Ocean Ranger Guidebook
Revision 0
2011 Season

Last Edit 3-30-11 (Contact Information and Maps Removed by DEC)

Document Revision Table
Ocean Ranger Guidebook

Status Revision	Item	By	Date
Rev. 0	Initial Document	K. Kriens – Crowley	3-30-11

Table of Contents

Tab 0 – General Information
Ocean Ranger Conduct…… 1
Contact List…… 2
References Located on the Ocean Ranger Acer…… 3
Ocean Ranger General Information…… 4
Background……..... 5
Alaska Statute Sec. 46.03.476……... 5
Ocean Ranger Access While On Board…… 6
Ocean Ranger Conduct While On Board…… 7
Ocean Ranger General Rules…… 9
Ocean Ranger Communications…… 10
Cruise Culture / Behavior…… 11
Ocean Ranger Health and Safety…… 12
Drills and Emergencies…… 12
Master's Authority…… 12
Personal Equipment and Gear……... 12
Duffle Bag Gear…… 13
Vessel Machinery Space Entry…… 13
Medical Screening and Condition Reporting…… 13
Preparation for the Ship Ride……... 14
Sign on the Ship…… 15
Ocean Ranger Scheduling…… 16
Uniform and Identifying Insignia…… 17
Shipboard Security…… 17
Initial Meeting and Tour with Ship's Staff…… 18
Explaining the Program and the Role of the Ocean Ranger…… 19
Ship Specific Jump Drive and Ship Specific Notebook…… 20
Upon Disembarkation…… 21
Useful Websites…… 22
Additional Information…… 24

Tab A - Crowley Information
Letter of Introduction – Crowley…… 28
Ocean Ranger Contact List…… 29
Relief Procedures…….. 31
USCG / Crowley Sea Service Letter…….. 32
Ocean Ranger Document Management Plan…… 35
Ocean Ranger Communications with ADEC…… 36
Ocean Ranger Reimbursement Guidelines…… 37
Expense Form Example…… 40
Per Diem Chart……... 41
Time Sheet Example…… 42
Camera Suggestions ……... 43
Ocean Ranger Summary Report from 2009…… 44
Port Codes…… 51
Cruise Ship Sampling Checklist…… 52
Report Naming Instruction…… 54
Daily Report…… Supplemental Handout

Incident/Question Report…… Supplemental Handout
Oil Spill Report……..... Supplemental Handout
Departure Report…… Supplemental Handout
Improvement Report…… Supplemental Handout
Turnover Report…… Supplemental Handout
Additional Observations Report…… Supplemental Handout
Seasonal Report…… Supplemental Handout

Tab B– Customs Information

Ocean Rangers and Customs……..... 56
Remember about Customs…… 57
Customs Alaska Port Information …… 58
US Customs Declaration Form 6059B…… 61
6059B Form, Instructions…… 62
Ocean Ranger Customs Ruling March 2009 …… 64

Tab C - Large Cruise Ship Laws and Regulations

Commercial Passenger Vessel Environmental Compliance Program…… 67
Alaska Statutes AS 46.03.460-490
Links to Other Laws…… 79
Federal Regulations 33 CFR 159.301 to 321…….. 80
Annual Registration Letter …… 86
Useful Websites…….. 89
Authorization to Discharge Example …….. ……. 90
State Certificate for Proof of Financial Responsibility Example…… 91
International Air Pollution Prevention Certificate Example ……. 92
Federal Certificate of Financial Responsibility Example ……. 93
Certificate of TBT – Free Antifouling Example ……... 94
Vessel Specific Sampling Plan 2010 Form…… 95
Vessel Wastewater Holding Management Plan 2009 Example…… 100
NOAA Harbor Seals…… 106
Registration Signature Page Example …… 108
Certificate of Disposal Example …… 109
Waste Disposal Document Example …… 110
Tracy Arm –Fords Terror Wilderness Agreement…… 111
Air Emissions…… 115
"What are Visible Emissions?"…… 115
Opacity Information…… 123
Vessel Opacity Monitoring Graph Example…… 124
Opacity Reading Form Example…… 125
Solid Waste…… 126
State of Alaska Waste Management Laws / Regulations…… 126
Waste Management Practices / Regulations…… 127
EPA Hazardous Waste Handling Requirements…… 128
Cruise Industry Waste Management Practices…… 130
Protected Waters of Southeast Alaska…… 146

Tab D - General Permit Information

ADEC General Permit for Large Cruise Ships and Related Documents…….. . 147
EPA Federal Vessel General Permit (Summary)……..... 205
EPA Vessel GP and OR Daily Report…… 207
Port of Skagway Map…….……. 210
Map of "Alexander Archipelago" Discharge Boundaries…….. 211
Locations to Compare Against Discharge Log Entries …… 212
US Maritime Zones…….. 213
Wastewater Discharge Logs/Instructions/Examples…….…… 214
ADEC Emergency Sampling Kit Instructions…… 217
NPDES Alaska Letter…… 220

Tab E – Oil, Potable Water, and Sanitation

SPAR ADEC Ocean Ranger Spill Pamphlet……..... 222
SPAR ADEC Ocean Ranger Spill Report Form ……. 238
Spill Reporting Letter II Sent August 2008…….. . 239
Alaska Statutes on Oil Pollution……..... 241
National Response Center Report Form……..... 242
33CFR156 Oil Transfer Facilities…….. 246
Certificate Examples……..... 247
Potable Water Guidelines…….. 255
Vessel Sanitation …… 256
Alaska Safe Food Worker Handbook ……..... 259
CDC Influenza Guidance ……..... 295
CDC Norwalk-Like Viruses ……..……..... 300
CDC Noroviruses and Food Handlers…….. ……..…. 308
CDC SARS Guidelines Recommendations……..… 311
CDC Outbreak Investigation ……..... 313

Tab F - Miscellaneous

Wastewater Schematics/Technology ……. 317
ISM Code Information …….. 333
Engineering Conversion Tables……..... 340
Term Abbreviations and Acronyms……... …….. 343
General SE Port Maps……. 350

Ocean Ranger Conduct

Ocean Rangers are required to maintain a professional business demeanor at all times. Professionalism must be demonstrated in verbal and non-verbal actions from the first day of duty to the last day of duty.

All Ocean Ranger and Crowley Marine Services Inc. policies and procedures must be adhered to by the Ocean Rangers.

References Located on Ocean Ranger Acer

Laws and Regulations

Wastewater Requirements & Since Panel 11/16/2009
House bill 134
Ballot Measure 2 2006
Ballot Measure 2
Wastewater Statutes 11/18/2009
AS 46.03.460 – 490
Air Regulations 2006
18 AAC 50.070, 235, 240
Certain Alaskan Cruise Ship Operations 2000
Article XIV (Federal)
33 CFR 159

ADEC Cruise Ship Reports

2011 Large Ship Wastewater Treatment and Discharge Status
2010 Opacity Monitoring of Commercial Passenger Vessels
2009 Opacity Monitoring of Commercial Passenger Vessels
2010 Special Reports

Other References

Alaska General Permit
EPA General Vessel Permit (GVP)
Ocean Ranger Guidebook
Agent Contact List
Oil Spill Pamphlet
Opacity Information
QAPP- Sampling QAQC (NWCA Sampling Book)
Maps
Computer, Camera and Phone Instructions
Daily Report
Oil Spill and Hazardous Waste Report
Deployment Schedule
In Port Schedule
Ship Join/Depart/In Port Schedule
Ranger Individual Schedule
Custom Events

Ocean Ranger General Information:

This 2011 Ocean Ranger Guidebook is a training and reference tool for the Alaska Department of Environmental Conservation (ADEC) Ocean Ranger Program. Ocean Rangers are to adhere to all requirements set forth in the document at all times. The Guidebook may be updated throughout the season as needed. Any new revisions will be sent electronically to the Ocean Rangers. The Ocean Ranger is required to work from the most recent version of the Guidebook.

Ocean Ranger General Information

Background

In 2006, Alaska voters passed Ballot Measure 2 creating an Ocean Ranger program in the Alaska Department of Environmental Conservation (ADEC) which became law on December 17, 2006. Alaska is the first and only state to require U.S. Coast Guard licensed marine engineers on board vessels to act as independent observers monitoring State environmental and marine discharge requirements. Ocean Rangers also check that passengers and crew are protected from improper sanitation, health, and safety practices. This program is managed by the Commercial Passenger Vessel Environmental Compliance Program, which was created in 2001 to monitor cruise ships in Alaskan waters. Crowley Marine Services is the contractor working for ADEC and managing the ocean ranger program.

Alaska Statute Sec. 46.03.476

From the 2006 Cruise Ship Ballot Measure

Sec. 46.03.476. Ocean Rangers.

(a) An owner or operator of a large commercial passenger vessel entering the marine waters of the state is required to have an ocean ranger hired or retained by the department on board the vessel to act as an independent observer for the purpose of monitoring state and federal requirements pertaining to marine discharge and pollution requirements and to insure that passengers, crew, and residents at ports are protected from improper sanitation, health, and safety practices.

(b) The ocean ranger shall monitor, observe, and record data and information related to the engineering, sanitation, and health related operations of the vessel, including but not limited to registration, reporting, record-keeping, and discharge functions required by state and federal law.

(c) Any information recorded or gathered by the ocean ranger shall be promptly conveyed to the Alaska Department of Environmental Conservation and the United States Coast Guard on a form or in a manner approved by the commissioner of environmental conservation. The commissioner may share information gathered with other state and federal agencies.

(d) In this section, "ocean ranger" means

(1) a marine engineer licensed by the United States Coast Guard; or

(2) a person who holds a degree in marine safety and environmental protection, or an equivalent course of study approved by the department, from an accredited maritime educational institution.

Ocean Ranger Access While On Board

The Ocean Ranger's primary liaison while on a board is the ship's environmental officer. However, the environmental officer cannot be a constant escort. It is understood that the Ocean Ranger cannot have unfettered and unescorted access to the areas of the ship that are designated as 'restricted' under the IMO International Ship and Port Security Code (ISPS). To do their job, the Ocean Ranger will need unescorted access between their stateroom and the engine control room where they can be 'rung-in' by the engineer on watch. When entering non-passenger areas, an escort by a designated vessel representative may be provided. Visits should be planned in advance with the Environmental Officer and would usually be scheduled during the normal workday.

The Ocean Ranger is an observer in Alaska waters only. They are not permitted to work with tools, actuate or operate controls that are part of vessel crew duties, open/close/mark valves or in any way participate in the operation of the ship. Ocean Rangers are employees of Crowley and work under a contract to the State of Alaska.

Ocean Rangers are not considered pilots for US Border and Customs purposes and must follow all Customs requirements.

The Ocean Rangers work routine is up to 12 hours per day while in Alaska Waters. When outside of Alaska waters, the work routine is to complete any outstanding paperwork / reports and to study ships system manuals – they will normally be available upon request.

The Ocean Ranger must submit a daily report for each day that the ship spends at least three hours time in Alaska waters. This requirement may necessitate the ocean ranger starting work late at night or early morning to complete a daily report when a vessel first enters Alaska waters.

Each cruise line has internal guidelines on Ocean Ranger access while in Alaska Waters. Crowley and ADEC have not reviewed any of the cruise line internal guidelines. The ADEC and Crowley policy is: **Ocean Rangers must be given sufficient access to make observations in the non-passenger areas in order to accurately complete the portions of the checklist that are due.**

Normally:

- Ocean Rangers have access to the engine control room while in Alaska waters. There shall be no interference with the watch standers.
- Ocean Rangers have access to the bridge, only by prior arrangement with designated officer while in Alaska waters to review log books and other pertinent records. Rangers are asked to keep visits to a minimum.
- Ocean Rangers have access to the galley only by prior arrangement with the EO, or designated officer while in Alaska waters.
- Any orientation meetings will typically occur when the vessel enters Alaska waters.

Media relations – It is Crowley's policy that all requests for information be referred to the corporate public relations department in Jacksonville. Interviews by media will be scheduled with Crowley's public relations department. Applicability of questions and availability of Rangers for comments will be coordinated between Crowley and ADEC.

Cruise lines normally have computer assisted training modules including advanced training for wastewater treatment, ballast water management, general environmental compliance, and safety/health. The Ocean Rangers are encouraged to take these online courses. Access to this self training can be arranged with permission from the cruise ship by the onboard environmental officer.

Ocean Ranger Conduct While On Board

The below rules and policies incorporate requirements of the Ocean Ranger program in addition to standard shipboard policies that apply to contractors and vendors retained by cruise lines.

Tickets purchased by the Ocean Ranger program cover berthing, standard food costs, cabin service charges, and the minimum gratuity charges that all passengers must pay. Any other charges incurred will be the responsibility of the Ocean Ranger. Rangers are personally responsible for room condition as if they were on board as a passenger. Rangers will not have other passengers or crew in their room at any time other than for normal hotel functions. Crowley has receipts for all the prepaid gratuity charges and copies can be requested by the ocean ranger if the ship's records are not up to date with this information.

Ocean Rangers have access to all areas of the ship open to passengers with the exception of areas of gambling, duty free stores, and bars.

Ocean Rangers will conduct themselves responsibly and be of good moral character. This means no acts of discrimination or harassment based on race, sex, religion, age, national origin, creed, color, marital status, or sexual orientation.

While onboard ship, Ocean Rangers cannot utilize/consume alcohol, drugs etc. Gambling is not permitted, including card playing with other passengers and crew members.

Ocean Rangers will <u>not</u> request or accept favors from any person(s) other than Crowley or ADEC. No favors will be requested or accepted from cruise line employees, cruise line agents or others associated with the cruise line industry. This includes, but not limited to:

Requesting the free use of a copy machine.
Requesting the printing of boarding passes.

Ocean Rangers are **not** allowed to purchase, mail, or carry off duty free items from the cruise ships. Ocean Rangers are not permitted to enter duty free stores on cruise ships.
Good grooming and neat appearances are expected on cruise ships. The Ocean Rangers should attempt to match the standards set by the ships officers. The Ocean Ranger shall wear a clean and neat uniform while on duty.

Ship rules allow eating with the crew or officers in the crew or officer mess when you are with other ships crew. When unaccompanied, the Ocean Ranger does not have access to crew areas. There are informal areas for eating in the passenger areas such as the Lido cafeteria.

When not working, the Ocean Ranger must be properly dressed as specified in the passenger daily program.

Some cruise ships have laundry facilities for the passengers. Other ships have only a higher cost laundry service. Ocean Rangers do not have access to crew laundry facilities. No laundry arrangement, other than what is available to other passengers at the same costs that passengers will pay, is to be utilized by Ocean Rangers. Crowley will provide a daily laundry allowance to compensate for these costs.

Ocean Ranger General Rules

- Do not display or communicate an unprofessional manner at anytime during your employment – on or off duty.
- Do not accept "favors" from cruise lines, industry and others.
- Do not enter duty free ship stores. Do not purchase duty free items on ship. Do not mail or carry duty free items from a ship.
- Do not buy or purchase alcohol, tobacco or other items that must be declared for payment of duties upon departure.
- Do not linger in public areas in work clothes when not working.
- Do not bring onboard or use non-prescription narcotics or any illegal drugs.
- Do not bring on board or consume alcohol.
- Do not enter any staterooms (other than the one assigned), occupied or unoccupied, unless accompanied by ship security.
- Do not bring any fire arms or other weapons onboard the vessel.
- Do not create an unseaworthy condition while onboard.
- Do not harm, damage, deface, or destroy any vessel equipment. Damaged equipment will be repaired or replaced at the Ocean Ranger's expense.
- Do not discuss ship's operational issues with passengers.
- Do not gamble in the casinos or engage in gambling with crew members / passengers.
- Do not engage in trading or selling goods with passengers and crew members.
- Do not eat in the formal dining halls while on duty. (Meals take considerable time, are extra cost to the Ocean Ranger, and take time away from the working schedule of the Ocean Ranger.)
- Each Ocean Ranger is responsible to complete assigned duties in a professional business manner and submit high quality reports and technical evaluations.
- Each Ocean Ranger is responsible to follow the most current deployment schedule including in port inspections.
- Each Ocean Ranger is responsible to place their assigned in port inspections into their email calendar and to set an alarm to notify when an in port inspections is due.
- Each Ocean Ranger is responsible to do the last quality check to verify: they have reservations for berths on their assigned voyages when matched with the latest deployment schedule; the in port events tab matches the latest deployment schedule; the Customs events matches the latest deployment schedule; the ranger travel event tab matches the latest deployment schedule; and the schedule by ship event tab matches the latest deployment schedule. The Ocean Ranger is the final check point before an in port is missed; Customs does not know you are joining or departing; the ship does not know you are joining or departing; you do not have a plane reservation to get to the next port on time or a hotel reservation when you get there. With the number of data points and variables in the deploying of Ocean Rangers, a 99.999% accuracy will still create missed event notifications. Your quality double check is important and brings the goal of 100% accuracy closer.
- Each Ocean Ranger is responsible to communicate with Customs and Security personnel in a professional manner.
- Each Ocean Ranger is responsible to complete the Customs forms accurately.
- Ocean Rangers are not allowed to use pilot boats.
- Ocean Rangers shall carry with them two copies of the US Customs letter explaining that Ocean Rangers are not considered "passengers" when conducting Ocean Ranger duties within the State of Alaska on foreign flag ships. If US Customs retains one copy

of the letter, the Ocean Ranger is to make another copy before their next Customs event.

- Remind the ship's environmental officer or other designated person at least 24 hours before your disembarkation that will result in a US Customs event.
- The policy on an ocean ranger wife/husband or "significant other" traveling on the cruise ships.
    - Wife/husband or significant other can travel on the same cruise as a Ocean Ranger
    - Wife/husband or significant other must book their own room.
    - Wife/husband or significant other cannot stay in a room that is paid for by the State of Alaska.
    - An ocean ranger can stay in room paid for by wife/husband or significant other.
    - No arrangements will be made by Crowley Travel/State of Alaska

Ocean Ranger Communications

- The form of ocean ranger communications is the use of iPhone for voice or emails.
- Required Communications
    - The Ocean Ranger shall email the manager when you are not able to board and/or depart assigned vessels on time. It is assumed you are onboard your assigned schedule unless the manager is notified differently.
    - The Ocean Ranger shall email the manager when you are not able to complete a travel assignment when flying/traveling between ports or first duty location of the season and leaving the last duty location of the season. It is assumed you are in the proper port to work your assigned duties timely.
    - The Ocean Ranger shall email the manager if sick or injured.
    - The Ocean Ranger shall email manager if unable to complete any assigned task.
    - The Ocean Ranger shall email the manager a confirmation of receipt for a new version of checklist, guidebook, or policies and follow these updated documents immediately.
    - The Ocean Ranger shall submit daily reports the next day unless a reasonably priced communications opportunity is not available. This should be rarely an issue. You should have no more than two reports that need to be sent. You will never be more than two days late – example Monday report has to be sent by Wednesday. Sending in reports on a weekly basis is NOT acceptable. Do not "save" up reports to all be sent in at once. If your ship schedule places you out of communication more than two days discuss the issue with the manager.
    - Ocean Rangers are to read all emails sent from the Crowley manager and ADEC. Take appropriate action, if needed, respond to the emails.
    - Notify Crowley when a cabin/room issue exists.

Use of Phone

- The Phone shall be left on while the cruise ship is in any US port. (phone plan allows unlimited usage)
- The Phone shall be turned on at arrival of a Canadian port to collect any email. After receiving any email, the phone should be returned to flight mode. Another check of email can be made prior to departing port. Daily reports should be sent

from Canada if they contain any potential non compliant items. (Some extra charges are incurred while in Canadian ports)

- When your cruise ship departs the dock in any port, the ihone MUST be put in flight mode. The cell phone service is considered an international call on cruise ships while at sea – these very high charges for "at sea" cell service may be billed back to the ocean ranger.
- In emergencies, any form of communications is allowed. Ocean rangers must follow up with a written explanation of the nature of the emergency when time allows.
- The Outlook Calendar appointment feature will be used to set up reminders for each ranger to know which in port inspections are assigned.
- Each ranger is responsible for making a calendar appointment and reminder for each of their assigned in port inspections on their own phone.
- The high costs of wireless service onboard the cruise ships has been determined by Crowley to be an "unreasonable" expense and should **not** be included in any requests for reimbursement – except in emergencies.
- Use of reasonably priced internet Café while ashore is allowable in all ports except Juneau. In Juneau the Ranger is expected to use the Crowley Juneau Office. The Ranger will be reimbursed for the receipted cost of internet service used for ocean ranger duties.

Cruise Culture / Behavior

The Ocean Rangers shall be very observant to onboard policy and procedures.

It is also important that the Ocean Rangers understand the role they will be performing and remain aware of the importance of staying out of the way during departure and arrivals, potential emergencies, drills or other situations where vessel staff have specifically assigned duties when interfacing with passengers.

The cruise ships that operate in Alaska during the season have multi-cultural environments. Ocean Rangers should consider these differences when working with vessel staff and follow proper etiquette.

- Culture is a set of values that society imposes on you. Culture is "learned", not genetic.
- Different cultures have different cultural priorities and values. These priorities can affect how subordinates interact with their superiors. This can directly affect behavior and interaction among crews and team members.
- As an Ocean Ranger you will meet many different cultures and value systems. The Ocean Ranger Program will have greatest success if good, cooperative and professional relationships are built between the Ocean Rangers and the multicultural crew members on these ships.

Ocean Ranger health and safety

Drills and Emergencies

Ocean Rangers are passengers for purposes of safety and emergency policy and shall attend passenger lifeboat/abandon ship briefing their first day onboard and weekly thereafter. The briefing will include emergency signals, lifejacket donning, abandoning ship (attend the boat drill if scheduled), smoking rules and response to a fire. In case of an emergency, Ocean Rangers are to follow the emergency instructions listed on the back of their stateroom door or the instructions otherwise provided by Officers and Crew.

Master's Authority

Ocean Rangers are subject to the authority of the Master for purposes of health, safety and discipline. The Master has the discretion to require an Ocean Ranger to remove him or her and belongings from the vessel at any time, when the vessel is in port. If such a case occurs, the Ocean Ranger is to immediately contact the Crowley program managers and ADEC.

Personal Equipment and Gear

Ocean Rangers shall safely stow for sea all their personal belongs and other equipment brought onboard before departure. Personal equipment will include, at minimum:

- Small flashlight
- Phone
- Computer
- Digital Camera
- Ear protection (ear muffles and plugs)
- Safety shoes (steel or composite toe protection)
- Eye protection
- Hand protection (leather gloves)

Duffle Bag Gear

Each ship that Ocean Rangers ride will have a duffle bag that will be kept in the possession of the environmental officer or other designated person. This bag will contain an ADEC sampling kit (materials and instructions inside a small cooler), tyvec coveralls, gloves, eye protection, and hard hat.

Ships that do not have Ocean Rangers riding may have a duffle bag onboard or a duffle bag will need to be picked up from the Juneau Crowley office for use and returned to the office after use.

Duffle bag is put onboard each cruise ship at the first call in Juneau and removed at the last call in Juneau. The Ocean Ranger currently assigned to the ship on the first and last days of call in Juneau is required to take the duffle bag on and off the cruise ship. All duffle bags are to be returned to the Crowley Juneau office.

Vessel Machinery Space Entry

Ocean Rangers will only be permitted to enter a machinery space if they are wearing safety shoes, eye protection, hearing protection, hand protection and wearing a Crowley Vessel Identification Card (VIC).

Medical Screening and Condition Reporting

Ocean Rangers shall be medically screened before assignment to the Ocean Ranger program. Ocean Rangers will be responsible for notifying the Crowley Ocean Ranger Program Manager prior to boarding if they feel that an illness like colds, diarrhea, infections, or other contagious disease would detrimentally impact other passengers or their ability to complete the necessary duties on board.

To prevent contraction or spread of infectious illness Ocean Rangers shall:

- Wash their hands with soap and warm water thoroughly and regularly during the cruise, especially after using the restroom and before eating, drinking or smoking.
- Wash hands after leaving sewage processing areas.
- Use paper towels when opening the restroom door to exit after washing their hands.
- Fingernails shall be cleaned and properly trimmed
- Regularly use the hand sanitizers located throughout the ship where hand washing facilities are not available.
- Contact the Hospital or Front Office if they experience vomiting or diarrhea.
- Observe sanitary practices for sampling as set out in the vessel's NWCA quality assurance / quality control (QAQC) plan.

Preparation for the ship ride

- Travel arrangements.
    - Each Ocean Rangers will be assigned a specific schedule for riding cruise ships
    - Hotels and Air Travel arrangements must be made using the Crowley travel department: On-site staff hours are 8:00 a.m. to 10:00 p.m. ET Monday through Friday
    - When meals are not provided onboard the cruise ship, Ocean Rangers will be reimbursed the federal meal rate and incidental rate for the particular city the ranger is located. When claiming meal reimbursement, always include the city name where you were located.
    - Incidental expenses for ocean ranger business such as taxi and airport ferry expenses will be reimbursed for the receipted amounts. Submit your receipts for any such expense.
- Documents required and IDs required for boarding.
    - Passport
    - Crowley Vessel Identification Card (VIC)
    - Engineers License
    - Merchant Mariners Document
    - TWIC card
    - Drivers License
- Copy of the US Customs exemption ruling dated.
- Check if all equipment is working and the batteries are charged.
- Crowley Ocean Ranger manager will email cruise companies of the onboard Ocean Ranger attendance schedule for each cruise line.
- US Customs will receive an email notification of the embarking and departing ports in Alaska for the Ocean Rangers.
- If there are changes to the original schedule, an additional notification to US Customs will be sent in similar fashion.
- Three days before boarding the Ocean Ranger is to verify the planned action correctly corresponds to the schedule he/she was given. If any discrepancies are noted, the Crowley program manager should be notified so any changes to the schedule can be updated and corrected.

Sign on the ship

- Ocean Rangers will be processed in the same fashion as all other guests for checking in and embarkation. (Ocean Rangers are not considered part of the operating crew of the vessel and will not have any emergency duties) They will board like all other passengers. The actual time required will depend on when they show up - as lines can be longer depending on the time and port. The earlier they can arrive, the better. The expectation is to be aboard no less than one-hour before sailing. (Follow the cruise line recommendation if they recommend more than one hour).
- Ocean Rangers will be signed on as passengers. They will not be on the crew list, nor have any expectation of any emergency duties. They will be expected to attend the passenger evacuation drills just like any other passenger first time on ship and weekly thereafter. Ocean rangers should also expect to receive a short familiarization program with the Environmental Officer, since they will have some access to crew and technical spaces.
- If going onboard a cruise ship for an in-port inspection, ask to have the environmental officer informed that you are at the gangway. (cruise ships will be notified in advance of each Ocean Ranger scheduled inspection) You will normally be escorted to the environmental officer's location.
- If you are joining or departing a ship in an Alaskan port, you must clear US Customs for the port you are in. You must follow all current requirements directed by the US Customs office.
- The Ocean Rangers will not be allowed to board if they show up later than the time required to comply with US Customs requirements.
- You can speed the boarding process by having your passport, cruise contract/ticket confirmation number, and credit card information handy.
- If boarding in an Alaska port, try to schedule embarkation in the early afternoon or before, allowing time to visit and conduct a walk-through with ship's staff during normal working hours. Note: The hour before departure, staff including the environmental officer, will be occupied with undocking. Ocean Rangers should ***not*** expect ship's staff to attend to them during that time.
- Review personal safety equipment and insure that your equipment is in working order.
- Review the Vessel specific procedures and particulars (company brochure)
- Upon boarding, attend the emergency briefing provided by the vessel staff for passengers to get assigned lifeboat / emergency station and any other safety briefings.
- Upon boarding, review the ship specific information located in the duffle bag and vessel schedule. Note any information items within the ship specific information that needs to be updated or completed should be done before leaving the ship and moving on to another assigned ship.

Ocean Ranger Scheduling

Ocean Rangers will join and disembark the cruise ships only in scheduled ports. There will be no usage of pilot boats by the Ocean Ranger Program.

Ocean Rangers will be assigned a schedule that has been pre approved by ADEC. The cruise companies will be informed by Crowley through email of the Ocean Ranger scheduling plan as soon as the plan is set. If any changes to the schedule are made, the cruise companies will be notified as soon as possible. At this time, no unannounced Ocean Ranger inspections are planned.

Each cruise booking has a prepaid minimum gratuity included in the purchase price. Rangers should check with the onboard front desk to understand how the distribution of this gratuity is handled. ($10 to $12 per day depending on cruise line)

If the cruise purchase price includes an "on-board credit per stateroom. ($25, or $75 or $100) and appears on your statement, the funds are to be used for an onboard internet access card to work on Ocean Ranger business and communications.

Frequent cruiser benefits are not available for ocean rangers. These benefits are normally applied to other passengers. The cruise lines have unanimously rejected this concept and have put the Ocean Ranger in a separate category of passengers that are not eligible for any of the benefits designed to encourage passenger loyalty to one cruise line. Ocean Rangers shall NOT put pressure on the cruise staff to attempt to receive these benefits on their own. ADEC is aware that Ocean Rangers are being treated differently than other passengers and are working with the cruise lines at a higher level in their discussions of all Ocean Ranger topics.

Uniform and Identifying Insignia

When on duty, Ocean Rangers shall wear the uniforms issued by Crowley Marine Services. The uniforms should be washed and ironed as needed to keep a neat appearance that is similar to the crew's uniform. Ocean Rangers may have access to passenger laundry facilities and will at all times maintain a neat, clean appearance.

When not on duty, the Ocean Ranger will maintain a neat appearance and dress appropriately according to the passenger standards.

Ocean Ranger uniform and insignia may NOT be worn when the cruise ship is outside Alaska waters.

Shipboard Security

The Security Officer and the Environmental Officer shall confer and coordinate security procedures for the Ocean Ranger visit. Security is NOT part of the Ocean Ranger duties.

Essentially, the Ocean Ranger must:

- Carry and present proper identifying credentials: passport, Crowley Vessel Identity Card (VIC) and merchant mariners document (MMD).
- Follow the procedures established by the ship's security team.
- Follow company procedures while in restricted areas of the ship: engine control room (ECR), engine room, bridge and other areas designated as "restricted areas" in the Ship Security Plan (SSP)
- Ocean Rangers are expected to notify ship personnel of any suspicious activities as is expected of any other member of the public.
- Ocean Rangers will have received security awareness training which includes knowledge of:
    - Understand the different MARSEC Levels and the possible change in responsibilities for each level.
    - Be aware of current security threats and patterns.
    - Be familiar with methods of recognition and detection of dangerous substances and devices.
    - Be familiar with the characteristics and behavioral patterns of persons who are likely to threaten security.
    - Understand techniques used to circumvent security measures on board a ship.

Initial Meeting and Tour with Ship's Staff

The Ocean Ranger should coordinate his activities with the environmental officer, unless another officer is assigned this duty. The Ocean Ranger may also meet the chief engineer and staff captain or chief officer. (The staff captain or first officer is equivalent of the chief mate – second in command – on other merchant ships.) It is not necessary for the Ocean Ranger to meet the master or captain. The initial meeting may be delayed until the cruise ship enters Alaska waters.

During this initial meeting, the Ocean Ranger should work with the environmental officer to develop a work plan or observation schedule that:

- Minimizes disruptions to other ship board operations during critical operations or maneuvers.
- Includes routine and mutually scheduled update meetings during the course of a voyage.
- Incorporates discussion and transmission of daily observation reports.
- Unannounced visits to the non-passenger areas are permitted when the Ocean Ranger determines there is a need.
- Arrangements should be made so that the Ocean Ranger is immediately informed when regulated environmental processes are conduced (e.g. waste water discharge events, any visits / inspections by ADEC, United State Coast Guard (USCG), or sampling contractors).
- Arrangements should be made that the Ocean Ranger can meet with designated contact to perform time efficient environmental compliance verifications.
    - Notification when vessel enters or leaves Alaska waters
    - Notification when any sampling event occurs by ADEC or USCG
    - Notification of any waste disposal action while in Alaska waters.
    - Daily routine to include checking overboard valves, holding tank levels, head tanks for oil water interface equipment, and any pertinent log and record books.
    - Overboard discharges are made.

Explaining the program and the role of the Ocean Ranger

The Ocean Ranger should assume that ship's staff knows little about the Ocean Ranger program. If there is interest, the Ocean Ranger might cover the following program elements:

- What is an Ocean Ranger? Discuss the "new law" and subsequent statutes.
    - Refer to ADEC web site for information http://www.dec.state.ak.us/water/cruise_ships/index.htm
- Provide a concise overview of the Ocean Ranger statute. You may pass out the letter of introduction.
- The Ocean Ranger is just a passenger anytime the ship is not in Alaska waters. No inspections and no access to non passenger areas should be expected.
- The Ocean Ranger's authority. Ship's officers should know that the Ocean Ranger is a contractor for the State of Alaska. As such, they are **not** enforcement officers of the State of Alaska. If the Ocean Ranger observes conditions that appear to be non compliant issues, he/she is expected to discuss them with the ship's staff. If, after discussions, the Ocean Ranger believes there is a potential non compliance issue, this must be identified on the daily report. Any serious potential non compliance issue found should be followed up with a phone call to a Crowley program manager. The Crowley program manager is responsible to contact ADEC immediately. ADEC will be responsible for following up with their own inspections and any enforcement actions. Examples include but are not limited to:
    - Off-loading hazardous waste in an Alaska port. (All cruise ships have reported to the ADEC that they will typically not off-load hazardous waste in Alaska, however if they do, this information needs to be included in the daily report)
    - Discharging any wastewater in a restricted water body like Glacier Bay or Skagway.
    - Alarm logs that indicate possible difficulties with emissions, wastewater treatment, etc.
    - An apparent oil spill or un-permitted discharge. (serious potential non compliant issue)
    - Any pictures taken should note the time, date, location, and vessels name.

    When any observation is listed in a daily report as a potential non-compliant item, the ocean ranger must also include in a subsequent daily report stating when that item is back in compliance.
- In addition to the letter you may provide the ship's staff, the Crowley address and contact information, a business card can be used for this purpose.

Ship Specific Jump Drive and Ship Specific Notebook

A Ship Specific Notebook and Ship Specific Jump Drive will be assigned to each ship and may be left in the duffle bag for the next Ranger.

A Ship Specific Jump Drive and a Ship Specific Notebook contain specific information that is particular to the designated ship. The notebook is for hardcopies of the ship's documents. The drive will be loaded at the beginning of the season with the ship's information and will be updated during the season by the Ocean Ranger assigned to conduct daily reports when the new information becomes available. The purpose of the ships specific notebook is to:

- Transfer information between rangers - for ship specific information that makes the ocean ranger job more efficient
- Transfer of follow-up information that is needed for continuity of potential non compliant items.
- Reference for ship specific information
- Transfer of follow-up information on ongoing ship specific projects.

The Ship Specific Jump Drive stays on ship once the season starts. It is kept in its protective case within the Ship Duffle Bag when there is a change in Ocean Rangers assignments. The Ship Duffle Bag is temporarily held with the ship's environmental officer (or other designated officer) until the next Ocean Ranger comes onboard.

Please be careful with the Jump Drives and keep them in their protective case when not in use. Protect them from water, wear and tear, they contain valuable information.

Remember do not ask for free copying of documents from ship's crew. Pay for the copies as any other passenger and place on your expense report for reimbursement.

Upon Disembarkation

- Remind the environmental officer or other designated person at least 24 hours before your disembarkation that will result in a US Customs event.
- No ship documents or copies of ship documents should be taken off any cruise ship without permission of the environmental officer. In case that permission is denied, the Ocean Ranger shall notify the Crowley program manager with an exact description of the document that was denied. The Crowley program manager will in turn will notify ADEC of the details of this event.
- Complete a "turnover report" for the next ocean ranger and put this in the Ship Specific Jump Drive (required). Include information on each item that has been reported as being a potential non compliant that has not been noted in a subsequent report as being corrected. (The next ocean ranger will need to follow up on each of these items.) These turnover notes should be written in a neutral professional manner. These are not private notes and assume that the cruise ship crews will be skimming these notes for their own information.
- Conduct a short exit interview with the Environmental Officer or appropriate ship's representative. Plan ahead if this will happen or not. If there is no interest from the ship's crew, then the daily report should indicate this. A Departure Report shall be completed on the final day of sailing on the ship. If you are scheduled to go between several ships during a short course of time, you complete a Departure Report at the end of the last voyage on that ship.
- Adhere to vessel specific policies and procedures, applicable.
- Complete a US Customs and Border Protection (CBP) Declaration Form 6059B.
    - Generally in the port of Juneau and Ketchikan, the US Customs Border Patrol (USCBP) agent will meet each ship. Have all your luggage items in the pursers or designated area with the declaration form filled out. After USCBP agent has given his OK, then the Ocean Ranger is free to depart the ship.
    - In Skagway, the USCBP agent may or may not meet the ship. If the agent does not come onboard, then the Ocean Ranger must proceed (by a hired vehicle) to the US Border Patrol office which is about a ½ hours drive north of Skagway. (There is only one road that leaves the town). At the US Customs office, have the hired vehicle wait while you present the customs declaration form along with your baggage and passport to the customs agent. Upon receiving clearance from the customs agent, proceed by way of your waiting hired vehicle back to Skagway and proceed to the next assignment.
- Normally foreign flag ships are not permitted to carry passengers between US ports. As an Ocean Ranger, you are not considered a passenger for customs purposes and therefore have the ability to embark and disembark according to the work schedule. A copy of the customs ruling that allows this shall be carried with the Ocean Ranger anytime they embark or disembark a ship.
- Canadian Customs
    - Rangers making multiple trips aboard the same vessel will have to clear Canadian Customs and Immigration each time they enter the country.
    - Rangers joining their vessels in Canada have an easier time by stating they are paying passengers on a cruise to Alaska. (Canadian Customs will grill people they suspect might be doing any kind of work in Canada)
    - There are no issues with Canadian Customs and Immigration with the Rangers moving from one cruise ship to another in Canadian ports. Once they clear, they can move around freely within Canada.

  - Canadian Customs contact information - Mr. Dave Mills is 204-983-3500. (He doesn't have a direct line but once in their system, dial "0")
- See the US Customs and Border Protection agent anytime moving onboard or disembarking from a cruise ship in Alaska. Be prepared to show the agent a passport, luggage/personal effects and instruments/gear used for the program.
- Customs clearance is NOT needed for "in port" inspections. (Running by Customs again.)
- Complete/check out at security and sign of release forms as required by the cruise company.
- Drop off the cruise company name badge/identification badge (if applicable)

Useful Websites

The Cruise Ship program website
http://www.state.ak.us/dec/water/cruise_ships/index.htm
ADEC Cruise Ship owner and operator page
http://www.state.ak.us/dec/water/cruise_ships/industrylinks.htm
General Permit page
http://www.dec.state.ak.us/water/cruise_ships/gp/2010gp.html
CPVEC program regulations (18 AAC 69) and Alaska Statute (46.03.460- 46.03.490) :
http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm
EPA's Vessel Discharge General Permit
http://cfpub.epa.gov/npdes/home.cfm?program_id=350

Visible Emissions (Opacity Requirements)

Air Quality regulations 18 AAC 50
http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm
Cruise Ship Excess Emission Form under Cruise Ship Excess Emissions Self Report
http://www.state.ak.us/dec/water/cruise_ships/industrylinks.htm

Oil Spill Prevention Requirements (COFR and C-Plan)

Non-tank Vessel Certificate of Financial Responsibility (COFR) program and Contingency Plan (C-Plan) information can be found at the following websites:
COFR INFO:
http://www.dec.state.ak.us/spar/ipp/fr&pi.htm
Industry preparedness Program:
http://www.dec.state.ak.us/spar/ipp/marine-vessels/
Industry preparedness Forms
http://www.dec.state.ak.us/spar/guidance.htm#ipp
Instruction Sheet
http://www.dec.state.ak.us/spar/ipp/docs/revdocs/ntvslinst.pdf
Statutes and Regulations regarding Oil Spill Prevention requirements can be found at:
http://www.dec.state.ak.us/spar/statutes_regs.htm

US Centers for Disease Control: Vessel Sanitation Program, Cruise Ship Reports
http://wwwn.cdc.gov/InspectionQueryTool/InspectionSearch.aspx

http://www.cdc.gov/nceh/vsp/default.htm

Trade associations for cruise ships operating in Alaska.
Northwest Cruiseship Association http://www.nwcruiseship.org

ACA - Alaska Cruise Association http://www.akcruise.org

Southeast Pilot Association
http://www.seapa.com Phone (907) 225-9696 (Dispatcher 24/7)

Alaska Department of Environmental Conservation (ADEC) Cruise Ship Home Page
http://www.dec.state.ak.us/water/cruise_ships/index.htm

USCG inspection records.
http://cgmix.uscg.mil/PSIX/PSIXSearch.aspx

Additional Information

Definitions of permitted discharges

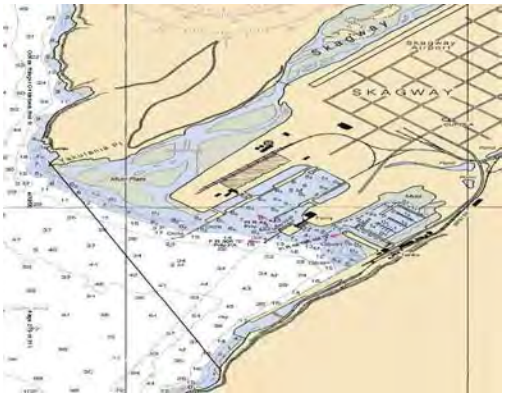
- **Within Alaska waters**
  Cruise ships need a notice of intent (signed version) and a copy of the General Permit authorization issued by the State of Alaska. They also need a copy of an authorization letter from the USCG.
  They need a copy of the VSSP if authorized to discharge. (33CFR 159)
  http://www.dec.state.ak.us/water/cruise_ships/gp/Auth_08.html
  In general, if vessels want to discharge In Alaska, they need to be capable of meeting the Alaska discharge standards, if discharging when 1nm of shore or under 6 knots. (Tables 1-7)
- **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 Alaska 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.

Opacity Issues

While in Alaska, the only official method of reading opacity is EPA method 9. This reading must be accomplished by someone who has been certified as a "qualified observer" under EPA method 9 Section 3.

Restricted Zones

- **Glacier Bay** - this is a no discharge area for the National Parks Service. Vessels navigating in Glacier Bay need a “park authorization”.
- **Tracy Arm –** this is a wilderness area for the US Forest Service – most vessels opt not to discharge while navigating in Tracy Arms area (including Endicott Arm).
- **Skagway Harbor –** Skagway harbor is a non-discharge zone for large vessels due to the harbor being listed as impacted water for metals.



Norovirus

Norovirus (genus Norovirus, family Caliciviridae) are a group of related, single-stranded RNA, nonenveloped viruses that cause acute gastroenteritis in humans. Norovirus was recently approved as the official genus name for the group of viruses provisionally described as “Norwalk-like viruses” (NLV).

Cruise ships participating in the Vessel Sanitation Program are required to report the total number of gastrointestinal illness (GI) cases (including zero cases) evaluated by the medical staff before the ship arrives at a U.S. port, when sailing from a foreign port. A separate notification is required when the GI illness count exceeds 2% of the total number of passengers or crew onboard.
http://www.cdc.gov/nceh/vsp/surv/GIlist.htm

Influenza Like Symptoms (ILS)

ILS is the new term for influenza like symptoms. (Rather than reporting potential flu or swine flu) CDC - Seasonal Influenza (Flu) - Other Flu Types

Swine Flu

The 2009 H1N1 influenza virus (referred to as “swine flu” early on) was first detected in people in the United States in April 2009. This virus was originally referred to as “swine flu” because laboratory testing showed that its gene segments were similar to influenza viruses that were most recently identified in and known to circulate among pigs.
http://www.cdc.gov/h1n1flu/guidance/cruiseships.htm
Reference information on Swine Flu is included (See Page xx)

If a suspected H1N1 influenza case is identified aboard a ship, the captain is required by law to report the illness to the CDC Quarantine Station in the jurisdiction of the U.S. port where the ship is expected to arrive (see http://www.cdc.gov/ncidod/dq/quarantine_stations.htm)

"Cruise Lines International Assoc. – "Description of vessel sanitation" (http://www.cruising.org/industry/sanitation.cfm)

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 that 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.)

Usage of double bottom tanks/other tankage not on VSSP for storing waste water

This information will be included in the 2010 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 observation of interest.

Discharge Permit and Discharges

Conditions in the state "general permit" are more stringent than the requirements for the USCG continuous discharge letter. Therefore, most ships that choose to discharge - get authorized under the state permit and typically obtain the USCG continuous discharge letter as well. However, a ship may legally choose not to obtain the Coast Guard letter. If that is the case, when in Alaska water, they may only discharge while under way. The effluent limits under the state permit don't change with this arrangement (must meet State General Permit Tables 1 - 7 standards)

Sharing of Information

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

After providing any information to the USCG, the ranger should write in their daily report what information they provided, to whom, on what date.

Ocean Rangers should NOT directly provide copies of their reports or photos to anybody else. ALL OTHERS (cruise industry, public, etc.) should make a request for information to ADEC.

Air Pollution from Diesel Engines

A question was added to the old checklist “Does vessel have an International Air Pollution Prevention (IAPP) or Engine International Air Pollution Prevention (EIAPP) certificate for diesel engines > 130KW?” When greater than 130 KW a certificate is needed. (The emergency diesel is exempt.) This was to check compliance with MARPOL Annex VI (air). This Annex was ratified by the U.S. in October 2008. Rangers should place a copy of this certificate in the vessel specific notebook once at the beginning of the season.

CROWLEY

Letter of introduction to the Ocean Ranger Program

In 2006, the citizens of Alaska sponsored a law that puts United States Licensed Marine Engineers onboard cruise ships to observe the environmental impacts of each ship while in Alaska water.

The Alaska Department of Environmental Conservation (ADEC) is the agency that has the responsibility to implement this law. ADEC has entered into a contract with Crowley Marine Services to run the Ocean Ranger Program.

The Alaska Statute creating the Ocean Ranger Program is:

*Sec. 7. AS 46.03 is amended to include new provisions as follows:
Sec. 46.03.476. Ocean Rangers.
(a) An owner or operator of a large commercial passenger vessel entering the marine waters of the state is required to have a marine engineer licensed by the United States Coast Guard hired or retained by the department on board the vessel to act as an independent observer for the purpose of monitoring state and federal requirements pertaining to marine discharge and pollution requirements and to insure that passengers, crew and residents at ports are protected from improper sanitation, health and safety practices.
(b) The licensed marine engineer shall monitor, observe and record data and information related to the engineering, sanitation and health related operations of the vessel, including but not limited to registration, reporting, record keeping and discharge functions required by state and federal law.
(c) Any information recorded or gathered by the licensed marine engineer shall be promptly conveyed to the Alaska Department of Environmental Conservation and the United States Coast Guard on a form or in a manner approved by the Commissioner of Environmental Conservation. The Commissioner may share information gathered with other state and federal agencies.

