Commercial Passenger Vessels Operating in Alaska.

Geometric mean: The nth root of the product of a series of n numbers computed by taking the logarithm of each number, computing the arithmetic mean of the logarithms, and raising the base used to take the logarithms to the arithmetic mean.

Glacier Bay: All waters inside a line drawn between Point Gustavus at 135º54.927' W longitude; 58º22.748' N latitude and Point Carolus at 136º2.535' W longitude; 58º22.694' N latitude.

Gray Water: Includes discharges from galley, sinks, washbasins, drains, showers and baths. These may be held in large tanks prior to being discharged overboard (State, Fed, regulation permitting).

Gray water system: includes discharges from galley, sinks, washbasin drains, showers, and baths, excluding drains and sinks from medical spaces.

ICLL: International Convention for Load Lines.

IMO: International Maritime Organization; a specialized agency of the United Nations concerned solely with maritime affairs. IMO is responsible for international treaties, conventions, resolutions and codes to improve maritime safety.

ISM Code: International Safety Management Code. (Chapter IX of SOLAS)

Harmful substance (from 33 CFR 151): *Harmful substance* means any substance which, if introduced into the sea, is liable to create hazards to human health, harm living resources and marine life, damage amenities, or interfere with other legitimate uses of the sea, and includes any substance subject to control by MARPOL 73/78.

Hazardous waste: includes wastes the EPA has determined are dangerous or potentially harmful to your health or the environment.

Marine sanitation device: Equipment that is installed on board a vessel, and that is designed to receive, retain, or discharge sewage; and any process to treat sewage on board a vessel.

MARPOL: Name given to the standards and requirements adopted by the International Convention for the Prevention of Pollution from Ships governing the discharge of oil and other hazardous substances, sewage, and garbage.

mg/L: **Milligrams per liter**. The concentration at which one thousandth of a gram (10-3 g) is found in a volume of one liter; it is approximately equal to the unit “parts per million (ppm)”.

µg/L: Micrograms per liter: The concentration at which one millionth of a gram (10-6 g) is found in a volume of one liter; it is approximately equal to the unit “parts per billion (ppb)”.

MSC: Maritime Safety Committee. One of five technical committees of the IMO which deals with issues such as aids to navigation, vessel equipment and construction, manning requirements, handling dangerous cargoes, hydrostatic and marine casualty information.

MSD: Marine Sanitation Device.

Non-hazardous waste: includes shipboard garbage including plastics and synthetic material, medical waste, food wastes and recyclables such as glass, cardboard, aluminum and metal cans. Items to be checked should include: disposal and incineration records; waste sorted to prevent hazardous waste from entering the non-hazardous waste stream; no plastics or synthetics discharge overboard; separate and proper disposal of hazardous and non-hazardous incinerator ash; and proper disposal of cooking grease from grease traps.

Offloading: means the removal of a hazardous substance, hazardous waste, or nonhazardous solid waste from a commercial passenger vessel onto or into a controlled storage, processing, or disposal facility or treatment works

9c

Oil (from 33 CFR 151): *Oil* means petroleum whether in solid, semi-solid, emulsified, or liquid form, including but not limited to, crude oil, fuel oil, sludge, oil refuse, oil residue, and refined products, and, without limiting the generality of the foregoing, includes the substances listed in Appendix I of Annex I of MARPOL 73/78. "Oil" does not include animal and vegetable based oil or noxious liquid substances (NLS) designated under Annex II of MARPOL 73/78.

Oil Content Meter (OWC): An instrument used to measure continuously the oil content of the effluent in the OWS output line, in parts per million, to ensure that the operation does not contravene the convention.

Oil Filtering Equipment: Equipment that uses any combination of a separator, filter or coalescer, and also a single unit designed to produce an effluent with oil content less than 15 parts per million (ppm).

Oil pollution prevention systems: include the oily water separator, the fuel/lubricating oil transfer, and sludge containment system.

Oily Water Separator (OWS): Equipment designed to separate oil from wastewater such as bilge water.

pH: An expression of the intensity of the basic or acid condition of a liquid; may range from 0 to 14, where 0 is the most acid and 7 is neutral.

Plastic (from 33 CFR 151): *Plastic* means any garbage that is solid material that contains, as an essential ingredient, one or more synthetic organic high polymers, and that is formed or shaped either during the manufacture of the polymer or polymers or during fabrication into a finished product by heat or pressure or both. "Degradable" plastics, which are composed of combinations of degradable starches and are either (a) synthetically produced or (b) naturally produced but harvested and adapted for use, are plastics under this part. Naturally produced plastics such as crab shells and other types of shells, which appear normally in the marine environment, are not plastics under this part.

Pollutant: Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

PMS: Preventative Maintenance System

Primary Waste Treatment: First steps in wastewater treatment; screens and sedimentation tanks are used to remove most materials that float or will settle. Primary treatment removes about 30 percent of carbonaceous biochemical oxygen demand from domestic sewage.

QAPP: Quality Assurance Project Plan. An approved plan documenting how samples are taken and the quality control measures taken to ensure samples are accurate and representative.

Qualified Individual (QI): The person authorized by the responsible party to act on their behalf, authorize expenditures and obligate organization's resources.

RCRA: Resource Conservation and Recovery Act (RCRA), was enacted by the U.S. in 1976 to address the issue of how to safely manage and dispose of the huge volumes of municipal and industrial hazardous waste generated nationwide.

Recoverable Oil: Oil that is in a thick enough layer on the water to be recovered by conventional techniques and equipment. Only black or dark brown oil, mousse, and heavy sheens (dull brown) are generally considered thick enough to be effectively recovered by skimmers.

SECA: Sulfur Emission Control Area

Separation Equipment: A device designed to remove enough oil from an oil-water mixture to provide a resulting mixture with an oil content of less than 100ppm, or 15ppm, such as an Oily Water Separator (OWS).

Sewage: Human body wastes and the wastes from toilets and other receptacles intended to receive or retain human body wastes.

Sheen: A sheen is a very thin layer of oil (less than 0.0001 inches or 0.003mm) floating on the water surface and is the most common form of oil seen in the later stages of a spill. According to their thickness, sheens vary in color ranging from dull brown for the thicker layers to rainbows, grays silvers and almost transparent for the thinnest layers.

Slick: Oil spilled on the water, which absorbs energy and dampens out the surface waves making the oil appear smoother or slicker than the surrounding water.

