Section 7: Oil Pollution

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 1990's and early 2000's oil pollution was in the news as several cruise operators paid fines totaling several millions of dollars for discharges of oil or oily waters. More recent cases in the general shipping community involved bypasses ("magic pipes") of oily water separators (OWS) and false reporting of Oil Record Books (ORB).

Any sheens noted in the water need to be immediately reported to the vessel that you are reporting on. The oil reporting from 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 cruise 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.

Figure 1- Oil droplets from azipod seal failure

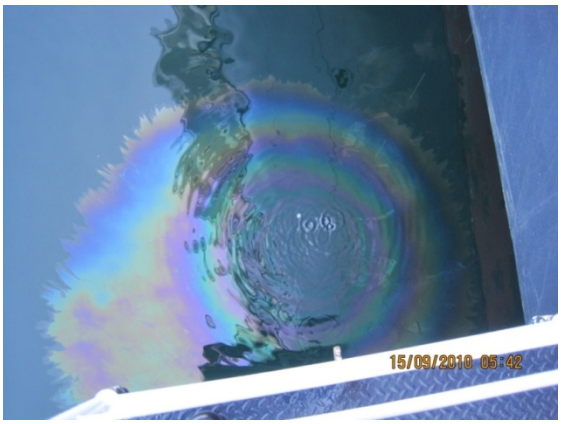


Figure 2- Small spill from ruptured hydraulic line

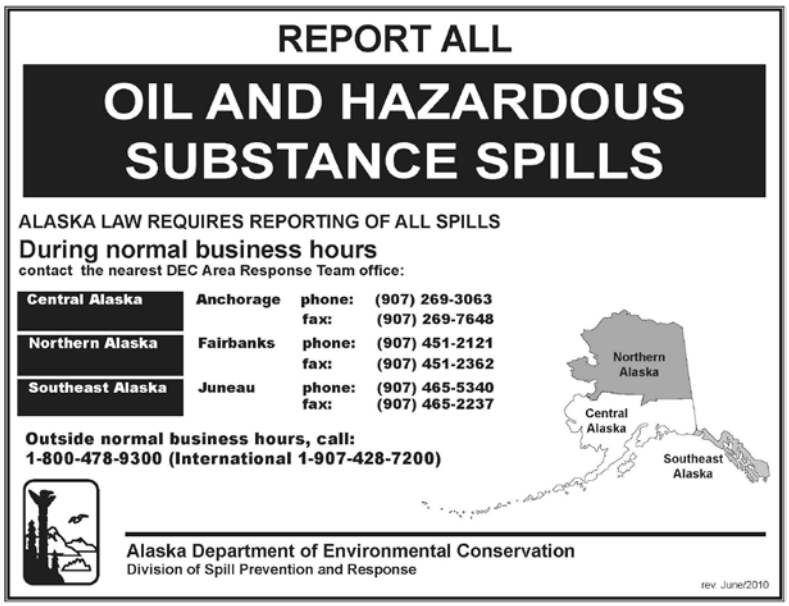
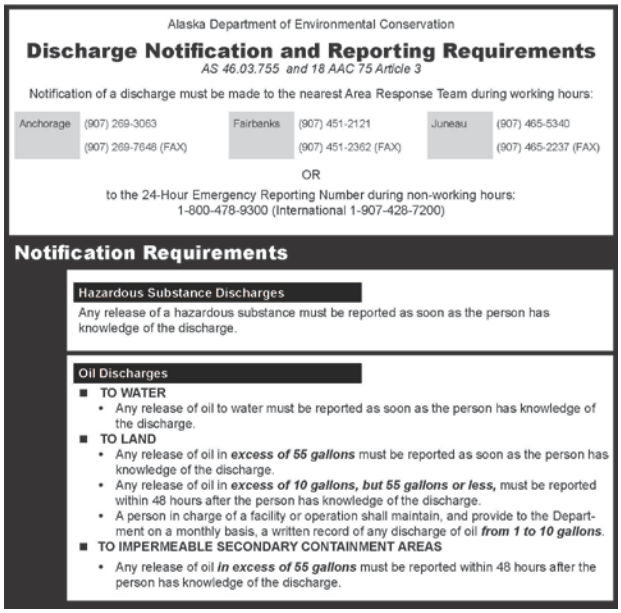