The Ocean Ranger riding your vessel is a marine engineer and professional mariner that has received specialized training for this program. The ocean ranger is an ***observer*** only and sends in daily reports that go to ADEC. Only after review and approval of ADEC do these reports become public information. When your ship is not in Alaska waters, the Ocean Ranger has no official duties and has the status of a passenger.

Crowley Marine Services welcomes comments from the cruise industry to recommend improvements to this program.

Relief Procedures

When you are preparing to leave a vessel for a new assignment, contact the environmental officer (EO) and ask if he/she wants to have an exit interview. If he/she accepts, ask how he believes the Ocean Ranger program can be improved. You may discuss any events that occurred while you were onboard. Keep the conversation positive by looking at ways to improve.

Put together all materials to pass onto the next ranger neatly on to the Ship Specific Jump Drive and into the Ship Specific Notebook if applicable. Especially include information on any outstanding issues that have not been resolved. Place the Jump Drive into the protective cover and place into the red duffle bag. Let the EO know that when to expect the next ocean ranger – normally this should be a matter of hours or days.

If this is the last Alaska voyage of the season, strip the vessel specific notebook of all documents pertaining to 2008 and ask permission from the EO to remove from the ship the binder and information that will be useful to the Ocean Ranger program in 2009. Do not ask to remove anything that would be considered proprietary information. Ask the Crowley program manager by email where to send this notebook when removed from the ship.

The process for leaving the vessel should be the standard procedure with US or Canadian Customs and filling out the customs declaration form.

After leaving the vessel, fill out and submit a “Departure Report” form. This is your opportunity to express your opinions of the cooperation received from the crew. If you have any negative experiences, make sure to recommend what changes you believe will help correct the problems.

When reporting to your next assignment, be sure to either fill out a daily report when in Alaska waters.

Anytime an Ocean Ranger is not able to perform to his or her assigned schedule, the Ocean Ranger Program Manager must be notified immediately.

Include the location of the ship specific notebook if a hard copy is on board or other Ocean Ranger material.

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

Commanding Officer
United States Coast Guard
National Maritime Center

100 Forbes Drive
Martinsburg, WV 25404
Phone: (304) 433-3480
FAX: (304) 433-3417

16721

APR 2 8 2007

Captain Margaret M. Reasoner
Ocean Ranger Program Manager
Crowley Marine
9487 Regency Square Blvd. N
Jacksonville, FL 32225

Dear Captain Reasoner:

This is in response to your letter dated April 14, 2008, requesting recognition for licensed Marine Engineers participating in the Ocean Ranger Program as mandated by Alaska Statute and implemented by Alaska Department of Environmental Conservation. Your letter requests that the special program allowing Marine Engineers acting as Ocean Rangers receive partial sea service credit for their time aboard the vessel, specifically service is creditable on a three-for-one basis for a raise in grade or renewal for up to one-half of the required service under Title 46, Code of Federal Regulations (CFR) 10.211. Your request is granted.

This program applies to licensed Mariner Engineers holding a Third Assistant Engineer license or higher contracted by Crowley Marine to monitor, observe and record data and information related to the engineering, sanitation and health related operations of Large Commercial Passenger Vessels while in Alaska waters. To ensure continuity, an applicant must:

a. Meet the requirements for a raise in grade prescribed by Title 46, CFR 10.207 including application, physical examination, proof of chemical testing, and verification of ID and fingerprinting.

b. Provide a letter from Crowley Marine with the dates of employment as an Ocean Ranger, vessel information including documentation number and actual days underway.

Time and a half credit will not be given for twelve-hour workdays as an Ocean Ranger nor will time be credited with regard to propulsion or horsepower for subsequent raise in grades. Additionally, service is not valid as continuing competencies for Basic Safety Training.

A copy of this letter must accompany the application. If you have any questions regarding this matter please contact Jennifer Hogge at 304-433-3542.

Sincerely,

David C. Stalfort
Captain, U. S. Coast Guard

CROWLEY®

Commanding Officer
National Maritime Center
Martinsburg, WV 20543

14 April 2008

Dear Sir:

In 2006, the citizens of Alaska sponsored a law that puts United States Coast Guard Licensed Marine Engineers onboard cruise ships to observe the environmental impacts of each ship while in Alaska water.

The Alaska Department of Environmental Conservation (ADEC) is the agency that has the responsibility to implement this law. ADEC has entered into a contract with Crowley Marine Services to run the Ocean Ranger Program.

The Alaska Statute creating the Ocean Ranger Program is:

*Sec. 7. AS 46.03 is amended to include new provisions as follows:
Sec. 46.03.476. Ocean Rangers.
(a) An owner or operator of a large commercial passenger vessel entering the marine waters of the state is required to have a marine engineer licensed by the United States Coast Guard hired or retained by the department on board the vessel to act as an independent observer for the purpose of monitoring state and federal requirements pertaining to marine discharge and pollution requirements and to insure that passengers, crew and residents at ports are protected from improper sanitation, health and safety practices.
(b) The licensed marine engineer shall monitor, observe and record data and information related to the engineering, sanitation and health related operations of the vessel, including but not limited to registration, reporting, record keeping and discharge functions required by state and federal law.
(c) Any information recorded or gathered by the licensed marine engineer shall be promptly conveyed to the Alaska Department of Environmental Conservation and the United States Coast Guard on a form or in a manner approved by the Commissioner of Environmental Conservation. The Commissioner may share information gathered with other state and federal agencies.

Each Ocean Ranger assigned to a vessel will have completed a 48 hour specialized training course consisting of classroom instruction and On the Job Training. Crowley Program Manager.

Under 46 CFR 10.211 we request that the Ocean Ranger receive sea service for their time aboard

CROWLEY MARINE SERVICES, INC.
9487 REGENCY SQUARE BLVD. • JACKSONVILLE • FLORIDA • 32225 • 904.727.2200
www.crowley.com

Ocean Ranger Document Management Plan

Ocean Ranger Guidebook

- The Guidebook will have revisions labeled 0, 1, 2…
- Any new revisions will be sent electronically as an email attachment.
- Rangers will load the newest version on their computers and delete any old versions. An email will be returned to the Crowley manager that this was successfully completed.
- Crowley manager will maintain the email records of revision receipt notifications that have been sent in by each ranger.
- Recommended changes or revisions to the Guidebook will be sent to the Crowley Manager for consideration, consolidation, review, and approval.
- The only controlled copy of the Guide is kept on the JAX Ocean Ranger SharePoint site.

Reports

- The reports are in electronic pdf.fillable.
- Revisions are labeled 0,1,2…
- All changes to the report templates will be sent to the Rangers to place on their laptops.
- When a revision is made to a report template, the ocean rangers will receive an updated copy notice electronically. They are to email the Crowley manager that they will begin using the updated template.
- Crowley manager will maintain a record of these email replies. The controlled copy of the report templates is kept on the JAX Ocean Ranger SharePoint site.

Ocean Ranger Communications with ADEC

When an Ocean Ranger directly communicates with ADEC on Ocean Ranger Program issues, a summary must be shared with the Ocean Ranger Program Manager as soon as possible, as to the information you discussed. You may be asked to place the discussed information into a written format to preserve for the Ocean Ranger records management system.

Crowley Ocean Ranger Program
2011Guidelines for Payment of Travel and Other Expenses

Revised 3/1/11

General

All travel and other expenses that you submit to Crowley for payment must be job-related, necessary, and reasonable. They must also be receipted, except as noted below. Receipted means supported by a valid, itemized, legible, original receipt or similar document that provides sufficient detail to identify the expense exclusively.

Submit your request for payment of travel and other expenses on the 2011 Ocean Ranger Expense Report, current revision. An electronic copy of this is available on your Acer. Send the scanned copy of the **signed** expense report with all required receipts (scanned) to Karol Kriens by email. All travel and other expenses (in short, any money other than payroll) must appear on this form in order to be paid.

The time period covered by your form should match a pay period (i.e., the 24th through the 8th of the month, or the 9 h through the 23rd of the month).

You may bill for an expense incurred in a previous pay period, but not for an expense incurred or expected to be incurred in a later pay period.

Payment will normally be included in your paycheck for the subsequent pay period. If you have a question about your payment, contact Karol Kriens, preferably by email so that she will have time to research your question before responding. Payment of travel and other expenses may take more than one pay period if your request is slow to arrive or there are issues with your receipts, so please be sure a payment has actually been made before questioning the amount.

Transportation

Crowley normally provides plane tickets. In unusual situations, if you must pay airfare yourself, we will reimburse an amount up to the lowest coach airfare at the time of travel. We never pay cash in lieu of airfare.

We will reimburse taxi fares, the cost of other forms of public transportation, and the cost of personal vehicle use. When it is possible to fly to your destination, the reimbursement will not exceed the lowest coach airfare amount at the time of travel.

The taxi fare from one dock to another is reimbursable when you change ships. Reasonable taxi fares for lunch from Pier 91 in Seattle and Ballantyne Pier in Vancouver will be reimbursable. State either of the Pier name on your form when applicable.

Personal vehicle use is reimbursed at the federal rate per mile. No receipt is required.

.

Meals and incidentals

We pay a standardized meal and incidental expense (MIE) rather than your actual costs for meals and most incidental expenses. Consequently, receipts are not needed for meals and

most incidentals. The MIE rates used are those used by the federal government. They vary by location and time of year.

On the ***first day of travel*** to a first ship assignment for the season, you are paid 75% of the MIE rate for where you spend the night.

On any ***full day spent ashore*** except the first or last day of the season -- defined as at least three meal periods but not necessarily 24 hours or overnight, you are paid the full MIE rate applicable for where you spend that night or, if you get on a ship that night, applicable for the port where you board the ship.

For any ***partial day spent ashore***, you are paid a prorated MIE rate. The rate used is determined by where the meal was taken, by where you spend that night, or by the port where you board a ship that day.

In a ***typical ship change scenario***, you get off one ship after breakfast because ships usually dock in the morning. You board the second ship midday because ships usually begin boarding in late morning and undock around 5:00 p.m. So, for a single-day ship change, you typically receive only the lunch MIE. If you support a request for additional meals, we will pay for additional meals.

On the ***last day of travel*** from a final ship assignment for the season, you are paid 75% of the MIE rate for where you spent the previous night or the port where the ship docked when you got off.

Lodging

Crowley normally arranges and pays for your lodging, so you will not usually incur lodging expenses. In unusual situations, if you have a legitimate lodging expense, Crowley will reimburse you, with a receipt, up to the federal maximum lodging rate for that location.

Laundry

At sea, you are expected to use the most economical laundry services available. You will not be reimbursed for receipted laundry service if coin-operated laundry facilities are available.

You may bill $10.00 per day, with a receipt, for laundry for each full or partial day at sea. The receipt must be an itemized invoice or bill, not a list of how many shirts etc. were sent out to the laundry.

Alternatively, you may bill $2.00 per day, without a receipt, for laundry for each full or partial day at sea. Payment for unreceipted laundry is not an entitlement, but rather a reimbursement at a set rate for actual costs incurred. You should request this only to the extent that you incur at-sea laundry costs, and you will receive this payment only to the extent that you request it.

Laundry reimbursement is reconciled by the pay period.

If you bill for and are eligible for a combination of receipted and unreceipted laundry expenses, the total paid will not exceed the amount calculated by this formula:

$$\text{receipted amt} + ((\text{\# of at-sea days} - \underline{\text{receipted amt}} \times \$2.00/\text{day})$$

in pay period $10.00/day)

Ashore, you may not bill for laundry, as the MIE rates include allowances for laundry.

On-board Gratuities

Cruise lines generally expect passengers to pay a minimum gratuity each voyage. Gratuities are distributed to the ship's service employees. Crowley attempts to prepay the minimum gratuity. It is your responsibility to confirm, shortly after you board a ship, whether the minimum gratuity has been fully prepaid for your expected time aboard. If not, contact a Crowley ocean ranger program manager immediately. In the rare event that you must pay a minimum gratuity, it will be reimbursed if receipted and preapproved in writing by a Crowley ocean ranger program manager.

Any gratuities that you pay in excess of the minimum are not reimbursable.

Other On-board Expenses

Generally, you cannot request payment for any expense (except laundry and, rarely, minimum gratuities) incurred while aboard a ship without prior written approval from a Crowley ocean ranger program manager. Internet use costs are specifically disallowed. If an expense is beyond your control, or if you incur an expense without prior approval, we will reimburse it (with receipt) as long as it meets the test of job-related, necessary, and reasonable.

Other Shoreside Expenses

As with other on-board expenses, you should always obtain prior written approval from one of Crowley's ocean ranger program managers before incurring a shoreside expense not specifically addressed above. In unusual situations, we will reimburse a receipted expense incurred without prior approval, provided that it meets the test of job-related, necessary, and reasonable.

Unavailable Receipts

Reimbursement of expenses that normally must be receipted but for which receipts are not available will be made with the following limits: $25.00 per expense and an aggregate total of $30.00 per pay period. Receipts are strongly encouraged. All expenses claimed are subject to review. Reimbursement of unavailable receipts may be disallowed.

Ocean Ranger Timesheet and Work Log																	
Name of Ranger:																	
Dates of Payperiod:																	
Calendar	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	Totals
Ship/Hotel																	0
Location																	0
Hours Onboard																	0
Hours Ashore																	0
Hours OR Duties																	0
Hours in AK Waters																	0
Ocean Ranger Signature:																	
Sign, scan and submit to:																	
karol.kriens@crowley.com																	
Subject Line: Timesheet/Payperiod Date/Name																	

Ocean Ranger Guidebook 2011 Rev. 0 Tab A – Crowley Information

ADEC CAMERA SUGGESTIONS / GUIDANCE

WHEN USING THE OLYMPUS CAMERA FOLLOW THE SUGGESTIONS BELOW:

FLASH USAGE: Use the flash whenever possible indoors.

PICTURE SCALE: Place a coffee cup, ruler, dollar bill, etc. next to the item being photographed to establish the scale.

AUTO MODE: Set camera to iAuto mode to pick the best mode for taking a picture. Refer to Page 17 of the Olympus Stylus Instruction Manual file located on Acer laptop.

VIDEO MODE: The camera can record about 40 minutes of video. Refer to the Olympus Stylus Instruction Manual file located on the Acer laptop.

EXPOSURE: Hold the camera still for a few seconds after depressing shutter button. Remember, darker settings require longer exposure.

IMAGE QUALITY: Image quality should be set to 2 megapixels (5x7 photo). Refer to the Olympus Stylus Instruction Manual, Page 24, for additional guidelines.

PROBLEMS: Contact Colleen DuBois

Photos are to be attached to the appropriate report at the time the report is created. They are not to be sent in separately.

REFERENCE FILES

The following files are available on the Acer Laptop Computer on the Desktop in a folder named, '**PHONE COMPUTER AND CAMERA INSTRUCTIONS'**:

OLYMPUS STYLUS INSTRUCTION MANUAL

OLYMPUS CAMERA INSTRUCTIONS

Ocean Ranger 2009 Season – Preliminary Season Report

The approved Ocean Ranger Daily Reports and Incident Reports included non-compliance items related to:

- Oil (petroleum products);
- Air
- EPA Vessel General Permit
- Wastewater/ Pool and spa water discharges
- Health
- Other Wastes
- Safety
- Boiler Blow-down (a wastewater stream)

General ADEC Procedures:

When non-compliance items are brought to ADEC's attention, they are also immediately brought to the vessel's attention, Ocean Ranger and Ocean Ranger manager's attention, and to the appropriate federal and state agencies for further action.

Some potentially non-compliant issues were outside the jurisdiction of the Cruise Ship Program (like oil pollution, safety items, and health items). These items are immediately referred to the appropriate federal and state agencies. Non-compliance items and potentially non-compliant items related to oil were forwarded to ADEC SPAR and US Coast Guard Sector Juneau. Safety and potentially non-compliant items regarding safety were forwarded to the US Coast Guard Sector Juneau. Health and Sanitation potentially non-compliant items were forwarded to US Center for Disease Control (CDC), and the appropriate State of Alaska health agencies.

LINK to 2008 Ocean Ranger Report
http://dec.state.ak.us/water/cruise_ships/ocean_ranger_info.html

LINK to 2009 Ocean Ranger Report
http://dec.state.ak.us/water/cruise_ships/ocean_ranger_info.html

Open Items:

Several items remain open from the 2009 season. ADEC's Cruise Ship Program regards Ocean Ranger items that have been forwarded to the appropriate agencies (USCG, SPAR, EPA, CDC) as closed. For all other items ADEC seeks to close the cases by working with the specific cruise line and/or having the Ocean Ranger check that it has been resolved. ADEC is still waiting for cruise line follow-up on several specific potential compliance items.

Oil Pollution 2009 Items:

The Ocean Ranger Daily Report section C includes items regarding oil handling on board. The most numerous categories of potentially non-compliant items that were reported in 2009 related to oil pollution. A total of 84 cases were reported in 2009. However, not all the reported cases were directly related to cruise ships. ADEC divided the 2009 reported oil pollution related items into 6 separate groups:

1) Oil from Vessel:

   Ocean Rangers reported a total of 9 oil from vessel items. These are the oil pollution cases where the petroleum products were coming from the vessel itself and either leaked or spilled into the water. Vessels are required by law to report pollution events of this nature immediately to ADEC SPAR and the USCG. Notifying ADEC SPAR and the USCG via the Ocean Rangers does not satisfy the legal reporting requirements of the cruise line. The 9 cases of petroleum leaking from vessels were caused by faulty propulsion equipment, potential leaking seals, or ruptured hydraulic lines / “sweating fittings”.

2) Port Oil Sheen:

   There were a total of 47 non-traceable pollution incidents, or “mystery” sheens reported by Ocean Rangers. These are oil pollution incidents that the Ocean Ranger noticed but could not “trace back” directly to a cruise ship. Vessels are not required by Alaska law to report pollution not believed to originate from them, although in some cases they do. Many of these sheens would have likely remained unreported without the Ocean Rangers. ADEC SPAR, Cruise Program, and USCG staff worked closely with the Ocean Rangers to ascertain the source of marine mystery sheens when possible. During the 2009 season, all marine mystery sheens reported to the ADEC Cruise Ship Program were immediately forwarded to ADEC SPAR and USCG Sector Juneau for further follow up.

3) Internal Oil leak:

   A total of 4 cases were reported where oil (including fuel) is not leaking or spilled into the water. Some vessels had oil in bilges (which was corrected immediately), leaking fuel pipe to combustion equipment, and internal fuel spills. These items may not be compliance items, although they may potentially develop into a safety (fire) or health hazard (fumes) item. Some minor internal oil leaks (such as leaks near high temperature objects) were reported as safety items and are not included in this section. Propulsion equipment also had internal leaks; and some vessels changed oil on regular basis because water was “seeping” into the propulsion lubrication system. All the reported cases were immediately reported to ADEC SPAR and USCG Sector Juneau by ADEC Cruise Ship Program.

4) Scrubber Oil Leak: Scrubber oil sheens occurred in 2008. No cruise ships operated air scrubbers in 2009.

5) Other Source Oil:

Ocean Rangers reported 17 oil sheens potentially caused from cruise ship tender boats or shore based tender operations not associated with the vessel.

ADEC SPAR issued a Notice of Violation in one case for failure to notify the State of Alaska regarding sheens from a tender. This was based on Ocean Ranger provided information. This occurred in Sitka and was for the Celebrity Mercury.

ADEC SPAR investigated the issue of sheens from tendering operations in Sitka.

The reported cases were immediately reported to ADEC SPAR and USCG Sector Juneau by ADEC Cruise Ship Program.

6) Miscellaneous Oil:

Ocean Ranger received questions from vessel crews about oil related matters, including records and operation of oil water separators. ADEC's Cruise Ship Program responded to questions from the Ocean Rangers and forwarded these questions to ADEC SPAR and USCG. A total of 7 items were identified for follow up.

Wastewater 2009 Items:

The Ocean Ranger Daily Report includes 21 items regarding wastewater. Ocean Rangers reported that tank identification systems on some of the vessels was not "in line" with the approved Vessel Specific Sampling Plan (VSSP). Vessels submitted requests for revision, and ADEC issued updated 2009 VSSP documents. The effluent quality appears not compromised by the incomplete tank identification; however tank identification discrepancies may have potentially contributed in the 2008 accidental discharges.

ADEC received late in the season reports of additional incomplete tank identifications. AADEC decided to not to re-issue these VSSP documents, for the remainder of the 2009 season. AADEC had similar problems in 2008. ADEC staff created a verification project regarding VSSPs. Information about that project can be found in the Ocean Ranger Data Verification section of this report.

The Ocean Ranger and vessels self-reported accidental discharges of pool water in Alaskan waters. One Ocean Ranger report included a failure of the wastewater treatment system. The vessel had already self-reported to ADEC and stopped discharging.

The reported wastewater items including the VSSP related items were immediately reported to USCG Sector Juneau by ADEC.

Pool and Spa Water Discharges:

The Ocean Ranger and vessels self-reported accidental discharges of pool and spa water in Alaskan waters. Ocean Rangers also identified issues with pool and spa piping. Pool and spa sanitation issues were reported as health issues. Pool and spa water discharge information was often reported by the cruise line directly to AADEC and EPA. Concerns about the release of pool water and spa water into Alaskan waters include possible exceedance of Alaska water quality standards (such as pH and chlorine) and the potential of pathogens released into surrounding waters without proper disinfection. The by Ocean Ranger reported discharges will be shared to verify that EPA received self-reports of all discharge events in Alaskan waters.

Health 2009 Items:

Ocean Rangers reported flu and Norovirus events onboard. The Ocean Ranger verified that the vessels took appropriate actions and that the CDC was notified. In one case the vessel reported a chickenpox case to the CDC and the Ocean Ranger. A total of 37 potential health items were reported. Beside flu and Norovirus, other issues included handling of potable water hoses, food preparation glove wearing, potable water chlorination issues, frozen chicken dropped on an outer deck that were washed and used, and pool clean-up of potentially pathogenic materials (vomit).

A large increase in the number of health items identified by Ocean Rangers in 2009 is directly related to the emergence of the N1H1 virus (“swine flu”). Ocean Rangers noted the presence of flu on several vessels. These cases were reported to the Centers for Disease Control (CDC) and the Alaska Department of Health.

AADEC learned after the 2009 cruise season that Holland America informed its Environmental Officers not to report illness cases to the Ocean Rangers. It appears that the Environmental Officers were instructed that the Ocean Rangers could get this information directly from CDC. This may skew the reported illness results, as some cruise lines were very open to the Ocean Rangers on this topic. At least one significant outbreak of disease listed by the CDC was not reported by the Ocean Ranger onboard. In 2010 AADEC will not allow to re-occur non sharing of reported illness cases.

Other Waste 2009 Items:

A total of 14 potential items were reported. Several involved items dropped or lost into the water. These ranged from a few drops of paint to a Man Overboard training dummy lost in Skagway harbor. Two items were reported thrown overboard by passengers. In one case beer bottles were thrown overboard in Glacier Bay. In another case a passenger was upset about paint fumes and threw a can of paint overboard in the Port of Skagway.

Ocean Rangers also reported refrigerant “leaks / escapes”. In one case about 13 kg of refrigerant a day was lost. The Ocean Ranger closely followed the amounts lost and repairs were undertaken to fix this issue.

The reported waste items were immediately reported to USCG Sector Juneau by AADEC Cruise Ship Program.

Safety 2009 Items:

The Ocean Ranger Daily Reports include items regarding safety on board. A total of 7 potential items were reported in 2009. All reported safety items were solved by the vessels. The safety items included onboard loss of communications, steering problems, internal fuel leaks or drips, open access hatches with no warnings, problems with water tight doors during the voyage, small incinerator room fire (which was immediately brought under control by vessel crew and extinguished), and damaged electrical cords. All these cases were communicated between the Ocean Ranger and the vessel. The Ocean Rangers found and reported generally, that the vessels immediately corrected the (potential) items. However, one vessel was not responsive to correct an issue with electric wiring protruding through panel at a elevator.

Another Ocean Ranger assisted an ill passenger in getting medical care after that passenger collapsed on an outer deck.

The reported items were immediately reported to USCG Sector Juneau, and if applicable, to other appropriate agencies by ADEC Cruise Ship Program.

EPA Vessel General Permit (VGP) 2009 Items:

EPA issued a NPDES vessel discharge permit on December 18, 2008[1]. This permit addressed several potential waste streams not included in the 2008 Alaska Cruise Ship General Permit (e.g. Boiler water, deck wash, ballast water, anchor wash down, and pool water or spa discharges). The Ocean Ranger Daily Report was modified in 2009 to address the new EPA permit. Many of the EPA permit waste streams were already included in the 2008 Ocean Ranger Daily Report.

Primary issues seen by Ocean Rangers in 2009 regarding the EPA VGP included painting and deck maintenance without proper environmental safeguards, anchor wash down items, and hull wash down with potentially hazardous chemicals. A complete list and copies of the associated Ocean ranger reports will be provided to EPA by AADEC.

Boiler Blow-Down 2009 Items:

The Ocean Ranger Daily Report includes items regarding Boiler Blow-Down wastewater. Most vessels have oil fired boilers in combination with steam boilers / heat recovery systems. In these systems, chemically treated boiler water is used. Ocean Rangers reported in 2008 that two vessels appear to not have direct storage capacity to store the boiler blow-down waste stream. AADEC worked with Ocean Rangers to verify, and to better understand these particular vessel waste streams. The cruise ship general permit does not include conditions that include or explicitly mention 'boiler water discharges'. Based on cursory research of the potential water quality of the boiler water that is disposed of, we expect that this waste stream may have extremely high levels of metals, suspended small solids (e.g. mud), high levels of pH, and may not meet Alaska Water Quality standards.

[1] EPA Vessel General Permit webpage is :http://cfpub.epa.gov/npdes/home.cfm?program_id=350

EPA issued a NPDES vessel discharge permit on December 18, 2008[2] that includes conditions that prohibit boiler water discharges, provided that the discharge cannot meet water quality standards.

Air Emissions 2009:

The Ocean Ranger Daily Reports include items regarding visible emissions from cruise vessels. The Ocean Rangers are not certified EPA Reference Method 9 opacity readers; therefore they cannot perform valid opacity readings. However the training discussed this important subject opacity more in detail. Even if Ocean Rangers were certified opacity readers, it may not be physically possible to take a valid RM 9 reading while onboard. Training in 2009 included information on how ADEC and others take opacity readings, and what items to report to ADEC. ADEC has EPA Method 9 certified readers and hires a contractor to take a majority of the opacity readings every season.

Ocean Rangers contributed significantly to the 2009 opacity data ADEC obtained. Ocean Rangers verified opacity information (such as graphs) onboard, alerted ADEC to concerns, and in several cases suggested crews contact ADEC and their corporate offices after an opacity exceedance onboard was detected. Ocean Rangers identified multiple potential future issues with incinerator and boiler use. It appears that cruise ships are burning more oil sludge and also increasing the amount of materials being incinerated.

In 2009 ADEC staff attempted to have Ocean Rangers complete a simple survey of fuels and equipment used. Some cruise ship owners and operators complained about this project, and this project was stopped by ADEC. At this time ADEC cannot confirm operational practices, equipment used, equipment status, or fuels used on most cruise ships. Some operators have voluntarily provided opacity information directly to ADEC.

ADEC is concerned with the increased burning of oil sludge and incinerated materials reported by Ocean Rangers in 2009. This may led to increased maintenance, potential safety issues, and unknown environmental effects. The Ocean Rangers also noticed an increase of vessels that combust sludge / used oil in their oil fired boiler systems.

In late July and continuing through the rest of the 2009 cruise season Ocean Rangers documented numerous air issues on the Celebrity Mercury. Some of these items were also self-reported by the vessel to ADEC. Reports included information on potential opacity exceedance while underway or anchored, fuel treatment problems, fuel switching issues, and equipment

[2] EPA Vessel General Permit webpage is :http://cfpub.epa.gov/npdes/home.cfm?program_id=350

maintenance. The ongoing opacity exceedance on the Mercury caused vessel safety concerns for potential exhaust system / stack fires.

ADEC compiled opacity statistics over the last seven years show a significant increase in the number of opacity violations and issues self-reported by cruise lines. This increase is particularly evident when looking at self-reports of issues occurring underway or at night when ADEC opacity readings would be impossible to perform.

Ocean Ranger Access Issues 2009:

In the beginning of June 2008, ADEC and Crowley received reports from several Ocean Rangers about problems with access on the cruise ships that they were responsible for monitoring. Ocean Rangers in some cases could not complete their observations and their reporting or were denied access to non-passenger areas. Full access to most areas on a vessel is critical to the success of the Ocean Ranger program. ADEC worked with Alaska Department of Law, Crowley, and the individual cruise lines in 2009. Also ADEC exercised in 2009 “direct vessel visits” on vessels with access issues to resolve the issue immediately and to restore full access for Ocean Rangers.

Surprisingly in 2009 ADEC noticed, that a few vessels / operators that were familiar with the Ocean Ranger program expectations, failed to provide, albeit for very short duration, access to the Ocean Rangers.

The Ocean Ranger report was modified in 2008 with a question on the front page asking if an Ocean Ranger had sufficient time and access to finish a section of the report. For the 2009 season ADEC and Crowley carefully watched Ocean Ranger reports for access issues and asked Ocean Rangers if they had any access problems. There were several access items in 2009, most dealt with inadequate time /access in the engineering spaces. All access issues were resolved, some before ADEC or Crowley was able to get involved. In a few cases ADEC had to contact /visit individual lines about a particular vessel.

Alaska Ports

ADK	ADAK	Aleutians
ATT	ATTU	Aleutians
CLD	COLD BAY	Aleutians
DH	DUTCH HARBOR	Aleutians
BRW	POINT BARROW	North Alaska
GAM	GAMBELL	North Alaska
NOM	NOME	North Alaska
STM	ST. MATHEW	North Alaska
STP	ST. PAUL	North Alaska
END	ENDICOTT ARM	Southeast Alaska
GB	GLACIER BAY	Southeast Alaska
HNS	HAINES	Southeast Alaska
JNU	JUNEAU	Southeast Alaska
KTN	KETCHIKAN	Southeast Alaska
MFJ	MISTY FJORD	Southeast Alaska
PTS	POINT SOPHIA	Southeast Alaska
SIT	SITKA	Southeast Alaska
SKG	SKAGWAY	Southeast Alaska
TA	TRACY ARM	Southeast Alaska
WRG	WRANGELL	Southeast Alaska
ANC	ANCHORAGE	Southwest Alaska
CFJ	COLLEGE FJORD	Southwest Alaska
CG	COLUMBIA GLACIER	Southwest Alaska
HOM	HOMER	Southwest Alaska
HUB	HUBBARD GLACIER	Southwest Alaska
ICB	ICY BAY	Southwest Alaska
KDK	KODIAK	Southwest Alaska
SEW	SEWARD	Southwest Alaska
VDZ	VALDEZ	Southwest Alaska
WHT	WHITTIER	Southwest Alaska

Ports outside Alaska

CMR	CAMPBELL RIVER	British Columbia
NAN	NANAIMO	British Columbia
PR	PRINCE RUPERT	British Columbia
VAN	VANCOUVER	British Columbia
VIC	VICTORIA	British Columbia
LAX	LOS ANGELES	California
SFO	SAN FRANCISCO	California
AST	ASTORIA	Oregon
SEA	SEATTLE	Washington

Alaska Cruise Ship Sampling Checklist for Ocean Ranger Events (USCG/ADEC) - Modified from 2010 QA/QCP

Vessel Name _____
Sampler Name_____
Date _____

I. Notification

- ☐ ADEC project manager notified prior to the sampling event

II. Type of Sampling

- ☐ Other (Example Re-sampling after exceedance of discharge limitations under 18 AAC 69.070 or 33 CFR 159)

III. Sampling Notes (to include:)

- ☐ Vessel name
- ☐ Names of sampling personnel
- ☐ Names of shipboard assistants
- ☐ Signature or initials by the vessel crew in the field notes indicating that the sample port is correct
- ☐ Sample ID clearly stating where the sample was taken
- ☐ Sample date and times recorded on COC
- ☐ Field measurements: pH, chlorine residual, and temp recorded on COC
- ☐ Records collected on discharge flow rates (always) and holding tank volumes (only for underway sampling)
- ☐ Sample ports within 50 feet of the point of overboard discharge
- ☐ Nature of sample recorded (should be grab)
- ☐ Waste type recorded (blackwater, graywater, or mixed)
- ☐ If deviations from VSSP and/or QAPP noted, reported to ADEC/USCG
- ☐ If unannounced sampling, sampler verified that vessel is discharging
- ☐ Latitude/longitude and speed at time of discharge being sampled is recorded,
- ☐ Copy of the Discharge record for the sampled discharge included (unannounced only)
- ☐ Chain of custody properly completed
- ☐ Samples delivered to laboratory within holding times for analyses

Alaska Cruise Ship Data Review Checklist

Vessel Name _____
Date_____
Location_____
Sampling Team_____
Laboratory_____
_____

Sample Type:

- ☐ Continued Compliance
- ☐ ADEC General Permit
- ☐ Ocean Ranger Emergency Sample

Final Report Package Includes:

- ☐ Sampling event summary sheet
- ☐ Analytical Report
  - ☐ Ship name
  - ☐ Sample ID's
  - ☐ Sample date and time collected
  - ☐ Date and time of sample preparation
  - ☐ Case narrative describing deviations from methods, procedural problems with sample analysis, explanation of data abnormalities, and any additional information that is necessary for describing the sample. This narrative should explain when results are outside the precision and accuracy limits and the corrective actions taken to rectify QC problems.
- ☐ Chain of custody form
- ☐ Cooler receipt forms with temperature indicated
- ☐ Discharge logs covering time of sampling. (For recircultated samples, provide discharge logs back to the time of last discharge)
- ☐ Field notes.
- ☐ Latitude and longitude information pertaining to each sample including which overboard port the waste was discharged through and the speed the vessel was traveling
- ☐ Completed sampling checklist
- ☐ Completed data review checklist

Report Naming Instructions

Use the following to complete the reports.

First Letter	Company Code
Second and Third Letter	Ship Code
Next Group	Date in format – month, day, year
Last two Letters	Type of Inspection
	VO = Voyage IP = In Port
Example:	
Carnival Cruise Lines	C
Carnival Spirit	SP
Date 24 February 2011	022411
Type of Inspection	VO

Daily Report	CSP022411VO
Departure Report	CSP022411departure
Improvement Report	CSP022411improvement
Incident Report	CSP022411incident
Oil Spill Report	CSP022411oilspill
Seasonal Report	CSP022411seasonal
Additional Observation Report	CSP022411addtionalobservation
Turnover Report	CSP022411turnover

Codes

Cruise Line	Ship Name	Cruise Line Code	Ship Code	Report Code
Disney	Wonder	D	WO	DWO
Carnival	Spirit	C	SP	CSP
Celebrity	Infinity	X	IN	XIN
	Millennium	X	MN	XMN
	Century	X	CE	XCE
Crystal	Symphony	Y	SY	YSY
Holland	Oosterdam	H	OO	HOO
	Statendam	H	SD	HSD
	Zuiderdam	H	ZD	HZD
	Westerdam	H	WE	HWE
	Zaandam	H	ZA	HZA
	Amsterdam	H	AM	HAM
	Volendam	H	VO	HVO
Norwegian	Pearl	N	PE	NPE
	Star	N	SR	NSR
Princess	Golden	P	GL	PGL
	Sea	P	SE	PSE
	Diamond	P	DI	PDI
	Coral	P	CR	PCR
	Sapphire	P	SA	PSA
	Island	P	IS	PIS
Oceania	Regatta	O	RE	ORE
Regent	Seven Seas Navigator	G	SN	GSN
Royal Caribbean	Radiance of the Seas	R	RA	RRA
	Rhapsody of the Seas	R	RH	RRH
Silver Seas	Silver Shadow	S	SH	SSH
P&O Lines	Arcadia	A	AR	AAR

Ocean Rangers and Customs

As a minimum the Ocean Ranger shall prepare a CBP 6059B declaration and present it with any luggage and themselves for inspection by the US Customs and Border Protection officers. This will be standard throughout the Alaskan ports. Rangers shall report to Customs personnel in all Alaskan ports when the Ocean Ranger is disembarking at Alaskan ports before the end of a voyage, this includes Skagway.

Note: Ocean Rangers are not pilots.

Remember about Customs

1. Ocean Rangers must check in with the USCBP office in the port they are disembarking a ship.
2. Ocean Rangers are not permitted to purchase duty free items, during on or off duty time. This includes, but not limited to, perfumes and cigarettes.
3. USCBP can take your passport and hold it. (Cruise lines should not be taking your passport and keeping it.)

U.S. Customs and Border Protection
Securing America's Borders
About CBP | Newsroom | Border Security | Trade | Travel | Careers

Service Port-Anchorage (Whittier)

Port Information

Port Code: **3126**
Location Address: **605 W. 4th Ave.**
Suite 230
Anchorage, AK 99501
Mailing Address: **Same As Above**
General Phone: **(907) 271-2675**
General Fax: **(907) 271-2684**
Operational Hours: **8:00 AM-4:30 PM(Alaska)**
Weekdays (Monday-Friday)

Port Of Entry-Juneau

Port Information

Port Code: **3101**
Location Address: **1875 Shell Simmons Dr. Suite 116**
Juneau, AK 99801
Mailing Address: **Same As Above**
General Phone: **(907) 586-7211**
General Fax: **(907) 586-9309**
Operational Hours: **8:30 AM-4:30 PM(Alaska)**
Weekdays (Monday-Friday)

Facilities And Crossings

Name: **Juneau Seaport ***
Phone: **(907) 586-7108**
Fax: **(907) 586-7109**
Operational Hours: **5:30 AM-4:30 PM(Alaska)**
Seven Days A Week (7)
05/01/2008To09/01/2020

**** (Downtown Juneau Bus Parking Lot by Mt. Roberts Tramway)***

Port Of Entry-Ketchikan

Port Information

Port Code: **3102**

Location Address: **648 Mission St.**
Suite 101
Ketchikan, AK 99901

Mailing Address: **Same As Above**

General Phone: **(907) 225-2254**

General Fax: **(907) 225-2288**

Operational Hours: **8:00 AM-5:00 PM(Alaska)**
Seven Days A Week (7)

Port Of Entry-Skagway

Port Information

Port Code: **3103**

Location Address: **Milepost 6.8, Klondike Hwy.**
Skagway, AK 99840

Mailing Address: **P.O. Box 475**
Skagway, AK 99840-0437

General Phone: **(907) 983-2325**

General Fax: **(907) 983-3626**

Operational Hours: **Twenty Four (24) Hours A Day**
Seven Days A Week (7)

Port Of Entry-Sitka

Port Information

Port Code: **3115**

Location Address: **329 Harbor Dr.**
Room 206
Sitka, AK 99835

Mailing Address: **Same As Above**

General Phone: **(907) 747-3374**

General Fax: **(907) 747-3554**

Operational Hours: **8:00 AM-5:00 PM(Alaska)**
Weekdays (Monday-Friday)

Port Of Entry-Wrangell

Port Information

Port Code: **3105**

Location Address: **1300 Airport Way**
Wrangell, AK 99929

Mailing Address: **PO Box 561**

General Phone: **(907) 874-3415**

General Fax: **(907) 874-3416**

Operational Hours: **7:00 AM-4:00 PM(Alaska)**
Weekdays (Monday-Friday)

U.S. Customs and Border Protection

Customs Declaration

FORM APPROVED OMB NO. 1651-0009

19 CFR 122.27, 148.12, 148.13, 148.110 148.111, 148b, 21 CFR 1316

Each arriving traveler or responsible family member must provide the following information (only ONE written declaration per family is required):

1. Family **Name**

   First (Given) Middle

2. **Birth date** Day Month Year
3. Number of **Family members** traveling with you
4. (a) U.S. Street **Address** (hotel name/destination)

   (b) City (c) State

5. **Passport issued by** (country)
6. **Passport number**
7. Country of **Residence**
8. **Countries visited** on this trip prior to U.S. arrival
9. **Airline/Flight No. or Vessel Name**
10. The primary purpose of this trip is **business** Yes No
11. I am (We are) bringing
    (a) fruits, vegetables, plants, seeds, food, insects: Yes No
    (b) meats, animals, animal/wildlife products: Yes No
    (c) disease agents, cell cultures, snails: Yes No
    (d) soil or have been on a farm/ranch/pasture: Yes No
12. I have (We have) been in close proximity of (such as touching or handling) **livestock**: Yes No
13. I am (We are) carrying **currency or monetary instruments** over $10,000 U.S. or foreign equivalent (see definition of monetary instruments on reverse): Yes No
14. I have (We have) **commercial merchandise:** (articles for sale, samples used for soliciting orders, or goods that are not considered personal effects): Yes No
15. **Residents** — the **total value of all goods,** including commercial merchandise I/we have purchased or acquired abroad, (including gifts for someone else, but not items mailed to the U.S.) and am/are bringing to the U.S. is: $

    Visitors — the **total value of all articles** that will remain in the U.S., including commercial merchandise is: $

Read the instructions on the back of this form. Space is provided to list all the items you must declare.

I HAVE READ THE IMPORTANT INFORMATION ON THE REVERSE SIDE OF THIS FORM AND HAVE MADE A TRUTHFUL DECLARATION.

X

(Signature) Date (day/month/year)

For Official Use Only

CBP Form 6059B (01/04)

Sample

U.S. Customs and Border Protection Welcomes You to the United States

U.S. Customs and Border Protection is responsible for protecting the United States against the illegal importation of prohibited items. CBP officers have the authority to question you and to examine you and your personal property. If you are one of the travelers selected for an examination, you will be treated in a courteous, professional, and dignified manner. CBP Supervisors and Passenger Service Representatives are available to answer your questions. Comment cards are available to compliment or provide feedback.

Important Information

U.S. Residents — declare all articles that you have acquired abroad and are bringing into the United States.

Visitors (Non-Residents) — declare the value of all articles that will remain in the United States.

Declare all articles on this declaration form and show the value in U.S. dollars. For gifts, please indicate the retail value.

Duty — CBP officers will determine duty. U.S. residents are normally entitled to a duty-free exemption of $800 on items accompanying them. Visitors (non-residents) are normally entitled to an exemption of $100. Duty will be assessed at the current rate on the first $1,000 above the exemption.

Controlled substances, obscene articles, and toxic substances are generally prohibited entry. Agricultural products are restricted entry.

Travel Fast, and Welcome to the United States

The transportation of currency or monetary instruments, regardless of the amount, is legal. However, if you are going to or to take out of the United States more than $10,000 U.S. (or its equivalent, or a combination of both), you are required by law to file a report on FinCEN 105 (formerly Customs Form 4790) with U.S. Customs and Border Protection. Monetary instruments include coin, currency, travelers checks and bearer instruments such as personal or cashiers checks and stocks and bonds. If you have someone else carry the currency or monetary instrument for you, you must also file a report on FinCEN 105. Failure to file the required report or failure to report the *total* amount that you are carrying may lead to the seizure of *all* the currency or monetary instruments, and may subject you to civil penalties and/or criminal prosecution. SIGN ON THE OPPOSITE SIDE OF THIS FORM AFTER YOU HAVE READ THE IMPORTANT INFORMATION ABOVE AND MADE A TRUTHFUL DECLARATION.

Description of Articles (List may continue on another CBP Form 6059B)	Value	CBP Use Only
	Total	

PAPERWORK REDUCTION ACT NOTICE: The Paperwork Reduction Act says we must tell you why we are collecting this information, how we will use it, and whether you have to give it to us. This information collected on this form is needed to carry out the Customs laws, regulations, and currency laws of the United States. CBP requires the information on this form to insure that travelers are complying with these laws and to allow us to figure and collect the right amount of duty and tax. Your response is mandatory as agency rules require customs or specific items present to be required to responding to a collection of information, unless it displays a valid OMB control number. The estimated average burden associated with this collection of information is 4 minutes per respondent or record-keeper, depending on individual circumstances. Comments concerning the accuracy of this burden estimate and suggestions for reducing this burden should be directed to U.S. Customs and Border Protection, Regulations Clearance Office, Information Services Branch, Washington, DC 20229, and to the Office of Management and Budget, Paperwork Reduction Project (1651-0009), Washington, DC 20503. **THIS FORM MAY NOT BE REPRODUCED WITHOUT APPROVAL FROM THE CBP FORMS MANAGER.**

CBP Form 6059B (01/04)

Sample

Sample Customs Declaration Form

U.S. Customs and Border Protection Declaration Form 6059B - Instructions

Each individual arriving into the United States must complete the CBP Declaration Form 6059B. If you are traveling with other immediate family members, complete one form per family unit. Please contact your nearest port of entry to order the form.

Explanations for information fields are explained below sample image.
U.S. Customs and Border Protection Declaration Form - Front
1. Print your last (family) name. Print your first (given) name. Print the first letter of your middle name.
2. Print your date of birth in the appropriate day/month/year boxes.
3. Print the number of family members traveling with you (do not include yourself).
4. Print your current street address in the United States. If you are staying at a hotel, include the hotel's name and street address. Print the city and the state in the appropriate boxes.
5. Print the name of the country that issued your passport.
6. Print your passport number.
7. Print the name of the country where you currently live.
8. Print the name of the country(ies) that you visited on your trip prior to arriving to the United States.
9. If traveling by airline, print the airline's name and flight number. If traveling by vessel (ship), print the vessel's name.
10. Mark an X in the Yes or No box. Are you traveling on a business (work-related) trip?
11. Mark an X in the Yes or No box. Are you bringing with you:
    a. fruits, plants, food, or insects?
    b. meats, animals, or animal/wildlife products?
    c. disease agents, cell cultures, or snails?
    d. soil or have you visited a farm/ranch/pasture outside the United States?
12. Mark an X in the Yes or No box. Have you or any family members traveling with you been in close proximity of (such as touching or handling) livestock outside the United States?
13. Mark an X in the Yes or No box. Are you or any family members traveling with you bringing $10,000 or more in U.S. dollars or foreign equivalent in any form into the United States?
Read definition of monetary instruments on the reverse side of the form.
Examples: coins, cash, personal or cashier's check, traveler's checks, money orders, stocks, bonds.
If yes, your must complete the Customs Form 4790.
14. Mark an X in the Yes or No box. Are you or any family members traveling with you bringing commercial merchandise into the United States?
Examples: all articles intended to be sold or left in the United States, samples used for soliciting orders, or goods that are not considered personal effects.