Sludge Tanks: Tanks used to contain sludge formed by fuel and lube oil purifiers and from other sources or cleaning activities. Sludge is not readily processed by many oily water separators and frequently requires treatment ashore or incineration. Every ship of 400 GT or more must be provided with a tank or tanks of adequate capacity, in regard to type of machinery and length of voyage, to receive the oil residues (sludge) that cannot be dealt with otherwise in accordance with MARPOL Annex I.

SMS: Safety Management System (sometimes referred to as an SQM). Required by the ISM Code and Chapter IX of SOLAS.

SOLAS: Safety of Life at Sea. The International Convention for the Safety of Life at Sea.

SOPEP: Shipboard Oil Pollution Emergency Plan. (MARPOL Annex I, Reg. 26)

STCW: The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers.

9c

Suspended Solids: Small particles of solid pollutants that float on the surface of, or are suspended in, sewage or other liquids. They resist removal by conventional means.

Total Suspended Solids (TSS): A measure of the suspended solids in wastewater, effluent, or water bodies, determined by tests for "total suspended non-filterable solids."

Transfer: Any movement of oil or hazardous material to, from or within a vessel by means of pumping, gravitation, or displacement.

Tributyltin Paints: TBT-based marine antifouling paint or coating means a paint, coating, or treatment that contains tributyltin, or a triorganotin compound used as a substitute for tributyltin.

Vessel Specific Sampling Plan (VSSP): This is an approved plan specific to each cruise ship that documents how wastewater is treated, stored, and sampled to ensure samples are representative of discharged wastewater.

VE: Visible Emissions. This is what is visible in the exhaust emissions (smoke). Measured by looking at the opacity of the emissions.

Acronyms/Abbreviations Used

ADEC	Alaska Department of Environmental Conservation
AS	Alaska Statute
BNA	Base/Neutrals, Acids
BOD	Biochemical Oxygen Demand – 5-day
CFR	Code of Federal Regulations
COC	Chain of Custody
COC	Certificate of Compliance, CG Form 3585.
COTP	Captain of the Port
COD	Chemical Oxygen Demand
CWA	Clean Water Act
DQO	Data Quality Objective
ECA	Emission Control Area
EPA	Environmental Protection Agency
GP	Alaska DEC Large Cruise Ship General Permit
MDL	Method Detection Limit
MSD	Marine Sanitation Device
OCM	Oil Content Meter
OWS	Oily Water Seperator
OR	Ocean Ranger
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
QC	Quality Control
RPD	Relative Percent Difference
RQ	Reportable Quantity per 40 CFR part 302
SM	Standard Methods
SW-846	Solid Waste Methods
SOP	Standard Operating Procedures
TSS	Total Suspended Solids
USCG	US Coast Guard
VOC	Volatile Organic Chemicals
VGP	EPA Vessel General Permit
VSSP	Vessel Specific Sampling Plan

9c

Wastewater Definitions and Information

Definitions of Permitted Discharges

- **Within Alaska waters**
  Cruise ships need a notice of intent (signed version) and a General Permit issued by the State of Alaska. They also need an authorization letter from the USCG (33CFR 159).
  In general, if vessels want to discharge In Alaska, they need to be capable of meeting the Alaska discharge standards (Table 1 of the general permit)
- **Outside of 3-mile limit**
  This is outside the jurisdiction of the State of Alaska. Most vessels use the "4 mile" limit to make sure that they are clear from state boundaries. (some VSSP plans and discharge plans make reference to a 4-mile limit) IMO allows materials to be discharged that are comminuted and disinfected waste at a speed of 4 knots.
- **Outside 12-mile limit**
  International waters where discharges of gray and black water, biomass, etc. are allowed to be discharged at 4 knots speed or higher.
- **Donut Holes**
  In the past definitions of Alaska waters, there were several areas within the islands of Southeast Alaska that were more than 3 miles from land. The cruise ships used these donut holes to discharge their waste water and then proceeded on their way. The concept of donut holes has been eliminated by the current definitions of Alaskan waters.

Restricted Zones

- **Glacier Bay** - this is a no discharge area for most operators. Vessels navigating in Glacier Bay need a NPS authorization.
- **Tracy Arm –** voluntary no discharge zone. This is a wilderness area for the US Forest Service – most vessels opt not to discharge while navigating in Tracy Arms area (including Endicott arms).

Usage of double bottom tanks not on VSSP for storing waste water

This information will be included in the current VSSP. Ocean rangers should make a note of which tanks are in use for waste water storage and compare this information to the VSSP. Any discrepancies should be pointed out on the daily report as a potential non-compliant item.

Burials at sea (40 CFR 229.1):

This has been a regular question. There are no specific ADEC requirements for disposal of cremated remains, other than no discharge of plastics. Burials must meet USCG and EPA requirements. Flowers and wreaths can be placed in the waters if they are "readily decomposable". Ashes are sometimes held in plastic bags inside the urns, these are often accidentally dropped in burials at sea.

Harvesting Glacier Ice

Ice in small amounts can be "harvested" from the Glacier areas; During the "harvest" the wildlife should not be disturbed, that would be a violation.

Note: in Glacier Bay, a permit/authorization must be obtained from National Parks Service to launch a lifeboat/tender in Glacier Bay waters. (Small quantities of ice are sometimes brought onboard the cruise ships to show the passengers what glacier ice looks like.)

D: Vessel Once a Season Report

This checklist includes items that Ocean Rangers monitor once per cruise season. Once verified these items should not change significantly during the cruise season. The department has determined that monitoring and recording the items on this checklist one per season should provide sufficient oversight to confirm environmental compliance for the cruise season. It should reduce the time required by Ocean Rangers to monitor, and make the time available for Ocean Rangers to monitor items that are more dynamic. Changes that the vessel makes that affect items on this checklist may require a re-check of those items.

Ocean Rangers. The first Ocean Ranger assigned to a voyage on a vessel shall complete the seasonal checklist. Recordkeeping on some ships is generally centralized.. If there are questions regarding the once a season report, please forward these to your manager to submit to ADEC. Upon completion, the Ocean Ranger will submit the completed checklist to the Crowley Program Manager. While completing the seasonal report, the Ocean Ranger shall also provide a daily report with minimum information each day, including daily checks for each section, the information section, and any compliance items noted.

Section 1: Wastewater (33 CFR 159, 18 AAC 69.050, Alaska GP, EPA VGP)

Seasonal Item: 1.b

Shipboard name and location of the Sewage and Graywater Discharge Record Book (discharge logs):

The official name should be the Sewage and Graywater Discharge Record Book. Vessel crews can use different informal names. The general permit requires copies of the discharge record books be submitted to ADEC monthly. Some vessels now utilize and electronic recordkeeping system.