Figure 3- Alaska Oil Pollution Placard



Alaska Department of Environmental Conservation

Discharge Notification and Reporting Requirements

AS 46.03.755 and 18 AAC 75 Article 3

Notification of a discharge must be made to the nearest Area Response Team during working hours:

Anchorage	(907) 269-3063 (907) 269-7648 (FAX)	Fairbanks	(907) 451-2121 (907) 451-2362 (FAX)	Juneau	(907) 465-5340 (907) 465-2237 (FAX)

OR

to the 24-Hour Emergency Reporting Number during non-working hours:
1-800-478-9300 (International 1-907-428-7200)

Notification Requirements

Hazardous Substance Discharges

Any release of a hazardous substance must be reported as soon as the person has knowledge of the discharge.

Oil Discharges

- **TO WATER**
  - Any release of oil to water must be reported as soon as the person has knowledge of the discharge.
- **TO LAND**
  - Any release of oil in ***excess of 55 gallons*** must be reported as soon as the person has knowledge of the discharge.
  - Any release of oil in ***excess of 10 gallons, but 55 gallons or less,*** must be reported within 48 hours after the person has knowledge of the discharge.
  - A person in charge of a facility or operation shall maintain, and provide to the Department on a monthly basis, a written record of any discharge of oil ***from 1 to 10 gallons***.
- **TO IMPERMEABLE SECONDARY CONTAINMENT AREAS**
  - Any release of oil ***in excess of 55 gallons*** must be reported within 48 hours after the person has knowledge of the discharge.

Figure 4: Alaska reporting requirements.

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.

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.

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 first class 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 46.09.900

(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, 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- 33CFR 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.

Oil Record Book: ORB

See included "Example of ORB pages large cruise vessel" "Example of typical Bunker Receipt".

- Vessels offload sludge oil. Most offloads may be in Victoria or Vancouver BC.
- Vessels generally do not use the OWS system to discharge in Alaska waters.
- Oil Record Book (ORB) shall be kept updated on board of the vessel. This record should provide a clear set out of the oil handling, sludge handling and all oil discharges.
- The ORB is in most cases kept in the Engine Control Room (ECR) and should be updated as operations are completed. In the ORB are letter codes and item numbers. These letter code / item numbers "explain" which operations took place. These codes are required by the IMO regulations.
- FORM A (as it is on board) should include or reference "Means for retention and disposal of oil residues (sludge) regulation 17 and bilge water holding tanks". This is very helpful information because it tells the OR what tanks / systems are available.

- Cruise ships generally have relatively complex oily / bilge water process systems. Varying from sludge concentrators (separators) to advanced filtration processes. Take the time to check / trace these operations.(seasonal checklist item)
- Abbreviations & symbols. Some vessels appear to use "cryptic" or unreadable entries in the ORB. Check and ask what the abbreviations (if any used) mean and where the "key" / conventions for these abbreviations are kept.(seasonal checklist item)
- Fuel bunkering actions including the bunkering of diesel oils and other lub oil products in bulk are kept in the ORB. Asked where the bunker receipts are located. (seasonal checklist item)
- Note: 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.

Citations: 33 CFR 151.25 Oil Record Book.