15. If you are a U.S. resident, print the total value of all goods (including commercial merchandise) you or any family members traveling with you have purchased or acquired abroad (including gifts for someone else, but not items mailed to the United States) and are bringing into the United States.
Note: U.S. residents are normally entitled to a duty-free exemption of $800 on items accompanying them.
If you are a visitor (non-U.S. Resident), print the total value of all goods (including commercial merchandise) you or any family members traveling with you are bringing into the United States and will remain in the United States.
Note: Visitors (non-U.S. Residents) are normally entitled to an exemption of $100.
Declare all articles on this form. For gifts, please indicate the retail value. Use the reverse side of this form if additional space is needed to list the items you will declare.
The U.S. Customs officer will determine duty. Duty will be assessed at the current rate on the first $1,000 above the exemption.
Read the notice on the reverse side of the form.
Sign the form and print the date.
Keep the complete form with you and hand it to the CBP inspector when you approach the Customs and Border Protection area.
Controlled substances, obscene articles, and toxic substances are generally prohibited entry.

FROM U. S. CUSTOMS (TUE) 3. 24'09 12:50/ST. 12:49/NO. 4861178130 P 2

799 9th Street NW
Washington, DC 20229

U.S. Customs and Border Protection

MAR 24 2009

HQ H055255

VES-3-02-OT:RR:BSTC:CCI H055255 LLB

CATEGORY: Carriers

Mr. Paul Johnsen
Crowley Marine Services
9487 Regency Square Blvd.
Jacksonville, Florida 32225

RE: Coastwise Transportation; 46 U.S.C. § 55103; 19 C.F.R. § 4.50(b)

Dear Mr. Johnsen:

This letter is in response to your correspondence of March 19, 2009, in which you inquire about coastwise transportation of the individuals mentioned therein. Our decision follows.

FACTS

The voyages in question involve the transportation of the subject individuals, marine engineers, aboard non-coastwise-qualified cruise vessels (the "vessels") between the Alaskan ports of Juneau, Ketchikan, and Skagway. The individuals will embark and disembark these vessels during the 2009 through 2010 cruise seasons according to a schedule that will be provided to and coordinated with, the Customs and Border Protection's (CBP) port in Juneau, Alaska. The purpose of the subject individuals aboard these vessels is to inspect the engineering, sanitation, and health related operations of the vessel as they relate to the marine discharge and pollution requirements and health and safety practices required under Alaska state law.

ISSUE

Whether the individuals described in the FACTS section above are "passengers" within the meaning of 46 U.S.C. § 55103 and 19 C.F.R. § 4.50(b).

LAW and ANALYSIS

Generally, the coastwise laws prohibit the transportation of passengers or merchandise between points in the United States embraced within the coastwise laws in any vessel other than a vessel built in, documented under the laws of, and owned by citizens of the United States. Such a vessel, after it has obtained a coastwise endorsement from the U.S. Coast Guard, is said to be "coastwise qualified."

The coastwise laws generally apply to points in the territorial sea, which is defined as the belt, three nautical miles wide, seaward of the territorial sea baseline, and to points located in internal waters, landward of the territorial sea baseline. See 33 C.F.R. § 2.22(a)(2)(2008). The coastwise law applicable to the carriage of passengers is found in 46 U.S.C. § 55103[1] which provides:

> (a) In General. Except as otherwise provided in this chapter or chapter 121 of this title, a vessel may not transport passengers between ports or places in the United States to which the coastwise laws apply, either directly or via a foreign port, unless the vessel-
>
> (1) is wholly owned by citizens of the United States for purposes of engaging in coastwise traffic;
>
> (2) has been issued a certificate of documentation with a coastwise endorsement under chapter 121 or is exempt from documentation but would otherwise be eligible for such a certificate and endorsement.
>
> (b) Penalty. The penalty for violating subsection (a) is $300 for each passenger transported and landed.

The Customs and Border Protection ("CBP") Regulations, promulgated under the authority of 46 U.S.C. § 55103, provide:

> A passenger within the meaning of this part is any person carried on a vessel who is not connected with the operation of the vessel, her navigation, ownership, or business.

19 C.F.R. § 4.50(b).

You state that the subject individuals will be transported on the vessel for the purpose of inspecting the engineering, sanitation, and health related operations of the vessel, as described above. In this context, and in accordance with previous Headquarters' rulings, workmen, technicians, or observers transported by vessel between ports of the United States are not classified as "passengers" within the meaning of 46 U.S.C. § 55103 and 19 C.F.R. § 4.50(b), if they are required to be on board to contribute to the accomplishment of the

[1] Recodified by Pub. L. 109-304, enacted on October 6, 2006.

operation or navigation of the vessel during the voyage or are on board because of a necessary vessel ownership or business interest during the voyage. HQ 101699 (Nov. 5, 1975); see also HQ 116721 (Sept. 25, 2006) quoting HQ 101699.

In the present case, to the extent that the subject individuals would be engaged in any shipboard activities while traveling on the foreign vessel between coastwise ports, that would be "directly and substantially" related to the operation or business itself, as would be the case under the facts herein submitted, the subject individuals would not be considered passengers.[2]

The subject individuals are not "passengers" within the meaning of 46 U.S.C. § 55103 and 19 C.F.R. § 4.50(b). Accordingly, the coastwise travel, as described above, is not in violation of 46 U.S.C. § 55103.

HOLDING

The subject individuals are not "passengers" within the meaning of 46 U.S.C. § 55103 and 19 C.F.R. § 4.50(b). Therefore, the coastwise transportation of such individuals is not in violation of 46 U.S.C. § 55103.

Sincerely,

Glen E. Vereb

Glen E. Vereb
Chief
Cargo Security, Carriers and Immigration Branch

Cc: Ken Koelsch
CBP, Juneau, Alaska

[2] See HQ 116721, supra; and see HQ 116659 (May 19, 2006) (referencing the "direct and substantial" test); see also, e.g., Customs telex 104712 (July 21, 1980) (finding that repairman were not passengers when carried aboard a foreign vessel between U.S. ports "for [the] purpose of repairing vessel en route between such ports.").

STATE OF ALASKA STATUTES REGULATIONS-

COMMERCIAL PASSENGER VESSEL ENVIRONMENTAL COMPLIANCE PROGRAM [CPVEC / Cruise Ship program]

Sec. 46.03.460. Program established.

(a) There is established the commercial passenger vessel environmental compliance program providing for

(1) terms and conditions of vessel discharges;

(2) independent verification of environmental compliance; and

(3) allowing the department to monitor and supervise discharges from commercial passenger vessels through a registration system.

(b) The department may adopt regulations to carry out the purposes of AS 46.03.460 - 46.03.490. The department shall use negotiated regulation making under AS 44.62.710 - 44.62.800, when appropriate, to develop those regulations.

Sec. 46.03.461. Registration requirements.

(a) Except as provided in AS 46.03.487 , each calendar year in which the owner or operator of a commercial passenger vessel intends to operate, or cause or allow to be operated, the vessel in the marine waters of the state, the owner or operator of the vessel shall register with the department. The registration shall be completed before the time any commercial passenger vessel of the owner or operator enters the marine waters of the state in that calendar year. The registration must include the following information:

(1) the vessel owner's business name and, if different, the vessel operator's business name for each commercial passenger vessel of the owner or operator that is scheduled to be in the marine waters of the state during the calendar year;

(2) the postal address, electronic mail address, telephone number, and facsimile number for the principal place of each business identified under (1) of this subsection;

(3) the name and address of an agent for service of process for each business identified under (1) of this subsection; the owner and operator shall continuously maintain a designated agent for service of process whenever a commercial passenger vessel of the owner or operator is in the marine waters of the state, and the agent must be an individual resident of this state, a domestic corporation, or a foreign corporation having a place of business in and authorized to do business in this state;

(4) the name or call sign of and Port of Registry for each of the owner's or operator's vessels that is scheduled either to call upon a port in this state or otherwise to be in the marine waters of the state during the calendar year and after the date of registration; and

(5) an agreement to comply with the terms and conditions of vessel discharges specified under AS 46.03.462 .

(b) Registration under (a) of this section shall be executed under oath by the owner or operator.

(c) Upon request of the department, the registrant shall submit registration information required under this section electronically.

Sec. 46.03.462. 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 effluent limits or standards under state or federal law, including Alaska Water Quality Standards governing pollution at the point of discharge, except as provided in (e) of this section;

(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).

(c) The owner or operator of a small commercial passenger vessel may submit a plan for alternative terms and conditions of vessel discharges if the keel of the vessel was laid before January 1, 2004. The alternative terms and conditions may include alternatives to the requirements under AS 46.03.465 (a) - (d). Except as provided in (d) of this section, the department shall approve the plan for a three-year period if the department finds that the alternative terms and conditions in the plan incorporate the best management practices for protecting the environment to the maximum extent feasible. The department shall adopt regulations to implement this subsection but may not require an owner or operator to retrofit a vessel solely for the purpose of waste treatment if the retrofitting requires additional stability testing or relicensing by the United States Coast Guard. In this subsection, "best management practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the marine waters of the state.

(d) A plan submitted under (c) of this section after December 31, 2012, may not be approved by the department for a period extending beyond December 31, 2015.

(e) When issuing, reissuing, renewing, or modifying a permit required under (a)(1) of this section, the department may include effluent limits or standards less stringent than those required under (b)(1) of this section for not more than three years duration if the department finds that a permittee is using economically feasible methods of pollution prevention, control, and treatment the department considers to be the most technologically effective in controlling all wastes and other substances in the discharge but is unable to achieve compliance with Alaska Water Quality Standards at the point of discharge.

(f) In developing an effluent limit or standard under (e) of this section, the department shall

(1) require use of economically feasible methods of pollution prevention, control, and treatment the department finds to be the most technologically effective; and

(2) apply all other applicable provisions of state law and this section.

(g) When reissuing, renewing, or modifying a permit required under this section that was issued after July 10, 2009, the department may not include effluent limits or standards less stringent than the comparable effluent limitations in a previous permit issued under this section.

(h) Nothing in this section shall be construed to limit the authority of the department to

(1) restrict the areas in which discharges permitted under this section may occur; or

(2) impose additional terms and conditions on the manner in which discharges permitted under this section may be made in a specific area.

Sec. 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 or under AS 46.03.462(c), 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 or under AS 46.03.462(c), 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 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.

Sec. 46.03.464. Advisory panel on wastewater treatment; commissioner's reports to the legislature.

(a) A science advisory panel is established in the department. The panel consists of 11 members selected by the commissioner. Members of the panel serve without compensation but are entitled to transportation expenses and per diem as authorized for members of boards and commissions under AS 39.20.180 . Each of the individuals the commissioner selects serves for up to a six-year period and have expertise in the design, operation, or function of wastewater management and treatment systems. Among the 11 panel members, the commissioner shall select at least one individual from each of the following groups:

(1) coastal community domestic wastewater management;

(2) the cruise ship industry;

(3) the commercial fishing industry; and

(4) a nongovernmental organization with an interest in water quality matters.

(b) The panel shall

(1) meet at the call of the commissioner and give public notice of meetings of the panel as required under AS 44.62.310 and 44.62.312;

(2) hold one or more public conferences or workshops before 2013, with at least one public conference or workshop to be held between January 1, 2013, and January 1, 2015, if the department issues, renews, or modifies a permit required under AS 46.03.462 (a)(1) after January 1, 2012; and

(3) assist and advise the commissioner in conducting the analyses and preparing the reports required in (c) and (d) of this section.

(c) On or before January 1, 2013, the commissioner, in consultation with the panel, shall provide a preliminary report to the legislature that summarizes

(1) methods of pollution prevention, control, and treatment in use and the level of effluent quality achieved by commercial passenger vessels;

(2) additional economically feasible methods of pollution prevention, control, and treatment that could be employed to provide the most technologically effective measures to control all wastes and other substances in the discharge; and

(3) the environmental benefit and cost of implementing additional methods of pollution prevention, control, and treatment identified in (2) of this subsection.

(d) On or before January 1, 2015, the commissioner, in consultation with the panel, shall provide a final report to the legislature that includes the topics identified in (c)(1) - (3) of this section.

Sec. 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.

(g) The department may exempt from the requirements of (a) - (d) of this section the owner or operator of a small commercial passenger vessel who has a plan for alternative terms and conditions of vessel discharges approved by the department under AS 46.03.462 (c).

(h) On request, the owner or operator of a commercial passenger vessel discharging wastewater under AS 46.03.462 (b) shall provide the department with information relating to wastewater treatment, pollution avoidance, and pollution reduction measures used on the vessel, including testing and evaluation procedures and economic and technical feasibility analyses.

Sec. 46.03.470. Record keeping requirements.

An owner or operator subject to AS 46.03.465 shall record the information required to be gathered under that section and shall maintain the records for three years after the date the information was gathered.

Sec. 46.03.475. Reporting requirements.

(a) An owner or operator of a commercial passenger vessel who becomes aware of a discharge in violation of AS 46.03.463 shall immediately report that discharge to the department. There is no audit report privilege under AS 09.25.450 for this information.

(b) If the owner or operator of a commercial passenger vessel operating in the marine waters of the state is required by the Administrator of the Environmental Protection Agency or the secretary of the federal department in which the United States Coast Guard is operating to collect samples and test sewage, graywater, or other wastewater and keep records of the sampling and testing, the owner or operator shall, within 21 days after the sewage, graywater, or other wastewater is tested, submit to the department a copy of the records.

(c) Within 21 days after the testing required under AS 46.03.465(d), the owner or operator shall submit a written report to the department that contains the measurements required under AS 46.03.465(d) and describes the sampling technique and analytical testing methods used. The information in the report required under this subsection may be provided by referring to, and including copies of, other reports that are required by substantially equivalent state or federal 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.

(e) Before the operation of a commercial passenger vessel in the marine waters of the state, the owner or operator of the vessel shall provide to the department a plan that describes the vessel's policies and procedures for

(1) offloading in this state or disposing into the marine waters of the state of nonhazardous solid waste other than sewage; and

(2) offloading of hazardous waste or a hazardous substance from the vessel while it is operating in the marine waters of the state to the extent that the offloading is not covered by (d) of this section.

(f) Upon request of the department, the information required under this section shall be submitted electronically.

(g) This section does not relieve the owner or operator of a commercial passenger vessel from other applicable reporting requirements of state or federal law.

Sec. 46.03.476. Ocean Rangers.

(a) An owner or operator of a large commercial passenger vessel entering the marine waters of the state is required to have an ocean ranger hired or retained by the department on board the vessel to act as an independent observer for the purpose of monitoring state and federal

requirements pertaining to marine discharge and pollution requirements and to insure that passengers, crew, and residents at ports are protected from improper sanitation, health, and safety practices.

(b) The ocean ranger shall monitor, observe, and record data and information related to the engineering, sanitation, and health related operations of the vessel, including but not limited to registration, reporting, record-keeping, and discharge functions required by state and federal law.

(c) Any information recorded or gathered by the ocean ranger shall be promptly conveyed to the Alaska Department of Environmental Conservation and the United States Coast Guard on a form or in a manner approved by the commissioner of environmental conservation. The commissioner may share information gathered with other state and federal agencies.

(d) In this section, "ocean ranger" means

(1) a marine engineer licensed by the United States Coast Guard; or

(2) a person who holds a degree in marine safety and environmental protection, or an equivalent course of study approved by the department, from an accredited maritime educational institution.

Sec. 46.03.480. Fees.

(a) There is imposed an environmental compliance fee on each commercial passenger vessel operating in the marine waters of the state.

(b) The fee imposed by (a) of this section for all commercial passenger vessels, other than vessels operated by the state, is a separate fee for each voyage during which the commercial passenger vessel operates in the marine waters of the state. The fee shall range from $.70 to $1.75 per berth, based on the overnight accommodation capacity of the vessel, determined with reference to the number of lower berths, according to the following categories:

(1) $75 for a commercial passenger vessel with overnight accommodations for at least 50 but not more than 99 passengers for hire;

(2) $175 for a commercial passenger vessel with overnight accommodations for at least 100 but not more than 249 passengers for hire;

(3) $375 for a commercial passenger vessel with overnight accommodations for at least 250 but not more than 499 passengers for hire;

(4) $750 for a commercial passenger vessel with overnight accommodations for at least 500 but not more than 999 passengers for hire;

(5) $1,250 for a commercial passenger vessel with overnight accommodations for at least 1,000 but not more than 1,499 passengers for hire;

(6) $1,750 for a commercial passenger vessel with overnight accommodations for at least 1,500 but not more than 1,999 passengers for hire;

(7) $2,250 for a commercial passenger vessel with overnight accommodations for at least 2,000 but not more than 2,499 passengers for hire;

(8) $2,750 for a commercial passenger vessel with overnight accommodations for at least 2,500 but not more than 2,999 passengers for hire;

(9) $3,250 for a commercial passenger vessel with overnight accommodations for at least 3,000 but not more than 3,499 passengers for hire;

(10) $3,750 for each commercial passenger vessel with overnight accommodations for 3,500 or more passengers for hire.

(c) The fee imposed by (a) of this section for a commercial passenger vessel that is operated by this state shall be determined by agreement between the commissioner of environmental conservation and the commissioner of transportation and public facilities.

(d) An additional fee in the amount of $4 per berth is imposed on all large commercial passenger vessels, other than vessels operated by the state, for the purpose of operating the Ocean Ranger program established in AS 46.03.476 ; said program shall be subject to legislative appropriation.

(e) A commercial passenger vessel operating in the marine waters of the state is liable for the fee imposed by this section. The fee is due and payable to the department in the manner and at the times required by the department by regulation.

Sec. 46.03.481. Citizens' suits.

(a) Any citizen of the State of Alaska may commence a civil action (1) against an owner or operator of a large passenger vessel alleged to have violated any provision of this chapter, or (2) against the department where there is an alleged failure to perform any act or duty under this chapter which is not discretionary. No civil action may be commenced under this section, however, prior to 45 days after the plaintiff has provided written notice of the intent to sue to the Attorney General of Alaska.

(b) Subject to appropriation, as necessary, up to 50 percent and not less than 25 percent of any fines, penalties, or other funds recovered as a result of enforcement of this chapter shall be paid to the person or entity, other than the defendant, providing information sufficient to commence an investigation and enforcement of this chapter under this provision.

Sec. 46.03.482. Commercial passenger vessel environmental compliance fund.

(a) The commercial passenger vessel environmental compliance fund is created in the general fund.

(b) The fund consists of the following, all of which shall be deposited in the fund upon receipt:

(1) money received by the department in payment of fees under AS 46.03.480;

(2) money received under AS 46.03.760 (e) as a result of a violation related to AS 46.03.460 - 46.03.490 unless the money would otherwise be deposited in the oil and hazardous substance release prevention and response fund established by AS 46.08.010 ;

(3) money appropriated to the fund by the legislature;

(4) earnings on the fund.

(c) The legislature may make appropriations from the fund to the department to pay for the department's operational costs necessary to prepare reports that assess the information received by the department for the cruise ship seasons of 2000, 2001, 2002, and 2003 and for the department's operational costs necessary to carry out activities under AS 46.03.460 - 46.03.490 relating to commercial passenger vessels.

(d) The unexpended and unobligated balance of an appropriation made from the fund to the department for the purposes described in (c) of this section lapses into the fund on December 31 following the end of the period for which the appropriation was made.

(e) Nothing in this section creates a dedicated fund.

Sec. 46.03.485. Recognition program.

The department may engage in efforts to encourage and recognize superior environmental protection efforts made by the owners or operators of commercial passenger vessels that exceed the requirements established by law.

Sec. 46.03.487. Exemption for vessels in innocent passage.

AS 46.03.460 - 46.03.490 do not apply to a commercial passenger vessel that operates in the marine waters of the state solely in innocent passage. For purposes of this section, a vessel is engaged in innocent passage if its operation in marine waters of the state, regardless of whether the vessel is a United States or foreign-flag vessel, would constitute innocent passage under the

(1) Convention on the Territorial Sea and the Contiguous Zone, April 29, 1958, 15 U.S.T. 1606; or

(2) United Nations Convention on the Law of the Sea 1982, December 10, 1982, United Nations Publication No. E.83.V.5, 21 I.L.M. 1261 (1982), were the vessel a foreign-flag vessel.

Sec. 46.03.488. Activities of the department.

The department may engage in the following activities relating to commercial passenger vessels operating in the marine waters of the state:

(1) direct in-water monitoring of discharges or releases of sewage, graywater, and other wastewater and direct monitoring of the opacity of air emissions from those vessels;

(2) monitoring and studying of direct or indirect environmental effects of those vessels; and

(3) researching ways to reduce effects of the vessels on marine waters and other coastal resources.

Sec. 46.03.490. Definitions.

In AS 46.03.460 - 46.03.490,

(1) "agent for service of process" means an agent upon whom process, notice, or demand required or permitted by law to be served upon the owner or operator may be served;

(2) "commercial passenger vessel" means a vessel that carries passengers for hire except that "commercial passenger vessel" does not include a vessel

(A) authorized to carry fewer than 50 passengers;

(B) that does not provide overnight accommodations for at least 50 passengers for hire, determined with reference to the number of lower berths; or

(C) operated by the United States or a foreign government;

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

(4) "federal cruise ship legislation" means secs. 1401 - 1414 of H.R. 5666, as incorporated by reference into P.L. 106-554;

(5) "fund" means the commercial passenger vessel environmental compliance fund established under AS 46.03.482 ;

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

(7) "large commercial passenger vessel" means a commercial passenger vessel that provides overnight accommodations for 250 or more passengers for hire, determined with reference to the number of lower berths;

(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;

(9) "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;

(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;

(11) "passengers for hire" means vessel passengers for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel;

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

(13) "small commercial passenger vessel" means a commercial passenger vessel that provides overnight accommodations for 249 or fewer passengers for hire, determined with reference to the number of lower berths;

(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;

(16) "vessel" means any form or manner of watercraft, other than a seaplane on the water, whether or not capable of self-propulsion;

(17) "voyage" means a vessel trip to or from one or more ports of call in the state with the majority of the passengers for hire completing the entire vessel trip; a vessel trip involving stops at more than one port of call is considered a single voyage so long as the majority of passengers for hire complete the entire trip;

(18) "waters of the Alexander Archipelago" means all waters under the sovereignty of the United States within or near Southeast Alaska, beginning at a point 58 degrees 11 minutes 41 seconds North, 136 degrees 39 minutes 25 seconds West (near Cape Spencer Light), thence southeasterly along a line three nautical miles seaward of the baseline from which the breadth of the territorial sea is measured in the Pacific Ocean and the Dixon Entrance, except where this line intersects geodesics connecting the following five pairs of points: (A) 58 degrees 05 minutes 17 seconds North, 136 degrees 33 minutes 49 seconds West and 58 degrees 11 minutes 41 seconds North, 136 degrees 39 minutes 25 seconds West (Cross Sound); (B) 56 degrees 09 minutes 40 seconds North, 134 degrees 40 minutes 00 seconds West and 55 degrees 49 minutes 15 seconds North, 134 degrees 17 minutes 40 seconds West (Chatham Strait); (C) 55 degrees 49 minutes 15 seconds North, 134 degrees 17 minutes 40 seconds West and 55 degrees 50 minutes 30 seconds North, 133 degrees 54 minutes 15 seconds West (Sumner Strait); (D) 54 degrees 41

minutes 30 seconds North, 132 degrees 01 minutes 00 seconds West and 54 degrees 51 minutes 30 seconds North, 131 degrees 20 minutes 45 seconds West (Clarence Strait); (E) 54 degrees 51 minutes 30 seconds North, 131 degrees 20 minutes 45 seconds West and 54 degrees 46 minutes 15 seconds North, 130 degrees 52 minutes 00 seconds West (Revillagigedo Channel); the portion of each such geodesic situated beyond three nautical miles from the baseline from which the breadth of the territorial sea is measured forms the outer limit of the waters of the Alexander Archipelago in those five locations.

- ADEC CPVEC Web Link Laws and Regulations:

  http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm

- BM 2 (2006) (Ballot Measure) Initiative (e.g. Ocean Rangers, Vessel Tracking, Vessel General Permit,)

  http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/Ballot%20Measure%202%20Cruise%20Ship%20Initiative.pdf

- HB 134 (2009) (House Bill) Waste Water Requirements Science Panel (e.g. Ocean Ranger Qualifications, water standards)

  http://www.legis.state.ak.us/basis/get_bill_text.asp?hsid=HB0134Z&session=26

FEDERAL LAW

- Article XIV Certain Alaskan Cruise Ship Operations
  http://www.epa.gov/owow/oceans/cruise_ships/titlexiv.html
- Federal Regulations –USCG- Large Vessel discharges Subpart E

  http://www.uscg.mil/hq/cg5/cg5213/msd.asp and

  http://law.justia.com/us/cfr/title33/33-2.0.1.5.27.5.html

Subpart E—Discharge of Effluents in Certain Alaskan Waters by Cruise Vessel Operations

SOURCE: 66 FR 38930, July 26, 2001, unless otherwise noted.

§ 159.301 Purpose.

The purpose of this subpart is to implement ''Title XIV—Certain Alaskan Cruise Ship Operations'' contained in section 1(a)(4) of Pub. L. 106–554, enacted on December 21, 2000, by prescribing regulations governing the discharges of sewage and graywater from cruise vessels, require sampling and testing of sewage and graywater discharges, and establish reporting and record keeping requirements.

§ 159.303 Applicability.

This subpart applies to each cruise vessel authorized to carry 500 or more passengers operating in the waters of the Alexander Archipelago and the navigable waters of the United States within the State of Alaska and within the Kachemak Bay National Estuarine Research Reserve.

§ 159.305 Definitions.

In this subpart:

Administrator—means the Administrator of the United States Environmental Protection Agency.

Applicable Waters of Alaska—means the waters of the Alexander Archipelago and the navigable waters of the United States within the State of Alaska and within the Kachemak Bay National Estuarine Research Reserve.

Captain of the Port—means the Captain of the Port as defined in Subpart 3.85 of this chapter.

Conventional Pollutants—means the list of pollutants listed in 40 CFR 401.16.

Cruise Vessel—means a passenger vessel as defined in section 2101(22) of Title 46, United States Code. The term does not include a vessel of the United States operated by the federal government or a vessel owned and operated by the government of a State.

Discharge—means a release, however caused, from a cruise vessel, and includes, any escape, disposal, spilling, leaking, pumping, emitting or emptying.

Environmental Compliance Records—includes the Sewage and Graywater Discharge Record Book, all discharge reports, all discharge sampling test results, as well as any other records that must be kept under this subpart.

Graywater—means only galley, dishwasher, bath, and laundry waste water. The term does not include other wastes or waste streams.

548

§ 159.307 33 CFR Ch. I (7–1–07 Edition)
Navigable Waters—has the same meaning as in section 502 of the Federal Water Pollution Control Act, as amended.
Person—means an individual, corporation, partnership, limited liability company, association, state, municipality, commission or political subdivision of a state, or any federally recognized Indian tribal government.
Priority Pollutant—means the list of toxic pollutants listed in 40 CFR 401.15.
Sewage—means human body wastes and the wastes from toilets and other receptacles intended to receive or retain body waste.
Treated Sewage—means sewage meeting all applicable effluent limitation standards and processing requirements of the Federal Water Pollution Control Act, as amended and of Title XIV of Public Law 106–554 ''Certain Alaskan Cruise Ship Operations'', and regulations promulgated under either.
Untreated Sewage—means sewage that is not treated sewage.
Waters Of The Alexander Archipelago—means all waters under the sovereignty of the United States within or near Southeast Alaska as follows:
(1) Beginning at a point 58° 11–44 N, 136° 39–25 W [near Cape Spencer Light], thence southeasterly along a line three nautical miles seaward of the baseline from which the breadth of the territorial sea is measured in the Pacific Ocean and the Dixon Entrance, except where this line intersects geodesics connecting the following five pairs of points:
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]
(2) The portion of each such geodesic in paragraph (1) of this definition situated beyond 3 nautical miles from the baseline from which the breadth of the territorial seas is measured from the outer limit of the waters of the Alexander Archipelago in those five locations.

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

§ 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;
(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.

[66 FR 38930, July 26, 2001, as amended at USCG–2005–21531, 70 FR 36350, June 23, 2005]

§ 159.311 Safety exception.

The regulations in this subpart shall not apply to discharges made for the purpose of securing the safety of the cruise vessel or saving life at sea, provided that all reasonable precautions have been taken for the purpose of preventing or minimizing the discharge.

§ 159.313 Inspection for compliance and enforcement.

(a) Cruise vessels operating within the applicable waters of Alaska are subject to inspection by the Coast Guard to ensure compliance with this subpart.

(b) An inspection under this section shall include an examination of the Sewage and Graywater Discharge Record Book required under § 159.315 of this subpart, environmental compliance records, and a general examination of the vessel. A copy of any entry in the Sewage and Graywater Discharge Record Book may be made and the Master of the vessel may be required to certify that the copy is a true copy of the original entry.

(c) A vessel not in compliance with this subpart may be subject to the penalties set out in § 159.321, denied entry into the applicable waters of Alaska, detained, or restricted in its operations by order of the COTP.

§ 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.

§ 159.317 33 CFR Ch. I (7–1–07 Edition)
(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.

§ 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 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

551

Coast Guard, DHS § 159.321

(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.

§ 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]

§ 159.321 Enforcement.

(a) *Administrative Penalties*—(1) *Violations.* Any person who violates this subpart may be assessed a class I or class II civil penalty by the Secretary or his delegatee.

(2) *Classes of penalties.* (i) *Class I.* The amount of a class I civil penalty under this section may not exceed $10,000 per violation, except that the maximum amount of any class I civil penalty under this section shall not exceed $25,000. Before assessing a civil penalty under this subparagraph, the Secretary or his delegatee shall give to the person to be assessed such penalty written notice of the Secretary's proposal to assess the penalty and the opportunity to request, within 30 days of the date the notice is received by such person, a hearing on the proposed penalty. Such hearing shall not be subject to 5 U.S.C. 554 or 556, but shall provide a reasonable opportunity to be heard and to present evidence.

(ii) *Class II.* The amount of a class II civil penalty under this section may not exceed $10,000 per day for each day during which the violation continues, except that the maximum amount of any class II civil penalty under this section shall not exceed $125,000. Except as otherwise provided in paragraph (a) of this section, a class II civil penalty shall be assessed and collected in the same manner, and subject to the same provisions as in the case of civil penalties assessed and collected after notice and an opportunity for hearing on the record in accordance with 5 U.S.C. 554. Proceedings to assess a class II administrative civil penalty under this section will be governed by 33 CFR Part 20.

(3) *Rights of interested persons.* (i) *Public notice.* Before issuing an order assessing a class II civil penalty under this paragraph, the Secretary shall provide public notice of and reasonable opportunity to comment on the proposed issuance of each order.

(ii) *Presentation of evidence.* Any person who comments on a proposed assessment of a class II civil penalty under this section shall be given notice of any hearing held under paragraph (a) of this section, and of the order assessing such penalty. In any hearing held under paragraph (a)(3) of this section, such person shall have a reasonable opportunity to be heard and present evidence.

(iii) *Rights of interested persons to a hearing.* If no hearing is held under paragraph (a)(2) of this section before issuance of an order assessing a class II civil penalty under this section, any person who commented on the proposed assessment may petition, within 30 days after the issuance of such an order, the Secretary or his delegatee to set aside such order and provide a hearing on the penalty. If the evidence presented by the petitioner in support of the petition is material and was not considered in the issuance of the order,

552

§ 159.321 33 CFR Ch. I (7–1–07 Edition)
the Secretary, or his delegatee, shall immediately set aside such order and provide a hearing in accordance with paragraph (a)(2)(ii) of this section. If the Secretary or his delegatee denies a hearing under this clause, the Secretary or his delegatee shall provide to the petitioner and publish in the FEDERAL REGISTER notice of and the reasons for such denial.
(b) *Civil judicial penalties*—(1) *Generally.* Any person who violates this subpart shall be subject to a civil penalty not to exceed $25,000 per day for each violation. Each day a violation continues constitutes a separate violation.
(2) *Limitation.* A person is not liable for a civil judicial penalty under this paragraph for a violation if the person has been assessed a civil administrative penalty under paragraph (a) of this section for the violation.
(c) *Determination of amount.* In determining the amount of a civil penalty under paragraphs (a) or (b) of this section, the court or the Secretary or his delegatee shall consider the seriousness of the violation, any history of such violations, any good-faith efforts to comply with applicable requirements, the economic impact of the penalty on the violator, and other such matters as justice may require.
(d) *Criminal penalties*—(1) *Negligent violations.* Any person who negligently violates this subpart commits a Class A misdemeanor.
(2) *Knowing violations.* Any person who knowingly violates this subpart commits a Class D felony.
(3) *False statements.* Any person who knowingly makes any false statement, representation, or certification in any record, report or other document filed or required to be maintained under this subpart, or who falsifies, tampers with, or knowingly renders inaccurate any testing or monitoring device or method required to be maintained under this subpart commits a Class D felony.
(e) *Awards.* (1) The Secretary or his delegatee or the court, when assessing any fines or civil penalties, as the case may be, may pay from any fines or civil penalties collected under this section an amount not to exceed one-half of the penalty or fine collected to any individual who furnished information which leads to the payment of the penalty or fine. If several individuals provide such information, the amount shall be divided equitably among such individuals. No officer or employee of the United States, the State of Alaska or any Federally recognized Tribe who furnishes information or renders service in the performance of his or her official duties shall be eligible for payment under this paragraph.
(2) The Secretary, his delegatee, or a court, when assessing any fines or civil penalties, as the case may be, may pay, from any fines or civil penalties collected under this section, to the State of Alaska or any Federally recognized Tribe providing information or investigative assistance which leads to payment of the penalty or fine, an amount which reflects the level of information or investigative assistance provided. Should the State of Alaska or a Federally recognized Tribe and an individual under paragraph (e)(1) of this section be eligible for an award, the Secretary, his delegatee, or the court, as the case may be, shall divide the amount equitably.
(f) *Liability in rem.* A cruise vessel operated in violation of this subpart is liable in rem for any fine imposed under paragraph (c) of this section or for any civil penalty imposed under paragraphs (a) or (b) of this section, and may be proceeded against in the United States district court of any district in which the cruise vessel may be found.

STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
COMMERCIAL PASSENGER VESSEL ENVIRONMENTAL COMPLIANCE PROGRAM

SEAN PARNELL, GOVERNOR
410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, Alaska 99811-1800
PHONE: (907) 465-5300
FAX: (907) 465-5274
http://www.state.ak.us/DEC/

January 3, 2011

Subject: Alaska's Commercial Passenger Vessel Annual Registration and Reporting Large Vessels[1]

Dear Sir or Madam:

Thank you for choosing Alaska as a destination for your vessel.

The Commercial Passenger Vessel Environmental Compliance (CPVEC) Program is established by Alaska Statute (AS) 46.03.460 – 46.03.490 and 18 AAC 69. The Alaska Department of Environmental Conservation (ADEC) Division of Water administers this program, which addresses wastewater discharges, hazardous wastes and solid wastes, and directly monitors air opacity of vessels operating in Alaska waters.

Under the CPVEC program, vessel owners or operators who intend to operate in Alaska marine waters in 2011 are required to submit the documents listed in Table 1.

ADEC will not send hardcopies of the registration documents via certified mail to the 2011 vessel contacts. The registration will be conducted via an on-line registration system that allows vessel owners or operators to attach the support documentation.

The ADEC website at http://www.dec.state.ak.us/water/cruise_ships/reg/CPVEC_reg_step_by_step.pdf includes a complete (printable) set of instructions.

The 2011 on-line registration includes per voyage[2] fee requirements for:

- The Environmental Compliance Fee for commercial passenger vessels (A.S. 46.03.480); and
- The Ocean Ranger Fee for large passenger vessels ($4 per berth per voyage) pursuant to A.S. 46.03.476 and A.S. 46.03.480(d).

Registration documents are also available both in PDF and Word versions on the ADEC website http://www.dec.state.ak.us/water/cruise_ships/regletter.htm or on request.

The only document the vessel owner or operator must send to ADEC through the mail is the original notarized vessel owner or operator's signature page.

Vessel owners/operators that discharge wastewater into the marine waters of the state[3] must seek coverage under the Large Commercial Passenger Vessel Wastewater Discharge General Permit. Information about the 2010 General Permit can be found at: http://www.dec.state.ak.us/water/cruise_ships/gp/10gp.html.

[1] Over 250 passengers as determined by the number of lower berths.

[2] A voyage is defined as "vessel trip to or from one or more ports of call in the state with the majority of passengers for hire completing the entire vessel trip; a vessel trip involving stops at more than one port of call is considered a single voyage so long as the majority of passengers for hire complete the entire trip." (AS 46.03.490(17))

Table 1. Schedule and Description of CPVEC Requirements

Document	Authority	Due Date
Registration	AS 46.03.461, 18 AAC 69.010	March 1, 2011
Quality Assurance Project Plan (sampling QA/ QC Plan)	AS 46.03.465(b), 18 AAC 69.025	March 1, 2011
Non-hazardous Solid Waste Offloading and Disposal Plan	AS 46.03.475(e)(1), 18 AAC 69.035	March 1, 2011
Hazardous Waste and Substance Offloading Plan	AS 46.03.475(e)(2), 18 AAC 69.040	March 1, 2011
Environmental Compliance Fee Ocean Ranger Fee	AS 46.03.480, 18 AAC 69.015 AS 46.03.480 (d)	June 1, 2011
Wastewater Discharge General Permit (if discharging wastewater in Alaskan waters)	AS 46.03.462(a)	A Notice of Intent (NOI) is due at least thirty days prior to discharge of treated wastewater. A Discharge Monitoring Report (DMR) is due by the 21st day of the following calendar month.
Vessel Specific Sampling Plan (VSSP) (if discharging wastewater in Alaskan waters)	18 AAC 69.030	An approved 2011 VSSP is required 21 days before sampling (AS 46.03.475). ADEC recommends sending the VSSP 60 days prior to sampling in order for ADEC to have adequate review time.
Sampler approval	AS 46.03.465	Qualifications of the sampler(s) are due 21 days prior to the first sample event.
Reporting of hourly vessel location	AS 46.03.465(b)	Reporting while in Alaska waters
Reporting of daily discharge records / logs/discharge regime	AS 46.03.465(a)	Five days after each calendar month of operation in Alaska waters.
Voyage and deviation Reports	18 AAC 69.015 & 18 AAC 69.065	November 15, 2011 Report any changes to the number of voyages or deviations from waste plans
Ocean Rangers	AS 46.03.476	Ocean Rangers will ride aboard or conduct in-port inspections. ADEC's contractor for this program will contact vessel owners or operators about purchasing berths and/or scheduling in-port inspections

Vessel owners or operators can use the 2010 or later Northwest Cruise Ship Association (NWCA) Quality Assurance Project Plan that is available at http://www.dec.state.ak.us/water/cruise_ships/pdfs/NWCA%20QAQC%202010%20Final.pdf or submit their own QAPP for ADEC approval.

It is the operator's responsibility to provide hourly positional information to ADEC (AS 46.03.465(b)). ADEC can not recommend a contractor to provide this service. In 2010 all operators contracted with the Marine Exchange of Alaska (907-463-2607). If an alternative source of vessel tracking data is found, it must be approved by ADEC.

[3] Marine waters of the state are generally defined as three nautical miles from coast and all waters of the Alexander Archipelago (Inside Passage). For specific latitude and longitude, see Alaska statute 46.03.490.

Please submit all CPVEC correspondence, support documents, and reports to:

Mr. Edward White
Commercial Passenger Vessel Environmental Compliance Program
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, AK 99811-1800
edward.white@alaska.gov

As a courtesy, the CPVEC program has referenced other documents that contain pertinent information for vessels operating in Alaska. For example, information on Alaska's marine emission standard and a document describing ADEC Spill Prevention and Response's program to prevent oil spills from non-tank vessels including the required Alaska Certificate of Financial Responsibility (COFR) and Contingency Plan (C-Plan) information and application. Also included with this letter a list of links to useful state websites. It is the vessel operator's responsibility to comply with these requirements.

In addition to ADEC's large cruise ship requirements, federal agencies (EPA and U.S. Coast Guard) have requirements for discharging wastewater in Alaska waters. It is the responsibility of vessel owners or operators to register with the appropriate federal agencies. U.S. Coast Guard Sector Juneau can be contacted at 907-463-2450. http://homeport.uscg.mil/juneau. EPA Vessel General Permit Information can be found at: http://cfpub.epa.gov/npdes/home.cfm?program_id=350

Please feel free to contact me at (907) 465-5312 or by e-mail (robert.edwardson@alaska.gov) to discuss CPVEC program requirements.

We appreciate your cooperation and willingness to work with us in the past and look forward to working with you during 2011.

Sincerely,

Robert Edwardson
Program Manager

Attachments: 2011 Registration Step by Step
Useful websites
Description of Required Plans
2011 Vessel Specific Sampling Plan Form
Alaska Opacity and Excess Emissions Regulations
Marine Vessel Excess Emission Notification Form
COFR and C-Plan Requirements

Useful websites

Wastewater

The Cruise Ship Program website
http://www.state.ak.us/dec/water/cruise_ships/index.htm

ADEC Cruise Ship owner and operator page
http://www.state.ak.us/dec/water/cruise_ships/industrylinks.htm

CPVEC program regulations (18 AAC 69) and Alaska Statute (46.03.460- 46.03.490) :
http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm

EPA's Vessel Discharge General Permit
http://cfpub.epa.gov/npdes/home.cfm?program_id=350

Visible Emissions (Opacity Requirements)

Air Quality regulations 18 AAC 50
http://www.dec.state.ak.us/water/cruise_ships/Law_and_Regs/index.htm

Cruise Ship Excess Emission Form under Cruise Ship Excess Emissions Self Report
http://www.state.ak.us/dec/water/cruise_ships/industrylinks.htm

Oil Spill Prevention Requirements (COFR and C-Plan)

Non-tank Vessel Certificate of Financial Responsibility (COFR) program and Contingency Plan (C-Plan) information can be found at the following websites:

COFR INFO:
http://www.dec.state.ak.us/spar/ipp/fr_nontank.htm

A blank Alaska COFR application form is available on-line at:
http://www.dec.state.ak.us/spar/ipp/docs/ntapplic.pdf
See: Non-tank Vessel Financial Responsibility Application (PDF 103K)

C-Plan INFO:
http://www.dec.state.ak.us/spar/ipp/marine-vessels/

A blank Alaska C-Plan application form is available on-line at:
http://www.dec.state.ak.us/spar/ipp/marine-vessels/apply-contingency-plan.htm

Instruction Sheet
http://www.dec.state.ak.us/spar/ipp/docs/revdocs/ntvslinst.pdf

Statutes and Regulations regarding Oil Spill Prevention requirements can be found at:

http://www.dec.state.ak.us/spar/statutes_regs.htm

Seven Seas Mariner

Authorization 2007DB0002-0022, Revision 1

Alaska Department of Environmental Conservation

Division of Water

Cruise Ship Program

AUTHORIZATION TO DISCHARGE

AUTHORIZATION TO DISCHARGE UNDER THE LARGE COMMERCIAL PASSENGER VESSEL WASTEWATER DISCHARGE GENERAL PERMIT NO. 2007DB0002

FACILITY ASSIGNED AUTHORIZATION NUMBER: 2007DB0002-0022

***GENERAL PERMIT NUMBER:* 2007DB0002**
See this General Permit for all permit requirements.

Example

The following facility is authorized to discharge in accordance with the terms of the State of Alaska General Permit 2007DB0002 and any specific requirements listed in this authorization.

The authorization effective date is **June19, 2009.**

The authorization to discharge shall expire at midnight, **March 25, 2013.**

The permittee must reapply for an authorization on or before **February 23, 2013** if the permittee intends to continue operations and discharges from the facility.

SECTION 1 – RESPONSIBLE PARTY INFORMATION

Issued to: [redacted] Cruise Holdings Inc.

SECTION 2 – FACILITY INFORMATION

ADEC File Number	920.45.001
Facility Name:	[redacted]
Type of Wastewater Treatment System and Disinfection:	System indicated in the current Department approved Vessel Specific Sampling Plan

STATE OF ALASKA

Department of Environmental Conservation
Division of Spill Prevention and Response
Industry Preparedness Program
P. O. Box 111800 · Juneau, Alaska 99811-1800
Phone: 907-465-5283 · Fax: 907-465-5245

CERTIFICATE FOR PROOF OF FINANCIAL RESPONSIBILITY

NON-TANK VESSELS EXCEEDING 400 GT & RAILROADS

No. 08-308NT-298-0527-1287

Owner: [redacted]ne., c/o [redacted] Cruises Ltd., [redacted], Miami, FL 33132, USA

Operator: [redacted] Ltd., [redacted], Miami, FL 33132, USA

Vessel: **RADIANCE OF THE SEAS** **9195195**

Vessel Size:	90090 GT	Vessel Capacity:	Persistent Oil:	6069 bbls
Vessel Type:	Passenger		Non-Persistent Oil:	23861 bbls

This application has been made in the name of [redacted] Cruises Ltd.
This applicant has met the minimum requirements for proof of financial ability to respond to oil spill damages as required by Alaska Statute 46.04.055 and regulations at 18 AAC Chapter 75, Article 2.

Approval expires: February 20, 2010 **Approval Type: Approved - Renewal**

******* See certificate requirements under regulations at 18 AAC 75.240 *******

Effective date: May 27, 2009

Approved by: _____
Ed Bennett, Financial Responsibility Program

Example

Revised 7/08

Certificate no.:
22826
Date of issue:
2008-10-24

DET NORSKE VERITAS

INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified of the Protocol of 1978 related thereto, and as amended by resolution MEPC.132(53), (hereinafter referred to as "the Convention") under the authority of the Government of

THE COMMONWEALTH OF THE BAHAMAS

by **Det Norske Veritas AS**

Example

Particulars of ship

Name of ship: "[redacted]"
Distinctive number or letters: C6F[redacted]
IMO number: 92283[redacted]
Port of registry: NASSAU
Gross tonnage: 90 090

Type of ship: [-] Tanker
[X] Ship other than tanker

THIS IS TO CERTIFY:

1. That the ship has been surveyed in accordance with regulation 5 of Annex VI of the Convention; and
2. That the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

Remarks/Recommendations:

This Certificate is valid until **2013-07-30** subject to surveys in accordance with Regulation 5 of Annex VI of the Convention.
Completion date of survey on which this Certificate is based: **2008-06-07**

Issued at **Høvik, Norway** on **2008-10-24**

for **Det Norske Veritas AS**

DET NORSKE VERITAS 1864

Karl Rygh
Head of Section

Department of Homeland Security
United States Coast Guard
National Pollution Funds Center
Arlington VA 22203-1804

No. 830732 - 19

VESSEL CERTIFICATE OF FINANCIAL RESPONSIBILITY (WATER POLLUTION)

Vessel Operator

[redacted] CRUISES LTD

has established evidence of financial responsibility, in accordance with 33 CFR 138, to meet liability under section 1002 of the Oil Pollution Act of 1990, and under section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act, which may result from the operation of the vessel named below:

Name of Vessel

[redacted]

Effective Date: 09MAR2007
Expiration Date: 09MAR2010

The use of this certificate is subject to the provisions of Part 138 of Title 33 of the Code of Federal Regulations, as it is or may be amended, and the conditions on the reverse side of this certificate. This certificate is invalid if there are any erasures or alterations hereon (except permitted by 33 CFR 138), and is void if the operator named hereon is not the party responsible for operating the vessel.