What to check: Enter the name the crew uses for the discharge log. Also enter the printed name on the log if it is different.

Seasonal Item: 1.c

Name and locations of instructions or guide to completing (making entries) discharge record book:

These instructions often tell how to fill in- for example to use local time or GMT. An example can be found in the wastewater section of the guidebook.

What to check: If there are discharge log instructions, record the name of the instructions. Information here will be useful in the recordkeeping section. Check that discharge ports names match those in the VSSP.

Seasonal Item: 1.d

How is sludge and biosolids offloads or discharges recorded?

Biosolids and sludge may be offloaded or discharged when a safe distance from shore. Records should be kept documenting where and when the discharge or offload occurred. The discharge logs often track this.

What to check: How sludge and wastewater from biosolids are recorded. Are the amounts reasonable? Are these estimates or measured?

9d

Seasonal Item: 1.f

USCG discharge authorization letter onboard (stationary dischargers)? Y/N:

This is only needed for ships that have authorization to discharge under USCG Continuous Compliance

Seasonal Item: 1.g

MSD International Sewage Pollution Prevention Certificate (ISPPC) or Non-U.S. flag "Certificate of Type Test MARPOL Annex IV" (MARPOL IV / 33 CFR159.7) Y/N:

Cruise ships that have MSD systems must have some type of documentation that these units were certified. The certification could be from the US Coast Guard or from a classification society such as DNV.

What to check: Check for a placard or documentation that shows the MSD is certified or vessel has a sewage pollution certificate.

Seasonal Item: 1.h

Explain how wastewater logs (sewage and greywater discharge record book) are recorded and the process to ensure they are current and accurate:

ADEC has found errors in logbooks, sometimes these errors are easily explained or just a misinterpretation of what was written. Understanding the recordkeeping process will help ADEC review and other Ocean rangers who check logbook entries.

What to enter: Explain the process that discharge logs are completed. Use titles, not names if identify who does each step. How is information collected? When are entries made? How is it entered? How are deviations or mistakes identified?

Seasonal Item: 1.j

What time format is used in the discharge logs (GMT, local, etc.)?

What to enter: There is no requirement for what time to record in the discharge logs, however there must be consistency. For example- if "local" time is used, is it Alaska or Pacific, and do they change when crossing time zones? Please record what time zone is used.

Seasonal Item: 1.k

Are other wastewater waste-stream discharges recorded and where (such as boiler, pulper waters, pool and spa, or other wastewaters)

What to enter: For each item, mark if it is recorded, and enter the name or description of the log it is recorded in and location on where to find the records. Record if the tank levels are recorded, and which log or records are used. If the logs are electronic, identify the name and location. Examples of sources include:

9d

- Graywater
- Sewage (blackwater or mixed)
- Permeate (treated wastewater)
- Bio sludge

- Bio solids
- Pool, spa and Jacuzzi
- Pulper water
- Pulper convey water
- Dewatering water
- Boiler/economizer blowdown and washdown (EPA VGP)
- Ballast water (33CFR151.070)
- Other water sources that could become wastewater

Seasonal Item: 1.l

AWTS and MSD unit(s). List with manufacturer name, model number, capacity, number of units.

Marine sanitation devices should have a placard or certification with capacities and other information. Some ships may have replaced MSDs with AWTS, and some may still have MSDs installed. See guidebook AWTS section for information on units. For future permit development ADEC needs information regarding capacity of ships that could be permitted in the future, even if they are not discharging at this time.

What to enter: List all MSD and wastewater treatment devices installed with name, model number, year built (if available), number of units, and maximum capacity. AWTS Units (if installed). List with manufacturer name, model number, capacity, number of units.

Seasonal Item: 1.m

Chemically treated cooling water handled correctly (e.g. anti freeze etc.) IAW VGP 2.2.19

Most vessels have conditioned spaces for their equipment so anti freeze may not be used in all the engines or in equipment cooling water systems. However, emergency diesels, lifeboat engines may have antifreeze in systems. These systems are regularly changed and most vessels have collection plans / recycling methods in place.

What to check: Toxic or hazardous substances added to or removed from cooling water are not allowed to enter a water body. For example, to the bilgewater or wastewater systems for discharge overboard.

Seasonal Item: 1.n

Gas turbine wash water discharged < 3 nm (Does not include turbo blowers / chargers on diesel engines) IAW VGP 2.2.14 & 40 CFR 110

What to check: Gas turbine washwater not directly discharged within 3nm of shore.

EPA found that turbine washwater could contain solvents, high levels of metals, and oily residues. There is concern these solvents if mixed with bilge water could allow for discharge of oily wastes. The VGP only addresses gas turbines, it does not include turboblowers or turbochargers. Note that there are other check items referring to solvents,

Helpful Hints & Suggestions

AWTS systems may have a MSD / AWTS IMO Certificate. The data on this certificate should be same as on the AWTS name plate. Note the certificate has an expiration date.

9d

surfactants, and hazardous wastes entering bilgewater- these could apply if the turboblowers are taken apart and washed on the deck of engine spaces.

Citation: EPA VGP 2.2.14 Gas Turbine Wash Water

Gas turbine wash water must not be directly discharged within waters subject to this permit. Where feasible, gas turbine washwater must be prevented from commingling with bilgewater that will be discharged in waters subject to this permit, for example by collecting it separately and properly disposing of it at an onshore facility. Under no circumstances may oils, including oily mixtures, from gas turbine wash water be discharged in waters subject to this permit in quantities that may be harmful as determined in accordance with 40 CFR Part 110.

Seasonal Item: 1.o

Deck wash down or secondary uses IAW VGP 2.2.12

What to check: Fire mains only discharged for emergency training, certification, emergencies, or if the intake comes from seawater or potable water.

Section 2: Ballast Water

Seasonal Item: 1.p

Ballast Management Plans/ procedures onboard (Y/N)?

What to enter: Are there plans and procedures? If there are, what are they called?

Seasonal Item: 1.q

Records on ballast transfers (33 CFR 151.2060)

What to enter: Are internal transfers or changes recorded? Where are they recorded? Recordkeeping for offloading to shore of ballast water?

Seasonal Item: 1.r

Ballast Water Recordkeeping IAW 33 CFR 151.2070

What to enter: Check if records are in accordance with federal ballast water record requirements.