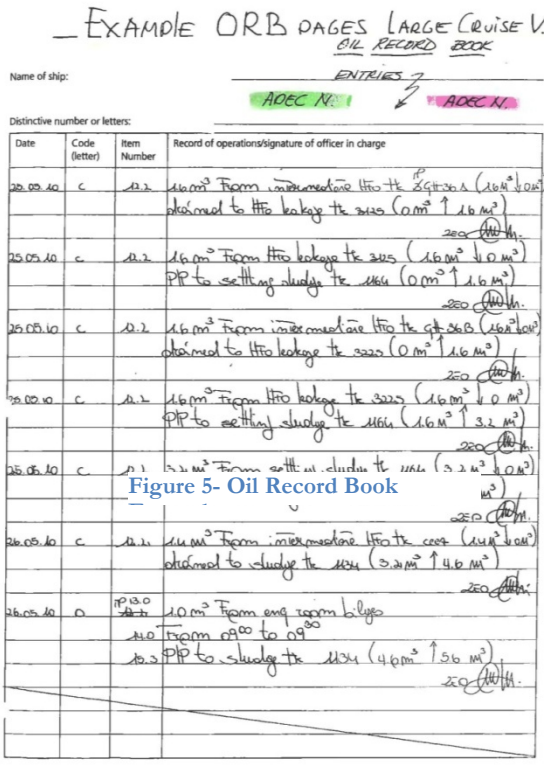
(a) Each oil tanker of 150 gross tons and above, ship of 400 gross tons and above other than an oil tanker, and manned fixed or floating drilling rig or other platform shall maintain an Oil Record Book Part I (Machinery Space Operations). An oil tanker of 150 gross tons and above or a non oil tanker 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.


EXAMPLE ORB PAGES LARGE CRUISE V.
OIL RECORD BOOK
Name of ship: ENTRIES
ADEC N. ADEC N.
Distinctive number or letters:

Date	Code (letter)	Item Number	Record of operations/signature of officer in charge
26.05.10	C	13.2	1.6 m³ From intermediate Hfo tk 2S (1.6 m³ 1.6 m³) obtained to Hfo leakage tk 3225 (0 m³ ↑ 1.6 m³)
25.05.10	C	13.2	1.6 m³ From Hfo leakage tk 3225 (1.6 m³ ↓ 0 m³) PP to settling sludge tk 1164 (0 m³ ↑ 1.6 m³)
25.05.10	C	13.2	1.6 m³ From intermediate Hfo tk 2S 36B (1.6 m³ 1.6 m³) obtained to Hfo leakage tk 3225 (0 m³ ↑ 1.6 m³)
25.05.10	C	13.2	1.6 m³ From Hfo leakage tk 3225 (1.6 m³ ↓ 0 m³) PP to settling sludge tk 1164 (1.6 m³ ↑ 3.2 m³)
25.05.10	C	13.2	3.2 m³ From settling sludge tk 1164 (3.2 m³ ↓ 0 m³)
26.05.10	C	13.2	1.4 m³ From intermediate Hfo tk 2S (1.4 m³ 1.4 m³) obtained to sludge tk 1164 (3.2 m³ ↑ 4.6 m³)
26.05.10	O	15.1.3.0 15.1.4.0 15.2.3	1.0 m³ From eng room bilges from 0800 to 0930 PP to sludge tk 1164 (4.6 m³ ↑ 5.6 m³)

Figure 5- Oil Record Book

(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.

(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.

MARINE FUEL OILS - BUNKER RECEIPT

RECEIVING VESSEL ☒ MV	DOCK / PORT	DATE	
VESSEL IMO NUMBER	ACCOUNT		Barge PB 12 Barge PB 20 Barge PB 32 Barge PB 34
LOCAL AGENTS			
ISO 8217		MDO (DMB)	MGO (DMA)
DENSITY @ 15 C.			0.8813
GROSS MEASURED QUANTITY			82 245
AVERAGE TEMPERATURE		°C	30 °C
TEMP. ADJ. COEFFICIENT			.9882
NET LITRES @ 15 C.			81,275
DELIVERED QUANTITY IN METRIC TONS			70 MT
FUEL PROPERTIES			
VISCOSITY (Cst) @ 50 °C			
SULPHUR (% by wt.)			
B.S. or W (% by vol)			
FLASH POINT (PMCC)		°C	°C
POUR POINT		°C	°C
API GRAVITY @ 60 °F			

BARGE
ARRIVED DATE TIME 12:30
MADE FAST DATE TIME 1245
BEGAN PUMPING DATE TIME 12:55
FINISHED PUMPING DATE TIME 16:00
TOTAL PUMPING TIME HRS. MIN.