Kim D. Bailey
Chief, Vessel Certification
National Pollution Funds Center
By Direction

Example

CERTIFICATE

TBT-FREE ANTIFOULING

SIGMA ECOFLEET 530

SIGMA COATINGS

Hereby declares that the Sigma EcoFleet 530 coating applied on the underwater area of the vessel

MV [redacted]

of Messrs [redacted] **Cruises**

during the period **December 2005**

at the **Keppel Tuas** drydock in **Singapore**

is a TBT free antifouling that itself complies with the terms of the IMO Convention on the Control of Harmful Antifouling Systems on Ships adopted in London on 5th October 2001.

This certificate is issued prior to the decision as to which body shall be charged by IMO with certifying compliance in the future.

For the avoidance of doubt, Sigma Coatings does not accept any liability in favour of any third party, nor any additional liability in favour of its customers as a result of issuing this factual certification.

Please consult Sigma Coatings for further details.

Sigma Coatings
December 2005

SIGMA COATINGS | Protecting the Future

Example

Vessel Specific Sampling Plan (VSSP) Rev: 2010 Season

The sampler will use the VSSP as a guide to identify the specific onboard locations to be sampled. To satisfy the VSSP requirement, you may fill in the blanks in this form starting on page 2 or you may submit an existing updated VSSP if it contains the components listed in 18 AAC 69.030(b).

Please note that ADEC will not approve sampling locations that are more than 50 feet from the overboard discharge port. Samples taken in 2003 indicate that samples taken directly after the ultraviolet disinfection unit were not of the same quality as samples taken at the overboard discharge pipe.

The two wastewater samples that are taken to satisfy the state requirements must reflect the quality of the effluent that is being discharged into Alaska waters during standard operating procedures. Only ships that discharge continuously may take the two samples for the state program. In port. vessels that have obtained continuous discharge certification from the U.S. Coast Guard but choose not to discharge in port as part of their standard operating procedures, must sample while the vessel is underway.

If you have questions concerning the components of the VSSP, please contact Albert Faure (907)-465-5279, or Ed White (907)-465-5138 or by email albert.faure@alaska.gov, edward.white@alaska.gov.

Table on this page is for ADEC use only.

Example

☐	**ADEC approved as written on** _____/10
☐	**ADEC approved with the redlined changes on** _____/
☐	**ADEC does not approve,** please **resubmit** _____/
The plan is missing or insufficient in the following areas:	

Vessel Name: _____

Facility contact name and info or attach business card.

(Note: Remember to include all units. Example cubic meters, gallons, cubic meters per second.)

Year ship joined fleet		
Gross tonnage		
Passenger capacity(#)/voyage		
Crew capacity(#)/voyage		
MSD system (USCG type)		
Number of MSD units		
Other water treatment units (type & capacity)		
Blackwater treatment (type & capacity)		
Treated blackwater holding tank capacity & location (holding capacity includes double bottom tanks)		
Graywater treatment (type & capacity)		
Graywater collection tank capacity & location		
Graywater holding tanks capacity & location		
Mixed graywater/treated blackwater holding tank capacity & location		
Maximum discharge flow rate per discharge port [1] and discharge pump type		
Average discharge flow rate per discharge port[1] and discharge pump type		
List of overboard discharge ports and location on vessel (Starboard/Port) & discharge line diameter and distance below/above waterline		
Blackwater generation per day		
Graywater generation per day	Accommodations	
	Galley	
	Laundry	
Daily water use/individual		
Seawater usage per day		

[1] The pump(s) rate and discharge line diameter must be given to check the flow rate.

Peak water use per hour	
Hours of peak water use	

Wastewater Treatment

Please provide a description and capacity of the wastewater treatment system(s) on this vessel:

Discharges

Please provide the individual vessel rules or procedures for discharging wastewater.

Wastewater Samples To Be Analyzed For Conventional Pollutants At Least Twice Per Season

Please describe the vessel's sample port location(s), where the sampling should occur (in port or underway) and the time of day that the sampling should take place. The owner/operator needs to explain why these selected sampling sites and times give the most representative sample. The sample selection should be adequately mixed and homogenous. All samples need to be taken from wastewater as it is discharging overboard, unless deemed impractical by ADEC.

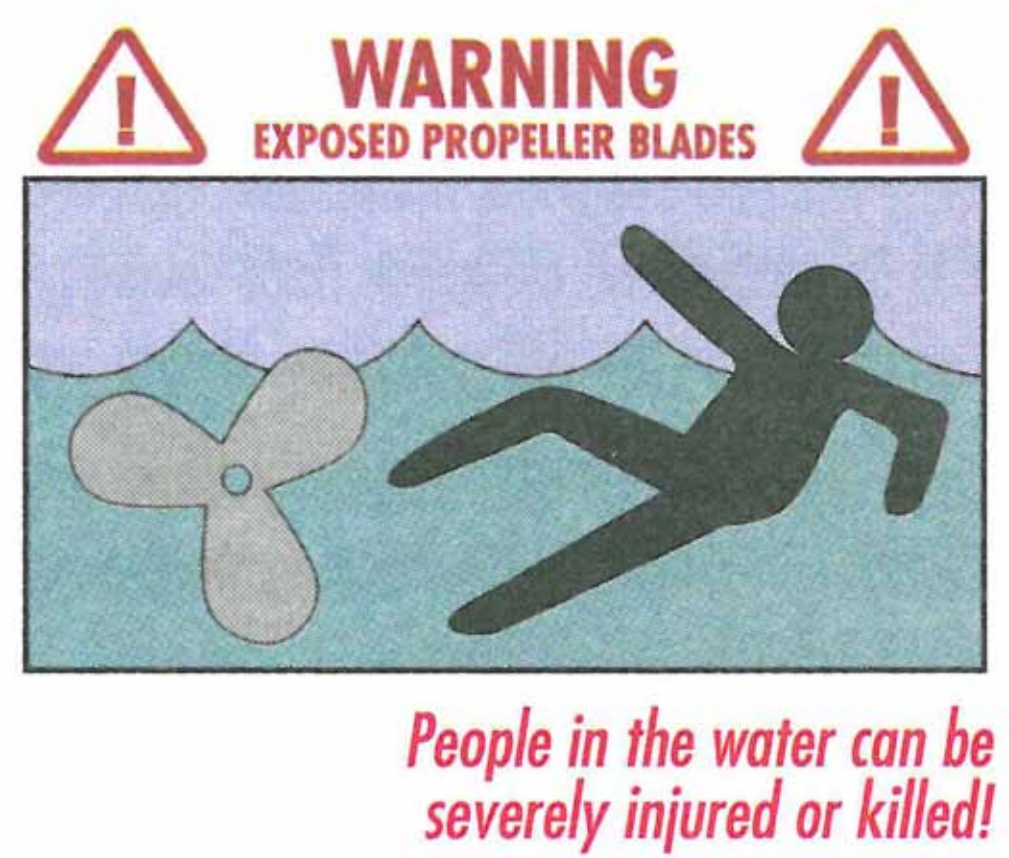
Wastewater Samples To Be Analyzed For Priority Pollutants Once Per Season

See description for conventional pollutants above.

Description of the standards the owner or operator will use to determine a deviation from the plan.

Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.

Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.



Regulated Conventional Pollutants

Wastewater	Sample Type	Parameters[2]	Bottles (preserved with)	Sample Location	Time & Dates Of ALL Appropriate Sample
Graywater (GW) AND Blackwater (BW)	Grab	BOD, TSS, pH*, EC Alkalinity	1 liter HDPE		
		Chlorine Residual*	From BOD, ASAP in field		
		COD, NH3, N2NO3 Total Phosphorus	250 ml HDPE (H_2SO_4)		
		TKN	500 ml HDPE (H_2SO_4)		
		Total Organic Carbon	2 40-ml VOC vials (H_2SO_4)		
		Settleable Solids	1 liter HDPE		
		Oil and grease	1 liter glass (H_2SO_4)		
		Fecal Coliforms	100 ml sterile plastic (Sodium Thiosulfate)		

**pH, free and total chlorine residuals will be field tested by the sampler while on the ship*

Priority Pollutants

Wastewater	Sample Type	Parameters[3]	Bottles (preserved with)	Sample Location	Time & Dates Of ALL Appropriate Sample
Graywater (GW) AND Blackwater (BW)	Grab	BNA	1 L amber (unpreserved)		
		VOCs	40 mL VOA x2 (HCl)		
		Total Rec. Metals	500 mL poly (HNO3)		
		Dissolved Metals	500 mL poly (unpreserved)		

[2] Parameters will be finalized in the Quality Assurance/Quality Control Plan.
[3] Parameters will be finalized in the Quality Assurance/Quality Control Plan.

VESSEL SPECIFIC WASTEWATER HOLDING MANAGEMENT PLAN 2009

Vessel Specific Wastewater Holding Management M/V BALMORAL

This document includes the technical description of the wastewater operations /management for the non-discharging vessels while operating in Alaska waters.

The vessel operator/owner to include demonstrates that the vessel under normal operations is capable to hold for the duration while in Alaska waters the total produced wastewater volume. Also detailed description of the waste water management operations while in Alaska waters must be described.

Waste water discharge / overboard valve locking regime, and procedures must be discussed / described in this document.

Owner / Operator to describe all relevant operations regarding the wastewater management of the vessel while in Alaska waters.

All deviations from the non-discharge status of the vessels while in Alaska waters needs immediately brought under the attention of the ADEC officials.

If you have questions concerning the components of the VSSP, please contact Albert Faure (907)-465-5279, or Ed White (907)-465-5138 or by email albert.faure@alaska.gov, edward.white@alaska.gov.

Table on this page is for ADEC use only.

X	**ADEC internal approved as written on** 2/19/09
The plan is missing or insufficient in the following areas: **N/A**	

Example

VESSEL SPECIFIC WASTEWATER HOLDING MANAGEMENT PLAN 2008

Vessel Name: BALMORAL

Facility contact name and info or attach business card.

(Note: Remember to include all units. Example cubic meters, gallons, cubic meters per second.)

Year ship joined fleet	2007
Gross tonnage	43537
Passenger capacity(#)/voyage	1360
Crew capacity(#)/voyage	570
MSD system (USCG type)	n/a
Number of MSD units	n/a
Other water treatment units (type & capacity)	Scanship Approx. 30m3/h
Blackwater treatment (type & capacity)	Evac/Scanship Approx. 30m3/hour (Gray and Black Water)
Treated blackwater holding tank capacity & location (holding capacity includes double bottom tanks)	Same tk's as for Gray Water.
Graywater treatment (type & capacity)	Scanship Approx. 30m3/hour hour (Gray and Black Water)
Graywater collection tank capacity & location	Comp. 7: GW tk. 7S 12m3 & GW tk. 7P 12 m3. Comp. 8: GW tk. 4P 9m3. New sect.: GW tk. S 10m3 & GW tk. P 10m3. Comp. 10: GW tk. 6S 8m3 & GW tk. 6P 8 m3. Comp. 13: GW tk. #8 6m3. Black/Gray water Mixing tanks: Comp. 8: DB tk. 8F P 37.2 m3 & DB tk. 8A P 51.8 m3.
Graywater holding tanks capacity & location	Comp. 10: DB tk. 10S 52.7 m3 & DB tk. 10P 52.7 m3. Comp 11: DB tk. 11S ins. 49.2 m3 & DB tk. 11P ins. 49.2 m3. Comp. 12: DB tk. 12S 32.6 m3 & DB tk. 12P 32.6 m3. Ballast tk's used for Gray Water: Comp. 4: Deep tk. 4S 81.1 m3 & Deep tk. 4P 81.1 m3. Comp. 5: Deep tk. 5S 168.3 m3 & Deep tk. 5P 168.3 m3, Forepeak: 298m3, BW 2ctr: 159M3, BW 9 Port: 71m3, BW 9Stb: 71m3
Mixed graywater/treated blackwater holding tank capacity & location	Same tk's as for Gray water.
Maximum discharge flow rate per discharge port [1] and discharge pump type	150 m3. Ballast and Bilge pump. (Piston pump) Diameter discharge line 12 cm.
Average discharge flow rate per discharge port[1] and discharge pump type	105 m3. Ballast and Bilge pump 1750 L/Min. Diameter discharge line 12 cm. Treated water: Scanship treated water discharge pump capacity 30 m3/h. Diameter discharge line: 7cm.

[1] The pump(s) rate and discharge line diameter must be given to check the flow rate.

Example

List of overboard discharge ports and location on vessel (Starboard/Port) & discharge line diameter and distance below/above waterline		Comp. 10 PS, Comp 11 PS, Comp. 13 PS. Treated water: Comp. 8 PS.
Blackwater generation per day		30 m3
Graywater generation per day	Accommodations	176 m3
	Galley	55 m3
	Laundry	45 m3
Daily water use/individual		180 litres/day
Seawater usage per day		Using potable water for flushing
Peak water use per hour		25 m3
Hours of peak water use		2

Wastewater Treatment

Please provide a description and capacity of the wastewater treatment system(s) on this vessel:

Scanship: Approx 30 m3/hour capacity.

AWP SYSTEM M/S Balmoral

The function of the advanced waste water purification system is to collect all waste water streams from galleys, laundry's, accommodation and black water system and then separate all solids to provide clean disinfected water for overboard discharge. The quality of the water allowed to be discharged is governed my the Alaska Murowski bill which has set down the following parameters which must be met to consider the water as clean and treated and therefore allowed for overboard discharge.

TSS (total suspended solids) < 30 mg/l
BOD_5 < 30 mg/l
Residual chlorine < 10mg/l
Fecal coliforms < 20MPN/100ml
PH 6-9

MIXING TANK

The function of the mixing tank is to provide a buffer space to collect the waste water streams and mix them together to provide a homogenous flow into the AWP.
The level control function will ensure that the flow through the system matches the water entering the mixing tank; this is achieved with frequency controlled pumps and will help to ensure an even flow with no sudden flow changes which can disrupt the chemical dosing and negatively affect the TSS.

Example

Pre-filter with pump station

The pre-filter mechanically screens the water entering the system and removes all solid particles over 200 microns. These large particles are sent, by gravity, to the sludge tank. The moving filter mesh is constantly cleaned by an "air knife". This blows through the mesh to remove the solid particles. The hot water flushing is provided for extra cleaning when there is a high level in the filter, there is also a timer function for periodic extra cleaning with the hot water.

BIOLOGICAL UNIT WITH PUMP STATION

The bio reactor is where the organic solids in the waste water are consumed by "friendly" bacteria. These bacteria colonize on the plastic carriers which can be observed through the sight glasses. Air blowers are provided to add air into the bio reactor so the bacteria can"breathe". The carbon dioxide is then ventilated through the funnel via a booster fan. There are 2 separate units as part of the same tank. There is no level control as the water overflows within the system from reactor 1 to reactor 2 and then to the pump station.

Flotation unit

The function of the flotation unit is to separate the sludge particles from the water flow. After the addition of the chemicals into the flocculent tower, explained separately, the water is passed to the flotation unit where the addition of dispersed air water, explained separately, causes the sludge to float to the surface. A scraper bar constantly rotates to skim the sludge into a sludge pocket and this feeds the sludge by gravity to the sludge tank.

COAGULANT DOSING

The coagulant is the first chemical added which causes the initial reaction and causes the microscopic sludge particles to join together to cause "flocs".

POLYMER DOSING

Polymer is added to the water flow and will cause the small flocs of sludge to come together and cause larger flocs which can then be easily removed from the water flow.
Polymer is dosed into the system depending on the flow into the flotation unit.

DISPERSION SYSTEM

The sludge separated in the flotation unit is generally heavier than water and would naturally sink. The dispersion unit generates water with air dissolved within at high pressure, up to 13 bar. When the dispersed air water is pumped into the flotation unit the pressure drop allows the air to be released from the water and causes micro bubbles which attach to the sludge. The sludge will now float in the flotation unit and can therefore be skimmed off.

POLISHING FILTER WITH PUMP STATION

Because the flotation unit will not be 100% efficient there is the possibility of sludge carry over, for this reason the polishing filter is fitted to remove any carry over. The filter is a rotating drum is fitted with a mesh of 30 microns. As the water enter the drum and passes through the mesh the sludge will collect on the inside of the drum. As the mesh gets blocked up the water level will rise until it reaches a level stick which senses the level and will cause the drum to start rotating and the flushing pump to start. Water is taken from the bottom of the filter and sprayed through the cloth to remove the sludge. The sludge is collected in an internal pocket and passes, by gravity, to the sludge tank. The clean water is now considered as treated water and is collected by a pump in the pump station below the polishing filter.

UV UNIT WITH WASHING SYSTEM AND TSS

Example

MONITOR

The UV unit uses ultra violet light to sterilize the treated water so that it is now safe for overboard discharge.
There are 2 units each fitted with 14 lamps. The control system monitors the intensity of the lamps and alarms when this drops below 20 W/m2.

The TSS sensor is an optical sensor which constantly monitors the water passing through the UV unit. If the water quality drops below 30mg/l the water is returned to the mixing tank for reprocessing.

Discharges

Please provide the individual vessel rules or procedures for discharging wastewater.
Beyond 12 NM

Example

Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.

Be Sensitive to Harbor Seals

Responsible Vessel Operation in Tracy Arm/Ford Terror Wilderness Area

You have entered a unique harbor seal breeding ground in Tracy & Endicott Arm fiords. Please follow these guidelines and use extra caution to reduce impact to these animals.

Harbor seals are protected from ***harassment*** by the Marine Mammal Protection Act (MMPA). This includes activities that could:

- injure seals
- disturb seals by disrupting behavioral patterns (i.e., breathing, nursing, breeding, feeding, or sheltering)
- To avoid disturbance, remain ***a minimum of 100 yards*** away from seals, farther with mothers and pups

Be a better boater…protect seals!

- ***Reduce speed*** when approaching hauled-out seals, and gradually increase speed when leaving the site. Sudden changes in speed are more likely to startle seals.

- ***Approach seals gradually*** from the side instead of head-on. Seals are less likely to react to a parallel approach.

- ***Remember that all vessels can disturb seals.*** Zodiacs and auxiliary boats commonly disturb seals by seeking close views. Kayaks startle seals by approaching quietly and too closely.

- ***Reduce or eliminate vessel wake.*** Waves can rock or tip icebergs, causing seals to slip off and separating mother-pup pairs.

- ***Follow seal cues.*** Be aware of slight changes in seal behavior in response to vessels. Alert behavior indicates disturbance.

- ***Keep noise low*** and ***remain downwind*** whenever possible.

- ***Avoid using amplified sound*** such as a public address system or outdoor microphone during pupping season.

- ***Use binoculars*** to observe seals rather than relying on close approach.

- ***Avoid mother-pup pairs, especially when another vessel is nearby.*** Multiple vessels mean more noise and waves, increasing the possibility for mothers and pups to be disturbed, encircled, or trapped without an escape route.

- ***Limit your viewing time*** when watching any individual, group, or mother-pup pair to respect this sensitive nursery area. Remember that dozens of vessels view these animals everyday.

- ***Respect the quiet enjoyment of the wilderness visitor.*** The wilderness area surrounding the seal pupping grounds was designated by Congress to provide outstanding opportunities for solitude. For more information visit: http://www.wilderness.net/index.cfm?fuseaction=wilderness.

REMEMBER: Maintain a distance of 100 YARDS OR MORE around harbor seals. Disturbance is a violation of the Marine Mammal Protection Act.

Harbor Seal Status and Natural History

Photo by Erika Phillips, NOAA Fisheries

Life History

•Harbor seals use icebergs in these glacial fiords to give birth in May and June. With relatively few protected large ice floes in southeast Alaska, these are important haul-out sites for seals.

•Harbor seals are generally non-migratory. Local movements are based on tides, weather, food, and reproduction.

•Nursing pups remain with their mothers for four to six weeks and then are weaned to forage and survive on their own.

Behavior and Disturbance

•Females recognize pups by their call and scent. The first few weeks after birth are critically important for mother and pup to bond.

•Mothers may abandon their pups if they are separated before the mother-pup bond is established.

•Pups must nurse without disturbance to rapidly gain weight before weaning and accumulate the energy reserves to forage on their own.

•Alert or vigilant seal behavior, movement on the ice, or abandonment of icebergs indicate that normal behavior has been altered and the seal has been disturbed.

Status

•Harbor seal populations have declined sharply over the last 20 years in many areas of Alaska, including the Aleutian Islands, the Kodiak Archipelago, Prince William Sound, and Glacier Bay. Reasons for this decline are unknown, but may include depletion of forage fish, ecosystem shifts, climate change, harvest, predation, and/or disturbance.

•Scientists estimate that about 112,000 harbor seals inhabit SE Alaska.

•Seal numbers peak during the third week of June in both Tracy & Endicott Arms.

•The highest daily seal count in 2005 recorded 804 animals in Tracy Arm and 628 in Endicott Arm.

•In recent years, the Sawyer and Dawes Glaciers have supported a combined total of up to 2040 harbor seals.

Photo by Erika Phillips, NOAA Fisheries

NOAA Fisheries' appreciates your help in protecting harbor seals in the Tracy Arm and Fords Terror Wilderness Area. For questions about harbor seals or vessel disturbance, please call the Protected Resources Division in Juneau at 907-586-7235.

2011 Wilderness Best Management Practices for Tracy Arm-Fords Terror Wilderness

Agreements Regarding Vessel Operators

This program is a cooperative effort between vessel operators and the Tongass National Forest. Initiated in 2008, Wilderness Best Management Practices are intended to minimize the impacts of tourism and vessel operations in the Tracy Arm-Fords Terror Wilderness (which includes Endicott Arm) in a manner that addresses both concerns for our natural resources and operators' concerns for safety and passenger service. By actively participating in this voluntary program, operators demonstrate their commitment to a sustainable use of wilderness resources.

The following agreements will advance wilderness values but are not intended to compromise vessel safety.

PRESERVING QUIET: All operators recognize the importance of quiet and solitude and will minimize vessel announcements and signals while in the Tracy Arm-Fords Terror Wilderness. While interpretation of wilderness values and marine ecology for passengers is important, operators agree to limit their outside announcements to preserve wilderness values of others in the vicinity. Operators agree to avoid announcements prior to 8:00am whenever possible, to limit the duration of announcements to about 5 minutes, to limit the number of announcements, and to lower the volume of announcements on outside decks to the minimum required for communication and safety. The Forest Service will work with vessel operators to suggest preferred locations for announcements and operators will agree to follow the Forest Service's recommended locations for these interpretive announcements (attached as Exhibit A and map). The Forest Service will also attempt to provide alternative methods of interpretation such as brochures, maps, and podcasts. Certain signals and announcements are necessary and required by the US Coast Guard for navigational and safety reasons.

MAINTAINING CLEAN AIR: All vessel operators agree to comply with the Marine Vessel Visible Emissions Standards (18 AAC 50-.070) and take all available and reasonable steps to minimize visible stack emissions while in Tracy Arm-Fords Terror Wilderness. Recognizing that the unusually cold, still air of these glacial fjords can trap persistent haze, operators agree to take proactive steps to manage visible emissions, such as seeking engineered solutions and improvements to emissions monitoring. Visible stack emissions are regulated by the Alaska Department of Environmental Conservation and monitored by the US Forest Service in cooperation with Alaska Department of Environmental Conservation. Forest Service rangers will provide timely feedback to vessel operators resulting from their observations.

PROTECTING WILDLIFE: All operators agree to conduct their business in a manner which, whenever possible, avoids changing the natural behavior of wildlife in their vicinity including bears, whales, and nesting birds such as terns and oystercatchers.

All operators agree to follow the Humpback Whale Approach Regulation and familiarize their crews with the NOAA Code of Conduct for viewing marine mammals. Both documents are described on the NOAA website: http://www.fakr.noaa.gov/protectedresources/mmv/guide.htm.

Harbor seals, sea lions and whales are protected by the Marine Mammal Protection Act, which prohibits causing injury or disturbance or disrupting behavioral patterns (i.e., breathing, nursing, breeding, feeding, or sheltering). All operators agree to remain ***a minimum of 100 yards*** away from seals on icebergs whenever possible.

All vessel operators, including those operating auxiliary boats and kayaks, agree to ***reduce speed*** when approaching hauled out seals, and to gradually increase speed when leaving the site in order to minimize wake. Sudden changes

in speed are more likely to startle seals and wakes can rock or tip icebergs, causing seals to slip off, separating mother-pup pairs.

PRESERVING SOLITUDE: All operators recognize the importance of an authentic Alaskan experience of wilderness and agree to help preserve solitude through the following measures:

- SCHEDULES: Operators of vessels with more than 250 passengers agree to avoid scheduling visits to Tracy Arm-Fords Terror Wilderness in a way that, due to vessel traffic, necessitates use of Endicott Arm. Each season, a small number of cruise ships may schedule visits to Endicott Arm due to unavoidable scheduling conflicts in Tracy Arm. Dates will be provided in the spring.

- ENDICOTT ARM: While vessels with more than 250 passengers agree to avoid scheduling operations in Endicott Arm, it is recognized that some visits to Endicott Arm may occur when ice, tidal conditions, vessel traffic, fog, or other vessel and passenger safety concerns limit operations elsewhere. In the event that vessels with more than 250 passengers transit Endicott Arm, operators will do their utmost to minimize the impact of wakes on paddlers, smaller boats, and wildlife, including bears, nesting birds, and hauled-out seals.

- FORDS TERROR: Vessels with more than 250 passengers agree not to enter Fords Terror, including the portion that opens from the north shore of Endicott Arm. All operators of motorized vessels agree to minimize their speed and wake around paddlers and to avoid them whenever possible, maintaining a safe and respectful distance. Paddlers acknowledge that use of the marine radio to announce their presence will assist motorized vessel operators in achieving these goals.

COMMUNICATION: All operators acknowledge the importance of communication to the success of this agreement and pledge the following commitments:

- to engage in annual discussions in January about previous summer's implementation of the agreement and possible changes for the upcoming summer.
- to use the marine radio to share information which is imperative to navigation such as vessel traffic and ice flows. Operators agree to keep such communications short and to avoid unnecessary conversations.
- to use the Forest Service sponsored blog to share schedule changes, ice conditions, provide feedback, or other information and concerns about Tracy Arm-Fords Terror Wilderness. Operators of vessels with over 250 passengers agree to use the blog to keep other operators informed of any schedule changes , which may involve diverting from Tracy Arm to Endicott Arm, cancelling calls altogether, or making significant timing changes, and will do so in a manner that provides as much notice as possible.
- to recognize the role of the Forest Service in sharing information and observations about the Wilderness Best Management Practices implementation in the field.

KEEPING IT ALIVE: All vessel operators agree to include these guidelines in annual training and respective policies and procedures documentation. Operators will provide feedback about compliance with the above guidelines to other operators and the appropriate agency.

Send emails to:
mmarshall01@fs.fed.us
tlydon@fs.fed.us

EXHIBIT A
RECOMMENDED AREAS FOR INTERPRETIVE ANNOUNCEMENTS

The following is a summary of locations where outside announcements would affect the fewest visitors: (see map)

1) Stephens Passage before entering Holkham Bay would be a good place to introduce Tracy Arm. Since the waterway is wide, announcements would not impact campers, kayakers, fishermen on shore, beach-walkers, hunters and other users of the wilderness area.

2) There is an approximate five-mile stretch beginning one mile east of the Tracy Arm elbow and ending one mile west of the first large U-shaped valley on the north shore. This would be a good area for short (5 minute) interpretive announcements to be made to guests (between N57.922776/W133.563637 and N57.915954/W133.452213).

3) There is another approximate four-mile stretch within the Tracy Arm S turns. It begins one mile north of the third U-shaped valley on the south shore, approximately eleven miles east of the elbow. It ends 1.5 miles west of Sawyer Island. This would be a good area for short interpretive announcements to be made to guests (between N57.887659/W133.307565 and N57.884008/W133.213526).

4) At the end of Tracy Arm, a few miles from South Sawyer Glacier is another area where there is an opportunity to present a short (5 minute) interpretive announcement (between N57.860754/W133.131673 and the face of the S. Sawyer Glacier). It would be preferable to leave a "quiet zone" within a few miles of Sawyer Island, to be able to ensure a more peaceful environment for those people who may be camping on the island.

5) P.A. announcements are more likely to disturb visitors and wildlife in Endicott Arm due to the greater amount of islands, bays and anchorages. The recommended location for announcements in Endicott Arm is between one mile southeast of the entrance to Fords Terror and one mile northwest of the entrance to North Dawes Inlet (between N57.585560/W133.163017 and N57.515926/W133.053845)

Recommended language for PA announcement in Stephens Passage or just prior to entering Tracy/Endicott Arm, and/or for printing in ship's daily program onboard which explains the intentions of this joint effort between all vessel operators and the USFS:

We're about to enter one of the most pristine Alaskan environments that we'll see on our voyage. Tracy Arm is a thirty-mile glacial fiord that reaches deep into the Coast Mountains and deep into our glacial past. With old-growth temperate rain forest here at its beginning and active tidewater glaciers at its upper reaches, our visit to Tracy Arm is a trip in time back to the Pleistocene ice age.

Tracy Arm is a special place. Recognizing its extraordinary biological, scenic, and recreational values, Congress protected the surrounding land as part of the National Wilderness Preservation System. The designation provides permanent protection for this part of the Tongass National Forest, ensuring that it remains a place of wild nature. It's a land for wildlife, timeless forests, and the enjoyment of the American public.

To help preserve Tracy Arm's wild character, tour companies and the Tongass National Forest created a set of guidelines for visiting the area. Our cruise company helped develop the guidelines and proudly supports their goals, which include special considerations for wildlife, air quality, and other natural systems. In accordance with the agreement, we will limit our outside announcements within the fiord, helping preserve a quiet environment both for wildlife and for other visitors. During the next few hours, our naturalists will make a few announcements about the area, but otherwise we invite you to sit back and enjoy this spectacular part of our rich national heritage.

Exhibit B– map of recommended locations for PA announcements in Tracy Arm and Endicott Arm

Yellow zones depict areas where public announcements might disturb the fewest visitors

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.

Smoke & Dust - The Most Common Visible Emissions

Smoke, the product of incomplete combustion, contains particulate matter **and** the major air pollution gases carbon monoxide (CO), oxides of nitrogen (NOX), and volatile organic compounds (VOCs).

Dust emissions are usually a result of attrition, but can also be windborne soil minerals, sea salt, pollen, etc.

Particles Are Visibility Reducers - the smaller the PM, the more it reflects light and obscures the view, causing visibility problems ranging from unsightly to dangerous. And the smallest PM, **aerosols,** can remain airborne for weeks.

Inhaled Particles Can Be Hazardous to Your Health...

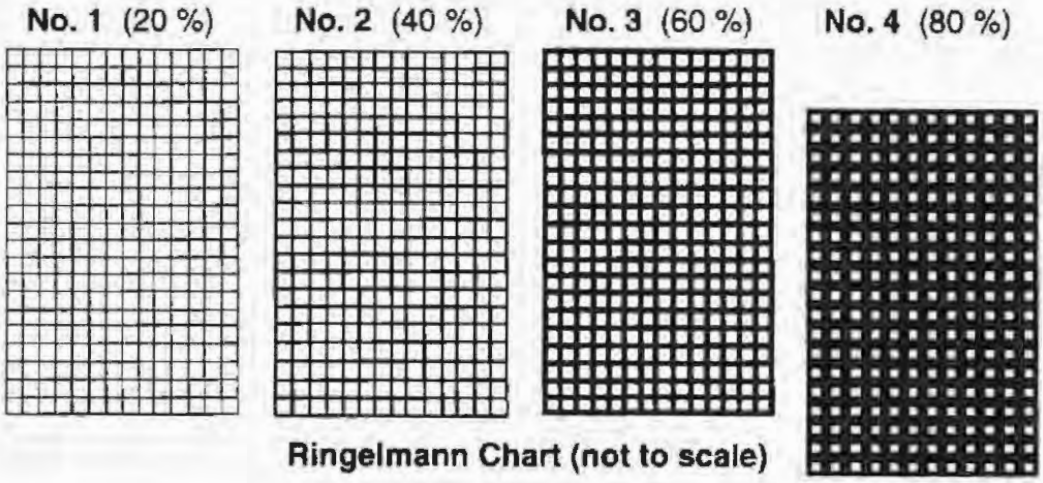
Smoke and dust aerosols are also **Inhalable Particulate Matter (PM10),** microscopic solid or liquid particles that are 10 microns in diameter or smaller (the average human hair is 70 microns across). **Most smoke particles are VERY small (less than a micron) droplets of condensed organic vapors (tars and gases) which escaped burning.** Other smoke PM includes **soot** (unburned carbon) and **ash** (unburnable minerals). When inhaled, PM10 particles easily travel deep into the lungs, causing irritation and coughing. **PM10 particles may be trapped in your lungs for years,** contributing to lung changes, chronic lung diseases, and cancer.

Smoke also contains VOCs which have been **changed by partial burning into toxic, irritating, and/or cancer-causing substances like benzene, formaldehyde, and benzo-a-pyrene,** a polycyclic aromatic hydrocarbon (**PAH**). VOCs adhere to soot particles which may be inhaled into the lungs.

The Ringelmann Chart

In the late 1800's in Paris, France, Professor Maximilian Ringelmann developed the **Ringelmann Chart** to measure the combustion efficiency of coal-fired boilers. The shade of the smoke plume shows how well a boiler is operating - the poorer its combustion efficiency, the more unburned carbon particles in the smoke and the darker the plume.

Professor Ringelmann's chart established four measured shades of gray between white, valued at zero, and black, at five. These specific shades of gray, Ringelmann No. 1 to Ringelmann No. 4, can be accurately reproduced by placing a grid of black lines of a given width and spacing on a white background. Viewed from a distance, the grid lines and background merge into the shades of gray, to be compared to the shade of the smoke plume.



Ringelmann Chart (not to scale)

Regulating Visible Emissions

The Ringelmann Chart became one of the first tools used to measure visible emissions. Introduced into the United States in 1897, it was soon accepted as the standard measure of smoke density and was used by engineers for power plant testing and smokeless combustion studies. In 1910, the Chart was officially adopted as part of the Smoke Ordinance for Boston, Mass.

Many city, state, and federal regulations now set smoke density limits based on the Ringelmann Smoke Chart. Although not originally designed as a regulatory tool to control air pollution, it gives good practical results when used by well-trained observers.

Ringelmann and Equivalent Opacity

Because the Ringelmann Chart is only useful in evaluating black or gray visible emissions, a principle of "equivalent opacity" was developed to apply Ringelmann values to white and other colors of smoke plumes. It is based on the premise that **the darker the plume, the more opaque it is,** as more particles are present to block the light and reduce visibility.

Plume opacity is measured in **percent:** the greater the opacity, the more the background behind the plume is obscured, the less light can come through the plume, and the higher the Ringelmann number.

Percent Light Transmission	Percent Opacity	Ringelmann Number
0	100	5
20	80	4
40	60	3
60	40	2
80	20	1
100	0	0

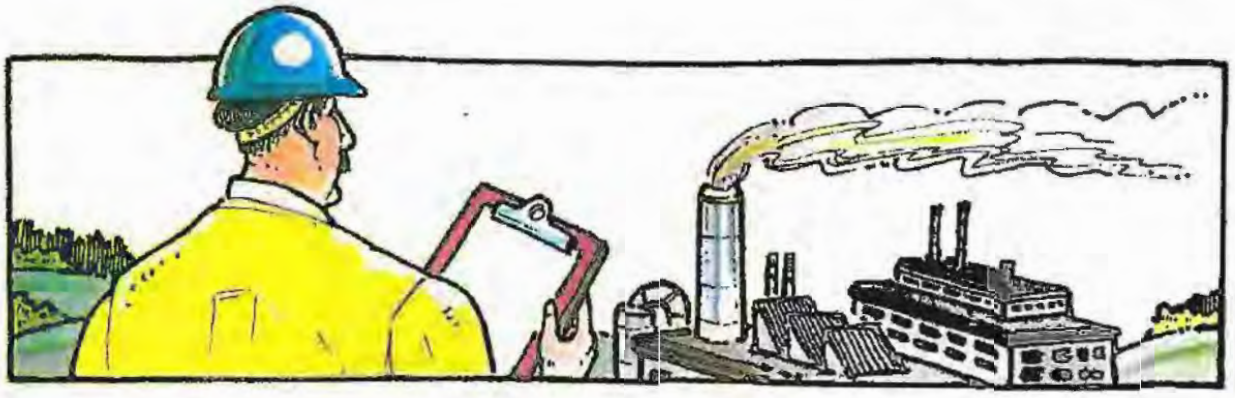
The Relationship Between Light Transmission, Opacity, and Ringelmann Number

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.



Advantages of Visible Emission Control Regulations

- ▼ The validity of using the Ringelmann Chart and the equivalent opacity concept has been established in air pollution control regulation, legislation and in the nation's courts.
- ▼ Observers can be trained in a relatively short time (one to two days) and need not have an extensive technical background.
- ▼ Recertification is easy and can be updated regularly.
- ▼ No expensive equipment is required.

- ▼ Emission readings can be taken 24 hours a day, outdoors or indoors.
- ▼ A single person can read emissions from many sources in one day.
- ▼ Source operators can monitor their own visible emissions.
- ▼ Violators can be cited without resorting to expensive, time-consuming source testing.
- ▼ Questionable discharges can be pinpointed and actual emissions can then be determined by source tests.
- ▼ Control can be required for operations where a source test would be difficult or impossible.

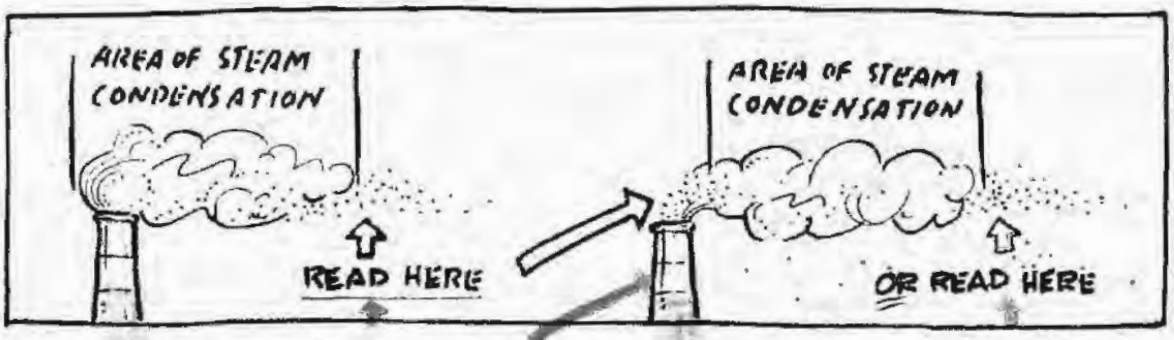
Water Vapor Plumes

Water vapor in plumes is a potential problem because it can mask other visible emissions in the plume.

Water vapor is present in the exhaust gas stream of many processes, such as drying, cooling and combustion, or it may be introduced by air pollution control equipment. When the hot gas stream enters the colder ambient air and the water vapor cools below its dew point, it condenses into an opaque white mist, becoming visible. If the relative humidity is low, this visible mist revaporizes and disappears as the plume is diluted further with ambient air

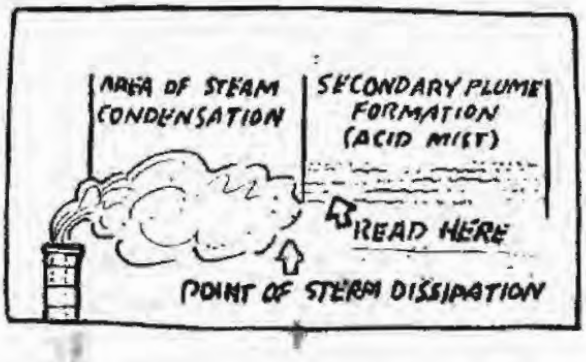
The chief characteristics of water vapor or "steam" plumes: opaque, white and billowy in bright sunlight, then becoming wispy and ending abruptly. A steam plume can be either "attached" or "detached" from the stack outlet. Read where there is no visible water vapor and the opacity is the greatest.

If water is present in the process, you should determine the air temperature and relative humidity as well as the moisture content and temperature of the gas stream, to tell whether formation of a steam plume is probable. If the relative humidity is above 60%, use the psychometric chart received in FOE to predict the occurrence of a steam plume which will <u>not</u> dissipate.



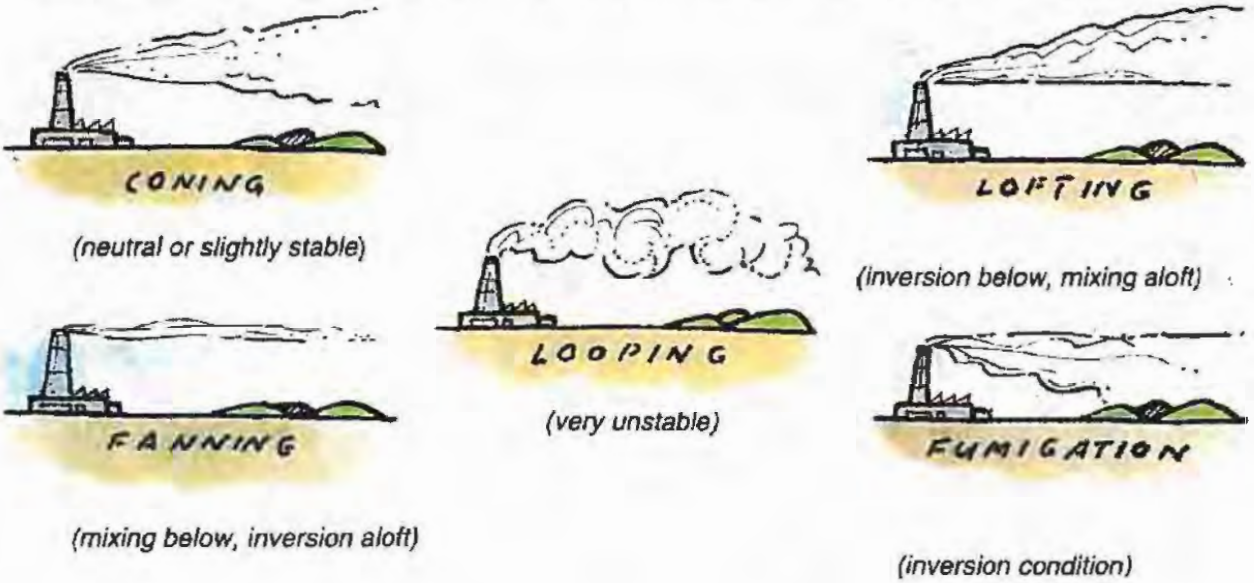
Secondary Plume Formation

Cooling gases in a plume can condense into solid or liquid PM, or particles may form in a chemical reaction between elements in the plume. This may occur with a steam plume or not. Unlike the steam plume, the secondary plume often persists far from the stack, is usually bluish-white due to very fine particles, and appears grainy rather than billowy.



Plume Shapes

Plume behavior is a good indicator of atmospheric stability (the amount of vertical air mixing) and can point to potential emission impacts downwind.



Opacity Information/ Background

The DEC Commercial Passenger Vessel Environmental Compliance program regularly monitors emissions from cruise ships and ferries. Since the summer of 2000, a contractor has done over 250 opacity readings per year on large cruise ships in four Southeast Alaska ports (Juneau, Haines, Skagway, and Ketchikan). DEC has hired a contractor to do opacity readings on large vessels and small vessels in South Central Alaska since 2002. DEC staff also responds to opacity complaints from the public.

EPA Method 9 is used to monitor the particulate matter exiting the stacks. Visible emissions readers (a.k.a. smoke readers) are trained and certified using a standardized national method. The method requires readers to visually differentiate the opacity of the emissions. It is critical that the sun is behind the reader in order to reduce light scattering that makes the plume appear darker.

Ocean rangers are not certified smoke readers but need to know the “principles” of the opacity controls and monitoring.

Most large vessels do have COMS systems (Continuous Opacity Monitoring Systems) these systems monitor and record the opacity levels of the operated equipment in the stack. The COMS systems may have integrated alarm systems installed that provides set alarms when certain opacity levels are reached. The COMS as referenced in the attachment is typical opacity meter example. Generally the COMS is located in the stack and “measures opacity” and transfers the opacity density in electronic signals.
The vessels with COMS have operating and calibration instructions. The COMS system is calibrated regularly. Again emphasis on the COMS is not required by law or regulations, it is a tool that the vessels use to verify compliance and to monitor their opacity performance. Some vessels also have video cameras on the stack to monitor the “plume”. Some vessels have both COMS and video camera installations. Note that COMS is able to generate alarms for the operating personal.
Most of the COMS systems also record the opacity in percentage and in duration (horizontal time scale / vertical percentage Opacity). And copy of an opacity chart is included. Note that sometimes the time scale is given in GMT time. Local AK time should be developed from the GMT time. Most vessels do keep a history of these COMS records, some vessels appear to “overwrite” the COMS opacity files (records), in that case “looking back” is impossible.
The COMS system is not an State driven requirement, it more or less for the vessel operators that they can verify opacity compliance, and monitor opacity levels. The opacity verification “in compliance / out of compliance” is done with help of Reference Method 9 certified opacity readers which are trained to “read” opacity levels from Marine Vessels exhaust.
The COMS data is also often used by operators in their “self reported” opacity incidents to DEC and other agencies.

ON	Name	Description	Attribute	Treatment	Ruler Time	Ruler Value	Y	Current Value	Unit	Filter	Time Offset	Form
	DG1_001_1_OPT_	DG1 OPACITY	MV	Mom				5.0	%			
	DG2_001_1_OPT_	DG2 OPACITY	MV	Mom				6.0	%			
	DG3_001_1_OPT_	DG3 OPACITY	MV	Mom				5.0	%			
	DG4_001_1_OPT_	DG4 OPACITY	MV	Mom				5.5	%			

< > << >> Current Time Save Trend... Hide Table

D1 40 minutes | D2 | D3 8 hours | D4 1 day | D5 2 days

D6 Positioning... | D7 Trace Control... | D8 Analyze... | D9 Trace Config... | D10 Extended Config...

ABB

Linda Cadwell C.T.O.