Seasonal Item: 1.s

Are there interfaces between the ballast and WW system?

There is always a potential for wastewater to enter the ballast water system if equipment or tanks are shared.

What to enter: Yes or No. If permitted ship list connections (this may be in the VSSP).

Seasonal Item: 1.t

Procedures for changing wastewater tanks to ballast water tanks (if applicable). What is done to prevent contamination of treated WW? Please list major procedures such as if pipes are drained or tanks cleaned.

9d

This information could be in the VSSP. Some ships use the same tanks and piping to collect or distribute wastewater and ballast water. There is always a potential for wastewater to enter the ballast water system if shared equipment or tanks. Cruise ships have procedures to prevent the introduction of wastewater into ballast water discharges. Any offloading to shore of ballast water?

What to enter: Enter N/A if ship is non permitted, non-discharging. List procedures that would prevent wastewater from entering the ballast water system or effluent. What is done to prevent contamination of ballast water or treated WW?

Section 3: Permitted ships and ships with current VSSPs

Seasonal Item: 3.d.a

AWTS Operations

What to check: Are AWTS operations logged? If they are, explain where.

Seasonal Item: 3.e

AWTS and MSD maintenance and repairs

Are AWTS maintenance and repairs logged? If they are, explain where. This item will be useful for other Ocean Rangers checking on the operability of the AWTS.

Seasonal Item: 3.f

AWTS and MSD system chemicals recorded

What to enter: Enter if there is a log that records what or when process chemicals were added to the AWTS. If not, mark either "none used" or "not recorded"., But it is useful for determining if an AWTS is functioning according to manufactures specifications.

Helpful Hints & Suggestions

Daily observations may already include the observed maintenance. Engineers can provide the records.

Are AWTS system chemicals needed to have the AWTS system functioning properly?

Seasonal Item: 3.g

Hydraulic capacity of MSD system is of sufficient capacity (GP).

What to enter: Check the calculation of total flow against the capacity information given in the VSSP or Notice of Intent. Check that flow does not exceed capacity. If capacity is sufficient mark yes.

Flow that exceeds capacity of a treatment system could lead to overflow into the bilge, system damage, or a system not being able to meet the effluent quality it was designed to meet. ADEC has seen cases in the past of wastewater dumped into bilges or overboard because an MSD was not of sufficient capacity.

Of particular concern are split systems, either with inflow or outflow split. This may be more difficult to check than a simple single system.

Seasonal Item:3.j

Explain process for estimating or metering discharged wastewater.

What to enter: The GP has requirements for reporting. Please note the process used to record volumes and times in the discharge record book (logs). Please note the process used for estimating or metering, and the time that the metering / estimation is performed and recorded.

9d

Vessel Specific Sampling Plans (VSSP)

Note: This section is only to be completed if the vessel has an approved Vessel Specific Sampling Plan (VSSP) for this year. For unpermitted vessels with a VSSP do not check items with a "GP" as a citation such as authorization letter. (18 AAC 69.030 and 33 CFR 159.37 (c))

VSSP and OWS checks are more detailed than those listed in the job aid for these subjects. They shall be done again if there are major changes to systems during the cruise season, or if there are compliance checks requested by ADEC that relate to use of the equipment. Background information can be found in the Job Aid sections of the guidebook.

Detailed Piping and Compliance Checks. These items are more "in the details" look at plans, such as pipe arrangements, tracing of valves flanges / blind flanges, and checks of equipment used. This may include looking at pipe tank connections and other systems inter tied with the piping system. Correlations are made on how systems are interwoven. An example is wastewater storage in double bottom tanks. How is this done? How these systems are interfaced (pipe lay out system) with the ballast water system?

Although the piping system on board of large cruise vessels are relatively straight forward, the possible integration of the piping systems with other systems can make this job more demanding.

Check all items that apply. List any deviations noted and report deviations in the VSSP on your daily report as well (under 1.3.a). Note this section only applies to ships that are sampling for ADEC or USCG and have an approved VSSP.

Seasonal Item: 3.v

GW and BW system connections to the ballast water system (tanks piping manifolds) and common connections IAW VSSP

What to check: Check connections between ballast water and wastewater systems. Check that tanks used are included in the VSSP. Check that procedures are in place to prevent discharge of wastewater through the ballast water system or from holding tanks without a specific sampling program. Check that the vessel has ways to clean or flush out tanks and pipes that have been used for wastewater prior to use for ballast water.

Many vessels use ballast water tanks at times to hold wastewater. This is acceptable under the general permit and current regulations. By using ballast water tanks there is the potential for discharge of wastewater through the ballast water system. If wastewater was discharged from ballast holding tanks or pipes it would need to be treated, and it would have to be part of a sampling regime (sampling held wastewater).

Some vessels pipe systems to and from WW holding tanks are complex and not easy to understand. OR needs to check this by visually tracking the major piping parts of the system. Ballast water tanks used for WW or waste solids need to be cleaned when used for ballast water operations in Alaska. A helpful check is on the operations and how treated stored WW and other WW is handled and discharged.

9d

Notice of Intent Checks (NOI)

ADEC will supply the NOI if this check is needed. This is only needed on ships that have been approved by the State of Alaska for discharge under the General Permit. Check each item as listed in the seasonal report. It may be difficult to take exact measurements and calculations, check if the

information appears to match what is seen onboard. Do not take any risks in measuring discharge port information.

Section 4: Hazardous materials and solid waste

For background please refer to the waste sections of the guidebook. Note- for full citations see the waste sections of the guidebook.

Seasonal Item: 4.b

Certification of TBT free paint coating on hull (AS 46.03.715)? (Y/N)

TBT paint use and sale was banned in Alaska under state law based on concern regarding the toxicity and long term effects of the antifouling paints being used.

Seasonal Item: 4.c

Waste/Hazardous wastes offloading plan(s) carried onboard (18 AAC 69.035/69.040)? (Y/N)

See waste sections. This is a check if they are onboard. The daily report includes check if they are being followed. A vessel can deviate from a waste plan, but need to submit a deviation report in November documenting changes.

Seasonal Item: 4.d

Vessel garbage management plan IAW 18AAC 69.035 / 33 CFR 151.55(b)(d)

Cruise ships must submit waste offload plans to ADEC. See guidebook waste sections for more details.

Seasonal Item: 4.e

The controlled storage processing or disposal facilities or treatment used is IAW 18 AAC 69.040)

Background: Cruise ships are required (if offloading hazardous waste in Alaska) to document planned methods, training, and facilities used in their hazardous waste offload plans. Most ships do not offload hazardous waste in Alaska.