REMARKS
We certify that the bunker fuel oil delivered meets the requirements of regulations 14 and 18 of Annex VI of MARPOL 73/78.

SAMPLE SEAL NUMBERS:

☑ YES ☐ NO SHIPS ENGINEER INVITED TO WITNESS SOUNDINGS
☑ YES ☐ NO SHIPS ENGINEER WITNESSED SOUNDINGS
☑ YES ☐ NO REPRESENTATIVE SAMPLE(S) OF THIS DELIVERY PASSED TO SHIPS ENGINEER.

THE QUANTITIES DELIVERED WERE CALCULATED ON THE BASIS OF THE MEASUREMENTS OF THE SUPPLIERS TANKS OR METERS. TAKEN BEFORE AND AFTER THE DELIVERY AND WILL BE CONTROLLING. THEY WILL NOT BE ADJUSTED BASED ON ULLAGES OF THE VESSELS TANK.

I CERTIFY THAT THE QUANTITY AND QUALITY OF THE MARINE FUELS AS SPECIFIED ABOVE HAVE BEEN DELIVERED TO THE VESSEL IN GOOD CONDITION.

BY TITLE

BY

Figure 6-Bunker Receipt Example

Oily Water Separator (OWS) General information:

Large cruise ships have installation(s) to treat oily water, oily bilge water, sludges, and other waters that may contain oil. These vessels have dedicated "oily water" installations onboard. These installations separate the oily substances from the water.

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

The guidebook, daily report and OR job aid list includes check items for this subject. A bullet list is included below with "attention points" that may be helpful to understand the installations better and to assist in the compliance verification.

Please note many of the OWS checks are in the Seasonal Report. This is to allow a more-in depth look at the OWS items that should not change regularly. These seasonal checks need to be re-done if there is major maintenance or piping changes to the oily water separation system. The OWS system

can be a dynamic process, and it is possible that there will be changes during the Alaska cruise season.

Oil Water Separation systems on board Alaska Trade Cruise vessels:

General:

All Alaska trade vessels have Oil Water Separation Systems onboard. The main components are:

- Pre-treatment system: Collection tanks that are laid out for the settling process and/or combination of centrifuges for separation of oily water.

Attention Points:

- Pre-treatment systems are multiple tanks dedicated pre-treatment tanks? How are they arranged? Including the transfer system to OWS system.
- Pre-treatment storage system, check tanks 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 the skimmed oil handled?
- Are portable pumps / hose arrangement 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?

Figure 7: An example of MarinFloc® WBS (White Box System)

- Overflow provisions of the pre-treatment (settling tanks, etc) where are the overflows going to?
- Are chemicals additives used in the pre–treatment process?
- Medium transfer records (volume change data time) of 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); close (recirculation) and flow and other controls monitoring
    - The WBS unit is in "locked cage" with key / tagging locking regime.
    - Calibration records

Note that on all vessels the monitoring system on the OWS units is sealed and protected. On some vessels there are video cameras installed to monitor anybody that is working close to the White Box system. The layout of the WBS with the recirculation valve and controls of the OCM system are on most vessels protected by a cage.

- Inside the WBS system you see the data recorder, this recorder has local read –out and data storage. On most vessels is the WBS data recorder interfaced with the ABB / Siemens / Valmarine automation systems and data recorders / data storage is made as well.

OWS / OCM system:

- Familiarize yourself with the system components.