Cruise Ship Visible Emission Observation Form

Company	Cruise West
Cruise Ship	Spirit of Columbia
Location	Juneau

Process Equipment	Operating Mode
—	DOCKED
Control Equipment	**Operating Mode**
—	DOCKED

Describe Emission Point: STACK

Height Above Sea Level (feet)	Height Relative to Observer (feet)
40	25

Distance From Observer (feet)	Direction From Observer (degrees M_{NC})
Start 285 End 275	Start 105 End ✓

Describe Emissions: rising smoke
Start plume-coned End ✓

Emission Color	Steam Plume
Start light grey End ✓	Start N/A End N/A

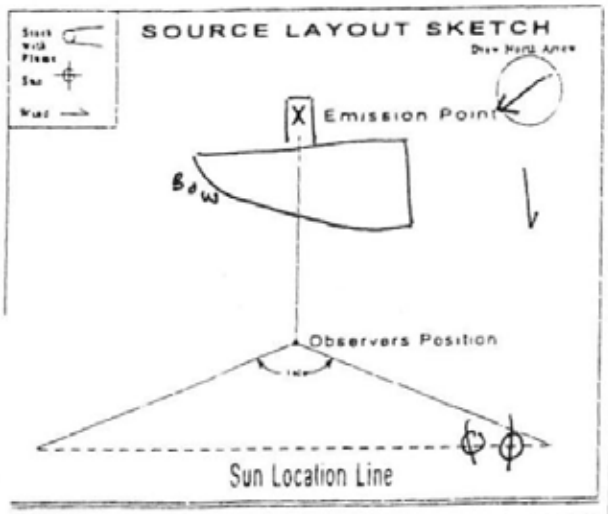
Point at which the opacity was determined (feet above exit)
Start 10 End ✓

Describe Plume Background
Start mountain End ✓

Background Color	Sky conditions
Start green End ✓	Start light rain End ✓

Wind Speed (knots)	Wind Direction
Start 0-2 End ✓	Start NW End ✓

Ambient Temperature (°F)	Relative Humidity (%)
Start 50 End ✓	Start 93 End ✓



The North Arrow in the drawing above is from a Magnetic Compass Reading, M_{NC} (not corrected to true North)

A written "End" Field means the same conditions existed at the start and end of the time

Observation Date	Start time	End time
9.3.08	AC 16:29	16:44

Min	0	15	30	45	Comments
1	<5	<5	<5	<5	
2	5	5	5	5	
3	5	5	5	5	
4	5	5	5	5	
5	5	5	5	5	
6	5	5	5	5	PAN
7	5	5	5	5	
8	5	5	5	5	
9	5	5	5	5	
10	5	5	5	5	PAN
11	5	5	5	5	
12	5	5	5	5	
13	5	5	5	5	
14	5	5	5	5	
15	5	5	5	5	
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Observer's Name (Print)	
Observer's Signature	Date 9.3.08
Certified By HMH	Date 6.24.08
VEO Form Number	

Company Abbreviations
NCL = Norwegian Cruise Lines
PCL = Princess Cruises
CCL = Celebrity Cruises Inc
CCL = Carnival Cruise Lines
RSS=Radisson Seven Seas
RCI = Royal Caribbean International (RCI)
HAL = Holland America Cruise Lines
CRY = Crystal Cruise Lines
WEC = World Explorer Cruises

Juneau Ship Location Abbreviations
CT= Cruiseship Terminal
ANC = Anchor Marine Park
AS = Alaska Steam Dock
FKL = S. Franklin Dock

Solid Waste

Cruise ships submit the hazardous and non-hazardous plans to ADEC for approval. Once approved by ADEC, the ocean ranger monitors that the approved plan is followed.

Non-hazardous Solid Waste Offloading and Disposal Plan	AS 46.03.475(e)(1), 18 AAC 69.035
Hazardous Waste and Substance Offloading Plan	AS 46.03.475(e)(2), 18 AAC 69.040

Following are

- regulations pertaining to Hazardous and non-hazardous waste management
- example of an offload manifest
- example of waste management offloading plan
- example of certificate of disposal
- waste management practices of cruise lines

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)
Authority: AS 46.03.460 AS 46.03.062 AS 46.03.475
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,
(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. (Eff. 11/15/2002, Register 164)
Register 178, July 2006 ENVIRONMENTAL CONSERVATION
(3) documentation that verifies the date when the vessel keel was laid;
(4) a certification that for physical or economic reasons the vessel is unable to

HAZARDOUS WASTE HANDLING REQUIREMENTS

§ 262.11 Hazardous waste determination.

A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method:

(a) Determine if the waste is listed as a hazardous waste in subpart D of 40 CFR part 261.

(c) Or if not listed in subpart D of 40 CFR part 261, generator must determine if the waste is identified in subpart C of 40 CFR part 261 by either:

(1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261

(2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

10

262.12 EPA identification numbers.

(a) A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.

262.20 General requirements.

(a) A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest OMB control number 2050-0039 on EPA form 8700-22, and, if necessary, EPA form 8700-22A, according to the appendix to part 262.

(b) Generator must designate on manifest one facility that is permitted to handle the waste described on the manifest.

262.23 Use of the manifest.

(a) The generator must:

(1) Sign the manifest certification by hand; and

(2) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and

(3) Retain one copy, in accordance with § 262.40(a) and give the transporter the remaining copies of the manifest.

262.30, .31, .32 & .33 Packaging, Labeling, Marking and Placarding.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package, label, mark and placard the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR parts 172, 173, 178, and 179. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the requirements of 49 CFR 172.304: HAZARDOUS WASTE -- Federal Law Prohibits Improper Disposal. If found, contact the nearest

police or public safety authority or the U.S. Environmental Protection Agency. Generator's Name and Address -- -- -- -- -- . Manifest Document Number -- -- -- -- -- -- .

262.34 Accumulation time.

A generator may accumulate hazardous waste on-site for 90 days or less for large quantity generator and 180 days or less for small quantity generator, without a permit or without having interim status.

The date upon which each period of accumulation begins must be clearly marked and visible for inspection on each container and while being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste."

§ 262.40 Recordkeeping.

(a) A generator must keep a copy of each manifest signed in accordance with § 262.23(a) for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

(b) A generator must keep a copy of each Biennial Report and Exception Report for a period of at least three years from the date of the report.

(c) A generator must keep records of any test results, waste analyses, or other determinations made in accordance with § 262.11 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

Waste Management Practices

CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES

REVISED: (November 27, 2006)

The cruise industry is dedicated to preserving the marine environment and oceans upon which our ships sail. As a stated industry standard, CLIA members have adopted aggressive programs of waste minimization, waste reuse and recycling, and waste stream management set forth in the following. In addition, CLIA members are working in a number of areas to identify and implement new technologies in order to improve the environmental performance of their ships. CLIA member lines currently have agreed to utilize waste management practices and procedures, which meet or exceed the stringent standards as set forth in international treaties and applicable U.S. laws.

Introduction

The cruise industry is inextricably linked to the environment. Our business is to bring people to interesting places in the world, over the water. Recognizing the future of the industry depends on a clean and healthy environment; cruise industry senior management is committed to stewardship of the environment and establishing industry practices that will make CLIA member cruise ship operators leaders in environmental performance.

This document outlining member line practices has been developed under the auspice of the industry's professional organizations, the Cruise Lines International Association (CLIA), the Florida Caribbean Cruise Association (FCCA), and the Northwest Cruise Ship Association (NWCA). The purpose of this document is to set forth cruise industry waste management practices and procedures that CLIA member cruise vessel operators have agreed to incorporate into their respective Safety Management Systems.

In the development of industry practices and procedures for waste management, the members of the Cruise Lines International Association have endorsed policies and practices based upon the following fundamental principles:

- Full compliance with applicable laws and regulations;
- Maintaining cooperative relationships with the regulatory community;
- Designing, constructing and operating vessels, so as to minimize their impact on the environment;
- Embracing new technology;
- Conserving resources through purchasing strategies and product management;
- Minimizing waste generated and maximize reuse and recycling;
- Optimizing energy efficiency through conservation and management;
- Managing water discharges; and
- Educating staff, guests and the community.

Discussion

Just as on shore, ship operations and passengers generate waste as part of many daily activities. On ships, waste is generated while underway and in port. Because ships move, the management of these wastes becomes more complicated than for land-based activities, as the facilities and laws change with the location of the ship. Facilities on the ships as well as management practices must be designed to take into account environmental laws and regulations around the world and the various local and state laws and regulations. Moreover, because waste management ultimately becomes a local activity, the local port infrastructure, service providers, and local waste disposal vendors are factors in the decision-making processes.

On an international level, environmental processes are an important part of the International Maritime Organization's (IMO's) policies and procedures for the maritime industry. CLIA member lines have agreed to incorporate environmental performance into Safety Management Systems (SMS) and MARPOL mandated Waste Management Manuals. Under agreements and laws specific to many nations, these programs are routinely reviewed by Port States to ensure compliance. For example, in the United States, the US Coast Guard has jurisdiction over environmental matters in ports and waterways and conducts passenger ship examinations that include review of environmental systems, SMS documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book. Within the United States, environmental laws and regulations apply include the Clean Water Act, the Refuse Disposal Act, the Resource Conservation and Recovery Act, The Clean Air Act, the Oil Pollution Act of 1990, and the Pollution Prevention Act, to name a few, which apply to all ships within U.S. waters.

The industry effort to develop waste management practices and procedures has focused on the traditional high volume wastes (garbage, graywater, blackwater, oily residues (sludge oil) and bilge water), pollution prevention, and the small quantities of hazardous waste produced onboard. In the process, CLIA members have shared waste management strategies and technologies, while focusing on a common goal of waste reduction.

The process of waste reduction includes waste prevention, the purchasing of products that have recycled content or produce less waste (e.g. source reduction), incineration, and recycling or reuse of wastes that are generated. The ultimate goal is to have the waste management culture absorbed into every facet of cruise vessel operation. A fully integrated system beginning with the design of the vessel should address environmental issues at every step.

Management practices for waste reduction should start before a product is selected. Eco-purchasing and packaging are vital to the success of any environmental program, as are strategies to change packaging, processes and management to optimize the resources used.

The commitment of the industry to this cooperative effort has been quite successful, as companies have shared information and strategies.

Industry Standard Waste Handling Procedures

CLIA member lines have agreed that hazardous wastes and waste streams onboard cruise vessels will be identified and segregated for individual handling and management in accordance with appropriate laws and regulations. They have further agreed, hazardous wastes will not be discharged overboard, nor be commingled or mixed with other waste streams.

A. Hazardous Waste Collection and Storage onboard Ship: *CLIA member lines have agreed that specific procedures for hazardous waste collection, storage and crew training will be addressed in each ship's SMS or equivalent onboard instruction in the Case of US registry vessels.*

B. <u>Photo Processing, Including X-Ray Development Fluid Waste</u>: *CLIA member lines have agreed to eliminate the discharge of silver from these sources into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations or by treating all photo processing and x-ray development fluid waste (treated or untreated) as a hazardous waste and landing ashore in accordance with RCRA requirements.*

There are several waste streams associated with photo processing operations that have the potential to be regulated under the Resource Conservation and Recovery Act (RCRA). These waste streams include spent fixer, spent cartridges, expired film and silver flake.

Photographic fixer removes the unexposed silver compounds from the film during the developing process. The spent fixer can have as much as 2000-3000 parts per million (ppm) of silver. Silver bearing waste is regulated by RCRA as a hazardous waste if the level of silver exceeds 5 ppm as determined by the Toxicity Characteristic Leaching Procedure (TCLP) test.

Silver recovery units may be used to reclaim the silver from the used fixer waste stream. There are two types of recovery units. These are active (with electricity) and passive (without electricity) units. The active unit uses electricity to plate silver onto an electrode. The passive unit uses a chemical reaction between steel wool and silver to remove most of the silver from solution. Utilizing the best available technology, the equipment currently onboard CLIA member cruise ships is conservatively estimated to reduce the silver content of this effluent below 4 mg/l (milligrams/l or ppm)

<u>Handling Method 1 Employed by Member Lines:</u>

Treat used photographic and x-ray development fluids to remove silver for recycling.

Verify that the effluent from the recovery unit is less than 5 parts per million (ppm) silver, as measured by EPA-approved methodology.

After treatment, the residual waste stream fluid is non-hazardous and landed ashore as industrial waste.

<u>Handling Method 2 Employed by Member Lines:</u>

Used photographic and x-ray development fluids, either treated or untreated, may be assumed to be a hazardous waste. In this event, they are landed ashore in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA).

C. <u>Dry-cleaning waste fluids and contaminated materials</u>: *CLIA member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment.*

Shipboard dry cleaning facilities use a chlorinated solvent called perchlorethylene (also known as PERC or tetrachloroethylene) as a dry cleaning fluid. This is the approved dry cleaning solvent for these units. Operators must receive specific required training for the correct use of this chemical and its associated precautions. This solvent should be used in accordance with all safety procedures including appropriate personal protective equipment (PPE).

The dry cleaning units produce a small volume waste from condensate, the bottoms of the internal recovery stills, waste products from button and lint traps, spent perchloroethylene and filter media. This waste is comprised of dirt, oils, filters material, and spent solvent. Each ship utilizing these dry-cleaning units produces approximately two pounds of waste material weekly. However, the amounts may vary greatly by season and passenger load. This material is classified as hazardous waste under RCRA and must be disposed of accordingly.

Handling Method 1 Employed by Member Lines:

Perchloroethylene (PERC) and other chlorinated dry-cleaning fluids, contaminated sludge and filter materials are hazardous waste and landed ashore in accordance with the requirements of RCRA.

C. Print Shop Waste Fluids: *CLIA member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.*

Print shop waste may contain hazardous waste. Printing solvents, inks and cleaners all may contain hydrocarbons, chlorinated hydrocarbons, and heavy metals that can be harmful to human and aquatic species. Recent advances in printing technology and substitution of chemicals that are less hazardous reduces the volume of print shop waste generated and reduces the impact of these waste products.

CLIA member lines have agreed to utilize, whenever possible, printing methods and printing process chemicals that produce both less volume of waste and less hazardous waste products, that shipboard printers will be trained in ways to minimize printing waste generated, and that alternative printing inks such as soy based, non-chlorinated hydrocarbon based ink products will be used whenever possible. The member lines have further agreed that all print shop waste including waste solvents, cleaners, and cleaning cloths will be treated as hazardous waste, if such waste contains chemical components that may be considered as hazardous by regulatory definitions, and that all other waste may be treated as non-hazardous.

Handling Method 1 Employed by Member Lines:

When using traditional or non-soy based inks and chlorinated solvents, all print shop waste is treated as hazardous, and discharged ashore in accordance with RCRA.

Handling Method 2 Employed by Member Lines:

Shipboard printing processes use non-toxic based printing ink such as soy based, non-chlorinated solvents, and other non-hazardous products to eliminate hazardous waste products.

D. **Photo Copying and Laser Printer Cartridges**: *CLIA member lines have agreed to initiate procedures so as to maximize the return of photocopying and laser printer cartridges for recycling, and in any event, have agreed that these cartridges will be landed ashore.*

Increased use of laser and photo copying equipment on shore as well as onboard ship results in the generation of increased volumes of waste cartridges, inks, and toner materials. CLIA member lines have agreed to use only such inks, toners and printing/copying cartridges that contain non-hazardous chemical components, and that none of these cartridges or their components should be disposed of by discharge into the marine environment. In recognition of the member lines' goal of waste minimization, they have further agreed these cartridges should, whenever possible, be returned to the manufacturer for credit, recycling, or for refilling.

Handling Method Employed by Member Lines:

CLIA member lines have agreed that wherever possible, photo copying and laser printer cartridges will be collected, packaged and returned for recycling and when this is not possible, that these materials will not be discharged into the sea or other bodies of water but will be handled as other shipboard waste that is landed ashore for further disposal.

F. **Unused And Outdated Pharmaceuticals**: *CLIA member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed in accordance with legal and environmental requirements.*

In general ships carry varying amounts of pharmaceuticals. The pharmaceuticals carried range from over-the-counter products such as anti-fungal creams to prescription drugs such as epinephrine. Each ship stocks an inventory based on its itinerary and the demographics of its passenger base. CLIA member lines have agreed that all pharmaceuticals will be managed to ensure that their efficacy is optimized and that disposal is done in an environmentally responsible manner.

CLIA member lines have further agreed that when disposing of pharmaceuticals, the method used will be consistent with established procedures, and that pharmaceuticals and medications which are off specification or which have exceeded their shelf-life, and stocks that are unused and out of date, cannot be used for patients and therefore will be removed from the ship. Further, each regulatory jurisdiction has a posting of listed pharmaceuticals that must be considered hazardous waste once the date has expired or the item is no longer considered good for patient use.

Through onboard management of the medical facility, CLIA member lines have agreed that stocks of such listed pharmaceuticals are returned to the vendor prior to date of expiration. Pharmaceuticals that are being returned and which have not reached their expiration date are shipped using ordinary practices for new products.

Safety and Health

CLIA member lines have agreed that all expired listed pharmaceuticals will be handled in accordance with established procedures and all personnel handling this waste will receive

appropriate training in the handling of hazardous materials. As guidance, the US Environmental Protection Agency (EPA) has issued a report that clarifies the fact that residuals, such as epinephrine, found in syringes after injections are not considered an acutely hazardous waste by definition and may be disposed of appropriately in sharps containers. Member lines have agreed that all Universal Precautions will be adhered to when handling sharps.

Handling Method 1 Employed by Member Lines:

Establish a reverse distribution system for returning unexpired, unopened non-narcotic pharmaceuticals to the original vendor.

Handling Method 2 Employed by Member Lines:

Appropriately destroy narcotic pharmaceuticals onboard ship in a manner that is witnessed and recorded.

Handling Method 3 Employed by Member Lines:

Land listed pharmaceuticals in accordance with local regulations. Listed pharmaceuticals are a hazardous waste having chemical compositions which prevent them from being incinerated or disposed of through the ship's sewer system. Listing of such pharmaceuticals may vary from state to state.

Handing Method 4 Employed by Member Lines:

Dispose of other non-narcotic and non-listed pharmaceuticals through onboard incineration or landing ashore.

G. Fluorescent and Mercury Vapor Lamp Bulbs: *CLIA member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable disposal methods.*

Fluorescent and Mercury Vapor lamps contain small amounts of mercury that could potentially be harmful to human health and the environment. To prevent human exposure and contamination of the environment, CLIA member lines have agreed that these lamps will be handled in an environmentally safe manner. Recycling of mercury from lamps and other mercury containing devices is the preferred handling method and is encouraged by various states. The recycling of fluorescent lamps and high intensity discharge (HID) lamps keeps potentially hazardous materials out of landfills, saves landfill space and reduces raw materials production needs.

The recycling of fluorescent and HID lamps is a proven technology capable of reliably recovering greater than 99 percent of the mercury in the spent lights. At the recycling facility, this is done by using a crush-and-sieve method. In this process, the spent tubes are first crushed and then sieved to separate the large particles from the mercury containing phosphor powder. The phosphor powder is collected and processed under intense heat and negative pressure, a process called retorting. The mercury is volatized and then recovered by condensation. The glass particles are segregated and recycled into other products such as fiberglass. Aluminum components are also recycled separately.

Storage and handling of used lamp bulbs pose no compatibility problems. Disposal of the glass tubes can be accomplished by (1) processing with shipboard lamp crusher units that filter and adsorb the mercury vapor through H.E.P.A. and activated carbon or (2) by keeping the glass tubes intact for recycling ashore. The intact lamps or crushed bulbs are classified as "Universal Waste" when they are shipped to a properly permitted recycling facility; as such, testing is not required. The filters are disposed of as a hazardous waste in accordance with applicable US EPA or other prevailing laws and regulations.

Handling Method Employed by Member Lines:

(1) Fluorescent and mercury vapor lamps are collected and processed aboard by lamp crusher units and disposed of as stated above; or

(2) Fluorescent and mercury vapor lamps are collected intact and landed for recycling or disposal in accordance with prevailing laws and regulations.

H. Other Mercury Containing Products: *CLIA Member lines have agreed to prevent the discharge of mercury containing products into the sea.*

Reduction in use: Where feasible, CLIA members will reduce the use of mercury containing products.

Disposal: Once mercury-containing products are no longer able to be used, or require disposal, these products shall be landed ashore as universal or hazardous waste as appropriate.

I. Batteries: *CLIA member lines have agreed to prevent the discharge of spent batteries into the marine environment.*

If not properly disposed of, spent batteries may constitute a hazardous waste stream. Most of the large batteries are on tenders and standby generators. Small batteries used in flashlights and other equipment and by passengers, account for the rest. There are four basic types of batteries used.

Lead-acid batteries – These are used in tenders and standby generators. They are wet, rechargeable, and usually six-celled. They contain a sponge lead anode, lead dioxide cathode, and sulfuric acid electrolyte. The electrolyte is corrosive. These batteries require disposal as a hazardous waste, unless recycled or reclaimed.

Lead-acid batteries use sulfuric acid as an electrolyte. Battery acid is extremely corrosive, reactive and dangerous. Damaged batteries will be drained into an acid-proof container. A damaged and leaking battery is then placed in another acid-proof container, and both the electrolyte and the damaged battery placed in secure storage for proper disposal as a hazardous waste.

Nickel-cadmium (NiCad) batteries – These are usually rechargeable, and contain wet or dry potassium hydroxide as electrolyte. The potassium hydroxide is corrosive and the cadmium is a characteristic hazardous waste. Therefore, NiCad batteries will be disposed of as hazardous waste, unless recycled or reclaimed.

Lithium batteries – These are used as a power source for flashlights and portable electronic equipment. All lithium batteries will be disposed of as hazardous waste, or sent out for reclamation.

Alkaline batteries – These are common flashlight batteries and are also used in many camera flash attachments, cassette recorders, etc. They should be recycled, properly disposed or reclaimed.

Handling Method Employed by Member Lines:

Spent batteries are collected and returned for recycling and/or disposal in accordance with prevailing regulations. Discarded batteries are isolated from the refuse waste stream to prevent potentially toxic materials from inappropriate disposal. The wet-cell battery-recycling program is kept separate from the dry battery collection process. Intact wet-cell batteries are sent back to the supplier. Dry-cell batteries are manifested to a licensed firm for recycling.

J. Bilge and Oily Water Residues: *CLIA member lines have agreed to meet or exceed the international requirements for removing oil from bilge and wastewater prior to discharge.*

The area of the ship at the very bottom of the hull is known as the bilge. The bilge is the area where water collects from various operational sources such as water lubricated shaft seals, propulsion system cooling, evaporators, and other machinery. All engine and machinery spaces also collect oil that leaks from machinery fittings and engine maintenance activities. In order to maintain ship stability and eliminate potential hazardous conditions from oil vapors in engine and machinery spaces, the bilge spaces should be periodically pumped dry. In discharging bilge and oily water residues, both international regulations (MARPOL) and United States regulations require that the oil content of the discharged effluent be less than 15 parts per million and that it not leave a visible sheen on the surface of the water.

All ships are required to have equipment installed onboard that limits the discharge of oil into the oceans to 15 parts per million when a ship is en route and provided the ship is not in a special area where all discharge of oil is prohibited. Regulations also require that all oil or oil residues, which cannot be discharged in compliance with these regulations, be retained onboard or discharged to a reception facility. The equipment and processes implemented onboard cruise ships to comply with these requirements are complex and sophisticated.

The term "*en route*" as utilized in MARPOL (73/78) Regulation 9(b) is taken to mean while the vessel is underway. The U.S. Coast Guard has informed CLIA that it agrees with this meaning of "*en route.*"

In accordance with MARPOL (73/78) Regulation 20 and as appropriate, US regulations (33CFR151.25), CLIA member lines have agreed that every cruise ship of 400 gross tons and above shall be provided with an oil record book which shall be completed on each occasion whenever any of numerous specified operations take place in the ship and that operations include:

a. Ballasting or cleaning of fuel oil tanks,
b. Discharge of dirty ballast or cleaning water from the fuel oil tanks above,
c. Disposal of oily residues,
d. And discharge of bilge water that accumulated in machinery spaces.

Requirements regarding the keeping of an Oil Record Book as well as the form of the Oil Record Book are also found in MARPOL and in U.S. Coast Guard regulations (33CFR151).

Handling Method Employed by Member Lines:

Bilge and oily water residue are processed prior to discharge to remove oil residues, such that oil content of the effluent is less than 15 ppm as specified by MARPOL Annex 1.

K. Glass, Cardboard, Aluminum and Steel Cans: *CLIA member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment. This will be accomplished through improved reuse and recycling opportunities. They have further agreed that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.*

Management of shipboard generated waste is a challenging issue for all ships at sea. This is true for cruise vessels, other commercial vessels, military ships, fishing vessels and recreational boats. Waste products in the past were made from natural materials and were mostly biodegradable. Today's packaging of food and other products present new challenges for waste management. A large cruise ship today can carry over three thousand passengers and crew. Each day, an average cruise passenger will generate two pounds of dry trash and dispose of two bottles and two cans.

A strategy of source reduction, waste minimization and recycling has allowed the cruise industry to significantly reduce shipboard generated waste. To attain this, CLIA member lines have agreed to adopt a multifaceted strategy that begins with waste minimization to decrease waste from provisions brought onboard. This means purchasing in bulk, encouraging suppliers to utilize more efficient packaging, reusable packaging, and packaging materials that are more environmentally friendly—those that can be more easily disposed of or recycled. In fact, through this comprehensive strategy of source reduction, total waste on passenger vessels has been reduced by nearly half over the past ten years.

Another important component of the industry's waste reduction strategy is product or packaging recycling. Glass, aluminum, other metals, paper, wood and cardboard are, in most cases, recycled. Wood and cardboard may be incinerated when appropriate.

Handling Method Employed by Member Lines:

MARPOL Annex V ship waste is minimized through purchasing practices, reuse and recycling programs, landing ashore and onboard incineration in approved shipboard incinerators. Any Annex V waste that is discharged at sea will be done in strict accordance with MARPOL and any other prevailing requirements.

L. Incinerator Ash: *CLIA member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities, and that the discharge of incinerator ash containing hazardous components will be prevented through a program of waste segregation and periodic ash testing.*

Incinerator ash is not normally a hazardous waste. Through relatively straightforward waste management strategies, items that would cause the ash to be hazardous are separated from the waste stream and handled according to accepted hazardous waste protocols. In general, source segregation for waste streams is foundational for onboard waste management and is incorporated into the waste management manual required by MARPOL. Waste management for onboard waste streams include the following: source reduction, minimization, recycling, collection, processing and discharge ashore. This allows the incinerator to be used primarily for food waste, contaminated cardboard, some plastics, trash and wood.

Member lines have agreed that incinerator ash will be tested at least once quarterly for the first year of operation to establish a baseline and that testing may then be conducted once a year. The member lines have further agreed that a recognized test procedure will be used to demonstrate that ash is not a hazardous waste. A recognized test procedure includes the following metals as indicators for toxicity - arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Special attention is placed on the removal of batteries from the incinerator waste stream. The use of incinerators saves landfill space and prevents the build up of material onboard that could become the breeding ground for insects, rodents and other vermin.

Handling Method Employed by Member Lines:

Proper hazardous waste management procedures are to be instituted onboard each ship to assure that waste products, which will result in a hazardous ash, are not introduced into the incinerator. Non-hazardous incinerator ash may be disposed of at sea in accordance with MARPOL Annex V. Ash identified as being hazardous is disposed of ashore in accordance with RCRA.

M. Wastewater reclamation

Because of the amounts of fresh water involved, and its restricted availability onboard ship (all fresh water must be either purchased or generated onboard), fresh water is a valuable commodity. Therefore, water management is extremely important and takes the form of both minimizing water usage and the potential reclamation and reuse of water for non-potable purposes. Many CLIA companies are researching new technology and piloting graywater treatment systems onboard their vessels. CLIA member operators also take numerous steps in onboard water management. Water management techniques include:

a. Use of technical water (for example: air conditioning condensate) where possible.
b. Use of water recovery systems (for example: filtering and reuse of laundry water – last rinse use for first wash).
c. Reclamation and reuse as technical water (flushing toilets, laundry, open deck washing) of properly treated and filtered wastewaters.
d. Active water conservation (for example: use of reduced flow showerheads, vacuum systems for toilets, vacuum food waste transportation and laundry equipment that utilizes less water).

N. Graywater: *For ships traveling regularly on itineraries beyond the territorial waters of coastal states, CLIA member lines have agreed to discharge graywater only while the ship is underway and proceeding at a speed of not less than 6 knots[1]; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. The member lines*

have further agreed that the discharge of graywater will comply with all applicable laws and regulations. For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.

The term graywater is used on ships to refer to wastewater that is generally incidental to the operation of the ship. The International Maritime Organization (IMO) defines graywater as including drainage from dishwasher, shower, laundry, bath and washbasin drains. The US Clean Water Act (formally know as the Federal Water Pollution Control Act) includes galley, bath and shower water in its definition of graywater. The US regulations implementing this act do not include a further definition of gray water. However, the regulations do include a provision that exempts all of the wastewater included in the IMO definition and other discharges incidental to the operation of a ship from the Clean Water Act's permitting program (formally known as the National Pollution Discharge Elimination System (NPDES) program). Finally, the US Coast Guard regulations include provisions that essentially combine the two definitions from the IMO and the Clean Water Act. None of the definitions of graywater include blackwater (discussed below) or bilgewater from the machinery spaces. Recent U.S. Legislation places limits on the discharge of graywater in the Alaska Alexander Archipelago.

Handling Method Employed by Member Lines:

Graywater is discharged only while ships are underway and proceeding at a speed of not less than 6 knots, in recognition that dispersal of these discharges is desirable and that mixing of these waters, which are discharged approximately 10-14 feet below the surface, by the action of the propellers and the movement of the ship, provides the best dispersal available.

O. Blackwater: *Waste from toilets, urinals, medical sinks and other similar facilities is called "blackwater." CLIA members have agreed that all blackwater will be processed through a Marine Sanitation Device (MSD), certified in accordance with U.S. or international regulations, prior to discharge. For ships traveling regularly on itineraries beyond the territorial water of coastal states, discharge will take place only when the ship is more than 4 miles from shore and when the ship is traveling at a speed of not less than 6 knots.* [1]
For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.

P. Advanced Wastewater Purification Systems:

To improve environmental performance, cruise lines are testing and installing wastewater purification systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing standards for secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

[1] For vessels operating under sail, or a combination of sail and motor propulsion, the speed shall not be less than 4 knots.

Q. Training and Educational Materials

Training is an important and ongoing part of every position and tasking onboard cruise ships. Not only is training necessary for the safe and economical operation of a ship, it is required by numerous international conventions and flag state regulations. The International Convention on Standards of Training Certification and Watchkeeping (STCW) for example, sets forth requirements for knowledge, experience and demonstrated competency for licensed officers of the deck and engineering departments and for ratings forming part of the navigation or engineering watch. Equivalent national standards apply to ships in United States registry. These detailed requirements address not only the navigation of the ship but also the proper operation of the shipboard machinery and knowledge of and ability to assure compliance with the environmental protection requirements of MARPOL and the safety regulations of The International Convention on Safety of Life at Sea (SOLAS). SOLAS also requires that the ship's training manual (which contents are prescribed by regulation) be placed in the crew messes and recreation rooms or in individual crew cabins.

CLIA member lines have developed programs that raise the level of environmental awareness on the part of both the passengers and the crew. Each ship's crew receives training regarding shipboard safety and environmental procedures. Advanced training in shipboard safety and environmental management procedures is provided for those directly involved in these areas. Those directly responsible for processing wastes are given specific instruction in their duties and responsibilities and in the operation of the various equipment and waste management systems. Specific actions that our member lines have taken to train employees and increase passenger awareness include:

a. Announcements over the public address system and notices in ship newsletters that caution against throwing any trash overboard,
b. Signage and colorful posters placed in crew and passenger areas encouraging environmental awareness and protection,
c. Safety and environmental information booklets in crew cabins and crew lounges,
d. Regular meetings of ship safety and environmental committees consisting of officers and crew from all departments to review methods of improving performance, including better and more effective environmental practices.

For ships on an international voyage, STCW, SOLAS, the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), require that training be fully documented. Individual training is documented in each crewmember's file. Ship training exercises, such as fire drills and emergency response exercises, are documented in the appropriate ship's logs. All of these training documents are required to be available for oversight examination by both the ship's flag state inspectors and by port state authorities such as the United States Coast Guard.

Placards warning of the prohibition of the discharge of oil are posted on all ships operating in the navigable waters of the United States as required by U.S. Coast Guard regulations (33CFR155.450). Additionally, as part of required shipboard waste management plans, both Coast Guard regulations (33CFR151.59) and MARPOL (Annex V Regulation 9) require the posting of placards that notify the passengers and the crew of the disposal requirements for garbage. These placards are to be written in the official language of the State whose flag the ship is entitled to fly and also in English or French if neither of these is the official

language. Once again, oversight of compliance with these requirements is conducted by ISM audits and frequent inspections by flag states and the United States Coast Guard.

For those ships on an international voyage, the Safety of Life at Sea Convention mandates compliance with the ISM Code. This comprehensive Code requires that each vessel operating company and each vessel participate in a_very strictly defined management program, under both internal and external audit and regulatory oversight that sets forth detailed procedures for assuring compliance with safety, environmental protection, emergency response and training mandates.

Equivalent equipment, practices and procedures

CLIA member lines have agreed that the use of equivalent or other acceptable practices and procedures shall be communicated to CLIA. As appropriate, such practices and procedures shall be included as a revision to this document. As an example, when improved systems for treating blackwater and graywater are perfected, shown to meet the requirements for MSDs and accepted by appropriate authorities for the treatment of graywater, the new systems and associated technology will be included together with their impact on the current standard of discharging graywater only while underway.

CLIA INDUSTRY STANDARD

CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES

The members of the Cruise Lines International Association (CLIA) are dedicated to preserving the marine environment and in particular the pristine condition of the oceans and other waters upon which our vessels sail. The environmental standards that apply to our industry are stringent and comprehensive. Through the International Maritime Organization, the United States and flag and port states, CLIA has developed consistent and uniform international standards that apply to all vessels engaged in international commerce. These standards are set forth in the International Convention for the Prevention of Pollution from Ships (MARPOL). The international standards of MARPOL have in turn been adopted by the United States and augmented by additional national legislation and regulation. The U.S. has jurisdiction over both foreign and domestic vessels that operate in U.S. waters where U.S. laws, such as the Federal Water Pollution Control Act, the Act to Prevent Pollution from Ships, the Ports and Waterways Safety Act, and the Resource Conservation and Recovery Act - which applies to hazardous waste as it is landed ashore for disposal, apply. The U.S. Coast Guard enforces both international conventions and domestic laws.

The cruise industry commitment to protecting the environment is demonstrated by the comprehensive spectrum of waste management technologies and procedures employed on its vessels.

CLIA members are committed to:

a. Designing, constructing and operating vessels, so as to minimize their impact on the environment;

b. Developing improved technologies to exceed current requirements for protection of the environment;

c. Implementing a policy goal of zero discharge of MARPOL, Annex V solid waste products (garbage) and equivalent US laws and regulations by use of more comprehensive waste minimization procedures to significantly reduce shipboard generated waste;

d. Expanding waste reduction strategies to include reuse and recycling to the maximum extent possible so as to land ashore even smaller quantities of waste products;

e. Improving processes and procedures for collection and transfer of hazardous waste; and

f. Strengthening comprehensive programs for monitoring and auditing of onboard environmental practices and procedures in accordance with the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code).

INDUSTRY WASTE MANAGEMENT STANDARDS: CLIA member cruise vessel operators have agreed to incorporate the following standards for waste stream management into their respective Safety Management Systems.

1. Photo Processing, Including X-Ray Development Fluid Waste: *Member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations.*

2. Dry-cleaning waste fluids and contaminated materials: *Member lines have agreed to* prevent *the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment*

3. Print Shop Waste Fluids: *Member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.*

4. Photo Copying and Laser Printer Cartridges: *Member lines have agreed to initiate procedures so as to maximize the return of photo copying and laser printer cartridges for recycling. In any event, these cartridges will be landed ashore.*

5. Unused And Outdated Pharmaceuticals: *Member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed of in accordance with legal and environmental requirements.*

6. Fluorescent And Mercury Vapor Lamp Bulbs: *Member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable means of disposal.*

7. Batteries: *Member lines have agreed to prevent the discharge of spent batteries into the marine environment.*

8. Bilge and Oily Water Residues: *Member lines have agreed to meet or exceed the international requirements for removing oil from bilge and wastewater prior to discharge.*

9. Glass, Cardboard, Aluminum and Steel Cans: *Member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment. This will be achieved through improved reuse and recycling opportunities. They have further agreed that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.*

10. Incinerator Ash: *Member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities.*

11. Graywater: [*For ships traveling regularly on itineraries beyond the territorial waters of coastal states], member lines have agreed that* graywater *will be discharged only while the ship is underway and proceeding at a speed of not less*

than 6 knots[1]; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations. For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.

12. Blackwater: *CLIA members have agreed that all blackwater will be processed through a Marine Sanitation Device (MSD), certified in accordance with U.S. or international regulations, prior to discharge. For ships traveling regularly on itineraries beyond territorial coastal waters, discharge will take place only when the ship is more than 4 miles from shore and when the ship is traveling at a speed of not less than 6 knots.[1] For vessels whose itineraries are fully within US territorial waters, discharge shall comply fully with U.S. and individual state legislation and regulations.*

Some member cruise lines are field-testing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems, which are currently being referred to as advanced wastewater purification (AWP) systems, are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

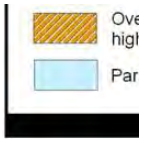
Each CLIA cruise vessel operator has agreed to utilize one or more of the practices and procedures contained in the attached "*Cruise Industry Waste Management Practices and Procedures"* in the management of their shipboard waste streams. Recognizing that technology is progressing at a rapid rate, any new equipment or management practices that are equivalent to or better than those described, and which are shown to meet or exceed international and federal environmental standards, will also be acceptable. Member lines have agreed to communicate to CLIA the use of equivalent or other acceptable practices and procedures. As appropriate, such practices and procedures shall be included as a revision to the attached document. As an example, when improved systems for treating blackwater and graywater are perfected and shown to meet the requirements for MSDs and accepted by appropriate authorities, the new systems and associated technology will be included in the attachment as a revision.

CLIA and its Environmental Committee will continue to work with the U.S. Coast Guard, the U.S. Environmental Protection Agency and other appropriate agencies to further implement the above commitments.

[1] For vessels operating under sail, or a combination of sail and motor propulsion, the speed shall not be less than 4 knots.

ATTACHMENT: *CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES*

Revised: November 12, 2006
Effective for non-prior ICCL members: [July 1, 2007]


Ove
hig
Par

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LARGE COMMERCIAL PASSENGER VESSEL WASTEWATER DISCHARGE
GENERAL PERMIT NO. 2009DB0026

Marine Discharge of Treated Sewage and Treated Graywater from Commercial Passenger Vessels Operating in Alaska

Permit Expiration Date: April 22, 2013

This Large Commercial Passenger Vessel Wastewater Discharge General Permit is issued for the discharge of treated sewage and treated graywater from large commercial passenger vessels operating in marine waters of the state exclusive of the waters of Glacier Bay National Park. Large commercial vessels include passenger vessels for hire that provide overnight accommodations for 250 or more passengers, determined with reference to the number of lower berths. Effluent limits apply to large vessels.

This permit is subject to the conditions and stipulations incorporated herein by reference. All discharges made under the authority of this permit, regardless of volume, are subject to the conditions and stipulations contained herein. Approval to operate under this permit shall be valid for no more than three years.

The Department will require a person to apply for an individual permit when the activity does not meet the conditions of this general permit, contributes to pollution, or causes an adverse impact on public health or water quality.

This permit is issued under provisions of Alaska Statutes 46.03, the Alaska Administrative Code as amended or revised, and other applicable State laws and regulations, including standards of the Alaska Coastal Management Program under 11 AAC 112 for activities in the coastal zone.

This permit is effective upon issuance and expires **April 22, 2013** unless modified, terminated, renewed or otherwise superseded before that time. This permit may be terminated or modified in accordance with AS 46.03.120.

April 22, 2010
Date Issued

SIGNATURE ON FILE
Denise Koch
Commercial Passenger Vessel Environmental Compliance Program

TABLE OF CONTENTS

1 OPERATION UNDER GENERAL PERMIT 4

1.1 ELIGIBILITY 4
1.2 AUTHORIZED DISCHARGES 4
1.3 DISCHARGE RESTRICTIONS 4
1.4 NOTICE OF INTENT 4
1.5 LIMITATIONS AND MONITORING 6
1.6 REPORTING 12
1.7 MANAGEMENT REQUIREMENTS 14
1.8 NONCOMPLIANCE NOTIFICATION 14
1.9 EXCLUSION FROM THE GENERAL PERMIT 15
1.10 INDIVIDUAL PERMIT 15
1.11 TERMINATION OF ACTIVITIES UNDER A GENERAL PERMIT 15

2 GENERAL CONDITIONS 17

2.1 ACCESS AND INSPECTION 17
2.2 AVAILABILITY OF RECORDS 17
2.3 LOCATION OF PERMIT AND OTHER REQUIRED PLANS 17
2.4 OTHER NONCOMPLIANCE REPORTING 18
2.5 CIVIL AND CRIMINAL LIABILITY 18
2.6 OTHER LEGAL OBLIGATIONS 18
2.7 TRIBUTYLTIN PAINTS (TBT) 19
2.8 POLLUTION PREVENTION 19
2.9 APPLICATIONS FOR PERMIT RENEWAL 19
2.10 TRANSFERS 19
2.11 TERMINATION 20
2.12 SIGNATORY REQUIREMENTS 20
2.13 QUALITY ASSURANCE / QUALITY CONTROL PLAN (QA/QC PLAN) 21
2.14 SAFETY AT SEA 21
2.15 UPSET CONDITIONS 21

ACRONYMS 22
DEFINITIONS 23

LIST OF TABLES

Table 1: Effluent Limits and Discharge Reporting for all Vessels..... 9
Table 2: Effluent Limits and Discharge Reporting for Hamworthy Wastewater Treatment Systems..... 10
Table 3: Effluent Limits and Discharge Reporting for Marisan Wastewater Treatment Systems..... 10
Table 4: Effluent Limits and Discharge Reporting for Rochem Wastewater Treatment Systems..... 10
Table 5: Effluent Limits and Discharge Reporting for Scanship Wastewater Treatment Systems..... 11
Table 6: Effluent Limits and Discharge Reporting for Zenon Treatment Systems..... 11
Table 7: Effluent Limits and Discharge Reporting for All Other Wastewater Treatment Systems 11

LIST OF FORMS

Discharge Monitoring Report (DMR) for Large Cruise Ships 27
NONCOMPLIANCE NOTIFICATION 31
ACCIDENTAL DISCHARGE / SPILL NOTIFICATION 33
NOTICE OF INTENT FORM 34
NOTICE OF TERMINATION FORM 37
Example of Acceptable Format for Transmittal of Analytical Results as Required by this General Permit Section 1.6 Reporting..... 39

1 OPERATION UNDER GENERAL PERMIT

1.1 ELIGIBILITY

Large commercial passenger vessels that operate in marine waters of the state are eligible to seek coverage under this general permit (AS 46.03.462). The scope of the permit does not include waters of Glacier Bay National Park and Preserve.

1.2 AUTHORIZED DISCHARGES

This general permit only authorizes the discharge of treated sewage and treated graywater, in accordance with the conditions set forth herein.

1.3 DISCHARGE RESTRICTIONS

1.3.1 Discharges to water bodies included in the ADEC CWA Section 305(b) report or effective CWA Section 303(d) list of waters which are “impaired” or “water quality-limited” are prohibited if the “impaired” or “water quality-limited” designation is due to any of the pollutant parameters for which effluent limits are included in applicable Effluent Limit and Discharge Reporting Tables (Table 1 through Table 7 of section 1.5).

1.3.2 There shall be no discharge of foam (in other than trace amounts), oily wastes (which produce a sheen on the surface of the receiving waters), floating solids, garbage or grease into marine waters of the state.

1.3.3 Sediment and sludge that accumulates in tanks shall not be disposed of by discharging into marine waters of the state unless it complies with the treatment and effluent requirements for sewage and graywater.

1.3.4 All sewage and graywater must be treated prior to discharge into marine waters of the state by an advanced wastewater treatment system to produce an effluent quality that complies with the applicable limits in Table 1 through Table 7 of section 1.5.

1.3.5 The discharge volume and flow rate shall not exceed the design capacity of the advanced wastewater treatment system.

1.4 NOTICE OF INTENT

1.4.1 All large commercial passenger vessels seeking coverage under this permit must submit a complete Notice of Intent (NOI) to the Cruise Ship Program within 30 days of the effective date of this permit. In subsequent years, new permittee’s must submit a complete NOI at least thirty days prior to the discharge of any treated sewage or treated graywater into marine waters of the state. The NOI must include the following information for the vessel to be covered under this general permit:

1.4.1.1 The main point of contact for the vessel;

1.4.1.2 Owner's business and name, mailing address, City/State/zip code/Country, electronic mail address, telephone and facsimile numbers, and representative;

1.4.1.3 Owner's or Operator's Alaskan agent for service of process, mailing address, City/State/zip code/Country, electronic mail address, telephone and facsimile numbers, and representative;

1.4.1.4 Operator's business name if different from the owner's business name, mailing address, City/State/zip code/Country, electronic mail address, telephone and facsimile numbers, and representative;

1.4.1.5 Whether the operator is requesting that the vessel be authorized to discharge only while the vessel is underway or whether the operator is requesting that the vessel be authorized for continuous discharge;

1.4.1.6 If the permittee is seeking authorization for continuous discharge, the permittee must also provide the discharge port(s) name or letter code. For each port, provide the following characteristics: internal diameter, shape, location (port or starboard), frame number, discharge port pump capacity, and the minimum distance from the center of the port to the (normal load) water line and the keel. The vessel length and draft are also required. The permittee must provide a drawing (to scale) of the location of wastewater effluent penetration points (ports) on the hull;

1.4.1.7 The vessel's name and International Maritime Organization (IMO) number;

1.4.1.8 The vessel's gross tonnage;

1.4.1.9 The vessel's port of registry;

1.4.1.10 Total number of berths available for passengers determined with reference to the number of lower berths;

1.4.1.11 Total number of berths available for crew on the vessel;

1.4.1.12 Maximum passenger capacity and the maximum crew capacity;

1.4.1.13 Estimates of the average and maximum volumes of wastewater to be discharged per 24 hour period (cubic meters), and the beginning and ending dates between which discharges may occur each year;

1.4.1.14 Type, number, and combined maximum design capacity in cubic meters per 24 hour period of all advanced wastewater treatment systems onboard;

1.4.1.15 Type(s) of sewage treatment and system capacity in cubic meters per 24 hour period;

1.4.1.16 Type(s) of graywater treatment and system capacity in cubic meters per 24 hour period;

1.4.1.17 Average volume of sewage generation per day in cubic meters;

1.4.1.18 Maximum volume of sewage generation per day in cubic meters;

1.4.1.19 Average graywater generation per day in cubic meters for the following sources:

1.4.1.20 Accommodations

1.4.1.21 Galley

1.4.1.22 Laundry

1.4.1.23 Maximum graywater generation per day in cubic meters for the following sources:

1.4.1.24 Accommodations

1.4.1.25 Galley

1.4.1.26 Laundry

1.4.1.27 The method of handling and disposal of sludge produced from the treatment of sewage and graywater.

1.4.1.28 A certification statement related to the use of tributyltin (TBT) paints.

1.4.2 The permittee may satisfy the requirements of this section by completely filling out and signing the NOI contained at the end of this permit or the Cruise Ship NOI posted on the Department's website.