If the ship offloads hazardous waste in Alaska, check that offloads match those in the current hazardous waste offload plan. Check also the packaging of the offloaded materials.

Seasonal Item: 4.f

Crew training in off loading procedures is IAW 18 AAC 69.040.

What to check: If the ship offloads hazardous waste in Alaska, check crew training matches the current hazardous waste offload plan. Citation- 18 AAC 69.040.

Seasonal Item: 4.g

Manufacturer provided material safety data sheet (MSDS) (if applicable) are included on the Hazardous waste and hazardous substances offloading plan IAW 18 AAC 69.040

Material safety data sheets or products safety datasheets should be supplied with all potentially hazardous or toxic chemicals. These sheets are intended to inform the end user of hazards, physical data, and how to safely handle and use the product. They should also identify the use and need of personal protection gear.

9d

Seasonal Item: 3.h Recordkeeping

For each item enter Y or N if it is recorded. If Y list where.

Material Conditions

Seasonal Item: 4.i

Describe the controlled storage & processing or disposal facilities or treatment used. (18 AAC 69.040(5)):

What to check: Describe the waste storage and handling process onboard.

Seasonal Item: 4.j

Grinders IAW 33 CFR 151.75

Background: This item is to check for the potential to discharge large items when the requirements are for small pieces. This should reduce the chance of items like food waste floating back to shore. Check if this item applies on the vessel, many do not discharge these items between 3 and 12 nm, but wait until outside 12nm.

This item may be hard to check unless equipment is open for cleaning or maintenance.

What to check: For ships that discharge food wastes, ground glass, or other materials inside of 12nm check that screen openings are less than 1 inch.

Citation: 33 CFR 151.75 Grinders or comminuters.

Each grinder or comminuter used to discharge garbage in accordance with §151.69(a)(2) or §151.73(b)(1), must be capable of processing garbage so that it passes through a screen with openings no greater than 25 millimeters (one inch).

Seasonal Item: 4.k

Valves and flappers on chutes IAW AS 46.03.710

Background: Most cruise ships have discharge chutes or “tunnels”. These chutes are often close to the solid waste processing area. Some ships have multiple chutes. The chutes can have valves or flappers. Most ships have procedures for locking valves or chutes. Some ships have welded these shut to avoid use.

What to check: Check that valves or flappers on waste chutes are closed in Alaska waters. Check waste records for any documentation of use in Alaska waters.

Operations and Procedures

Seasonal Item: 4.l

9d

Vessel machinery logs, reports for maintenance, repairs, cleaning operations of the hazardous mat handling equipment are onboard and available IAW 33 CFR 151.63 (b(3).

Background: One of the factors when evaluating compliance with waste handling requirements is if the equipment is operable. One sign of operable equipment is regular maintenance and recording of operations.

What to enter: If compliant then enter SAT.

Citation: 151.63 Shipboard control of garbage.

(a) The master, operator, or person who is in charge of a ship shall ensure that all garbage is discharged ashore or in accordance with §§ 151.66-151.73.

(b) The following factors, among others, may be considered by enforcement personnel in evaluating compliance with §§ 151.51 through 151.77:

(1) Records, including receipts, of garbage discharges at port reception facilities.

(2) Records under § 151.55 or log entries of garbage discharges.

(3) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters.

(4) The presence of and adherence to a written shipboard waste management plan.

(5) The absence of plastics in ship stores.

(6) Ongoing educational programs to train shipboard personnel of garbage handling procedures and the need for these.

(7) The presence of shipboard spaces used for collecting, processing, storing and discharging ship-generated garbage.

(c) The master, operator, or person who is in charge of a ship shall ensure that if garbage is transported from a ship by shipboard personnel, it is properly deposited into a port or terminal's reception facility.

Seasonal Item: 4.m

Garbage Pollution Placards posted IAW 33CFR151.59

Background: Pollution placards are used to help educate crew and passengers in what can and cannot be discharged and where discharges are allowed of solid wastes.

What to enter: Enter Satisfactory (SAT) if they are present, are accessible, and prominent.

Citation: 33 CF 151.59(b)

The master or person in charge of each ship under paragraph (a)(1) or (a)(2) of this section shall ensure that one or more placards meeting the requirements of this section are displayed in prominent locations and in sufficient numbers so that they can be read by the crew and passengers. These locations must be readily accessible to the intended reader and may include embarkation points, food service facilities, garbage handling spaces, and common spaces on deck. If the Captain of the Port determines that the number or location of the placards is insufficient to adequately inform crew and passengers, the Captain of the Port may require additional placards and may specify their locations. R 151.59 (b)

Seasonal Item: 4.n

Checked Human Factors (crew familiar with procedures, sanitation maintained, protective equipment available if needed, warning signs posted) (33CFR151.63(b)) Master and crew were familiar with essential shipboard Hazardous Material handling procedures. Personal protective equipment available, functioning and in place (ILO 134). Sanitation, from a health standpoint, being maintained (ILO 147)

This is another check for signs that garbage is not handled correctly. Most ships try to use clear procedures, such as color coding of wastes. In general waste sorters are dedicated crew and should be aware of the waste handling processes.

Check that the waste management plan(s) are available, and that crew are familiar with these plans. Familiarity could include training programs, such as how to identify plastic waste. Check that crew understand procedures, and know where they are and who to contact if they have questions. Check for presence of safety equipment like eye protection, gloves, eyewash stations, etc.

9d

Citation: 33 CFR 151.63 Shipboard control of garbage.

(b) The following factors, among others, may be considered by enforcement personnel in evaluating compliance with §§151.51 through 151.77:

(1) Records, including receipts, of garbage discharges at port reception facilities.
(2) Records under §151.55 or log entries of garbage discharges.
(3) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters.
(4) The presence of and adherence to a written shipboard waste management plan.
(5) The absence of plastics in ship stores.
(6) Ongoing educational programs to train shipboard personnel of garbage handling procedures and the need for these.
(7) The presence of shipboard spaces used for collecting, processing, storing and discharging ship-generated garbage.

Seasonal Item: 4.o

Procedures to minimize amount of potential waste IAW 40 CFR 262.27?

Generators of hazardous waste must certify they either a small generator and will minimize waste generation, or they are a large generator who will have a program in place to reduce the volume. This will commonly be seen as efforts to stop the introduction of hazardous materials or wastes into the garbage waste stream by proper handling and storage. Segregation of wastes will minimize volumes, because mixed waste would need to be handled as hazardous.