- From which tanks is the OWS system processing?
- OCM system is locked with dedicated responsible person?
- Is the OCM system automated?
- The OCM system included 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.

Figure 8: Example Large Vessel OWS / White Box System

- To discharge, oil ppm level are recorded this can be done:
    - Check "Writer card"/ "strip charts" From previous feedback it appears that not many large vessels use the "writer / strip card option".
    - Electronically stored in the White box / relayed to the engine control room repeater system.
    - OCM data Read outs? 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; however this requires opening the "white box cage". In order to do so the responsible officer and C/E have to 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.
    - Is memory storage history of "open box" close box available? Ask for demonstration.
    - Are cards hard discs / repeater print outs made of the OCM system?
- Some vessel had a defective (under repair) closed "sealed" OWS unit. Check the paperwork and the reporting to the USCG (when in Alaska waters).
- General condition of the three way valve, 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.
- In 2012 it was found that some seals made of tape came loose. Please bring this to the vessels attention and report.

OWS Citations:

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.

Figure 9: Example of pre-treatment system component "Sludge" concentration trunk tank

Figure 10: OWS separator (dynamic)

Figure 11: OWS separator / sludge treatment (dynamic) "concentrator"

Figure 12: OWS Piping Example

Figure 13: Example OWS

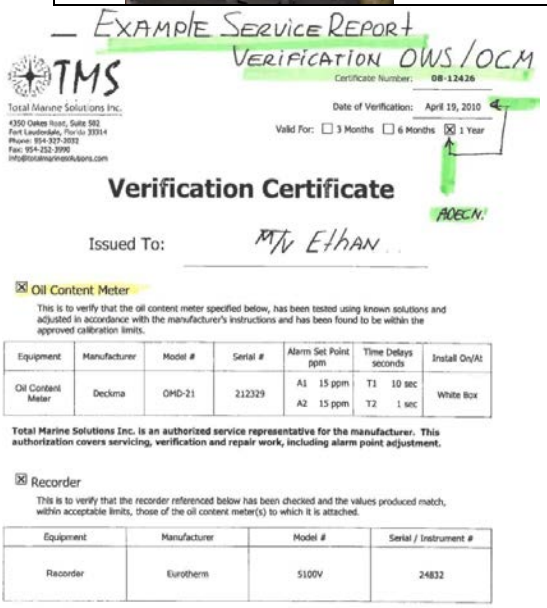


Figure 15: Verification Examples

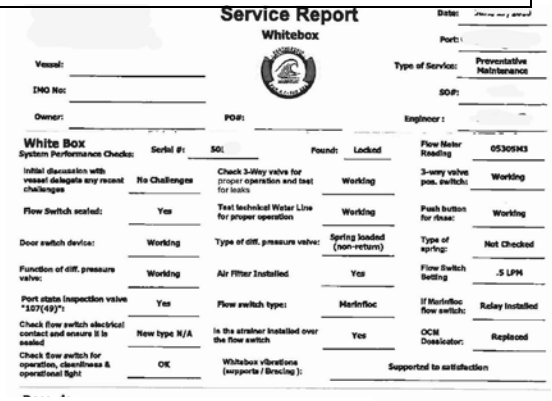
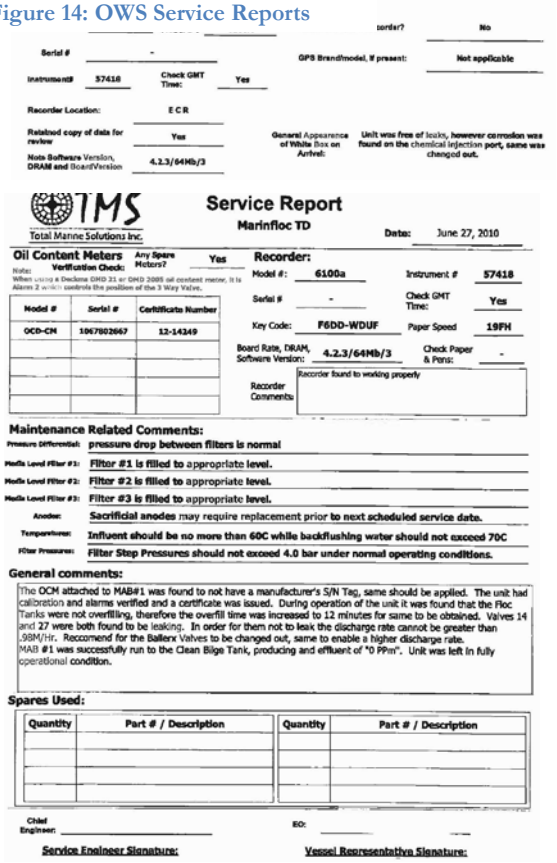