1.4.3 An original signed copy of the NOI form shall be mailed to the office listed in Section 1.6.3 (Reporting).

1.5 LIMITATIONS AND MONITORING

1.5.1 Unless otherwise specified in this permit, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements for the term of this general permit.

1.5.1.1 Onboard sampling locations will be the same as those listed in the current and accurate Vessel Specific Sampling Plan (VSSP) approved by the Department under 18 AAC 69.030.

1.5.1.2 All wastewater samples taken to satisfy the state requirements must be collected while the vessel is discharging into marine waters of the state.

1.5.1.3 In addition, the samples must be representative of the treated sewage and treated graywater that is discharged into marine waters of the state. Treated sewage or treated graywater that is stored in holding tanks may only be discharged into marine waters of the state if the effluent from those tanks is sampled as part of the regulatory sampling regime that is detailed in the current approved VSSP.

1.5.1.4 The permittee shall ensure that the sampling required under this general permit and AS 46.03.465 is conducted by a qualified, approved person in accordance with the current approved Quality Assurance / Quality Control (QA/QC) Plan that is part of the VSSP. The permittee must submit information describing the qualifications of the sampler no later than 21 days before sampling required under this general permit and AS 46.03.465 is to occur. If the Department deems it necessary to confirm the qualifications of the person conducting the sampling, the Department will consider whether the person:

1.5.1.5 Has been trained in sampling methodology, sample handling, chain of custody, field measurements, and quality assurance procedures; and

1.5.1.6 Is familiar with the requirements of the QA/QC plan and the vessel specific sampling plan for the vessel being sampled.

1.5.1.7 The permittee shall ensure that the testing required under this general permit and AS 46.03.465 is conducted by an approved laboratory.

1.5.2 Authorized discharges must comply with the effluent limits and discharge reporting requirements specified in Table 1 and the appropriate Effluent Limit and Discharge Reporting Table (Table 2 through Table 7) contained in this permit for the manufacturer of the wastewater treatment system that is being used to treat the discharge.

1.5.3 If an owner or operator of a large commercial passenger vessel with an advanced wastewater treatment system by a manufacturer other than those listed in Table 2 through Table 6 seeks authorization to discharge wastewater into the marine waters of the state, the permittee will be required to meet the effluent limits contained in Table 1 and Table 7.

1.5.4 The permittee must monitor the parameters listed in Table 1 and the appropriate Effluent Limit and Discharge Reporting Table (Table 2 through Table 7) as per 1.5.2 and 1.5.3 and any additional parameters required under the most recent version of the Department approved QA/QC plan (AS 46.03.465(d)).

1.5.5 All figures in the Effluent Limit and Discharge Reporting Tables represent maximum effluent limits unless otherwise indicated. The permittee must comply with the effluent

limits at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit.

1.5.6 The first sample event for all parameters with effluent limits listed in Table 1 through Table 7 must occur within ten (10) days of the first discharge into marine waters of the state for each cruise ship season. The exception is total flow, which must be documented daily. If a ship has a meter that measures the total daily flow, the actual flow meter results (not estimations) must be reported on the Discharge Monitoring Report.

1.5.7 All subsequent sampling frequency is specified in Effluent Limit and Discharge Reporting Tables 1 through 7. Individual sample events must be at least 24 hours apart.

1.5.8 Permittees may submit U.S. Coast Guard required sampling analysis obtained from samples taken while a ship was discharging into marine waters of the state for the specified parameters in the Effluent Limit and Discharge Reporting Table 1 through Table 7 in lieu of conducting additional sampling to satisfy the sampling requirements of this general permit (AS 46.03.465(f)).

1.5.9 Copper, nickel, and zinc in the effluent must be analyzed as dissolved metal.

Table 1: Effluent Limits and Discharge Reporting for all Vessels.

(See tables 2 through 7 for ammonia and metals limits specific to the wastewater treatment system installed on your vessel.)

Parameter	Minimum Value	Monthly Geometric Mean [a]	Daily Maximum	Minimum Frequency	Sample Type
Fecal Coliform Bacteria	N/A	14 per 100 mL	43 per 100 mL	Twice per month	Grab

Parameter	Minimum Value	Monthly Average [b]	Daily Maximum	Minimum Frequency	Sample Type
Total Flow (cubic meters per day of effluent)	N/A	Not to exceed design capacity	Not to exceed design capacity	Daily	Metered or estimated
Biochemical Oxygen Demand (5-day)	N/A	30 mg/L	60 mg/L	Twice per month	Grab
Total Residual Chlorine	N/A	N/A	10 ug/L [c]	Twice per month	Field test
pH	6.5 S.U.	N/A	8.5 S.U.	Twice per month	Field test, grab, or continuous
Total Suspended Solids (TSS)	N/A	N/A	150 mg/L	Twice per month	Grab or Continuous
Specific Conductance	N/A	N/A	Report	Twice per season	Field test, grab, or continuous
Chemical Oxygen Demand	N/A	N/A	Report	Twice per season	Grab
Nitrate-Nitrogen (NO_3 - N)	N/A	N/A	Report	Twice per season	Grab
Total phosphorus	N/A	N/A	Report	Twice per season	Grab
Total Kjeldahl Nitrogen (TKN)	N/A	N/A	Report	Twice per season	Grab
Total Organic Carbon	N/A	N/A	Report	Twice per season	Grab
Base-Neutral Acid extractables (BNA) [d]	N/A	N/A	Report	Twice per season	Grab
Volatile Organic Compounds (VOCs)[d]	N/A	N/A	Report	Twice per season	Grab
Other Dissolved and Total Recoverable Metals [d]	N/A	N/A	Report	Twice per season	Grab

Notes:

a. The "monthly geometric mean" is the geometric mean of all samples taken during the calendar month. A non-detect value may be substituted with a value of 1 for the purpose of calculating the geometric mean. If only one sample is collected, the result of that sample is the geometric mean.

b. The "monthly average" is the average of all samples taken during the calendar month. If only one sample is collected, the result of that sample is the monthly average. A non-detect value may be substituted with a value of 0 for the purpose of calculating the monthly average.

c. Analytical results below the method detection limit for the method used shall be deemed compliant with the effluent limits.

d. The specific pollutants are listed in the most recent version of the Department approved QA/QC plan.

Table 2: Effluent Limits and Discharge Reporting for Hamworthy Wastewater Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	28 mg/L	143 mg/L	Twice per month	Grab
Copper	87 µg/L	133 µg/L	Twice per month	Grab
Nickel	63 µg/L	63 µg/L	Twice per month	Grab
Zinc	395 µg/L	395 µg/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Table 3: Effluent Limits and Discharge Reporting for Marisan Wastewater Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	20 mg/L	20 mg/L	Twice per month	Grab
Copper	87µg/L	157 µg/L	Twice per month	Grab
Nickel	24 µg/L	24 µg/L	Twice per month	Grab
Zinc	112 µg/L	112 µg/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Table 4: Effluent Limits and Discharge Reporting for Rochem Wastewater Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	12 mg/L	12 mg/L	Twice per month	Grab
Copper	10 µg/L	10 ug/L	Twice per month	Grab
Nickel	10 µg/L	10 ug/L	Twice per month	Grab
Zinc	118 µg/L	118 ug/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Table 5: Effluent Limits and Discharge Reporting for Scanship Wastewater Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	28 mg/L	68 mg/L	Twice per month	Grab
Copper	26 ug/L	26 ug/L	Twice per month	Grab
Nickel	28 ug/L	28 ug/L	Twice per month	Grab
Zinc	267 ug/L	267 ug/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Table 6: Effluent Limits and Discharge Reporting for Zenon Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	28 mg/L	51 mg/L	Twice per month	Grab
Copper	50 ug/L	50 ug/L	Twice per month	Grab
Nickel	40 ug/L	40 ug/L	Twice per month	Grab
Zinc	188 ug/L	188 ug/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Table 7: Effluent Limits and Discharge Reporting for All Other Wastewater Treatment Systems

(These effluent limits apply in addition to the effluent limits listed in Table 1.)

Parameter	Daily Maximum Continuous [a]	Daily Maximum Underway [b,c]	Minimum Frequency	Sample Type
Ammonia	28 mg/L	130 mg/L	Twice per month	Grab
Copper	87 ug/L	130 ug/L	Twice per month	Grab
Nickel	43 ug/L	43 ug/L	Twice per month	Grab
Zinc	360 ug/L	360 ug/L	Twice per month	Grab

Notes:

a. This effluent limit applies to wastewater discharged while docked, anchored, or moving at less than 6 knots.

b. This effluent limit applies to wastewater discharged while underway traveling at a speed of 6 knots or greater.

c. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

1.5.10 A permittee that monitors (while discharging into marine waters of the state) any parameter identified in this permit at a frequency greater than required shall report those results and include the results in any monitoring report calculations.

1.5.11 Test procedures for the analysis of pollutants shall conform to methods cited in 18 AAC 70.020 or the latest edition of Standard Methods for the Examination of Water and Wastewater, except as otherwise specified in this permit. The permittee may substitute alternative methods of monitoring or analysis upon receipt of written approval from the Department (18 AAC 70.020 (c) (7)).

1.5.12 If a permittee is authorized for continuous discharge and the permittee has discharged wastewater effluent into marine waters of the state while docked, anchored, or moving at less than 6 knots during a calendar month, then the permittee must obtain at least one wastewater effluent sample while the vessel is discharging wastewater into the marine waters of the state while the vessel is docked, anchored, or moving at less than 6 knots.

1.6 REPORTING

1.6.1 An owner or operator shall submit a Discharge Monitoring Report (DMR) that provides the analytical results for required sampling for the calendar month to the Department by the 21st day of the following calendar month. The DMR must include:

1.6.1.1 A clear notification of whether the sample was taken while the vessel was underway or while it was docked, anchored, or moving at less than 6 knots.

1.6.1.2 The date, time, vessel location (latitude/longitude) and sample discharge port where each sample was collected;

1.6.1.3 Whether there were any discharges from the vessel while it was docked, anchored, or moving at less than 6 knots during the reporting period;

1.6.1.4 The sampling technique and analytical testing method used for each sample;

1.6.1.5 The quality assurance and quality control analysis of the sampling, analytical testing, and analytical data;

1.6.1.6 The analytical results in a Microsoft Excel format approved by the Department. The spreadsheet shall include: vessel name, contact information, valve used for sample event, sample date, sample time, latitude and longitude of the ship when the sample was collected, and whether the sample was taken as the ship was discharging wastewater into marine waters of the state. Each sample parameter will have a row, the columns shall include: parameter, flag, results, units, analysis date, analysis time, Practical Quantitation Limit (PQL), sample type, and comments. A sample of a Department approved format is contained at the end of this permit;

1.6.1.7 Any deviation from the approved plan submitted under 18 AAC 69.025;

1.6.1.8 Any deviation from the accurate approved Vessel Specific Sampling Plan submitted under 18 AAC 69.030;

1.6.1.9 The type of wastewater sampled according to the vessel specific sample plan (treated sewage, treated graywater, or both);

1.6.1.10 A copy of the original laboratory report from each sampling event; and

1.6.1.11 An indication when effluent values exceed effluent limits found in Table 1 through Table 7 and space for any qualifying or relevant information.

1.6.2 A permittee shall submit a Discharge Monitoring Report (DMR) to the Department for the months that the vessel operated in the marine waters of the state even if the ship did not discharge into Alaska waters during the calendar month. The DMR shall indicate that the vessel did not discharge and must be signed by the responsible party.

1.6.3 Monitoring results shall be summarized and reported to the Department for each sampling event. Each DMR must be signed, postmarked and mailed, or faxed, or emailed no later than the 21st day of the following calendar month of the date that sampling occurred. If a permittee submits a DMR via e-mail, the permittee must mail the original signed DMR to the Department. Reporting shall be done on the Department approved DMR form provided, or on a similar form approved by the Department. Signed copies of these and all other reports required herein shall be submitted to the Department at the following address:

Alaska Department of Environmental Conservation
Division of Water/ CPVEC
410 Willoughby Ave, Suite 303
PO Box 111800
Juneau, AK 99811-1800
Phone (907) 465-5300; FAX (907) 465-5274
DEC.WQ.Cruise@alaska.gov

1.6.4 Pursuant to AS 46.03.470, other requirements, and this permit, a permittee shall maintain records and information resulting from the monitoring activities required by this permit, including all records of sewage and graywater discharge monitoring analyses performed, calibration and maintenance of sewage and graywater discharge monitoring instrumentation, recordings from continuous monitoring instrumentation associated with the discharge of sewage and graywater discharge monitoring, laboratory quality control summaries, and any addition to or modification of the sewage and graywater treatment facility, for review for a minimum of three years. Permittees shall submit certified copies of such records to the Department upon request.

1.6.5 The permittee shall maintain discharge logs and provide those records to the Department not later than five days after each calendar month of operation in state waters as specified in AS 46.03.465(a).

1.6.6 Knowingly making a false statement by the permittee or any person in its employ, including contractors, on any report or test may result in the imposition of civil criminal penalties as provided for under state law, including AS 46.03.760 and AS 46.03.790, and federal law.

1.7 MANAGEMENT REQUIREMENTS

1.7.1 All discharges authorized under this permit shall be consistent with the terms and conditions of this permit and approved plans.

1.8 NONCOMPLIANCE NOTIFICATION

1.8.1 The permittee must report the following occurrences to the Department, either verbally or in writing, within 24 hours of the permittee becoming aware of the occurrence:

1.8.1.1 Any noncompliant discharge of sewage, graywater or other wastewaters into marine waters of the state that may endanger health or the environment;

1.8.1.2 Any unanticipated discharge of sewage or graywater into marine waters of the state that exceeds any effluent limitation established in the permit;

1.8.1.3 Any discharge of sewage, graywater or other wastewater into marine waters of the state resulting from an upset and that exceeds any effluent limitation established in the permit (2.15 Upset Conditions); or

1.8.1.4 Any discharge of sewage or graywater or other wastewaters into marine waters of the state released overboard prior to passing through the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limitation established in the permit.

1.8.2 In addition to the initial report required by 1.8.1, the permittee must provide a written report within 7 days of the time that the permittee becomes aware of any event required to be reported under Section 1.8.1. This report may be submitted on the Non-Compliance form included in this permit and must contain:

1.8.2.1 A description of the noncompliance event and its cause;

1.8.2.2 The onset and duration of noncompliance, including dates and times;

1.8.2.3 The estimated duration noncompliance is expected to continue if it has not been corrected;

1.8.2.4 Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance; and

1.8.2.5 If the noncompliance involves a discharge prior to the treatment works, an estimate of the quantity (in cubic meters) of untreated discharge.

1.8.3 When a permittee is required by United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Vessel General Permit for Discharges Incidental to the Normal Operation of Vessel (VGP) to file a noncompliance form for discharges that occurred while the vessel was operating in marine waters of the state, the permittee shall submit a copy of that form to the Department within 72 hours of submittal to EPA. The Department may waive the requirement for a written report pursuant to 1.8.2 if the VGP report is provided to the Department as required and contains information substantially the same as that required by 1.8.2.

1.8.4 The Department may waive the requirement for a written report pursuant to 1.8.2 if the initial report required by 1.8.1 is received within 24 hours and is deemed sufficient by the Department.

1.8.5 Reports required under this section must be submitted to the addresses in Section 1.6.3 (Reporting).

1.9 EXCLUSION FROM THE GENERAL PERMIT

1.9.1 A permittee may request to be excluded from the coverage of this general permit by applying for an individual permit. An application for an individual permit must be submitted to the Commercial Passenger Vessel Environmental Compliance Program at least 60 days before the proposed discharge commences.

1.10 INDIVIDUAL PERMIT

1.10.1 When an individual permit is issued to a permittee otherwise subject to this general permit, the applicability of this general permit to that permittee is automatically terminated on the date the individual permit becomes effective.

1.11 TERMINATION OF ACTIVITIES UNDER A GENERAL PERMIT

1.11.1 The Department may, in its discretion, require a person with a general permit to terminate operation under the general permit, or apply for an individual permit when situations including, but not limited to, the following occur:

1.11.1.1 The discharge does not meet the conditions of the general permit;

1.11.1.2 The discharge contributes to pollution or causes an adverse impact on public health or water quality; or

1.11.1.3 A change occurs in the availability of technology or practices for the control or abatement of pollution contained in the discharge.

1.11.2 The permittee may submit a Notice of Termination at any time. The Notice of Termination shall be submitted to the Department at the appropriate office listed in Section 1.6.3. This letter shall be signed by a responsible corporate officer and shall include:

1.11.2.1 Complete vessel name and IMO number;

1.11.2.2 Current owner's business name and mailing address;

1.11.2.3 Current operator's business name and mailing address if different from owner; and

1.11.2.4 A Vessel Specific Holding Plan detailing operational changes made and tanks used to hold wastewater, if the vessel will continue to operate in marine waters of the state but does not intend to discharge there.

1.11.3 A Notice of Termination shall be provided on the Department approved Notice of Termination form or a similar form approved by the Department. An original signed copy of this form shall be mailed to the office listed in Section 1.6.3 (Reporting.)

1.11.4 The permittee shall be required to meet all conditions of this permit until the Department approves the termination of authorization to discharge under this permit.

2 GENERAL CONDITIONS

2.1 ACCESS AND INSPECTION

2.1.1 The Department's employees and agents shall be allowed access to the permittee's vessel to conduct scheduled or unscheduled inspections or sampling tests to determine compliance with this permit and applicable state laws and regulations.

2.1.2 If the permittee is only authorized to discharge wastewater into marine waters of the state while the vessel is underway, the permittee will allow the Department's employees and agents passage aboard the vessel as it travels from one port to the next available port for the purpose of obtaining wastewater samples.

2.1.3 Upon request, the permittee shall provide the Department with information relating to wastewater treatment, pollution avoidance, and pollution reduction measures used on the vessel, including testing and evaluation procedures and economic and technical feasibility analyses (AS 46.03.465(h)).

2.2 AVAILABILITY OF RECORDS

Except for information related to confidential processes, equipment, or methods of manufacture, all records and reports submitted in accordance with the terms of this permit shall be available for public inspection at the Commercial Passenger Vessel Environmental Compliance Program Office listed in Section 1.6.3 (Reporting) of this permit.

2.3 LOCATION OF PERMIT AND OTHER REQUIRED PLANS

The permittee shall maintain a current copy of the following documents on the vessel in a location that is accessible to the Department's employees or agents:

2.3.1 A copy of this permit;

2.3.2 A copy of any Department authorization to discharge;

2.3.3 A copy of the accurate approved Vessel Specific Sampling Plan (18 AAC 69.030);

2.3.4 A copy of the approved Non-Hazardous Solid Waste Offloading and Disposal Plan (AS 46.03.475(e)(1) and 18 AAC 69.035);

2.3.5 A copy of the current vessel registration and notarization papers;

2.3.6 A copy of the approved Hazardous Waste and Substance Offloading Plan (AS 46.03.475(e)(2) and 18 AAC 69.040); and

2.3.7 A copy of the certification from antifouling paint supplier that TBT-free coatings have been applied to the vessel.

2.4 OTHER NONCOMPLIANCE REPORTING

2.4.1 An owner or operator of a commercial passenger vessel who becomes aware of a discharge in violation of AS 46.03.463 or this permit, not required to be reported under Section 1.8 Noncompliance Reporting, or becomes aware of a violation of other state law or requirement, shall immediately report that discharge to the Department at the address listed in Section 1.6.3 (Reporting). The Noncompliance Notification form must be submitted to the Department within 7 calendar days of the noncompliance event.

2.4.2 Federal and state laws require reporting of any oil spill to land or water, including those that cause a sheen, to be reported to both of the following locations:

U.S. Coast Guard National Response Center:	800-424-8802 (24 hours per day)

Alaska Department of Environmental Conservation:

Southeast Alaska Oil Spill Response Team:	907-465-5340 (8 am to 5 pm, Monday through Friday) 907- 465-2237 Fax Number 800-478-9300 (all other times including holidays)
South-Central Alaska Oil Spill Response Team for areas North and West of Yakutat:	907-269-3063 (8 am to 5 pm, Monday through Friday) 907- 269-7648 Fax Number 800-478-9300 (all other times including holidays)

2.5 CIVIL AND CRIMINAL LIABILITY

2.5.1 Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not noncompliance is due to factors beyond permittee's control, including but not limited to accidents, equipment breakdowns, or labor disputes.

2.6 OTHER LEGAL OBLIGATIONS

2.6.1 This permit does not relieve the permittee from the duty to obtain any other necessary permits, certificates, or plans from the Department or from other local, state, or federal agencies, and to comply with the requirements contained in any such permits. All activities conducted and all plans implemented by the permittee pursuant to the

terms of this permit shall comply with all applicable local, state, and federal laws and regulations.

2.7 TRIBUTYLTIN PAINTS (TBT)

2.7.1 Vessels owners/operators must comply with AS 46.03.715, sale and use of TBT-based antifouling paint. TBT-based marine antifouling paint or coating need not be removed from a vessel or other item that was painted or treated before December 1, 1987, but the vessel, gear, or item may not be repainted or retreated with TBT-based marine antifouling paint or coating.

2.8 POLLUTION PREVENTION

2.8.1 In order to prevent and minimize present and future pollution, when making management decisions that affect waste generation, the permittee shall consider the order of priority options as outlined in AS 46.06.021.

2.9 APPLICATIONS FOR PERMIT RENEWAL

2.9.1 Application for a renewal of a permit will be treated in the same manner as the initial application. Application for renewal must be made to the Department at the office listed in Section 1.6.3 (Reporting) no later than 30 days before the expiration of the permit.

2.10 TRANSFERS

2.10.1 In the event of any change in control or ownership of the permitted vessel, the permittee shall notify the succeeding owner or operator of the existence of this permit by letter, a copy of which shall be forwarded to the Department at the office listed in Section 1.6.3 (Reporting) of this permit.

2.10.2 The original permittee shall submit a Notice of Termination form to the Department within 30 days of a new owner or operator taking over responsibility for the vessel.

2.10.3 The original permittee remains responsible for permit compliance until the original permittee submits a Notice of Termination form and it is approved by the Department in writing. The authorization to discharge terminates at 11:59 p.m. Alaska time on the day that the Department approves the Notice of Termination.

2.10.4 The new owner or operator of the vessel will not be authorized to discharge under the terms of this permit until the new owner or operator submits a completed Notice of Intent form and the Department issues the vessel an authorization to discharge. An original signed copy of the Notice of Intent form shall be mailed to the office listed in Section 1.6.3 (Reporting).

2.11 TERMINATION

2.11.1 This permit terminates upon the expiration date. The Department has the authority to terminate a permit or authorization issued under the permit upon 30 days written notice, if the Department finds that there has been a violation of the conditions of the permit.

2.12 SIGNATORY REQUIREMENTS

2.12.1 All Notice of Intent, Notice of Termination, Notice of Transfer, reports, or information submitted to the Department must be signed and certified as follows:

2.12.2 All permit applications shall be signed as follows:

2.12.2.1 For a corporation, shall be signed by a responsible corporate officer.

2.12.2.2 For a partnership or sole proprietorship, shall be signed by a general partner or the proprietor, respectively.

2.12.3 All information required by Section 2.12.1, and other information submitted to or requested by the Department shall be signed by a person described in 2.12.2 or by a duly authorized representative of that person. A person is a duly authorized representative only if:

2.12.3.1 The authorization is made in writing by a person described in Section 2.12.2;

2.12.3.2 The authorization specifies either an individual or a position as having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company; and

2.12.3.3 The written authorization is submitted to the Department.

2.12.4 If an authorization under Section 2.12.3 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Section 2.12.3 must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

2.12.5 **Certification**. Any person signing a document under this Part must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on

my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

2.13 QUALITY ASSURANCE / QUALITY CONTROL PLAN (QA/QC PLAN)

2.13.1 Permittees may use the Department approved 2010 Northwest Cruise Association QA/QC Plan (or subsequent Department approved updates of the plan) or may develop and implement a vessel specific QA/QC plan approved by the Department.

2.14 SAFETY AT SEA

2.14.1 If wastewater is discharged from a commercial passenger vessel into marine waters of the state for the purposes of securing the safety of the vessel or saving human life at sea, the vessel owner or operator must notify the Department within 24 hours as set out in 18 AAC 69.060.

2.15 UPSET CONDITIONS

2.15.1 **Effect of an upset**. An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of Section 2.15.2 are met. No preliminary determination made during the department's administrative review of a defense that noncompliance was caused by upset -- but before a formal administrative action is potentially brought by the department for noncompliance -- is final administrative action subject to judicial review.

2.15.2 **Necessary upset demonstration conditions**. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

2.15.2.1 An upset occurred and that the permittee can identify the cause of the upset;

2.15.2.2 The permitted facility was at the time being properly maintained and operated; and

2.15.2.3 The permittee submitted notice of the upset as required under Section 1.8 Noncompliance Notification.

2.15.3 **Burden of proof**: In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

ACRONYMS

ADEC	Alaska Department of Environmental Conservation
AWTS	Advanced Wastewater Treatment System
BOD_5	Biochemical Oxygen Demand
DMR	Discharge Monitoring Report
FC	Fecal Coliform
IMO	International Maritime Organization
mg/L	Milligrams per Liter
N/A	Not Applicable
NOI	Notice of Intent
pH	A measure, in Standard Units (SU), of the hydrogen-ion concentration in a solution. On the pH scale (0 –14), a value of 7 at 25°C represents a neutral condition. Decreasing values, below 7, indicate increasing hydrogen-ion concentration (acidity); increasing values, above 7, indicate decreasing hydrogen-ion concentration (basicity).
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
SU	Standard Units
TSS	Total Suspended Solids
µg/L	Micrograms per Liter
VSSP	Vessel Specific Sampling Plan
WQS	Water Quality Standards

DEFINITIONS

18 AAC 69	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 69: Commercial Passenger Vessel Environmental Compliance Program. Available at http://www.dec.state.ak.us/regulations/index.htm.
18 AAC 70	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 70: Water Quality Standards. Available at http://www.dec.state.ak.us/regulations/index.htm.
AS 46.03	Alaska Statutes Title 46, Chapter 03: Environmental Conservation
Advanced Wastewater Treatment System	A treatment system that is capable of complying with the performance standards for Type II Marine Sanitation Devices discharging to Alaskan waters (33 CFR Part 159 Subparts C and E) but that also includes additional solids separation using membrane technologies such as ultrafiltration, nanofiltration, or reverse osmosis, flotation, or an equally effective solids separation process, and disinfection.
Average	An arithmetic mean obtained by adding quantities and dividing the sum by the number of quantities.
Biochemical Oxygen Demand (BOD_5)	The amount, in milligrams per liter, of oxygen used in the biochemical oxidation of organic matter in five days at 20º C.
Chemical Oxygen Demand (COD)	A measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant.
Continuous Discharge	Means a discharge of treated sewage or treated graywater into marine waters of the state regardless of whether the vessel is underway or docked, anchored, or moving at less than 6 knots.
Department	The Alaska Department of Environmental Conservation.
Effluent	The segment of a wastewater stream that follows the final step in a treatment process and precedes discharge of the wastewater stream to the receiving environment.

DEFINITIONS

Fecal Coliform Bacteria	Bacteria that can ferment lactose at 44.5° ± 0.2°C to produce gas in a multiple tube procedure.; "fecal coliform bacteria" also means all bacteria that produce blue colonies within 24 ± 2 hours of incubation at 44.5° ± 0.2°C in an M-FC broth.
Geometric Mean	A geometric mean is obtained by multiplying "n" quantities and then taking the nth root of the product.
Grab	A sample taken at a given place and time.
Graywater	Means galley, dishwater, bath, and laundry wastewater, even if it is stored in a ballast tank or other holding area on the vessel that may not be customarily used to store graywater.
Large Commercial Passenger Vessels	Means a commercial passenger vessel that provides overnight accommodations for two hundred fifty (250) or more passengers for hire, determined with reference to the number of lower berths (AS 46.03.490(7)).
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. Waters of the Alexander Archipelago includes all waters under the sovereignty of the United States within or near Southeast Alaska as follows: (1) Beginning at a point 58° 11' 41" N, 136° 39' 25" W [near Cape Spencer Light], thence southeasterly along a line three nautical miles seaward of the baseline from which the breadth of the territorial sea is measured in the Pacific Ocean and the Dixon Entrance, except where this line intersects geodesics connecting the following five pairs of points: 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

DEFINITIONS

	Channel] The portion of each such geodesic situated beyond three nautical miles from the baseline from which the breadth of the territorial sea is measured forms the outer limit of the waters of the Alexander Archipelago in those five locations. (AS 46.03.490(18)).
Milligrams per liter (mg/L)	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)," formerly of common use.
Micrograms per liter µg/L	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)," formerly of common use.
Month	Month shall be the time period from the first of a calendar month to the last day in the calendar month.
Permittee	A company, organization, association, entity or person who is issued a wastewater permit and is responsible for ensuring compliance, monitoring, and reporting as required by the permit.
Quality Assurance / Quality Control Plan	A system of procedures, checks, audits, and corrective actions to ensure that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.
Receiving Water	A harbor or other marine water into which wastewater or treated effluent is discharged.
Report	Report result of sample analysis or information gathering.
Sewage	Means human body wastes and other wastes from toilets and other receptacles intended to receive or retain human body waste, even if it is stored in a ballast tank or other holding area on the vessel that may not be customarily used to store sewage.
Sheen	An iridescent appearance on the water surface.
Total Residual Chlorine	Chlorine remaining in water or wastewater at the end of a specified contact period as combined or free chlorine.

DEFINITIONS

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, and that is intended to control fouling organisms in a fresh water or marine environment.
Total Suspended Solids	A measure of the suspended solids in wastewater, effluent, or water bodies, determined by tests for "total suspended non-filterable solids."
Twice per season	Twice per season shall consist of two sampling events during the period when vessels are operating in marine waters of the state, typically May through September.
Underway	A vessel that is traveling at a speed of 6 knots (speed over ground) or greater.
Wastewater Treatment	Any process to which wastewater is subjected in order to remove or alter its objectionable constituents and make it suitable for subsequent use or acceptable for discharge to the environment.
Waters of Glacier Bay National Park & Preserve	For purposes of this permit, 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.

Discharge Monitoring Report (DMR) for Large Cruise Ships

General Permit #: 2009DB0026	Expires **April 22, 2013**	**Submit this report to:** Alaska Department of Environmental Conservation, Division of Water/ CPVEC, 410 Willoughby Ave, Suite 303, PO Box 111800, Juneau, AK 99811-1800, Phone (907) 465-5300, FAX (907) 465-5274, DEC.WQ.Cruise@alaska.gov
File Number:		
Authorization Number:		

Name:			
Address:		**Responsible party:**	
Vessel:		**Phone:**	
Onsite Contact:		**Email:**	

Sample #	**Date**	**Underway? (Y/N)**	**Location** (Lat/Long in decimal degrees or the city if docked)	**Discharge port**
1				
2				
3				
4				

If additional samples were taken, list the date, location, port used, and whether it was an underway sample on an attached sheet.

Were there any discharges from the vessel while it was docked, anchored, or moving at less than 6 knots during this reporting period (Yes/No)?

Required Reporting Frequency: When one or more samples are taken, the DMR is due on the 21st day of the following Calendar month.

Effluent Monitoring

Parameter		**Min Value**	**Monthly Geometric Mean**	**Daily Maximum**	**Number of Analyses**	**Number of Violations**	**Units**	**Minimum Frequency**	**Sample Method**
Fecal Coliform Bacteria	Analytical Results						FC/100ml	Twice per month	Grab
	Permit Limits	N/A	14 per 100 mL	43 per 100 mL	report	report			

Parameter		**Min Value**	**Monthly Average**	**Daily Maximum**	**Number of Analyses**	**Number of Violations**	**Units**	**Minimum Frequency**	**Sample Method**
Ammonia (docked, anchored, or moving less than 6 knots)	Analytical Results						mg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Ammonia (Underway)	Analytical Results						mg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			

[1] Fill in the appropriate effluent limit for the system used to treat the wastewater discharged from the vessel (Tables 2-7).

Parameter		Min. Value	Monthly Average	Daily Maximum	Number of Analyses	Number of Violations	Units	Minimum Frequency	Sample Method
Dissolved Copper (docked, anchored, or moving less than 6 knots)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Dissolved Copper (Underway)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Dissolved Nickel (docked, anchored, or moving less than 6 knots)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Dissolved Nickel (Underway)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Dissolved Zinc (docked, anchored, or moving less than 6 knots)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			
Dissolved Zinc (Underway)	Analytical Results						µg/L	Twice per month	Grab
	Permit Limits	N/A	N/A	See Tables 2-7[1]	report	report			

Parameter		Min. Value	Monthly Average	Daily Maximum	Number of Analyses	Number of Violations	Units	Minimum Frequency	Sample Method
Total Flow (cubic meters per day of effluent)	Estimated or Metered						m^3/day	Daily	Metered or estimated
	Permit Limits	N/A	Not to exceed design capacity	Not to exceed design capacity	report	report			
Biochemical Oxygen Demand (5-day)	Analytical Results						mg/L	Twice per month	Grab
	Permit Limits	N/A	30	60	report	report			
Total Residual Chlorine	Analytical Results						µg/L	Twice per month	Field Test
	Permit Limits	N/A	N/A	10	report	report			
PH	Analytical Results						Std. Units	Twice per month	Field test, grab, or continuous
	Permit Limits	6.5	N/A	8.5	report	report			
Total Suspended Solids (TSS)	Analytical Results						mg/L	Twice per month	Grab or continuous
	Permit Limits	N/A	N/A	150	report	report			
Specific Conductance	Analytical Results						µmhos/cm	Twice per season	Field test, grab, or continuous
	Permit Limits	N/A	N/A	report	report	report			
Chemical	Analytical Results						mg/L	Twice per	Grab

Parameter		Min. Value	Monthly Average	Daily Maximum	Number of Analyses	Number of Violations	Units	Minimum Frequency	Sample Method
Oxygen Demand	Permit Limits	N/A	N/A	report	report	report		season	

Parameter		Min. Value	Monthly Average	Daily Maximum	Number of Analyses	Number of Violations	Units	Minimum Frequency	Sample Method
Nitrate-Nitrogen (N-NO3)	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Total Phosphorus	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Total Kjeldahl Nitrogen (TKN)	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Alkalinity	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Settleable Solids	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Oil & Grease	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Total Organic Carbon	Analytical Results						mg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Base-Neutral Acid extractables (BNA)	Analytical Results						µg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Volatile Organic Compounds (VOCs)	Analytical Results						µg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			
Other Dissolved and Total Recoverable Metals	Analytical Results						µg/L	Twice per season	Grab
	Permit Limits	N/A	N/A	report	report	report			

Has there been any deviation from the approved QA/QC Plan? (Y/N – If no, explain below.)

The VSSP is accurate, and there has been no deviation from the approved VSSP. (Y/N – If no, explain below.)
Attach a copy of the original laboratory report from each sampling event, the quality assurance and quality control analysis of the sampling, analytical testing and analytical data, and the sampling technique and analytical testing method for each sample.

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILIITY OF FINES AND IMPRISONMENT FOR KNOWING VIOLATIONS.

NAME, TITLE OF PRINCIPAL EXECUTIVE OFFICER	**SIGNATURE**		
			( ) _____-_____
		DATE	**TELEPHONE**

COMMENT AND EXPLANATION OF ANY VIOLATIONS AND DETAILS OF CORRECTIVE ACTIONS (REFERENCE ALL ATTACHMENT HERE)

NONCOMPLIANCE NOTIFICATION

GENERAL INFORMATION		PERMIT NO (If any).
APPLICANT/COMPANY	VESSEL NAME	VESSEL LOCATION (Lat/Long)
PERSON REPORTING	PHONE NUMBER OF PERSON REPORTING	REPORTED HOW? (e.g. by phone)
DATE/TIME EVENT WAS NOTICED	DATE/TIME REPORTED	NAME OF ADEC STAFF CONTACTED
VERBAL NOTIFICATION MUST BE MADE TO ADEC WITHIN 24 HOURS OF DISCOVERY		

INCIDENT DETAILS (attach additional sheets, lab reports and photos as necessary)

NATURE OF THE DISCHARGE (e.g. boiler blow down, sewage, graywater, etc.)

ESTIMATED QUANTITY INVOLVED (volume or weight)	ESTIMATED DURATION OF NONCOMPLIANCE

CAUSE OF EVENT (be specific)

PERMIT CONDITION DEVIATION Identify each permit condition exceeded during the event.

Parameter (e.g. BOD_5, pH)	Permit Limit	Exceedence (sample result)	Sample date

CORRECTIVE ACTIONS Attach a description of corrective actions taken to restore the system to normal operation and to minimize or eliminate chances of recurrence.

ENVIRONMENTAL DAMAGE. ☐ YES ☐ NO ☐ UNKNOWN (If yes, provide details below).

ACTUAL/POTENTIAL IMPACT ON ENVIRONMENT/PUBLIC HEALTH (describe in detail)

ACTIONS TAKEN TO REDUCE OR ELIMINATE ACTUAL/POTENTAIL IMPACT ON ENVIRONMENT/PUBLIC HEALTH (describe in detail)

COMMENTS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

NAME:_____ SIGNATURE:_____

DATE:_____

FORMS MUST BE SENT TO DEC WITHIN 7 DAYS OF THE EVENT.

ALASKA
Department of
Environmental
Conservation

ACCIDENTAL DISCHARGE / SPILL NOTIFICATION

GENERAL INFORMATION		PERMIT # (if any):
APPLICANT/COMPANY	VESSEL NAME	VESSEL LOCATION (Lat/Long)
PERSON REPORTING	PHONE NUMBER OF PERSON REPORTING	REPORTED HOW? (e.g. by phone)
DATE/TIME OF SPILL	DATE/TIME REPORTED	NAME OF ADEC STAFF CONTACTED

VERBAL NOTIFICATION MUST BE MADE TO ADEC WITHIN 24 HOURS OF DISCOVERY OF SPILL.

INCIDENT DETAILS (attach additional sheets, lab reports and photos as necessary)			
PRODUCT SPILLED (e.g. sewage, propylene glycol, etc)		SOURCE OF SPILL	
QUANTITY SPILLED (volume or weight)	QUANTITY CONTAINED	QUANTITY RECOVERED	QUANTITY DISPOSED
CAUSE OF SPILL (be specific)			
CLEANUP ACTIONS (describe in detail)			
DISPOSAL METHODS AND LOCATION (describe in detail)			
STATUS OF CLEANUP ACTIONS			
ENVIRONMENTAL DAMAGE. ☐ YES ☐ NO ☐ UNKNOWN If yes, provide details below.	SURFACE AREA AFFECTED (square feet)	SURFACE TYPE (e.g. marine waters of the state, waters of the United States)	
ACTUAL/POTENTIAL IMPACT ON ENVIRONMENT/PUBLIC HEALTH (describe in detail)			
COMMENTS			

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

NAME: _____ SIGNATURE: _____ DATE: _____

FORMS MUST BE SENT TO DEC WITHIN 7 DAYS OF THE EVENT.

ALASKA
Department of
Environmental
Conservation

NOTICE OF INTENT FORM

Notice of Intent

to be covered under the Wastewater General Permit 2009DB0026 for
Large Commercial Passenger Vessels Operating in Alaska
(See Section 1.4 of the permit.)

Submission of this document constitutes a request that certain discharges into marine waters of the state resulting from the operation of the large commercial passenger vessels identified herein be authorized under General Permit 2009DB0026.

Vessel Owner Information

Who is the main point of contact for the vessel? (e.g. owner, operator, or Alaska Agent):	
Vessel Owner Business Name:	
Mailing Address:	Phone:
	FAX:
Representative:	Email:

Vessel Owner's or Operator's Alaska Agent Information

Company Name:	
Mailing Address:	Phone:
	FAX:
Representative:	Email:

Vessel Operator's Business Name if Different From the Owner's Business Name

Vessel Operators Owner Business Name:	
Mailing Address:	Phone:
	FAX:
Representative:	Email:

Vessel Information

Is the vessel seeking authorization to discharge treated sewage or treated graywater only while underway? (Y/N) or

Is the vessel seeking authorization for continuous discharge of treated sewage or treated graywater? (Y/N)

If the permittee is seeking authorization for continuous discharge (both underway and while docked, anchored, or moving at less than 6 knots), the permittee must attach (may be emailed separately) a drawing to scale that indicates the length of the vessel and the locations of the wastewater effluent penetration points (ports) on the hull.

Vessel name and IMO number:	
Vessel's Gross Tonnage:	
Port of Registry:	
Total number of berths available for passengers determined with reference to the number of lower berths	
Total number of berths available for crew on the vessel:	
Maximum passenger capacity and the maximum crew capacity per voyage:	

Discharge Port Characteristics (Required for continuous dischargers)

Note: If there is more than one discharge port, attach a sheet with the characteristics below for each AWTS Port.

Port Name:		**Port Diameter (internal):**		**Frame Number:**	
Location (Starboard/Port):		**Port centerline distance from waterline (normal load):**		**Port centerline distance from keel:**	
Vessel draft:		**Discharge Port pump capacity (m^3/hr)**		**Vessel length:**	
Port shape (round, oval, square)					

Wastewater Discharge Information	
Estimates of the average and maximum volume of the wastewater to be discharged per 24 hour period (cubic meters), and the beginning and ending dates between which discharges may occur each year;	Volume per 24 period, Average: Maximum: Startup Date: Ending date:
The type, number, and combined maximum design capacity in cubic meters per 24 hour period of all advanced wastewater treatment systems (AWTS) onboard;	Type (s): Number of AWTS: Combined design capacity:
Type(s) of sewage treatment and system capacity in cubic meters per 24 hour period;	Type (s): Combined design capacity:
Type(s) of graywater treatment and system capacity in cubic meters per 24 hour period;	Type (s): Combined design capacity:
Average volume of sewage generation per day in cubic meters;	
Maximum volume of sewage generation per day in cubic meters;	
Average graywater generation per day in cubic meters for the following sources:	Accommodations Galley Laundry
Maximum graywater generation per day in cubic meters for the following sources:	Accommodations Galley Laundry
The method of handling and disposal of sludge produced from the treatment of sewage and graywater.	

Signature and Certification that Tributyltin Paints are not Used for Antifoulant Purposes

I certify under penalty of law that any tributyltin paints that were applied to the surface of the vessel where it would be in direct contact with marine waters of the state after December 1, 1987 have either been removed or have been sealed by the application of a antifouling bottom paint that has been approved for use by the U.S. Environmental Protection Agency. Based on my inquiry of the person or persons who manage the vessel or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Principal Corporate or Executive Officer/General Proprietor	Printed Name
Title/Company	Date

Signature and Certification for NOI	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
Signature of Principal Corporate or Executive Officer/General Proprietor	Printed Name
Title/Company	Date
Submit this Notice of Intent to:	
Alaska Dept. of Environmental Conservation Division of Water Commercial Passenger Vessel Environmental Compliance Program 410 Willoughby Avenue, Suite 303 PO Box 111800 Juneau, AK 99811-1800	

Permit No.: 2009DB0026

2010 Large Commercial Passenger Vessel Wastewater Discharge General Permit Information Sheet

April 22, 2010

Alaska Department of Environmental Conservation
Division of Water
Commercial Passenger Vessel Environmental Compliance Program
410 Willoughby Avenue, Suite 303
PO Box 111800
Juneau, AK 99811-1800

The Alaska Department of Environmental Conservation issued a General Permit pursuant to AS 46.03 and 18 AAC 69 for Large Commercial Passenger Vessel Discharges to Marine Waters of the State

The Alaska Department of Environmental Conservation (ADEC), Commercial Passenger Vessel Environmental Compliance (CPVEC) Program issued the 2010 Large Commercial Passenger Vessel Wastewater Discharge General Permit (the 2010 General Permit), number 2009DB0026 for discharges of treated sewage and treated graywater.

The 2010 final General Permit places limits on the types and amounts of pollutants that can be discharged from large commercial passenger vessels and places other conditions on such activity. The 2010 final General Permit only authorizes discharge of waste streams specifically included in this permit. This information document includes:

- information on the final General Permit;
- discussion of significant changes from the 2008 General Permit (2007DB0002);
- discussion of significant changes from the 2010 draft General Permit (2009DB0026) and
- a description of the effluent limits.

Significant Changes from the 2008 Large Commercial Passenger Vessel Wastewater Discharge General Permit (2007DB0002)

- The fecal coliform monthly limit is now a geometric mean instead of an arithmetic mean;
- The effluent limit for chlorine now applies to all permitted vessels. Previously, the chlorine effluent limit only applied to permittees that used chlorine as a disinfectant in the wastewater treatment works process;
- Ammonia, copper, nickel, and zinc effluent limits are established based on the type of wastewater treatment system used;
- There are two effluent limits for some parameters- one applies to wastewater that is discharged while the vessel is travelling at a speed of 6 knots or greater (underway) and one applies to wastewater that is discharged continuously (while, docked, anchored, or moving at less than of 6 knots);
- The effluent limits for copper, nickel, and zinc have been adjusted based upon the ADEC analysis of the larger data set that includes 2008 and 2009 information; and
- The compliance schedule and associated requirements (Source Reduction Evaluations) were eliminated.

Table 8 compares the parameters for which the effluent limits have changed from the 2008 General Permit to the 2010 General Permit.