What to enter: Enter SAT if the vessel has procedures to minimize hazardous wastes, to segregate hazardous wastes, or has implemented measures to replace hazardous substances with less toxic materials.

Cruise ships generally have effective ways to sort waste streams to separate recycling and any potential hazardous wastes from general garbage.

What to check for: Check that waste is sorted and hazardous waste is kept separate to avoid accidental re-introduction to the garbage or recycling materials.

Citation:40 CFR 265.17 General requirements for ignitable, reactive, or incompatible wastes.

(a) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: Open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. ''No Smoking'' signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) Where specifically required by other sections of this part, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:

(1) Generate extreme heat or pressure, fire or explosion, or violent reaction;
(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;
(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

Section 5: Oil and Fuel

Note: General background and most citations are found in the oil section of the guidebook.

Documentation

For each item enter if records are kept, and if they are list where.

9d

Material Conditions

Seasonal Item: 5.c

Oil pollution Placard is Posted (18 AAC 75.305)?

Background: State regulations require the posting of oil reporting information while in Alaska.

What to enter: SAT if placard is posted and conspicuous.

Citation: 18 AAC 75.305. Posting of information required. (a) The owner or operator shall display a discharge or release notification placard, provided by the department, that includes telephone numbers of department offices in conspicuous locations on a

(2) tugboat, tank vessel, oil barge, tow boat, or other vessel transporting a hazardous substance as cargo in state waters;

Seasonal Item: 5.d

Standard discharge connection / bunker station IAW 33 CFR155.370(c))

Background: Most cruise ships reduce the risk of oil spills by using international connections from ship to shore / bunker ship. Most cruise ships do not bunker in Alaska or on very rare occasions bunker on limited scale (emergency lub oils / hydraulic oils). However, it should be noted that in most cases the heavy fuel, distillated fuels and lube oils, hydraulic oils etc. are bunkered in non Alaskan Ports. On very rare occasions bunkering on limited scale could happen in Alaska. General background included in oil section, under OWS of the guidebook.

What to enter: Check bunkering stations for oil spills and leaks / procedures. Enter SAT if the vessel has a pipeline/way to discharge oil mixtures properly.

Citation: (c) No person may operate a ship under this section unless it is equipped with a pipeline to discharge oily mixtures to a reception facility.

Seasonal Item: 5.e

Fuel / lube sludge fill vent and overflow discharge containment IAW 33 CFR 155.320

Tanks are equipped with vents and containment system / overflow to overflow tanks. Depending on the vessel, the overflows of the larger tanks are overflowing in a monitored (alarm equipped) fuel overflow tank. Some operators call this tank or tank system “fuel protection tank”. There may be more than one of these fuel overflow tanks in the system. Smaller tanks, or tanks that are not connected to the “oil overflow tank system” may direct overflow for the tanks to a dedicated vent pipe. This is in particular the case of smaller tanks (e.g. lube oil tanks. Note: Some vessels have their engine crankcase breather systems terminating in the funnel / top deck area. The breather contain oily (lube oil) air mixture. Around these breather terminals there is a containment area. Check this areas for oil and if the oil (condensate) is removed.

What to enter: Enter SAT if tanks are vented and overflow discharge containment meets federal requirements.

Citation: 155.320 Fuel oil and bulk lubricating oil discharge containment.

(a) A ship of 300 gross tons or more constructed after June 30, 1974 must have a fixed container or enclosed deck area under or around each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe, that:(2) For a ship of 1600 or more gross tons has a capacity of one barrel.

Seasonal Item: 5.f

Containment / drains / scupper closures IAW 33 CFR 155.320

9d

If scuppers and drains are closed during oil transfer operations. This is more related to bunkering; vessels generally do not bunker in AK. However the bunker oil spill prevention plan includes these items. Oil containment- are the plugs inserted / drains open? If procedures are implemented that

when oil transfers operations are conducted, drains and scupper closures are done (same as above). However, it should be noted that in most cases the heavy fuel, distillated fuels and lube oils, hydraulic oils etc. are bunkered in non Alaskan Ports. On very rare occasions bunkering on limited scale could happen in Alaska.

With regard with fuel transfer for example on the vessel itself with dispensers / hoses etc. which may used to "fuel up" the life boats and tenders, this rule applies.

Operations and Procedures

Seasonal Item: 5.g

Oil transfer procedures are posted and available in crew's language? (18 AAC 75.025 / 33 CFR 154.300 a(3))

Background: Oil transfers from or to large cruise ships in Alaska is not common. Fueling of tenders is covered in the daily report Job Aid. 33 CFR 154.300 a(3): Includes translations into a language or languages understood by all designated persons in charge of transfer operations employed by the facility.

What to enter: SAT if yes or N/A.

Citation: 18 AAC 75.025. Transfer requirements.

(a) The owner or operator of an oil terminal facility, railroad, tank vessel, or oil barge shall take all appropriate measures to prevent spills or overfilling during a transfer of oil, including reduced loading rates at the beginning and end of a transfer.
(d) The owner or operator shall ensure that each person involved in a transfer is capable of clearly communicating orders to stop a transfer at any time during the transfer.

Seasonal Item: 5.j

Procedures on oil spills listed in operations manual 33 CFR 154.310a(5(f))

Background: The procedures to be followed if the cargo spills or leaks, or if a person is exposed to the cargo should be in the operations manual.

Oily Water Separator (OWS):Oil Water Separation/Oil systems (33 CFR 155.360-380)

Check all items that apply. List any deviations noted and report these on your daily report as well (under 7.2). Insert an X or check mark on the report for each item checked.

k: Documentation and Administrative

- Bilge system piping matches approved diagram (direct to OWS, holding tank etc.)
- General housekeeping and cleanliness, maintenance looks acceptable
- OWS system if in operation, evaluate operator competency.
- System operating in published ranges.

9d

l: Mechanical- Is the OWS free from:

a) Electrical bypasses, jumpers, extra switches on the OWS unit or meter control panel.
b) Blanked flanges, pipe caps, dead-ended valves, or tees on inlet or outlet piping.
c) Unusual connections to other machinery space overboard piping

d) Recent paint on pipe segments
e) Indications of bolting / unbolting of associated, piping segments valves.

m: Ensure:

- Observe has automatic recirculate (3 way valve) or shuts down when > 15 ppm
- In use valves operate properly
- Samples analyzed by OWS meter is from the OWS effluent (trace sample-line to ensure no clean-water connection)

Section 6: Air Pollution and Opacity (18 AAC 50.40 CFR 1043)

Note: General background and most citations are found in the air section of the guidebook. Self-reporting of known violations is required under 18 AAC 50.240.