Figure 14: OWS Service Reports



Subsection 1: Oil Pollution; Fuel, Daily (40 CFR 110.3 and AS 46.03.740)

Note: Citations can be found under the general citations in this section, unless specific to that item then they are listed with the item.

►Tip: in 2015, Ocean Rangers reported "soot" floating "soot balls" and "oily specks" from exhaust gas scrubber discharges. The exhaust scrubber has relatively a large discharge volume. Systems upsets, transient loads, not well functioning scrubber components may cause the discharge of soot and oil etc in the scrubber effluent. Often these discharges of oil soot are not continuous and show up on the surface of the discharge area.
►Tip: For vessels equipped with "open loop" scrubbers, there may be "process chemicals " used to support scrubber oil / soot / particle separation process.
►Tip: Some vessel record their low sulfur fuel bunkers in separate recording system. Not all vessel record this in the ORB.

Job Aid Item: 7.1.a

Text: 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, or when outside. Oil sheens, oil fill ups and leakage of oil in the vessel self (interior) and at the exterior. Vessel use of bow thrusters, and maneuvering appear to be operational conditions where oil sheens from leaky seals are manifested first. Check for the exterior parts of oil systems (tanks, tubes) that no oil is lost or leaking. 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" such as Vickers B series, CITGO No sheen etc.) will manifest visible sheens. However the oil loss from leaking seals can be very small and hard to detect. Operational condition 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 require 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 EAL's could not be used for technical reasons etc. documentation is on board that include why the EAL could not applied.

Job Aid Item: 7.1.b

Text: 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 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.

Job Aid Item: 7.1.c

Text: 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 info.

What to check: Check that the ORB includes internal transfers.

- Do the entries add up?
- Off loads of oil / used lubrication oil must also 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 are volumes calculated and determined. Are procedures in place?

Job Aid Item: 7.1.d

Text: 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

Figure 16: oil to sea seal/gravity tanks

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 dropped 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 or 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 or are already indictors of "sea water" side shaft seal troubles. Some operators separate and recycle the oil, adding new oil. 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 operation 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 fill 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?

►Tip: 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?

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

Note: Citations can be found under the general citations in this section, unless specific to that item then they are listed with the item.

Job Aid Item: 7.2.a

Text: 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. There are more in-depth checks on this in the seasonal report. This item is meant as an update to the seasonal in-depth checks, to see if any changes have been made since then. The seasonal report could be a useful reference for this.

What to check: OWS status in general. Scraped nuts bolts head, missing washers and fresh fixed piping are suspect. Also blind flanges, connectors and hoses are possible indicators of non-original (as built) OWS discharge piping lay out. Compare the system with as built drawing and trace the piping. Ask questions. 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.

Job Aid Item: 7.2.b

Text: 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. In order 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. Familiarize the entire system and how the system is operated. Checks for OWS piping, storage tanks and how the "influent" is processed and where it originated from.

Job Aid Item: 7.2.c

Text: 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 with the set parameters (calibrations).

What to check: If multiple oil content meters 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?