Table 8: Comparison of Ammonia, Copper, Nickel, and Zinc Effluent Limits between the 2008 General Permit and the 2010 General Permit

Parameter	Ammonia [a]	Copper [b]	Nickel [b]	Zinc [b]
Units	**mg/L**	**µg/L**	**µg/L**	**µg/L**
Alaska Water Quality Standards	1 [a]	3.1	8.2	81
2008 GP Long Term Limits	2.9 [c]	3.1	8.2	81
2008 GP Permit Interim Limits	80.4	66	180	230
2010 GP Continuous Discharge Limits				
Hamworthy	28	87	63	395
Marisan	20	87	24	112
Rochem	12	10	10	118
Scanship	28	26	28	267
Zenon	28	50	40	188
Other Treatment Systems	28	87	43	360
2010 GP Underway Limits[d]				
Hamworthy	143	133	63	395
Marisan	20	157	24	112
Rochem	12	10	10	118
Scanship	68	26	28	267
Zenon	51	50	40	188
Other Treatment Systems	130	130	43	360

Notes:
a. Based on the Alaska Water Quality Criteria Manual for Toxics (12/12/2008) using an average salinity

Table 8: Comparison of Ammonia, Copper, Nickel, and Zinc Effluent Limits between the 2008 General Permit and the 2010 General Permit

Parameter	Ammonia [a]	Copper [b]	Nickel [b]	Zinc [b]
Units	mg/L	µg/L	µg/L	µg/L

of 20 g/kg, a pH of 8.2 and a temperature of 10 -15˚ C.

b. Dissolved.

c. This standard is from Table IX in the *Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances* using a ph 7.8, salinity of 20 g/kg and temperature between 10-15 degrees Celsius.

d. For the 2010 season, this is a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit, the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season.

Background

History

The ADEC Commercial Passenger Vessel Environmental Compliance (CPVEC) Program was established in July 2001 by Alaska Statute (AS) 46.03.460 - AS 46.03.490. State law set effluent limits and sampling requirements for the discharge of blackwater (toilet water) and graywater (accommodations, galley, and laundry water) from large commercial passenger vessels ("cruise ships"). Cruise ships that discharged treated sewage in Alaska were required to take samples of discharged wastewater. Effluent limits were established at 200 fecal coliform per 100 mL and 150 mg/L of Total Suspended Solids (TSS).

In August 2006, Alaskan voters approved a ballot measure that added new requirements to the CPVEC Program. Among several other new provisions, the statute required owners/operators of large commercial passenger vessels to obtain a wastewater discharge permit from ADEC for the discharge of any treated sewage, treated graywater, or other treated wastewater into marine waters of the state. The new law required that cruise ship wastewater effluent meet Alaska Water Quality Standards (WQS) at the point of discharge.

The 2008 ADEC Large Commercial Passenger Vessel Wastewater Discharge General Permit No. 2007DB0002 was developed to satisfy this new law. That permit was issued on March 25, 2008. On April 9, 2008, the Alaska Cruise Association requested an informal review of the permit. The ADEC Director of the Division of Water issued a decision on April 24, 2008. Based on that decision several corrections were made to citations and schedules in the original permit. The revised permit was issued on May 1, 2008.

In addition to the 2001 state statutory requirements, the 2008 General Permit required additional reporting and sampling requirements, and contained new limits for several wastewater parameters. The permit established long term effluent limits for ammonia, copper, nickel, and zinc that applied Alaska Water Quality Standards (WQS) at the point of discharge beginning in 2010. The permit also contained less stringent interim (2008 and 2009) limits for these four parameters to allow ship owners and operators time to improve effluent quality. The interim limits required cruise ship operators to submit a Source Reduction Evaluation (SRE) to ADEC that documented progress and actions taken by the vessel operators to achieve the long-term limits.

Current Law and ADEC Finding Regarding Economically Feasible and Technologically Effective Treatment

House Bill (HB) 134 was passed by the Legislature in 2009. This bill allows ADEC to issue a three year General Permit to cruise ships that contains effluent limits or standards that are less stringent than the WQS at the point of discharge if the Department finds that a permittee is using economically feasible methods of pollution prevention, control, and treatment that the Department considers to be the most technologically effective in controlling all wastewater and other substances at the point of discharge but the permittee is unable to achieve compliance with WQS at the point of discharge.

Cruise ships that discharge wastewater into marine waters of the state had, at significant cost, installed Advanced Wastewater Treatment Systems (AWTS) before or during 2003. The General Permit requires use of AWTS as a condition of discharge. Because there are different manufacturers of AWTS and they produce varying levels of effluent quality, the General Permit includes effluent limits specific to the type of treatment system, ensuring that those systems that can do better than others are required to do so.

The U.S. Environmental Protection Agency (EPA) published a December 29, 2008 analysis, the "Cruise Ship Discharge Assessment Report", which evaluated the state of cruise ship wastewater treatment technologies, their effectiveness, and other existing technologies that could potentially be employed on cruise ships. EPA stated the following in the report:

"2.4.4 Potential Treatment Technologies in Addition to AWTs

> As part of its assessment of the large cruise ship sewage and graywater discharge standards in Alaska, EPA is evaluating upgrades to AWTs and technologies that could be added on to AWTs that would improve the quality of the treated effluent in terms of nutrients, metals, and temperature. These technologies have not been used or tested on cruise ships for the treatment of sewage or graywater. However, EPA believes these technologies are potentially feasible for this application because they currently are used in other shipboard applications or because they currently are used in land-based wastewater treatment facilities and could be adapted for shipboard application. Use of these technologies onboard large cruise ships would require engineering studies to adapt existing designs and materials selection (e.g., metallurgy, membrane and resin selection, loading rates, reliability, space constraints), operating parameters (e.g., pressures, temperatures, service and maintenance cycles), and training for operating personnel to ensure effective and consistent performance and minimize operating costs."

ADEC conducted its own review of cruise ship wastewater technologies, conducting a technology conference on February 18, 2009 and a follow-up report. DEC's primary conclusion from this effort was that AWTS are very effective wastewater treatment systems. While other new and emerging technologies, as well as some existing technologies used in shore-based facilities could result in improvements to cruise ship effluent quality, none are currently readily available (and therefore economically feasible) for installation and use on the entire cruise ship fleet that discharges in marine waters of the state. ADEC finds that cruise ships are currently using the most technologically effective treatment systems that are economically feasible.

Per HB 134, ADEC has established a Science Advisory Panel to evaluate changes over time to what types of wastewater treatment might become economically feasible and more technologically effective in terms of producing higher quality wastewater effluent. Improvements will be reflected in amendments to the existing General Permit or in future renewals of the General Permit.

Operation under the General Permit

Discharges Allowed:

The 2010 Cruise Ship General Permit only authorizes discharge of waste streams specifically mentioned in the permit. All discharges authorized under the 2010 General Permit shall be consistent with the terms and conditions of the permit and approved plans (e.g. Vessel Specific Sampling Plans, Quality Assurance/Quality Control Plan).

Vessels that do not discharge wastewater into marine waters of the state are not required to apply for coverage under the General Permit.

Definition of Marine Waters of the State (areas covered by the permit):

- All waters within the boundaries of the state (3 nautical miles from the baseline from which territorial seas are measured);
- Waters of the Alexander Archipelago as defined in AS 46.03.490 (18).

Marine waters of the state include areas that are outside of the definition of the Alexander Archipelago, but within 3 nautical miles from shore. These areas include, but are not limited to: Hazy Islands, Forrester Island, Wolf Rock, and Lowrie Island.

Discharge Exclusion Areas:

The scope of the permit does not include the waters of Glacier Bay National Park and Preserve. Discharges are prohibited within the Park by the U. S. National Park Service's concession contract with large cruise ships for entry into the Park.

For purposes of this permit, waters of Glacier Bay National Park and Preserve 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.

The 2010 General Permit prohibits wastewater discharges in certain areas including any waterbody included in the ADEC Clean Water Act (CWA) Section 305(b) report or effective CWA Section 303(d) list of waters which are "impaired" or "water quality-limited" for any of the pollutant parameters, for which there are effluent limits. At the time of the issuance of the 2010 General Permit, these areas include Skagway Harbor and Klag Bay. Klag Bay is located on the west side of Chicagof Island. Skagway Harbor is defined as being northeast of the line from Yakutania Point at 135° 20' 13"N, 59° 27' 7"N, approximately southeast, to a point at 135° 19' 43"W, 59° 26' 32"N.

For more information on the ADEC list of impaired waterbodies visit:

http://www.dec.state.ak.us/water/wqsar/waterbody/integratedreport.htm

Discharge Characterization

The wastewater treatment systems that are used on large cruise ships that discharge into marine waters of the state have generally performed well at treating the conventional effluent parameters that have been monitored (sampled regularly) by ADEC and the U.S. Coast Guard since 2001. Conventional parameters includes fecal coliform bacteria counts (an indicator of potential pathogens), pH, chlorine, biological oxygen demand, and total suspended solids. An exceedance of one of these parameters may be an indicator of improperly working equipment.

Cruise ships that discharge wastewater into marine waters of the state had installed Advanced Wastewater Treatment Systems (AWTS) before or during 2003. By the end of the 2004 cruise ship season, sample results indicated substantial improvements in effluent quality for fecal coliform, biochemical oxygen demand, and chlorine. Wastewater sample results can be found on the ADEC Cruise Program website at: http://www.dec.state.ak.us/water/cruise_ships/reports.htm.

The 2008 General Permit required additional wastewater sampling and contained new limits for several parameters. Long term effluent limits for ammonia, copper, nickel, and zinc were equivalent to Alaska WQS. Less stringent limits (interim limits) were allowed for these parameters during the 2008 and 2009 Alaska cruise ship seasons. Table 9 and Table 10 below summarize wastewater sample results for 2008 and 2009.

Table 9: Summary of 2008 Large Ship Sampling Results (21 ships, 206 samples)

Parameter	Ammonia as N	Copper [a]	Nickel [a]	Zinc [a]	pH	Bio-chemical O_2 Demand	Total Suspended Solids	Total Residual Chlorine	Fecal Coliform Daily Max
Units	mg/l	µg/L	µg/L	µg/L	S.U.	mg/L	mg/L	mg/L	MPN/ 100 mL
Alaska WQS	2.9 [b]	3.1	8.2	81	6.5 – 8.5	N/A	N/A	0.0075	43
Minimum	0	0	0	0	6.18	0	0	0	0
Maximum	150	140	43.2	501	9.2	126	99	0.10	210
Median	25	7.23	9.1	73.5	7.28	3	0	0	0

Notes:

a. Dissolved metals.

b. Ammonia standard was based on temperature, pH and salinity. This standard is from Table IX in the *Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances* using a ph 7.8, salinity of 20 g/kg and temperature between 10-15 degrees Celsius. The ammonia WQS for the 2010 Permit is 1 mg/L based on the latest and most comprehensive Southeast Alaska ambient water data, with a pH of 8.2, a salinity of 20 g/kg, and a temperature of 10-15 degrees C.

Table 10: Summary of 2009 Large Ship Sampling Results (19 ships, 201 samples [a])

Parameter	Ammonia as N	Copper [b]	Nickel [b]	Zinc [b]	pH	Bio-chemical O_2 Demand	Total Suspended Solids	Total Residual Chlorine	Fecal Coliform Daily Max
Units	mg/l	µg/L	µg/L	µg/L	S.U.	mg/L	mg/L	mg/L	MPN/100 mL
Alaska WQS	2.9 [c]	3.1	8.2	81	6.5 – 8.5	N/A	N/A	0.0075	43
Minimum	0	0	0	0	6.28	0	0	0	0
Maximum	160	130	420	450	8.32	45	116	0.11	4,800
Median	37.5	9.35	9.9	84.5	7.37	3.6	0	0	0

Notes:

a. Does not include resample events.

b. Dissolved metals.

c. Ammonia standard was based on temperature, pH and salinity. This standard is from Table IX in the *Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances* using a ph 7.8, salinity of 20 g/kg and temperature between 10-15 degrees Celsius. The ammonia WQS for the 2010 Permit is 1 mg/L based on the latest and most comprehensive Southeast Alaska ambient water data, with a pH of 8.2, a salinity of 20 g/kg, and a temperature of 10-15 degrees C.

Large cruise ships that discharged wastewater into marine waters of the state in 2008 and 2009 had the most difficulty meeting the long-term effluent limits for ammonia and copper. For more information about the 2008 sample results, see the ADEC "Large Cruise Ship 2008 Wastewater

Sampling Results" found at:
http://www.dec.state.ak.us/water/cruise_ships/pdfs/2008_LargeShip_WW_Sampling.pdf

Large Cruise Ship Sample Spreadsheet" found at:
http://www.dec.state.ak.us/water/cruise_ships/SciencePanel/documents/Binder/Permit_Sample_Data_CPVEC_2009.pdf

Large cruise ships that discharge wastewater into marine waters of the state use several different types of advanced wastewater treatment systems (AWTS). A comparison of the sample results achieved by different treatment technologies can be found in Table 11.

Table 11: Comparison of Advanced Wastewater Treatment System Medians [a] (2004-2008)

	Ammonia	Copper	Nickel	Zinc
Wastewater Treatment Systems	**mg/L**	**µg/L**	**µg/L**	**µg/L**
Rochem	0.9	1	0.87	11.2
Zenon	13.5	6	12.4	61.4
Scanship	28	4.31	9.7	70.5
Hamworthy	48.5	13	8.5	110
Marisan	0.3	52	13.9	21

Note:
a. Does not include Hamman and Hydroxyl, in both systems there were too few samples for a meaningful comparison.

The volume of treated wastewater discharge varies from vessel to vessel. It ranges from a maximum of 91,711 gallons per day (approximately 366 cubic meters/day) to a maximum of 330,000 gallons per day (approximately 1,250 cubic meters per day). For purposes of comparison, Table 12 below contrasts two different cruise ship populations and discharge volumes with the population and discharge volume from two small municipal wastewater treatment systems in southeast Alaska. Cruise ships produce fewer gallons per day per person of wastewater compared to a comparably sized municipality due to water conservation measures that are employed on board.

Table 12: Comparison of Cruise Ship Discharge Volume[a] with that of Similarly Populated Southeast Alaska Municipalities[b]

	Cruise Ship 1	Cruise Ship 2	Petersburg	Craig
Total population	4,230	2,728	3,009	1,117
Wastewater production	330,000 gals/day (maximum load)	187,165 gals/day (maximum load)	475,000 gals/day (average April 2008)	186,000 gals/day (average March 2008)

Notes:
a. (Source of cruise ship data: 2009 Discharge Monitoring Reports)
b. (Source of municipal data: 2008 Discharge Monitoring Reports)

Dilution Studies:

Dilution while Stationary:

In July 2008, ADEC and EPA conducted a joint field study to characterize the near-field (0 – 15 meters) dilution that occurs to wastewater that is discharged from a stationary cruise ship. The field study was conducted in Skagway Harbor, considered to be a conservative "worst case"

location for dilution. The lowest dilution factor (i.e. worst case; least dilution) that was calculated at a distance of 15 meters from the discharge port was during the study was 1/28.

ADEC used the dilution factor of 1/28 to determine the water quality based effluent limits for wastewater that is discharged when a vessel is docked, anchored or moving at less than 6 knots.

See the ADEC report entitled "Assessment of Stationary Cruise Ship Plume Dilution" for more information. This study is available at:
http://www.dec.state.ak.us/water/cruise_ships/pdfs/2009_Plume_Dilution_Study.pdf

Dilution while Underway:

A 2002 Science Advisory Panel and ADEC report concluded that for a typical large cruise ship moving at a minimum speed of 6 knots and discharging wastewater at 200m^3/hr the dilution factor on the wastewater effluent is 50,000 (See "The Impact of Cruise Ship Wastewater Discharge on Alaska Waters," November 2002, available at:
http://www.dec.state.ak.us/water/cruise_ships/pdfs/impactofcruiseship.pdf).

ADEC used the dilution factor of 1/50,000 to determine the water quality based effluent limits for wastewater that is discharged when a vessel is underway.

For the 2010 season only, while the vessel is underway, the permit includes ammonia, copper, nickel, and zinc parameters with a monitoring and reporting requirement only. For any samples collected in 2010 that exceed the limit in the treatment system-specific tables of the permit (Tables 2-7), the permittee must, with the DMR, provide a written explanation of the known or likely cause(s) of the exceedance and the corrective measures the permittee will take to address the cause(s) before the 2011 season. During 2010 any exceedance of the ammonia, copper, nickel, or zinc limit while underway would still be subjected to the 1/50,000 dilution factor and the water quality standards will still be met in the receiving water.

For example, an exceedance equivalent to the highest measurement from the 2004-2009 data set for each parameter would yield the following: ammonia at 160 mg/L with a dilution factor of 1:50,000 would be 0.0032 mg/L, well below the water quality standard of 1 mg/L; copper at 172 µg/L with a dilution factor of 1:50,000 would be 0.00344 µg/L, well below the water quality standard of 3.1 µg/L; nickel at 420 µg/L with a dilution factor of 1:50,000 would be 0.0084 µg/L, well below the water quality standard of 8.2 µg/L; and zinc at 501 µg/L with a dilution factor of 1:50,000 would be 0.01002 µg/L, well below the water quality standard of 81 µg/L. In summary, even if vessels discharge these substances at the highest concentrations seen to date, concentrations in receiving waters would still be less than one percent of the water quality standards.

Table 13: Applying Dilution Factor While Underway to Maximum Detected Values
(2004 – 2009 data set for all vessels)

	Ammonia	Copper	Nickel	Zinc
Maximum value detected	160 mg/L	172 µg/L	420 µg/L	501 µg/L
Underway Dilution Factor	50,000	50,000	50,000	50,000
Expected Concentration in Receiving Water	0.0032 mg/L	0.00344 µg/L	0.0084 µg/L	0.01002 µg/L
WQS	1 mg/L	3.1 µg/L	8.2 µg/L	81 µg/L

Effluent Limitations

Alaska's Water Quality Standards (18 AAC 70) include three articles: Article 1, statewide standards (18 AAC 70.005 -.050), Article 2, exceptions to state-wide standards (18 AAC 70.200 -.270), and Article 3, general provisions (18 AAC 70.900 -.990). The standards also include the Alaska Water Quality Criteria Manual for Toxic and Deleterious Organic and Inorganic Substances. The Alaska Water Quality Criteria Manual for Toxic and Deleterious Organic and Inorganic Substances has been adopted into 18 AAC 70.020(b). Numeric criterion for certain pollutants in the 2010 General Permit (i.e., fecal coliform) are found in 18 AAC 70.020 (b).

The Alaska Water Quality Standards are found at:
http://www.dec.state.ak.us/water/wqsar/wqs/wqs.htm

A presentation on the Water Quality Standards and the parameters of concern (ammonia, copper, nickel, and zinc can be found at:

http://www.dec.state.ak.us/water/cruise_ships/SciencePanel/documents/Alaska_WQS_Cruise_Ship_mtg_powell

When ADEC issues permits for shore-based domestic wastewater treatment plants, it may authorize a mixing zone where water quality standards can be exceeded, while still protecting receiving waters. However, the 2006 law that pertained to cruise ships required that all discharges meet applicable standards -- including Alaska Water Quality Standards -- ***at "the point of discharge***," (AS 46.03.462(b)(1)(emphasis added)). ADEC concluded that the 2006 law precluded authorization of a dilution factor or mixing zone in the final 2008 General Permit for parameters that had exceeded the WQS in the effluent in recent years - ammonia, copper, nickel, and zinc.

ADEC issued the 2008 General Permit with long term effluent limits that were equivalent to the WQS. Public comment and ADEC analysis indicated that the cruise ships were not likely to be able to immediately comply with the strict long term effluent limits for ammonia, copper, nickel, and zinc. Therefore, the 2008 General Permit included interim effluent limits for the 2008 and 2009 cruise ship seasons. The upper 95th percentile limit of the 2004 through 2007 data was selected as the interim effluent limit for these parameters. The 95th percentile would mean that 5% of the samples would exceed the established effluent limits. It was selected to encourage improvements in effluent through development and implementation of Source Reduction Evaluations.

In 2009, House Bill (HB) 134 was passed by the Alaska Legislature. This new law addressed the challenges cruise ships had in meeting the long term limits at the point of discharge. Without HB 134, WQS would apply to large cruise ship wastewater at the point of discharge beginning in 2010. The law now allows ADEC to issue a permit that:

"may include effluent limits or standards less stringent than those required under (b)(1) of this section for not more than three years duration if the department finds that a permittee is using economically feasible methods of pollution prevention, control, and treatment the department considers to be the most technologically effective in controlling all wastes and other substances in the discharge but is unable to achieve compliance with Alaska Water Quality Standards at the point of discharge." (AS 46.03.462(e))

In determining the effluent limits that were included in the 2010 General Permit for cruise ships, ADEC followed a similar methodology that is used when EPA issues municipal wastewater permits. A technology based limit and a water quality based effluent limit were both determined for ammonia, copper, nickel, and zinc for effluent discharged while the vessel was docked, anchored, or moving at less than 6 knots and for effluent discharged while the vessel was underway (6 knots or greater). Then the stricter of the technology or water quality based effluent limit was selected as the effluent limit for ammonia, copper, nickel, and zinc in the 2010 General Permit.

The technology based effluent limit for the final permit was calculated as the upper 99th percentile limit of the 2004 to 2009 wastewater sample data set for the specific wastewater treatment systems used on the ships. The technology based effluent limit for Table 7 (Other Wastewater Treatment Systems) in the final permit is based upon the pooled data set - all ships during the 2004 to 2009 time period.

The 99th percentile was selected, in part, because of the more robust data set now available (increased understanding of the data consistency and variability) and because ADEC has set effluent limits in the new permit based upon the capabilities of specific treatment systems to ensure effluent limits reflect the capabilities of each specific wastewater treatment technology while also being protective of water quality. Use of the 99th percentile presumes that if the ships and treatment systems continue to operate as they have in the past, 1% of the samples will exceed the effluent limits. Use of the 99th percentile is an option under EPA's federal wastewater discharge permitting guidance and is protective of receiving water quality and waterbody uses.

ADEC then selected the more conservative (lower limit) of either the technology based effluent limit (99th percentile) or the water quality based effluent limit for each type of wastewater treatment technology. The more conservative limit for ammonia, copper, nickel, and zinc became the effluent limit in the General Permit Tables 2 through 7.

Table 14: Comparison of 99th Percentile Technology Based Effluent Limit versus Water Quality Based Effluent Limit While Stationary

Note: When the technology based effluent limit is lower than the water quality based effluent limit, the number became the effluent limit in the permit and is **bolded** and shaded. Otherwise the water quality based effluent limit became the effluent limit in the permit.

Wastewater Treatment System		Ammonia (mg/L)	Copper (µg/L)	Nickel (µg/L)	Zinc (µg/L)
	WQS	1	3.1	8.2	81
	2008 Interim limits	80.4	66	180	230
	WQ based effluent limit	28	87	230	2,300
Hamworthy		143	133	**63**	**395**
Marisan		**20**	157	**24**	**112**
Rochem		**12**	**10**	**10**	**118**
Scanship		68	**26**	**28**	**267**
Zenon		51	**50**	**40**	**188**
Other Wastewater Treatment System		130	130	**43**	**360**

The water quality based effluent limit for each parameter was determined by multiplying the WQS and the dilution factor. The dilution factor applied to determine the water quality based effluent for wastewater that is discharged while the vessel is docked, anchored or while travelling at less than 6 knots was 1/28 based upon the joint ADEC and EPA study of stationary dilution. This dilution factor means that all WQS will be met in the receiving water within 15 meters of the discharge port. The dilution factor applied to determine the water quality based effluent for wastewater that is discharged while the vessel is underway (traveling at 6 knots or greater) was 1/50,000, based upon the previous findings of a Science Panel. In applying these dilution factors in the permit, ADEC considered and finds that the provisions of 18 AAC 70.240 (mixing zones) have been met.

BOD (Biochemical Oxygen Demand)

There is no change from the effluent limits in the 2008 General Permit.

Alaska Water Quality Standards do not contain a numeric criterion for BOD. BOD is a technology based standard that is a useful indicator of the effectiveness of wastewater treatment. The 2010 General Permit uses the limit established in 40 CFR 133.102 Secondary Standard which apply to cruise ships in Alaska per U.S. Coast Guard requirements. This limit is a daily maximum of 60 mg/L and a monthly average limit of 30 mg/L.

Fecal Coliform

The 2008 General Permit used the most stringent state WQS for the raw consumption of aquatic life of 14 FC/100 ml for a monthly arithmetic average and 43 FC/100 ml for a daily maximum.

In the 2010 General Permit, the effluent limits remain the same. However, the statistical method to calculate the monthly limit has been changed from an arithmetic mean to a geometric mean. A geometric mean is the standard statistic applied to fecal coliform. A geometric mean is applied as the metric for the federal cruise ship effluent limit (33 CFR 159.309). Geometric

means are also frequently applied to fecal coliform effluent limits in municipal permits in Alaska.

Total Residual Chlorine

The effluent limit in the 2008 General Permit for total residual chlorine was 0.0075 mg/L (7.5µg/L). However, the permit only required monitoring for chlorine if vessels used chlorine as part of their treatment process. Wastewater samples obtained to satisfy the requirements of the Quality Assurance \ Quality Control Plan occasionally indicated detectable levels of chlorine above Alaska WQS. Potential sources of chlorine include, but are not limited to: pool water, spa water, cleaning of the treatment system or distribution piping prior to a sample, and the chlorine that is present in potable (drinking) water.

Chlorine had been used in the past to disinfect (remove bacteria and viruses) treated wastewater prior to discharge. It can also be an alternative method of disinfection in case of failure of a primary disinfection system or to clean discharge piping to remove fecal coliform aftergrowth. Most current AWTS use ultraviolet light rather than chlorine to disinfect wastewater. Chlorine has been known to damage the membranes of some AWTS, which would lead to a reduction of efficiency or ability to properly treat wastewater.

Free residual chlorine is described as the portion of the chlorine injected into water that remains as molecular chlorine, hypochlorous acid, or hypochlorite ions after the solution has reached a state of equilibrium. Total residual chlorine includes free chlorine, but also includes chlorine that has combined with ammonia or other nitrogenous compounds. ADEC marine water quality criteria for total residual chlorine are 13 ug/L (acute criterion) and 7.5 ug/L (chronic criterion). The acute criterion is based upon a 24-hour average concentration. The chronic criterion is based upon a four-day average concentration.

In setting the effluent limit, ADEC considered using the chronic criterion multiplied by the dilution factor of 28 for an effluent limit of 210 ug/L (28 * 7.5 ug/L). However, ADEC determined that, per the state antidegradation policy that requires treatment to the "highest statutory and regulatory requirements," the effluent limit established by the U.S. Coast Guard of 10 ug/L for continuous discharge in 33 CFR Part 159 Subpart E is more stringent. The 2010 General Permit therefore establishes a chlorine limit of 10 µg/L for all cruise ships that discharge wastewater into marine waters of the state. The limit, however, is below the detection level for most EPA-approved analytical methods. Therefore, effluent samples will be considered compliant with the total residual chlorine limit if the sampled chlorine concentration is below the method detection limit of the analytical method used.

pH

There is no change from the effluent limits in the 2008 General Permit.

Federal rules (40 CFR 133.102 Secondary Treatment) establish the criterion for pH at a value between 6 and 9. The most stringent state water quality criterion for pH (for aquaculture water supply and aquatic life) states that pH must be no less than 6.5 and no greater than 8.5 standard units and may not vary more than 0.2 pH units from natural conditions. The final General Permit limits pH to a range of 6.5 to 8.5 standard units.

Total Suspended Solids (TSS)

There is no change from the effluent limits in the 2008 General Permit.

The Alaska Water Quality Standards do not contain a numeric criterion for TSS. It is a technology based standard. The General Permit is based upon the limit (150 mg/L) established in Alaska's statutes relating to cruise ships, AS 46.03.463(b).

Ammonia

Toxicity of Ammonia

Ammonia affects the life cycle as well as survival of some species. Ammonia at concentrations less than those chronically toxic to animals may stimulate growth and reduce reproduction of some red macroalgal species. Ammonia is primarily a product of biological processes such as microbial digestion of sewage due to the presence of urine. Ammonia is also present in some cleaning products.

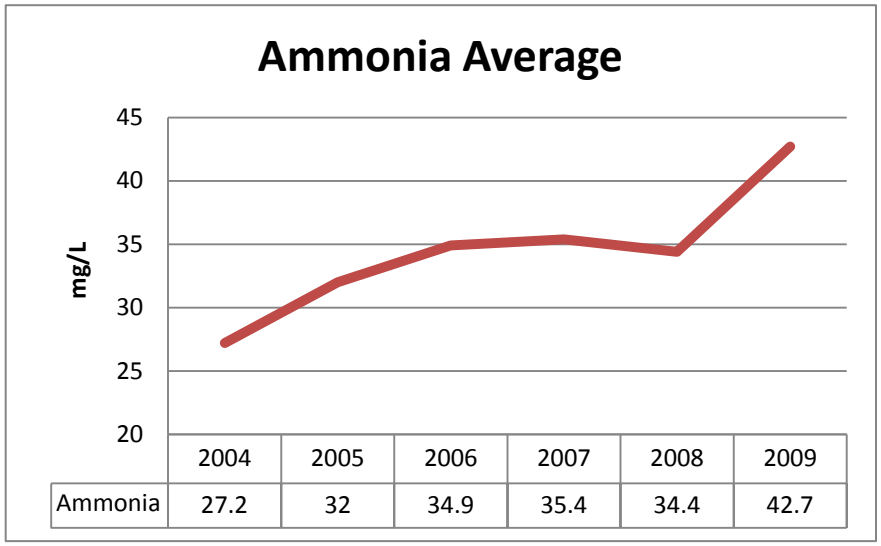
Toxicity and Speciation

Ammonia is present in two forms in saltwater: un-ionized ammonia (NH_3) and the ammonium ion (NH_4+). The pH, temperature, and salinity of the receiving water govern the speciation of ammonia and, therefore, its toxicity. Un-ionized ammonia is the more toxic form, but because ionic ammonium is often present in much greater concentrations, its toxicity must be considered. Both total ammonia ($NH_3 + NH_4^+$) and un-ionized ammonia (NH_3) are included in the water quality standards because both can have toxic effects on aquatic life under certain conditions.

Technology Based Effluent Limits

The ADEC calculation of a technology based ammonia effluent limit for the 2010 General Permit was based on the 2004 – 2009 cruise ship wastewater data set. Cruise ships that were granted interim ammonia effluent limits in 2008 and 2009 were required to sample for ammonia twice per month. Therefore, the inclusion of the 2008 and 2009 wastewater sample data greatly increased the number of samples that were included in the calculation of the 99th percent confidence interval.

Figure 1: Ammonia Averages in Wastewater Sample Results (2004-2009)



Water Quality Based Effluent Limits

ADEC derived an ammonia water quality standard of 1 mg/L using a receiving water pH of 8.2, a salinity of 20 g/kg, and a temperature of 10- 15 degrees Celsius. The determination of the ammonia water quality standard is heavily dependent upon the pH of the receiving water. The receiving water characteristics were selected using the 2004 Environmental Monitoring and Assessment Program (EMAP) data for Southeast Alaska. The EMAP data is presented in Table 15:

Table 15: Alaska Port Receiving Water Characteristics

Name	Vessel Visits in 2009	pH	Temperature (C)	Salinity (PSU)
Juneau	514	8.35	14.2	13.1
Ketchikan [a]	479	8.27 [a]	17.3	24.86
Skagway	383	8.02	11.8	9.5
Sitka	159	8.06	18.3	29.4
Point Sophia	69	8.25	15.1	25.5
Haines	33	8.24	12	10.7
	Average	8.20	14.78	18.84
	Median	8.25	14.65	18.98

Notes:
a. All results taken at or near the surface.
b. There was no pH data for Ketchikan harbor in EMAP. The pH from the closest site with similar geographic area, temperature, and salinity (Sumner Strait AK04-0014) was selected.

<u>Ammonia Effluent Limit while docked, anchored, or travelling at less than 6 knots (continuous discharge)</u>

ADEC multiplied the ammonia water quality standard of 1 mg/L and a dilution factor of 1/28 to calculate a water quality based effluent limit. Following this procedure, ADEC calculated an

ammonia effluent limit of 28 mg/L for a cruise ships that discharges continuously, including while docked, anchored or moving at less than 6 knots.

ADEC also calculated a technology based effluent limit based on specific wastewater treatment systems, using the 99th percentile of the 2004-2009 data.

ADEC selected the more conservative of the water quality based and technology based effluent limit for each type of treatment system. For Marisan and Rochem, the technology based effluent limits were more conservative and set at 20 mg/L and 12 mg/L, respectively. For Hamworthy, Scanship, Zenon, and other treatment systems, the water quality based effluent limit (28 mg/L), was more conservative (lower number).

Ammonia Effluent Limit while Underway

ADEC applied the ammonia water quality standard of 1 mg/L and a dilution factor of 1/50,000 to calculate a water quality based effluent limit of 50,000 mg/L for a cruise ship that is underway.

ADEC also calculated a technology based effluent limit based on specific treatment systems using the 99th percentile of the 2004-2009 data. In all cases, the technology based effluent limit was more conservative than the water quality based effluent limit and was used for the ammonia effluent limits in the General Permit for vessels while underway. See Table 8 above.

Copper

Toxicity of Copper

Alaska has a water quality standard of 3.1 ug/L dissolved copper in saltwater based on chronic effects to aquatic life and 4.8 ug/L for acute effects (Table IV in the Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances). The chronic criterion is based upon a four-day average. The acute criterion is based upon a 24-hour average. Copper can be toxic in aquatic environments and bio-concentrates in many different organs in fish and mollusks.

Potential Sources of Copper in Wastewater

Potential sources of copper/ copper alloys include but are not limited to: on board piping systems (copper pipes which can leach copper when exposed to soft potable water or electrical galvanic corrosion activity), cookware (although galley wastewater is not normally mixed with other wastewater), copper parts from evaporators which are used in making potable water onboard, copper used in refrigeration and air conditioning systems, and some disinfectants.

Copper Effluent Limits while docked, anchored, or travelling at less than 6 knots (continuous discharge)

ADEC multiplied the copper water quality standard of 3.1 µg/L and a dilution factor of 1/28 to calculate a water quality based effluent limit using a reasonable potential analysis for vessels while docked, anchored, or travelling at less than 6 knots. Following this procedure, ADEC calculated a water quality based copper effluent limit of 87 µg/L.

The ADEC calculation of a technology based copper effluent limit for the 2010 General Permit was based upon an evaluation of the 2004 – 2009 cruise ship wastewater data set. Cruise ships that were granted interim copper effluent limits in 2008 and 2009 were required to sample for copper twice per month. Therefore, the inclusion of the 2008 and 2009 wastewater sample data greatly increased the number of samples that were included in the calculation of the 99th percentile confidence interval for each type of treatment system which was used as the technology based effluent limit. ADEC also incorporated additional samples (obtained by ADEC) that were not included in the data set used to establish the technology based effluent limit (interim limit) in the 2008 General Permit.

For vessels that discharge continuously, the technology based effluent limit calculated by type of treatment system ranges from 10 ug/L to levels higher than the water quality based effluent limit (87 ug/L).

For the 2010 General Permit, ADEC selected the more conservative of the water quality based or technology based limits. For Rochem, Scanship, and Zenon the technology based effluent limits were more conservative and set at 10 ug/L, 26, ug/L, and 50 ug/L, respectively. For Hamworthy, Marisan, and other treatment systems, the water quality based effluent limit (87 ug/L), was more conservative.

Copper Effluent Limit while Underway

ADEC applied the copper water quality standard of 3.1 µg/L and a dilution factor of 1/50,000 to calculate a water quality based effluent limit using a reasonable potential analysis for vessels while underway. Following this procedure, ADEC calculated a copper effluent limit of 155,000 µg/L.

ADEC also calculated a technology based effluent limit for each type of treatment system based on the 99th percentile of the 2004-2009 data. In all cases, the technology based effluent limit was the more conservative value when a cruise ship is underway, and ADEC included the technology based limits for copper in the 2010 General Permit. See Table 8 above.

Nickel

Toxicity of Nickel

Alaska has a water quality standard of 8.2 µg/L dissolved nickel in saltwater based on chronic effects to aquatic life and 74 ug/L for acute effects (Table IV in the Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances). The chronic criterion is based upon a four-day average. The acute criterion is based upon a one-hour average.

Potential Sources of Nickel in Wastewater

Nickel is used as an alloy in pipes (such as stainless steel), valves, fittings, and plumbing fixtures. It could also be present in potable water sources.

Nickel Effluent Limits

The ADEC calculation of a technology based nickel effluent limit for the 2010 General Permit was based upon an evaluation of the 2004 – 2009 cruise ship wastewater data set. Cruise ships that were granted interim nickel effluent limits in 2008 and 2009 were required to sample for nickel twice per month. Therefore, the inclusion of the 2008 and 2009 wastewater sample data greatly increased the number of samples that were included in the calculation of the 99th percent confidence interval. ADEC also incorporated additional samples (taken by ADEC) that were not included in the data review used to establish the effluent limits in the 2008 General Permit. The interim effluent limit for nickel in the 2008 General Permit was 180 µg/L (0.18 mg/L).

Nickel Effluent Limits while underway and while docked, anchored, or travelling at less than 6 knots (continuous discharge)

ADEC multiplied the nickel water quality standard of 8.2 µg/L and a dilution factor of 1/28 to calculate a water quality based effluent limit using a reasonable potential analysis for a vessel while docked, anchored, or travelling at less than 6 knots. Following this procedure, ADEC calculated a nickel effluent limit of 230 µg/L.

ADEC also applied the nickel water quality standard of 8.2 µg/L and a dilution factor of 1/50,000 to calculate a water quality based effluent limit using a reasonable potential analysis for a vessel that is underway. Following this procedure, ADEC calculated a water quality based effluent limit for nickel of 410,000 µg/L.

ADEC then calculated technology based effluent limits for Nickel for the different types of treatment systems. Those limits range from 10 ug/L to 63 ug/L based on the type of treatment system.

In all cases, the technology based effluent limit was more conservative than the water quality based effluent limit and was used for the nickel effluent limits in the General Permit for vessels while underway as well as while docked, anchored or travelling at less than 6 knots. See Table 8 above.

Zinc

Toxicity of Zinc

Alaska has a water quality standard of 81 ug/L dissolved zinc in saltwater based on chronic effects to aquatic life and 90 ug/L for acute effects (Table IV in the Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances). The chronic criterion is based upon a four-day average. The acute criterion is based upon a one-hour average. Toxicity of zinc to an organism depends on feeding habits. Plants and most fish would not be adversely affected, but invertebrates could be affected by ingestion of sufficient quantity of particulates containing zinc.

Potential Sources of Zinc in Wastewater

Zinc can be found in some types of piping, fittings, and valves. It is used as a coating to protect against corrosion. Zinc is also used as a sacrificial anode in cathodic protection. Zinc has been used in antifouling paints in tanks. Other potential sources of zinc include: sunscreen and diaper rash cream, toothpaste, vitamin supplements, potable water sources, and shampoos.

Zinc Effluent Limits while underway and while docked, anchored, or travelling at less than 6 knots (continuous discharge)

The ADEC calculation of a technology based zinc effluent limit for the 2010 General Permit was based upon an evaluation of the 2004 – 2009 cruise ship wastewater data set. Cruise ships that were granted interim zinc effluent limits in 2008 and 2009 were required to sample for copper twice per month. Therefore, the inclusion of the 2008 and 2009 wastewater sample data greatly increased the number of samples that were included in the calculation of the 99th percent confidence interval. ADEC also incorporated additional samples (taken by ADEC) that were not included in the data review for the 2008 General Permit. The interim effluent limit for zinc in the 2008 General Permit was 230 µg/L (0.23 mg/L).

ADEC applied the zinc water quality standard of 81 µg/L and a dilution factor of 1/28 to calculate a water quality based effluent limit using a reasonable potential analysis for a vessel while docked, anchored or travelling at less than 6 knots. Following this procedure, ADEC calculated a zinc effluent limit of 2,268 µg/L.

ADEC also applied the zinc water quality standard of 81 µg/L and a dilution factor of 1/50,000 to calculate a water quality based effluent limit using a reasonable potential analysis for a vessel that is underway. Following this procedure, ADEC calculated a zinc effluent limit of 4,050,000 µg/L.

ADEC then calculated technology based effluent limits for Zinc for the different types of treatment systems. Those limits range from 112 ug/L to 395 ug/L depending upon the type of wastewater treatment system.

In all cases, the technology based effluent limit was more conservative than the water quality based effluent limit and was used for the zinc effluent limits in the General Permit for vessels while underway and while docked, anchored or travelling at less than 6 knots. See Table 8 above.

Evaluation of other parameters for Potential Inclusion in Permit

ADEC also evaluated the wastewater sample results for several other metals that had occasionally exceeded the Alaska Water Quality Standards (WQS) including mercury, selenium, and silver. Sampling for these parameters was only required twice per season under the QA/QC Plan. Silver and mercury each had one exceedance in the past five years, while selenium had four. These parameters were not included in the 2010 General Permit because each parameter had few excedances and the upper 99th percentile of sample results was below WQS. ADEC will continue to monitor these and other pollutants for inclusion into future revisions of this General Permit.

Data Reliability and Representative Nature of Wastewater Samples

It is crucial that wastewater sample data is reliable and representative. This data will be used to determine compliance with the General Permit. Large vessels that discharged in Alaska from 2001 to 2007 took at least two compliance samples per cruise ship season to satisfy both state and federal cruise ship requirements.

In 2008 and 2009, large cruise ships that discharged wastewater into marine waters of the state were required to sample twice a month to satisfy the 2008 General Permit requirements. The same frequency of sampling is required in the 2010 General Permit.

ADEC, the U.S. Coast Guard, and the Northwest Cruiseship Association have established a Quality Assurance/Quality Control (QAQC) plan that ensures that the sample results are reliable and are representative of the wastewater that is discharged into marine waters of the state. The 2010 General Permit requires permittees to follow the most recent version of an ADEC-approved QAQC sampling plan.

The QAQC plan includes standard sampling and laboratory quality control elements with additional instructions tailored to a maritime facility. It lists all the pollutants to be tested and the EPA analytical methods to be used. The QAQC plan requirements include duplicate sampling, independent sampling audits, and a lab technical systems audit. The samples are obtained by a third party sampler and analyzed at an approved laboratory.

The 2010 General Permit and state statutes also allow ADEC or its representative to take additional wastewater samples and conduct additional analysis.

Because each ship is configured differently and follows unique wastewater management practices, the state also requires the owner/operator to submit a vessel specific sampling plan (VSSP). The VSSP plan must be approved by ADEC before the first sampling event takes place.

The VSSP must demonstrate that the sample will be representative of the wastewater discharged from the particular ship. The General Permit requires onboard sampling locations to be the same as those listed in the current approved VSSP. The VSSP also documents discharge and sample ports, storage tanks, pump flows, and contains a concise description of the wastewater treatment process.

In 2008 and 2009, ADEC discovered numerous errors in the approved VSSPs. The 2010 General Permit requires that VSSPs be both accurate and complete, and reflect the current wastewater treatment and discharge operations. The sampled discharge must match the treatment system, tanks used, and discharge port typically used.

If wastewater is being treated and then stored in holding tanks for a period of time prior to being discharged into marine waters of the state, then that source of wastewater may only be discharged if that effluent is sampled after a typical holding time as indicated in the VSSP.

If wastewater from tanks is mixed with wastewater from the AWTS prior to discharge, a representative sample must match the typical discharge ratios. The mix of graywater and blackwater in the treatment system should also be typical of discharges into marine waters of the state.

Monitoring Requirements

There are monitoring requirements and frequencies associated with all the effluent limits that are stated in Tables 1-7 of the General Permit. Twice monthly sampling is required for ammonia, copper, nickel, and zinc. This is equivalent to the frequency of sampling for these parameters in the 2008 General Permit for permittees who were allowed to discharge under the terms associated with the interim effluent limits.

The General Permit retains the twice seasonal monitoring requirement for other parameters.

ADEC or its contractor may take additional samples in addition to those required in the 2010 General Permit (AS 46.03.465 (c)). ADEC will be allowed access to the vessel for the purpose of taking samples, to verify the integrity of the sampling process, and to verify recordkeeping requirements of the permit (AS 46. 03.462).

The first sampling event for all parameters with effluent limits listed is required within ten (10) days of the first discharge into marine waters of the state.

A cruise ship that is authorized to discharge while underway may only discharge wastewater while the vessel is traveling at least 6 knots. Wastewater samples must be taken while the vessel is underway and is discharging into marine waters of the state. The sample must also be representative of the wastewater that is discharged.

A cruise ship that is authorized to discharge continuously may discharge either while the vessel is docked, anchored, moving at less than 6 knots or while it is underway traveling at a speed of 6 knots or greater. If a cruise vessel that is authorized to discharge continuously chooses to discharge wastewater while docked, anchored, or moving at less than 6 knots at any time during a calendar month, then at least one wastewater sample must be obtained from the vessel while the vessel is docked, anchored, or moving at less than 6 knots during that same month.

Any samples taken while the vessel is docked, anchored, or traveling at a speed of less than 6 knots must comply with the "Daily Maximum Continuous" requirements found in Table 2 through 7 of the General Permit.

The permittee must identify on the Discharge Monitoring Reports (DMRs) whether the vessel is docked, anchored or moving at less than 6 knots or whether the vessel is underway during the sample event.

Reporting Requirements

Calculating averages:

The monthly limit for fecal coliform bacteria must be calculated as a geometric mean. The geometric mean is the Nth root of the product of N, where N is the number of samples analyzed. All non-detect sample results will use a value of 1 for calculation of the geometric mean.

Example geometric mean calculation, where N= 4: $\sqrt[4]{12x23x34x990} = 55$.

The monthly average for Biochemical Oxygen Demand (BOD) must be calculated as an arithmetic mean. This is the sum of the sample results divided by the number of samples. All non-detects will use a value of zero for the calculation of the arithmetic mean.

Noncompliance Notification:

A permittee must report all violations of the General Permit within 24 hours of discovery to ADEC. For effluent limit violations that are reported on the DMR, there is no requirement that a Noncompliance Notification form to be submitted to ADEC. The 2010 General Permit does require a Noncompliance Form for accidental discharges, discharges that may endanger health or the environment, or upset conditions of the wastewater treatment system.

Northwest Cruise Ship Association Quality Assurance Project Plan [effective 2/10 – 1/2013]:

http://www.dec.state.ak.us/water/cruise_ships/industrylinks.htm

Ocean Ranger important sections of the QAPP Appendix A – Alaska Cruise Ship Sampling Checklist (all sampling events ADEC /USCG). This checklist gives a good summary of the sampling actions / requirements.

The EPA has issued and informative slide show presentation of the Vessel General Permit. This slide show presentation includes a general discussion of the EPA permit.

EPA Region 9 PowerPoint on the EPA vessel GP
-Overview with Particular Information for the Tanker Vessel Industry

Please see:

http://www.dec.state.ak.us/water/wwdp/pdfs/EPA_PPT_Tanker_Vessel.pdf

Vessel Discharges Federal Permit (Summary)

Final Federal Vessel General Permit (EPA permit)-

The 2008 EPA Vessel General Permit (VGP) regulates discharges incidental to the normal operation of vessels operating in a capacity as a means of transportation. The VGP includes general effluent limits applicable to all discharges; general effluent limits applicable to 26 specific discharge streams; narrative water-quality based effluent limits; inspection, monitoring, recordkeeping, and reporting requirements; and additional requirements applicable to certain vessel types.