Seasonal Item: 6.b

Is a Continuous Opacity Monitoring Systems (COMS) installed and used onboard? (Y/N)
Background: Most cruise ships monitor emissions. This information is helpful when evaluating self-reports. A COMS is not required.
What to enter: If Y then list how and the name of the records. If no, when are the COMS unit operated? (Example: only in port, only in Glacier Bay, etc.)

Where is the COMS unit located in the stack? (Example: above the scrubber unit, below the silencer, etc.)

Seasonal Item: 6.c

Is the COMS functioning properly? (Y/N/NA)

What to enter: If COMS is functioning, if no COPMS enter NA. When was the COMS unit last calibrated?

Seasonal Item: 6.d

Are Exhaust Gas Cleaning technology (Scrubbers) installed onboard? (Y/N)

What to enter: Y if equipment is installed. If yes, what type of scrubber is installed? (Example: Yara, Wartsilla, open loop, closed loop, hybrid, etc.) What type of alkali is used? (Example: Caustic Soda, Magnesium Oxide, etc.)

Seasonal Item: 6.e

Opacity monitoring records kept onboard? (Y/N).

Background: Many cruise ships monitor opacity for self-monitoring and self-reporting of opacity exceedances. When ADEC evaluates these self-reports it is useful to know how the vessel keeps records.

Seasonal Item: 6.f

Self reporting records kept onboard? (Y/N).

9d

Background: Many cruise ships monitor opacity for self-monitoring and self-reporting of opacity exceedances. When ADEC evaluates these self-reports it is useful to know how the vessel keeps records.

Seasonal Item: 6.g

List the self reporting procedures (opacity) (18 AAC 50.240)

What to enter: Briefly explain protocol on reporting to ADEC.

Seasonal Item: 6.h

Does the vessel have an approved alternative equivalent method for complying with fuel requirements in 40 CFR 1043 (40 CFR 1043.55)?

Background: In 2015, many ships had been granted exemptions from the EPA. Vessels should have documentation onboard regarding the exemption. The EPA and USCG may be looking more closely at this this year, so it is critical to monitor these and document which ships have exemptions. Some vessels may have scrubber installations as part of the exemption. See Opacity section for citation.

Check for documentation or information regarding approved equivalent method.

Seasonal Item: 6.i

Valid International Air Pollution Prevention (IAPP) or Engine International Air Pollution Prevention (EIAPP) certificate (>130kW)? (Y/N) 40 CFR 1043.30&40

Background: All foreign flagged vessels over 400 gross tons need to have IAPP certificate that meets the requirements of MARPOL Annex VI regulation 6.

Check that the IAPP certificate is valid. Check the expiration date. Note- not needed for emergency only engines or for engines not installed after 2000 that have not been modified.

Seasonal Item: 6.j

Freon / refrigerants use IAW MARPOL Annex VI Regulation 12 (6-7)

i. Records are kept and updated of refrigerant use? (Y/N)
ii. Check the entries and used consumed volumes of refrigerants

What to enter: How are records kept? Where is this recorded? Are volumes excessive?

Seasonal Item: 6.k

Fuel use records IAW with 40 CFR 1043.70?

See the air section of the guidebook for information from the EPA on the North America ECA. Does the vessel monitor and record the total Sulfur content (% by weight) of each bunkered party of fuel used in Alaska Waters (including the MDO MGO IFO HFO fuel types)? (IMO Annex VI)(40 CFR 1043)Which record or logbook is used? Is low-sulfur used? Records IAW with 40 CFR 1043?

9d

What to enter: How are records kept? Where is this recorded? Is low sulfur fuel used, or do they have a documented exemption? Are records IAW with 40 CFR 1043.

Material Conditions

Seasonal Item: 6.l

Are there dedicated low sulfur combustion sources and high sulfur fuel switch sources?

i. If there are "high sulfur" fuels onboard, are they separated (physically) from the other fuels IAW 40 CFR 1043.60 (Y/N)
ii. Adequate capacity for using required fuels or alternative method in Alaska waters?

Background: Are there are "high sulfur" fuels on board, how are they separated (physically) form the "low Sulfur" fuels. (40 CFR 1043)

What to enter: If there are dedicated sources list how they are dedicated and seperated. Does the vessel had a reasonable amount of fuel that will meet requirements while operating in the ECA.

Seasonal Item: 6.m

Describe the fuel switch a procedure (40 CFR 1043.60)

Background: See the air section of the guidebook for the full citation and background.

What to enter: Explain how fuel switches are accomplished if they are done. Provide information if the vessel has an exemption from the NA ECA in 5.1.h.

Seasonal Item: 6.n

How is it ensured that the low sulfur fuel is used in the areas where it is mandatory for use? (timely switch / fuel flushing)? (40 CFR 1043.60) What procedures are in place to switchover fuels?

What to enter: Explain process for ensuring low sulfur fuel is used where required.

Section 7: Safety, Health, and Sanitation

For background please see the associated sections of the guidebook.

Seasonal Item 7.b

Production of potable water per source (estimate percentages)

What to enter: How much water on average is produced? What is the rough estimate of production by source? This is useful to ADEC when permitting to compare production with treatment capacity to determine adequate capacity for treatment (water balance).

Seasonal Item: 7.d

Bunker water bunkering / loading recordkeeping

What to enter: Name of records of bunkering events.

Seasonal Item: 7.e

Potable water hose storage locker maintained in good repair with doors closed when not in use IAW Vessel Sanitation Program Operations Manual USPHS CDC

Check that storage is a dedicated store for potable water hose only and is clean and identified with a sign: "Potable Water Hose and Fitting Storage". The locker must be closed (door). The locker cannot be used for other storage purposes other than potable water hoses , fittings, sanitizers buckets etc. The locker should be off the deck at least 18 inches and self draining.

Helpful Hints & Suggestions

The locker should be clean, inside and well maintained. Some lockers include potable water hose related tools that are allowed if related to the potable water hoses/ connections.

9d

Seasonal Item: 7.f

Ship rails not less than 42 inches above cabin deck IAW 46 USC 3507 (a (1))?