Job Aid Item: 7.2.d

Text: 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.

Job Aid Item: 7.2.e

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

Background: Oil dispersants could remove a sheen, when oil is still being discharged to waters. Some emulsifiers could be used to cause oil or grease to sink instead of float, which reduces the likelihood of an oil loss being detected. It also creates 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.
Addition of dispersants or emulsifiers to oil to be discharged that would circumvent the provisions of this part is prohibited.

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 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 specifications 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: 7.2.f

Text: 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 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.

Job Aid Item: 7.2.g

Text: 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? Are safeties 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: See 7.2.f.

Job Aid Item: 7.2.h

Text: 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 check system parameters controls. Where is the back flush routed too? Are the operational mode displayed? Is the purge cycle working?
Citations: See general OWS information.

Job Aid Item: 7.2.i

Text: 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.

Job Aid Item: 7.2.j

Text: 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 poly water.

What to check: Check for out of place hoses, portable pumps, open man holes, 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: See general oil background section.

Subsection 3: Bilges (33CFR155.770)

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 has been identified by Ocean Rangers as a possible safety hazard when fumes or vapors accumulate.
General Citation: 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: 7.3.a

Text: Machinery bilge spaces free from excess contamination of oil or hazardous materials IAW 33CFR155.770

What to check: Check machinery bilge spaces for contamination with oil or hazardous materials. Check for sheens, sludge, odd odors, or unusual stains.

Job Aid Item: 7.3.b

Text: Bulkheads, piping, structures, within rose boxes free from excess contamination/oil residues IAW 33CFR155.770

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

Job Aid Item: 7.3.c

Text: 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.

Job Aid Item: 7.3.d

Text: Bilges are free from direct discharge into the bilges of oil or hazardous materials IAW 33 CFR155.770

What to check: Check on oil usage, quantities, where lost, consumed or in bilges. Check for direct discharge of oil or wastes into bilges. Check oil record book and other sources for information for amounts of oil lost into bilge and recovered sludge/oily water.

Job Aid Item: 7.3.e

Text: 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 Dispersants.

Addition of dispersants or emulsifiers to oil to be discharged that would circumvent the provisions of this part is prohibited.

EPA VGP 2.2.2 *Bilgewater/Oily Water Separator Effluent*

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.

• 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: 7.3.f

Text: 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 the discharge operations and operating of these valves will possible trigger overboard discharge or not.

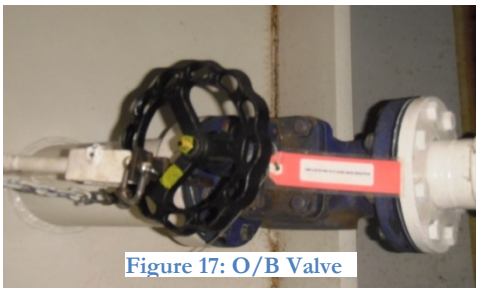


Figure 17: O/B Valve

What to check: Check for unlocked / uncontrolled overboard valves on bilge, bilge ballast salt water service. Identification of the valve (tag) should be of lasting character. 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 looking performed and tracked?

Citations: See general section.

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

Job Aid Item: 7.4.a

Text: 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.

What to check: Check the oil record book and manifests for accepted sludge materials onshore. Check the sludge handling / record keeping for sludge / spent lube oils send shore based facilities (off load). Sludge handling accounted for the volumes reasonably produced. Sludge produced should be accounted for by burning, in tanks, or burned. No offloads of sludge could indicate an issue. Check that estimated quantities of sludge produced- normal or excessive (fuel sludge production can exceed 2% total fuel use).

►Tip: 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 that vessels operating on Residual fuels.

Citations: See general section. Oil record book. Avoiding oil in water.

Job Aid Item: 7.4.b

Text**:** 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 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 are not allowing to burn sludge in the engine.

What to check: Is the incinerator suitable to combust sludge? If so 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: See general section- oil record book.

Job Aid Item: 7.4.c

Text: 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 equipment that the fuel /sludge blends (mix) is used.

Citation- see air section.

Subsection 5: Lifeboats; Security Vessels; Tender Boats; Deck (40 CFR 110.3)

Note: Citations found in general citations in this section unless otherwise noted.

Job Aid Item: 7.5.a

Text: Vessel(s) mechanical and bilge systems are free of oil, 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: water Check lifeboat/tender vessel engineering systems are oil or grease leak & drip free. Check that bilges are clean

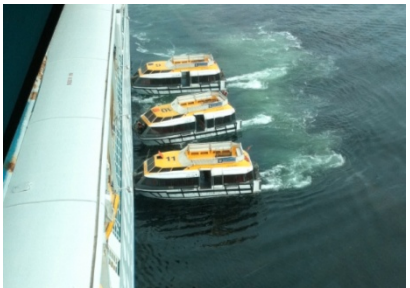


Figure 18: Tenders in action

of excess oil. Visually check when available the bilges of vessels operated by the cruise ship. No direct discharge from bilges to overboard if oil present. Visually 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. Winch equipment containment should be oil free. Some vessels have "outrigger davits" they are hydraulically operated. Check hose connector oil sweating / leaks and containment areas. Also steel rope should be checked for grease gobs and for overfilled rope lubricators.

Job Aid Item: 7.5.b

Text: 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.

►Tip: 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.

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.

Citation: EPA VGP 2.2.1 Deck Wash down and Runoff and Above Water Line Hull Cleaning (first part)

> 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.

Job Aid Item: 7.5.c

Text: 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. How are tank volumes calculated / measured? Are systems and procedures in place? Are tanks equipped with fuel overflow (captive) systems? Are tank level monitoring alarms in place and operable? Does the overflow tank have level alarms that are operable? Are overflow tank alarms recorded? Is a communication system from deck (bunker station) to other parts of the system (manifold) in place? Are general operation procedures in place?

►Tip: 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.

Subsection 6: Oil to Sea Interface (40 CFR 110.3 & AS 46.03.740)

Job Aid Item: 7.6.a

Text: Oil lubricated stern tubes, bow and stern thruster seals, fin-stabilizers, steering gear, Azipods etc. IAW VGP 2.2.9.

Figure 19: Barrel of lubrication oil

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 out at 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. When the oil is incinerated or off loaded this is also recorded in the ORB.

Citation: EPA VGP 2.2.9 See Job Aid Item 7.2.e

Job Aid Item: 7.6.b

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


Figure 20: Unknown Hose

What to check: Check lube oil consumption oil records and type of oil used. In order to detect "consumption trends" check the records back to early in the season. Sudden increase of lube oil in the stern tube may indicate an oil leak. Some vessels keep also records of the oil drum stores, such records are extremely helpful to find out 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. Another point of attention is the "small engine lube oil changes". Emergency diesels, diesels on the tenders and lifeboats. Monitor how these oil volumes is counted for, recorded, and the handling of the spent oil.

Citation: See general section under Oil Record Book.

Job Aid Item: 7.6.c

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

Figures 21 and 22: Temporary Oil filtration or pumping system

Background: Non "first supplied" piping conveyance systems (as built) are suspicious. However, a change of operations may necessitate the use of hosed and temporarily made piping systems. If such system is found document and ask. Portable pumps connected to nipples / re-routing liquids to other tanks should be investigated and found out why. In any case document (pictures) and described the system. In a particular case 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. If in

these cases temporarily or homemade permanent fill options are made a further check is warranted.

What to check: 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. Not properly bracketed piping sections. Drums empty, or filled? How are full drums removed after fill up? What medium is transferred? From which system to which other system? Who operates the systems and when is the system operated? Are records kept? If so, what is included in the records? How are transferred volumes estimated?

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

PRODUCT SPILLED

Name 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.).