The Cruise Vessel Security and Safety Act of 2010 applies to large cruise ships (over 250 passengers) and include several items relating to passenger and crew safety. This federal law applies to US and foreign passenger vessels. Note- you do not need to check every railing. This is an opportunity check to do while performing other duties.

What to enter: Enter SAT if satisfactory.

Citation: 46 USC Sec. 3507 Passenger vessel security and safety requirements

(a) Vessel Design, Equipment, Construction, and Retrofitting Requirements. -

(1) In general. - Each vessel to which this subsection applies shall comply with the following design and construction standards:

(A) The vessel shall be equipped with ship rails that are located not less than 42 inches above the cabin deck.

(B) Each passenger stateroom and crew cabin shall be equipped with entry doors that include peep holes or other means of visual identification.

(C) For any vessel the keel of which is laid after the date of enactment of the Cruise Vessel Security and Safety Act of 2010, each passenger stateroom and crew cabin shall be equipped with -

(i) security latches; and

(ii) time-sensitive key technology.

(D) The vessel shall integrate technology that can be used for capturing images of passengers or detecting passengers who have fallen overboard, to the extent that such technology is available.

(E) The vessel shall be equipped with a sufficient number of operable acoustic hailing or other such warning devices to provide communication capability around the entire vessel when operating in high risk areas (as defined by the United States Coast Guard).

46 CFR 72.40-5 Where rails required.

(a) All passenger vessels shall have efficient guard rails or bulwarks on decks and bridges as follows: The height of rails or bulwarks shall be at least 39 1/2 inches from the deck. At the peripheries of the freeboard and superstructure decks and at the peripheries of all decks accessible to passengers, rails shall be in at least three courses including the top. The opening below the lowest course shall not be more than 9 inches. The courses shall not be more than 15 inches apart. In the case of ships with rounded gunwales the guard rail supports shall be placed on the flat of the deck. On other decks and bridges the rails shall be in at least two courses, including the top, approximately evenly spaced.

(b) Where the height of the rails interferes with the business of the vessel, as in the case of a sport fishing vessel, other arrangements may be specifically approved by the Commandant. However, in general, the effective rail or bulwark height above the deck on which the passengers stand shall be at least 30 inches.

(c) On the passenger decks of ferryboats, excursion vessels, and vessels of a similar type, the space below the top of the rail shall be fitted with suitable wire mesh or the equivalent. Depending upon the type of construction, the lower rail courses may not be required.

Seasonal Item: 7.g

Visual identification means in passenger and crew cabin doors IAW 46 USC 3507 a(1)). (Y/N)

Background: The Cruise Vessel Security and Safety Act of 2010 applies to large cruise ships (over 250 passengers) and include several items relating to passenger and crew safety. This new federal law applies to US and foreign passenger vessels.

9d

Cabins door must have some way to identify who is at the door; it could be a peep hole device, a video system, or other device. Although not written into the citation, the idea was that this should be a one-way view out of the cabin, not a way for crew or passengers to look into a cabin. Note- you do not need to check every door. Check when possible that cabin doors to public areas have

some means of viewing outside. It may be that the only check for the functionality of these devices can be made from your cabin. For citation see item above.

What to enter: Enter SAT if satisfactory.

Seasonal Item: 7.h

Facilities are convenient, accessible, cleaned and stocked.

This regulation applies to commercial passenger vessels selling tickets in the United States.

What to enter: Enter SAT if toilet faculties are accessible, sanitary, and cleaned and stocked regularly.

Citation: 21 CFR 1250.90 Toilets and lavatories.

Toilet and lavatory equipment and spaces shall be maintained in a clean condition.

Seasonal Item: 7.i

Toilet rooms are ventilated with self closing door.

Background: See item above, this is a check if facilities are sanitary.

What to enter: Enter SAT if ventilated and self-closing doors.

Seasonal Item: 7.j

There is complete separation of food and food equipment / utensils from living quarters, laundry. Floor, walls, and ceilings are clean (food preparation area).

Background: Basic sanitation check of food preparation. This is a very old inspection item from the 1930's and seems to relate to concern of people living and sleeping in same space where food is prepared. Cruise ships have modern sanitation practices so this has not been an issue.

What to enter: Enter SAT if galley is separated from living quarters and laundry.

Citation: 21 CFR 1250.22 General requirements.

All food and drink served on conveyances shall be clean, wholesome, and free from spoilage, and shall be prepared, stored, handled, and served in accordance with the requirements prescribed in this subpart and § 1240.20 of this chapter

Seasonal Item: 7.k

Phosphate free detergents and non toxic degreasers are used in sculleries and galleys (EPA defines free less than 0.5% phosphates) (EPA VGP 5.1.1.1.3& 5.2.1.1.3)? (Y/N)

This is an EPA VGP item it is placed here with other galley items for convince. The purpose for this requirement is to reduce the input of phosphate into waters. Adding phosphate to an aquatic system can increase biological activities, which could deplete oxygen available in the water. The check for "non-toxic" is to reduce the input of toxic materials into the water. Check that cleaners used have less than 0.5% phosphates listed as an ingredient. This can be on the bottle or MSDS or product sheet. Check that degreasers are non-toxic.

9d

Note- from the list that is referenced for non-toxic in the VGP please check if any of the following applies:

Is it labeled flammable?

Does it contain carbon tetrachloride?

Does it contain 10 percent or more by weight of sodium and/or potassium hydroxide?

Does it contain cyanide salts?

What to enter: Enter SAT if low-phosphate detergents are used.

Citation: EPA VGP 5.1.1.1.3 Sculleries and Galleys

Cruise ship owner/operators must use detergents that are phosphate free. Degreasers must be non-toxic if they will be discharged as part of any waste stream.*(Note- 5.2.1.1.3 is identical but for under 500 passengers)*

"Non-toxic" soaps, cleaners, and detergents means these materials which do not exhibit potentially harmful characteristics as defined by the Consumer Product Safety Commission regulations found at 16 CFR Chapter II, Subchapter C, Part 1500.

"Phosphate Free" soaps, cleaners, and detergents means these materials which contain, by weight, 0.5% or less of phosphates or derivatives of phosphates.

"Toxic and hazardous materials" means, for purposes of the VGP: any substance identified in 40 CFR 116.4; any toxic pollutant identified in 40 CFR 401.15; and any hazardous material as defined in 49 CFR 171.8""

Seasonal Item: 7.l

Safety procedures for hazardous materials handling / chemicals are onboard and available IAW 40 CFR 262.34

Background: See safety section in the guidebook.

What to enter: Enter SAT (satisfactory) if procedures are available.