In a nutshell the new VGP (EPA Permit):

- Will reduce releases of 26 types of discharges from vessels operating in U.S. waters. Beginning Dec. 19, 2008 approximately 61,000 domestically flagged commercial vessels and 8,000 foreign flagged vessels will need to comply with the permit;
- Includes large cruise vessels regardless of if they discharge or not
- Covers non-recreational vessels 79 feet in length or longer, such as cruise ships or oil and cargo tankers, but excludes fishing vessels of any length, unless they discharge ballast water;
- Incorporates the Coast Guard's mandatory ballast water management and exchange standards;
- Provides technology-based and water-quality-based effluent limits for other types of discharges, including deck runoff from rain or cleaning, ballast water used to stabilize ships and "gray water" from showers, sinks and laundry machines; and
- Establishes specific corrective actions, inspections and monitoring, recordkeeping and reporting requirements.

All the large cruise vessels have applied for these VGP's issued by the EPA. The new VGP is a permit issued by the EPA (federal level). Large cruise vessels must obtain a VGP (EPA) regardless their discharge status. The State of Alaska General Permit (see page 193), must be obtained when vessels opt to discharge in Alaska waters. Non discharging vessels must have a VGP (EPA permit). Discharging vessels must have a valid VGP (EPA Permit) and a valid General Permit issued by the State of Alaska. Note that in some cases a vessel has obtained a valid State of Alaska issued General Permit, but decided to not discharge; in these cases the vessel has a VGP and State issued GP.

The USCG approval and related sampling regime [33 CFR 159] remains the same.

For more information regarding the new VGP please see: epa.gov/npdes/vessels and

http://cfpub.epa.gov/npdes/home.cfm?program_id=350

Ocean Ranger Information Daily Reporting and VGP

The new VGP is permit is a large document. We have enclosed the "EPA VGP List of items and comparison to the OR Checklist", this list include the items for OR verification based on VGP subjects; these items are included in the OR daily check list. The listed Subjects are derived from the VGP. ADEC did not include an example of the VGP in the Guidebook because of the size of this permit. A copy of the EPA vessel permit is found on the SharePoint portal under references.

Note that many items found in the EPA Vessel General Permit (VGP) were already covered in the 2008 Ocean ranger checklist.

Below are some brief explanations on the selected subjects of the VGP:

- Large cruise vessels and medium size cruise vessels which are subject to the VGP do have in most cases (if not all) extended record keeping systems and data filing systems on board. Most likely the recordkeeping is harmonized / integrated in the existing record keeping system. The EPA VGP requires recordkeeping for ballast water, bilge water, deck maintenance, chain locker rinsings, pool and spa discharges, and training. EPA allows using recordkeeping for other requirements (such as USCG) for this. For the OR is it recommended to indentify the recordkeeping and responsible person for this recordkeeping in the OR daily report. Also this item should be documented in the Vessel Specific Notebook, so the other OR's can use this information for verification.
- Boilerwater discharges. The VGP includes a "limitation" on boiler water discharges. However, it appears that "boiler wash" down operations are not included in the VGP. Both items wash down and boiler blown down are included in the OR Daily checklist (Daily Checks)
- Chain locker effluent. Anchor must be washed down when weighing anchor. Checks must be made and descriptions provided on how this operation is performed including tanks / and water systems are involved. These items should be documented in Vessel Specific Notebook for future references. Most vessels may not use anchorage, so it is possible that is subject cannot be verified. However, some vessel may perform "anchor / winch" operations (e.g. Port of Sitka, Port of Juneau), or do while docked "anchor tests".
- On board potable water production "Distillation and Reverse Osmosis (RO)" brine, check and document in OR daily reporting and include for future reference in Vessel Specific Notebook.
- Elevator pit effluent, some vessels may collect effluent (slurries etc) with absorption pads and dispose these oily / dirty pads in their hazardous waste stream.
- Fire main systems. Verify this subject and describe in the Vessel Specific Notebook. Explain how it works on board for future references
- Gas turbine wash water. Most vessels do not have Gas turbines, so this item may not apply to all the large cruise vessels. However, although not explicitly identified in the VGP, most if not all Diesel engines on board are equipped with Turbo Blowers / Compressors (T/C). These TC's are regular "washed on the Compressor side and Turbine side of the unit. Describe what happens with this waste stream.
- Seawater Piping Biofouling prevention. Described how this is done on board while in Alaska, and if such systems exist, include volume and used chemicals.
- Exhaust Scrubber Discharge: one vessel has installed experimental technology (M/V Zaandam). OR will be briefed and informed at the time this system is operated in Alaska waters.
- Spa and Pool Record Keeping / discharges. OR to describe how this is done in Alaska waters. OR report to include that recording systems are in place. Vessel Specific Notebook shall include the description for future references.
- Education / Training item: The vessels have already extensive recording system in place, the vessel permit recording and reporting items are expected (may vary per vessel) in already existing recording systems. OR may make notes of these finding in the vessel specific note book.
- Sculleries and galleys. EPA VGP does not allow toxic degreasers or detergents with phosphates. This topic is in Section E of the OR checklist.
- Aqueous Fighting Forming Foam. No discharge (in US waters) except emergencies. If this happens, list under non-routine discharges under daily checks.

EPA Vessel GP December 19, 2008 Permit

List of items and comparison to the OR checklist

EPA VGP Section	Subject	Applicable Y/N?	OR Check-list Ref	Description of Item in EPA GP	Recordkeeping[1]	Vessel Self-Inspection[2]
2.1.1	Material Storage	Y	II and III	Materials that could be washed or blown overboard should be stored properly	N/A	Weekly
2.1.2	Toxic and Hazardous Materials	Y	II and III	Waste should be properly and safely stored	N/A	Weekly
2.1.3	Fuel Spills/Overflows	Y	VII	Minimize spills and overflows, ensure prompt cleanup if they occur	Notify NRC within 24 hours	Ship's watch
2.1.4	Discharge of Oil, Oil Mixtures	Y	VII	Less than 15 ppm, discharged oily mixtures shall not be harmful	Notify NRC within 24 hours	Ship's watch
2.1.5	Compliance with other regulations	Y	I and VII C	Discharges must comply with clean water act and other federal regulations	N/A	Weekly
2.2.1	Deck washdown and hull cleaning above waterline	Y	Daily Checks	Minimize debris and residues in deck washwater, deck machinery should have oil drip pans, minimize paint, rust and materials entering water during maintenance, use non-toxic cleaners on exterior of vessel	Deck maintenance logs with materials used, process for anything more than routine cleaning	Ship's watch
2.2.2	Bilgewater	Y	I and VII	No dispersants to remove sheen , minimize bilgewater discharge within 3nm.	Record discharge dates, locations, volumes, any sheens	Sample quarterly
2.2.3	Discharges of ballast water	Y	III	No oil discharge, need management plans, avoid discharge in sensitive areas, avoid uptake where there is suspended sediments, near sewage outfalls, algae blooms, pods of whales, boundaries of ocean currents. Clean tanks regularly, but not in US waters. Ballast water exchange is going more than 50 nm offshore.	Keep written record and ballast plans	Annual check of tanks
2.2.4	Anti-Fouling Hull Coatings	Y	Commons	Must not contain banned substances, like	Record dates,	Annual check

[1] It is not the intention of the EPA permit to require separate records for USCG and EPA. Vessels can harmonize their record keeping practices where appropriate. Operators may choose how records are maintained, but must retain for three years.
[2] Document findings of inspections in logbook or other recordkeeping documentation. Document date and time of inspection, locations inspected, personnel involved, and any issues found. Must be signed by inspector or master.

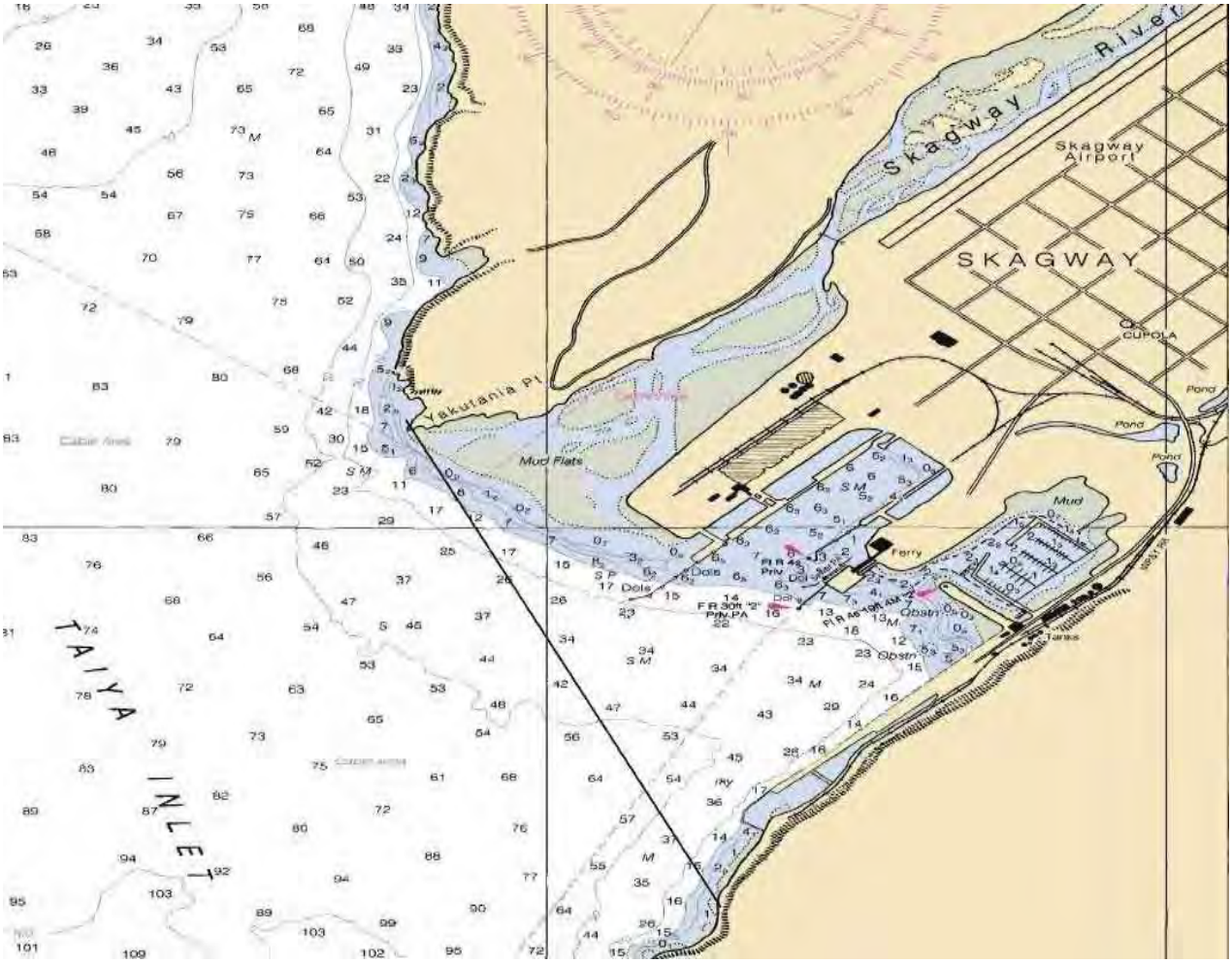
EPA VGP Section	Subject	Applicable Y/N?	OR Check-list Ref	Description of Item in EPA GP	Recordkeeping[1]	Vessel Self-Inspection[2]
			check	TBT.	materials used, application process.	
2.2.5	Aqueous Film Forming Foam	N		No discharge except emergencies	Record dates and volumes of discharge.	N/A
2.2.6	Boiler/Economizer Blowdown	Y	I / Daily Checks	Should not be discharged within 3nm.	N/A	N/A
2.2.7	Cathodic Protection	N	N/A	Dry-dock item. No flaking.	N/A	Annual check.
2.2.8	Chain Locker Effluent	Y	I	Anchor chain must be washed down when weighing anchor.	Dates of inspections and rinsing of chain locker	Weekly
2.2.9	Controllable Pitch Propeller and Thruster Hydraulic Fluid and other Oil to Sea Interfaces	Y	VII	Seals maintained in good order, minimize maintenance on stern tubes, and remove excess lubricant from wire rope and mechanical equipment.	Record maintenance dates and locations when in US waters.	Annual check during drydock.
2.2.10	Distillation and Reverse Osmosis Brine		I	Shall not contain or contact hazardous wastes.	N/A	N/A
2.2.11	Elevator Pit Effluent	Y	VII	Must be treated by OWS	N/A	N/A
2.2.12	Firemain Systems		I	Only discharged in emergencies and for anchor/chain washdown.	N/A	N/A
2.2.13	Freshwater Layup	N	N/A	N/A	N/A	N/A
2.2.14	Gas Turbine Washwater	Y		No direct discharge within 3nm, should be kept separate from bilgewater	Record dates and volumes of discharge in US waters	N/A
2.2.15	Graywater	N	I	Included in Alaska GP	Wastewater log	Quarterly sample
2.2.16	Motor Gasoline and Compensating Discharge	Y	VII	No oil, no sheen	Notify NRC within 24 hours	Ship's watch
2.2.17	Non-oily Machinery Wastewater	Y	I and VII	Must be free from oils.	N/A	N/A
2.2.18	Refrigeration and Condensate Discharge	Y		No oil or toxic materials.	N/A	N/A
2.2.19	Seawater Cooling Discharge	N	N/A	Should be discharged underway.	N/A	N/A
2.2.20	Seawater Piping Biofouling Prevention	N	N/A	Minimal use, no banned chemicals.	N/A	N/A

EPA VGP Section	Subject	Applicable Y/N?	OR Check-list Ref	Description of Item in EPA GP	Recordkeeping[1]	Vessel Self-Inspection[2]
2.2.21	Boat Engine Wet Exhaust	N	N/A	N/A	N/A	N/A
2.2.22	Sonar Dome Discharge	N	N/A	N/A	N/A	N/A
2.2.23	Underwater Ship Husbandry Discharges	N	N/A	Dry-dock activity.	N/A	Annual check
2.2.24	Welldeck Discharges	N	N/A	N/A	N/A	N/A
2.2.25	Graywater Mixed with Sewage	N	I	Included in Alaska GP.	Wastewater log	Sampling
2.2.26	Exhaust Scrubber Discharge	N	N/A	To be covered in AK approval	N/A	N/A
5.1.1.1.3	Sculleries and Galleys	Y	VI	Use phosphate-free detergents, non-toxic degreasers.	N/A	N/A
5.1.1.1.4	Other materials	Y	II and III	Mercury, photo, dry cleaning, medical, printing, and solvent waste should not enter discharged waste streams. No hazardous/toxic materials into sinks or floor drains that will be discharged.	Offloads recorded in waste manifests (DEC requirement)	Weekly
5.1.1.1.5	Pool and Spa Discharges	Y	I	Must de-chlorinate and/or de-brominate and discharge underway. Chlorine less than 100 ug/L, oxidant less than 25 ug/L unless through AWTS.	See 5.1.2.3	Sample every discharge.
5.1.2.3	Spa and Pool Record Keeping	Y	VI E	Must monitor chlorine or bromine concentrations before discharge. Must keep records or locations, estimated volumes, and concentration of chlorine or bromine.	See description	N/A
5.1.3	Education/Training	Y		Crews must be educated/trained in environmental procedure. Passengers must be educated on their potential environmental impacts.	Record of completed training required by EPA permit.	Weekly

Skagway Restricted Zone

3. This general permit authorizes the discharge of authorized pollutant parameters into any waterbody included in the ADEC CWA Section 305(b) report or effective CWA Section 303(d) list of waters which are “impaired” or “water quality-limited” only from vessels whose treated wastewater meets the effluent limits for those parameters listed in Table 1 that apply to all permittees as of the 2010 season in accordance with the requirements of Section 1.5. Vessels that cannot meet these standards are prohibited from discharging in these waters.1

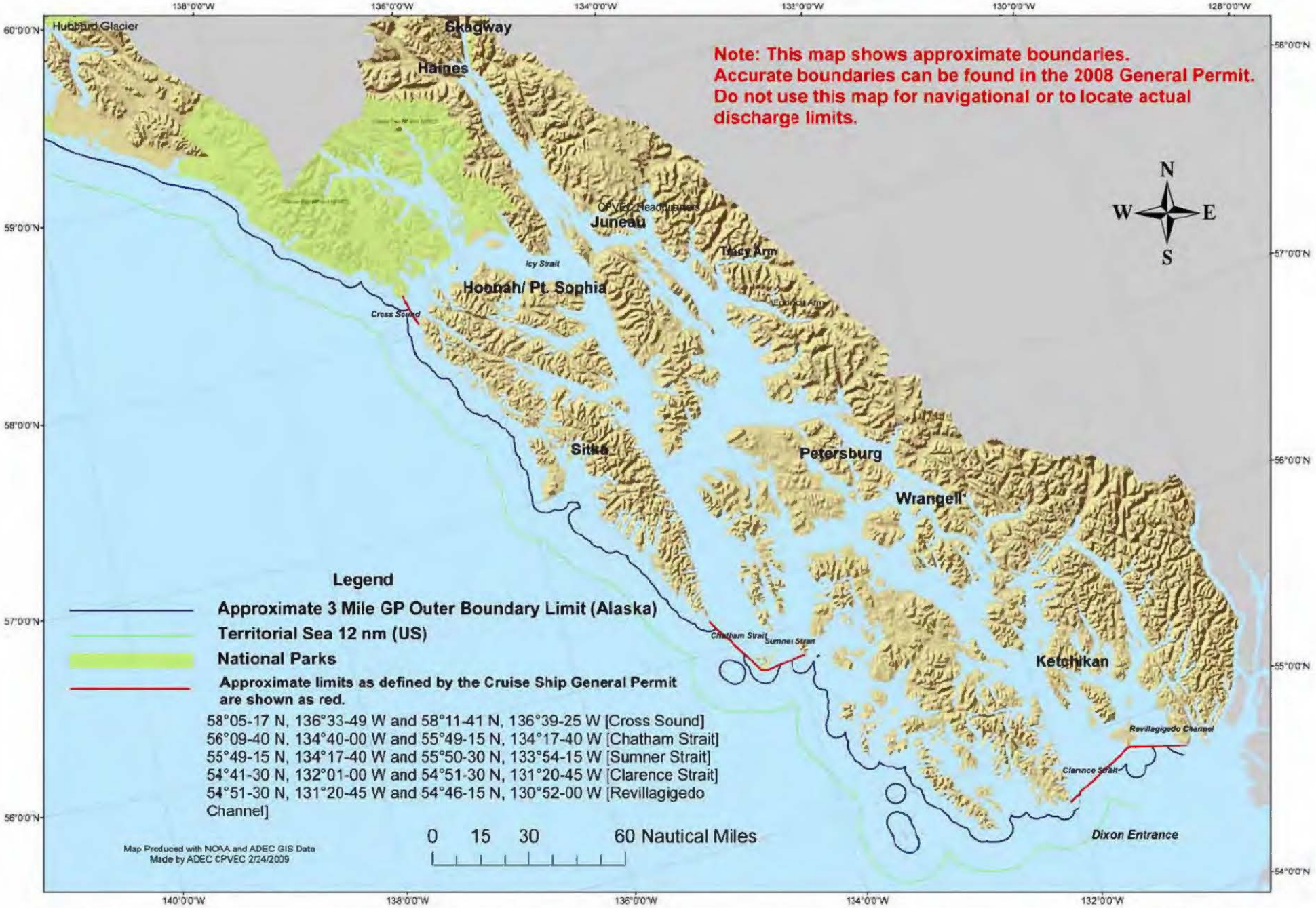
1 At the time that the permit was issued, this discharge condition only applied to Skagway Harbor.



Boundary Skagway Harbor for General Permit purposes:

Discharge Restrictions from Large Passenger vessels within the Harbor of Skagway extending to the referenced Boundary Line.
Boundary Line from the north at Yakutania Point at 135° 20’ 13”N, 59° 27’ 7”N, approximately southeast, to a point at 135° 19’ 43”W, 59° 26’ 32”N.

CPVEC General Permit SE Alaska Boundaries



Locations to compare against discharge log entries:

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

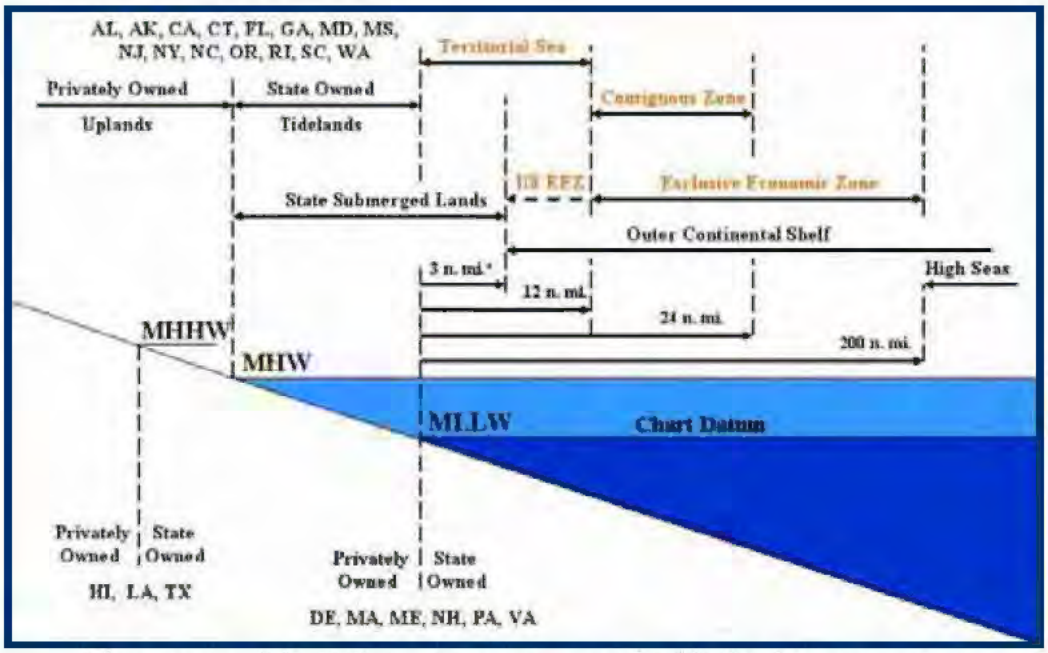
Outer General Permit Boundaries (common entrances to SE Alaska):

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]

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
Canadian Border (Canadian claim, not US approved) 54’40” N or 54.67 N
Made famous in the “Fifty-Four Forty or Fight!” slogan in the 1844 US presidential campaign.

U.S. MARITIME ZONES



The extents of the U.S. maritime zones are highlighted in orange text

The United States, pursuant to international treaties and customary law, has established maritime zones in which various activities are controlled or restricted. NOAA is responsible for depicting on its nautical charts the limits of the 12 nautical mile Territorial Sea, 24 nautical miles Contiguous Zone, and 200 nautical miles Exclusive Economic Zone (EEZ). Each of these maritime zones is projected from what is called a "normal baseline." A "**normal baseline**" as defined in the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone refers to the low-water line as marked on officially recognized, large-scale nautical charts. Since low water is not an official tidal datum, the U.S. applies the term to reference the lowest charted datum, which is mean lower low water (MLLW) in the U.S.

HOW ARE MARITIME LIMITS CREATED?

The maritime limits are created using a method called "envelope of arcs," which is a method by which one would roll a virtual circle along the charted low water line and select salient points. These salient points are contributing baseline points. Arcs generated from these baseline points are blended together to form a continuous limit line or envelope of arcs. The baseline is reviewed and approved by an interagency committee called the U.S. Baseline Committee, chaired by the Department of State.

Source NOAA: http://nauticalcharts.noaa.gov/csdl/eez.htm & http://nauticalcharts.noaa.gov/csdl/mbound.htm

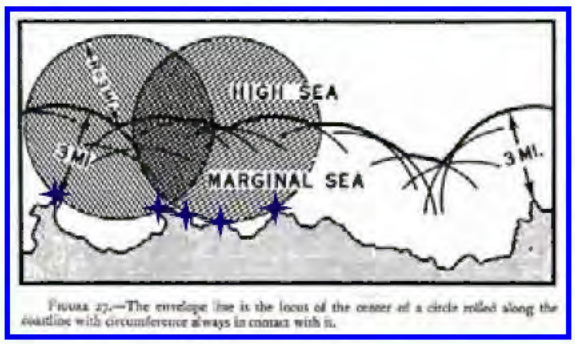


FIGURE 27.—The envelope line is the locus of the center of a circle rolled along the coastline with circumference always in contact with it.

Wastewater Discharge Logs

- Each cruise ship operator has his “own methodology” format of waste water discharge log keeping.
- Per AK law, the operators must keep a waste water discharge log while in Alaska water, and must also file monthly to ADEC a copy of discharge logs [AS 46.03.465(a)]. This applies to large vessels that are authorized to discharge (permit holders)[AS 46.03.462(a)], so dischargers and vessels that are authorized to discharge but do not have choose to discharge. Some operators do not discharge but voluntary provide discharge logs to demonstrate that they hold their waste water while in AK waters.

Waste Water discharge Logs to review how to look at them:

Each operator has its “own conventions” regarding waste water type etc.” This should identified in the discharge log book. Most operators do have on the front page / “preface of the log book” an explanation of the used abbreviations.

- Discharge ports and “gates” these notations should be consistent with VSSP document, if not report to ADEC.
- Tanks etc. This should be also consistent with VSSP document, if not report to ADEC.
- Time date of discharge; some operators register only “start / stop” time dates of discharges of periods of time longer than a day. For example start in KTN and three days later stop in Alaska Gulf. In this situation, the ocean ranger to be alert how the total discharges are calculated and if tanks have been changed.
- Volume discharge determinations, some operators do discharge “12 hrs “ waste water soundings and based there volumes on that measurement (12 hrs sounding). Discharge log should include the total discharged water, that is the volume difference from at tank before / after discharge (without tank flow intake Check!)
- Vessels that discharge treated effluent from the Advanced Water Treatment Systems normally discharge immediately overboard, some vessels however do have metering systems installed that meters the discharged volumes; these metered values (flow) should be use to determine the volume discharges logged in the discharge log.
- Be alert, and ask the crew to explain the log book entries and how it is done. The findings need to be documented in the Ship Specific Note Book for future reference for the next Ocean Ranger.
- Further changes in entries should signed for, page number should be consecutive, and the pages of the discharge log book should be firmly bound, not possible to “exchange” the log sheets.
- Entries to be made in non erasable pen (ink)
- Questions not answered report to ocean ranger manager.
- Completed Pages and not “operational” should signed for. Large open areas on signed pages should be avoided, to prevent (accidentally) later on inclusions of entries.

Examples of discharge below:

Emergency Sampling

Each vessel has an dedicated emergency sample box. This box is property of the State of Alaska and includes sample material and instructions for emergency sampling.

Sampling event can be triggered by public complaints, Advanced Waste Treatment System upset or other unusual situation what is not part of the normal operations.

Emergency sampling is performed when there is an emergency situation and warrants approval of ADEC.

The emergency sample kits are brought on board by ADEC when the vessel arrives for the first time in Juneau. When kit is on board it will normally stored in Environmental Officers office.

Ocean ranger is to check if kit is complete and when kit contents (e.g bottles etc.) are missing - this needs to be reported to ADEC. (in some cases samplers have “borrowed” bottles from kit), please notify ADEC for follow up.

Ocean ranger is to collect samples; vessel crew opens and closes the sampling port during the sampling process.

If vessels objects to the emergency sampling, or discharges are discontinued that sampling is not possible, ocean ranger to document time involved persons that not allowed the sampling event. In such case immediately notify ADEC and the ocean ranger manager.

At the end of the cruise season – at the last call in Juneau, the ocean ranger will contact ADEC to arrange sample box pick up from the gangway

Emergency Sample Kit Instructions

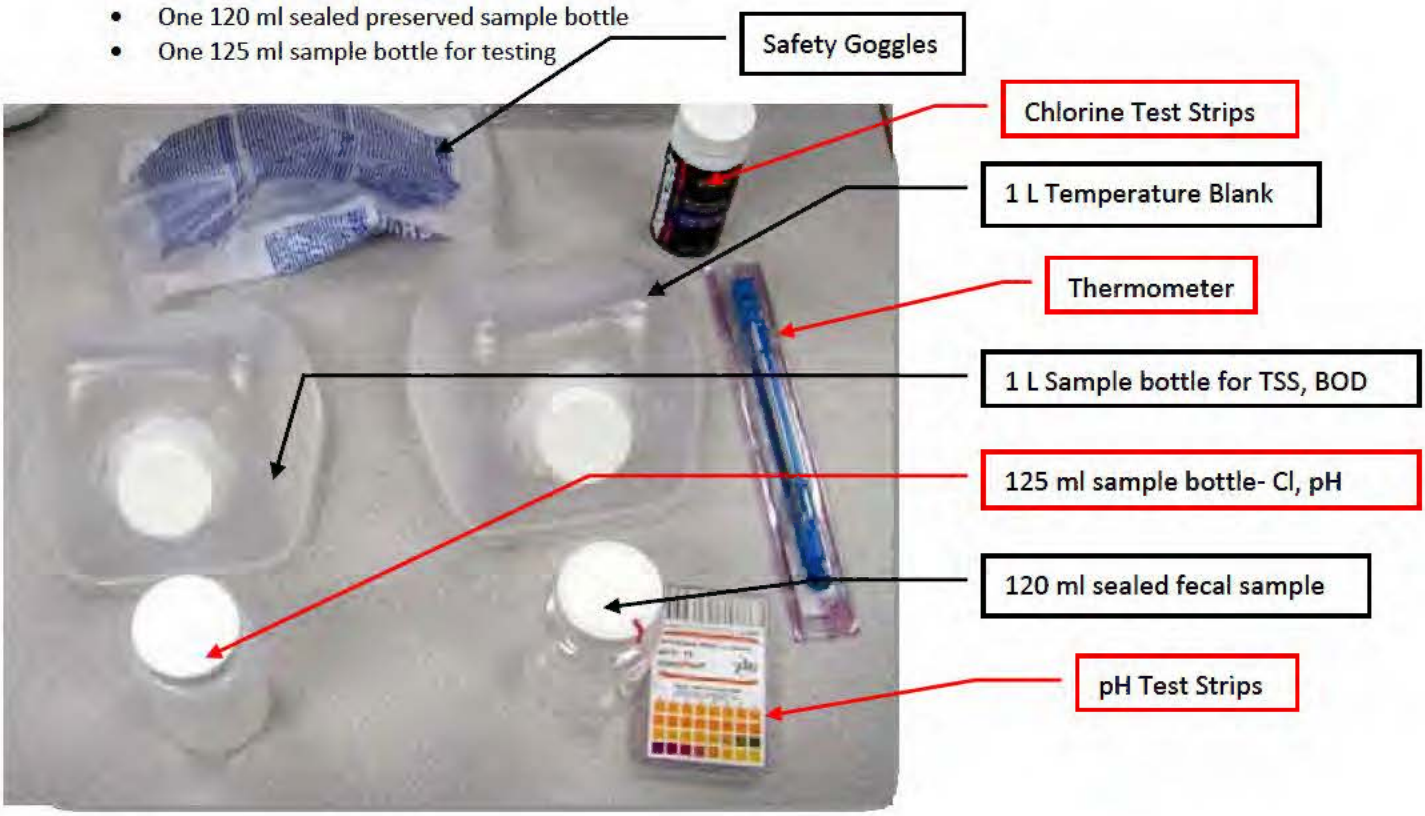
Ocean Ranger 2010

Introduction/ Why Sample?

The emergency sample kits are provided so that a sample can be taken in case of an accident or incident. These samples should only be taken if there are no safety issues and with the permission of the ship. These are relatively simple test kits, and will only be measuring a few parameters. Sampling of wastewater provides DEC information on whether equipment was functioning properly, and if there was a spill it might give a representation of what was released.

Kit contents:

- One hard plastic cooler with label
- One set of safety goggles, one pair of gloves
- One Chain of Custody form, one tamper resistant seal
- One thermometer
- One pH test kit with 100 test strips, One chlorine test kit with 50 test strips
- Two 1 liter collapsible plastic bottles
- One 120 ml sealed preserved sample bottle
- One 125 ml sample bottle for testing



Safety Information: Use supplied safety goggles and gloves while sampling. Treat all samples as potential biohazards. Do not reuse gloves. Be aware of your surroundings and don't sample if you feel uncomfortable. Do not operate the sample port or any equipment. Let an employee of the ship collect the samples in the bottles.

Reasons for not sampling: If vessel officials object or do not want to cooperate in the sampling event, report this to DEC and terminate the sample. Do not sample if conditions aboard the vessel are not safe.

Field Records: Use field record form or if this is not available please take notes. Information must include the vessel name, location with latitude and longitude, sample port used, discharge type (blackwater, graywater, mixed), discharge status, and who assisted and/or observed the sample collection. Comments must be included on the form such as why the sample was taken. In the field notes record the chlorine measurements, pH, and temperature along with time sample was taken. Place field notes in top lid compartment of cooler before having lab or DEC pick up sample. If possible take a photograph of the sample port. Photographs should include identifying information- like time, place- for example include filed notes in photograph.

Custody: Ocean Ranger to stay with the box until it is picked up and custody form is singed and completed. If vessel officials object or do not want to cooperate in the sampling event, report this to DEC and terminate the sampling process.

Procedures:

Pre-sample:

1) Get ice: Partially fill cooler with combination of ice and water to make ice water slurry. Leave enough room for full sample bottles.
2) Inflate the two 1 liter collapsible bottles with air prior to adding liquids
3) Put on safety goggles and gloves.
4) Fill out initial information in field notes.
5) Flush port: to clear line of standing water have ten times the sample volume discharged into a bucket or container prior to sampling.

Sample:

1) Have ship's crew fill all and cap all provided bottles. Fecal bottle must not be rinsed, filled only once, and not overflow. Use filled 125ml unpreserved bottle to perform test below in the following order:
2) Chlorine test: Take one of the strips and place in 125 ml unpreserved sample bottle. Move strip back and forth for 30 seconds. Remove and compare results to color chart on the bottle, find the closest color match. The first pad from the end is total chlorine, the second is free chlorine. Write results in filed notes and on chain of custody form.
3) Record temperature. Insert thermometer up to the insertion line on thermometer. When temperature is stable (not changing) record temperature to nearest 0.5 degrees Celsius.
4) pH test: Dip one pH test strip into 125ml unpreserved sample bottle. Read when there is no further color change, and while still moist. Compare to color chart on container.
5) Tamper-resistant seal- use to seal cooler when all samples are placed inside.
6) Properly dispose of test strips and gloves.

Sample drop off information:

Contact DEC or Crowley contact to arrange a sample-pick up from the vessel. Provide vessel location information.

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM

SARAH PALIN, GOVERNOR
555 Cordova Street
Anchorage, Alaska 99501
Phone: (907) 269-7504
Fax: (907) 269-7509
www.dec.state.ak.us

December 18, 2008

Michael Gearheard
Office of Water and Watersheds
EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

RE: NPDES Vessel General Permit for Discharges Incidental to the Normal Operations of Commercial Vessels and Large Recreational Vessels

Dear Mr. Gearheard:

On July 21, 2008, the Environmental Protection Agency Region 10 (EPA) requested that Alaska certify under Section 401 of the Clean Water Act a federal permit regulating ballast water and other incidental wastewater discharges from certain vessels over 79 feet long. As provided at 40 CFR 121.16(a), the Alaska Department of Environmental Conservation (DEC) waives its authority to act on this request for certification.

In deciding to waive our certification authority in this instance we saw value in allowing the federal permit to take effect in order to control ballast water practices and stem the spread of invasive species that could threaten Alaska's aquatic resources. We also recognized that EPA's actions and the permit development schedule are driven by court order.

At the same time, we are concerned that the final permit – which we have not seen at this point – includes clear, effective, practicable and reasonable conditions for Alaska vessel traffic. We earlier provided comments on a draft permit and ask that EPA revisit those comments as it develops a final permit. Those earlier comments questioned some permit conditions and how they could apply to Alaska vessel traffic, but generally endorsed a best management practices approach for the initial term of the permit.

We are, of course, concerned that the court-driven schedule has not allowed us to conduct the level of review normally afforded a federal permit of this importance to Alaska. It follows that we are intensely interested in working with EPA as it collects information, gains experience with the permit, and considers potential amendments. Moreover, we expressly reserve our rights to comment on, certify or object to conditions in the permit at the time of renewal, or before to the full extent that those rights exist and our experience and judgment suggest a need.

Finally, we are already receiving inquiries from vessel owners and operators as to their obligations to apply for coverage under this permit. We suggest that outreach efforts will be needed to communicate permit requirements and processes to affected persons and interested public. While we are willing to help with those efforts, we encourage EPA to design and execute a competent outreach program.

This letter does not address matters of consistency with the Alaska Coastal Management Program (ACMP) and does not constitute the State's consistency determination. While we are waiving our Section 401 Clean Water Act certification authority, this letter should not be interpreted to waive any of the State's authorities under the federal Coastal Zone Management Act or the approved state ACMP. All decisions concerning consistency with the ACMP will be made and communicated by the Alaska Department of Natural Resources, Division of Coastal and Ocean Management.

If you have any questions regarding this decision please contact me at (907) 269-7565 or at sharmon.stambaugh @alaska.gov.

Sincerely,

Sharmon M. Stambaugh
Environmental Program Manager

cc: Cindy Godsey, EPA/Anchorage Field Office Region 10
Mike Lidgard, EPA NPDES Unit Region 10
Ryan Albert, EPA Headquarters Water Permits Division
Deborah Nagle, EPA Headquarters Water Permits Division
Larry Hartig, ADEC, Commissioner
Lynn Kent, ADEC, Director, Water Division
Denise Koch, ADEC, Cruise Ship Program
Randy Bates, ADNR, Director, Division of Coastal and Ocean Management
Sue Asplund, ADF&G, Deputy Director
Jay J. Manning, Director, Washington Department of Ecology
Association of State and Interstate Water Pollution Control Authorities

ALASKA LAW REQUIRES REPORTING OF ALL MARINE SPILLS TO ADEC

During normal business hours

contact the nearest DEC Area Response Team office:

Southeast Alaska Response Teams: Juneau	465-5340
Ketchikan	225-6200 x1
Central Alaska Response Team: Anchorage	269-3063
Northern Alaska Response Team: Fairbanks	451-2121

Outside normal business hours, call:

1-800-478-9300

Introduction

An important step in oil spill response is assessing the quantity of oil spilled on the water. This information is used by the response team to prioritize response and, if necessary, direct cleanup resources.

If the source and cause of the pollution is known, oiling and fueling logs can be used to determine the volume of product spilled. However, if the incident is a marine mystery sheen, the characteristics of the sheen is the only indication to determine oil quantity and the ability to contain and/or recover it. Gray or rainbow color sheen, for instance, is a very thin layer of oil which cannot be recovered with sorbent materials or skimmers. Only thicker layers, typically True Color or heavy Metallic layers, are considered thick enough to be effectively recovered.

This booklet was designed to help you perform efficient assessments of pollution events and communicate your findings to the Alaska Department of Environmental Conservation (ADEC) Division of Spill Prevention and Response (SPAR).

GLOSSARY OF STANDARD OIL SPILL OBSERVATION TERMS

Sheen: Sheen is a very thin layer of oil floating on the water surface. Depending on their thickness, sheens vary in color: **rainbows** for the thickest layers, **silver/gray** for thinner layers, and almost transparent for the thinnest layers. Even the thickest sheen layer is only 0.0002 inches thick.

Metallic Color: Metallic coloration is the next distinct oil color, thicker than rainbow, that tends to reflect the color of the sky, but with some element of oil color, often between a light gray and a dull brown. Metallic is a "mirror to the sky."

Transitional Dark (or True) Color: Transitional Dark (or True) color is the next distinct oil on water layer thickness after metallic. At the "transitional" stage, most of the oil will be just thick enough to take on the product's natural color, and yet thin enough in places to appear somewhat patchy.

Dark (or True) Color: The thickest oil on water classification represents a continuous true oil color (i.e., its natural color), commonly occurring at thicknesses of at least a hundredth of an inch (or, a little over a tenth of a millimeter).

GLOSSARY OF STANDARD OIL SPILL TERMS

Recoverable Oil: Oil that is in a thick enough layer on the water to be recoverable by conventional techniques and equipment. Only Dark Color or heavy Metallic layers are generally considered thick enough to be effectively recovered by sorbent materials or skimmers.

Slick: Oil spilled on the water that absorbs energy and dampens out the surface waves making the oil appear smoother or "slicker" than the surrounding water. "Slicks" refer to oil layers that are thicker than Rainbow and Silver "sheens."

REPORTABLE QUANTITIES

Reportable Quantity: AS 46.03.755 and 18 AAC 75.300 requires that **all** spills to water be reported as soon as the responsible party has knowledge of the discharge. The Cruise Line or its representative is required to report all pollution events originating from their ship to the Department immediately.

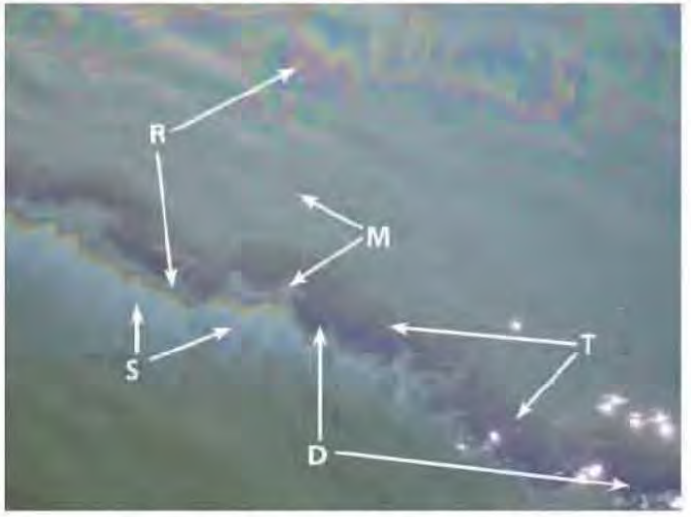
Marine Mystery Sheens: Cruise Lines are not required to report pollution of an unknown origin to the Department. As an Ocean Ranger you may, and are encouraged to, report marine mystery sheens to the Department yourselves. Given the transient nature of marine spills it is critical that reports are made in a timely manner. If you have access to phone service, please call the report in or email a digital spill report as soon as the sheen is discovered. The Department does not have the man power to respond to all marine mystery sheens and often the quantity is unrecoverable but sometimes they lead to the discovery of a previously unidentified problem onboard a vessel.

Oil Discharges within the Vessel: Internal oil discharges are not regulated or tracked by ADEC-SPAR and do not need to be reported to ADEC-SPAR. Internal oil discharges should be reported to the ADEC Cruise Ship Program per your protocol.

OIL COLOR/APPEARANCE

Five Primary Color Codes

Code	Description
S	Silver Sheen (silver/gray)
R	Rainbow
M	Metallic
T	Transitional Dark (or True) Color
D	Dark (or True) Color



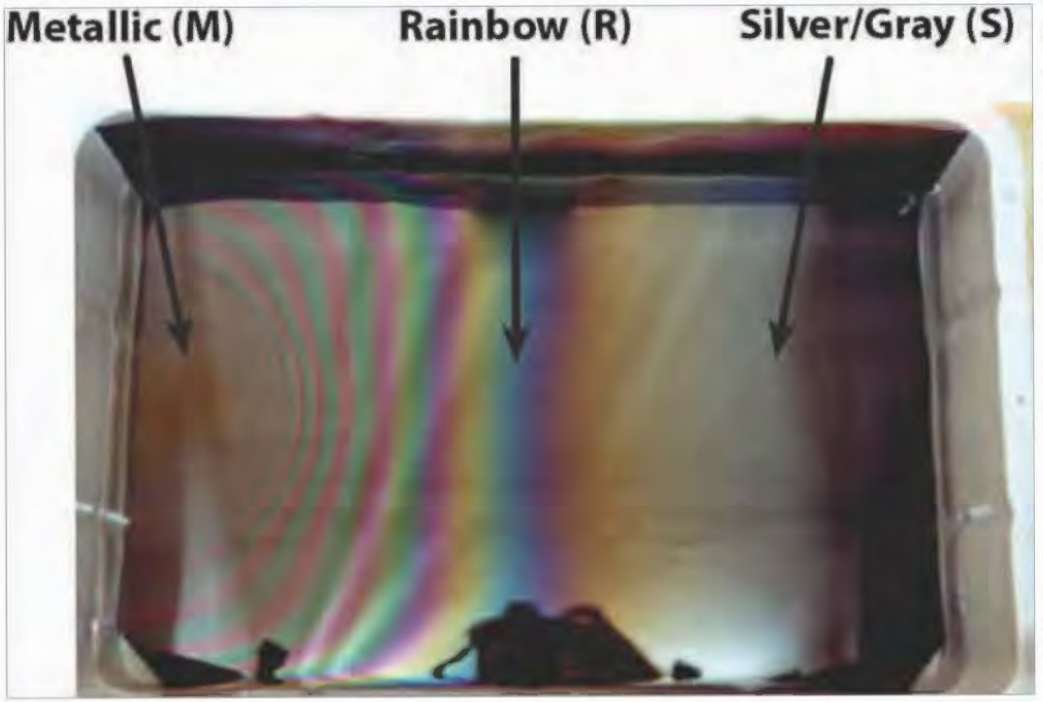
Source: Alum Lewis & SINTEF (Dec. 2002)

OIL COLOR/APPEARANCE

The BONN (BAOAC) Data – Metric and Imperial Units

Code	Description	Layer-Thickness Interval		Concentration	
		microns (μm)	Inches (in)	m^3 per Km^2	bbl/acre
S	Silver (silver/ gray)	0.04 - 0.30	1.6×10^{-6} – 1.2×10^{-5}	0.04 - 0.30	1×10^{-3} – 7.8×10^{-3}
R	Rainbow	0.30 – 5.0	1.2×10^{-5} – 2.0×10^{-4}	0.30 – 5.0	7.8×10^{-3} – 1.28×10^{-1}
M	Metallic	5.0 - 50	2.0×10^{-4} – 2.0×10^{-3}	5.0 - 50	1.28×10^{-1} – 1.25
T	Transitional Dark (or True) Color	50-200	2.0×10^{-3} – 8×10^{-3}	50-200	1.28 – 5.1
D	Dark (or True) Color	> 200	> 8×10^{-3}	> 200	> 5.1

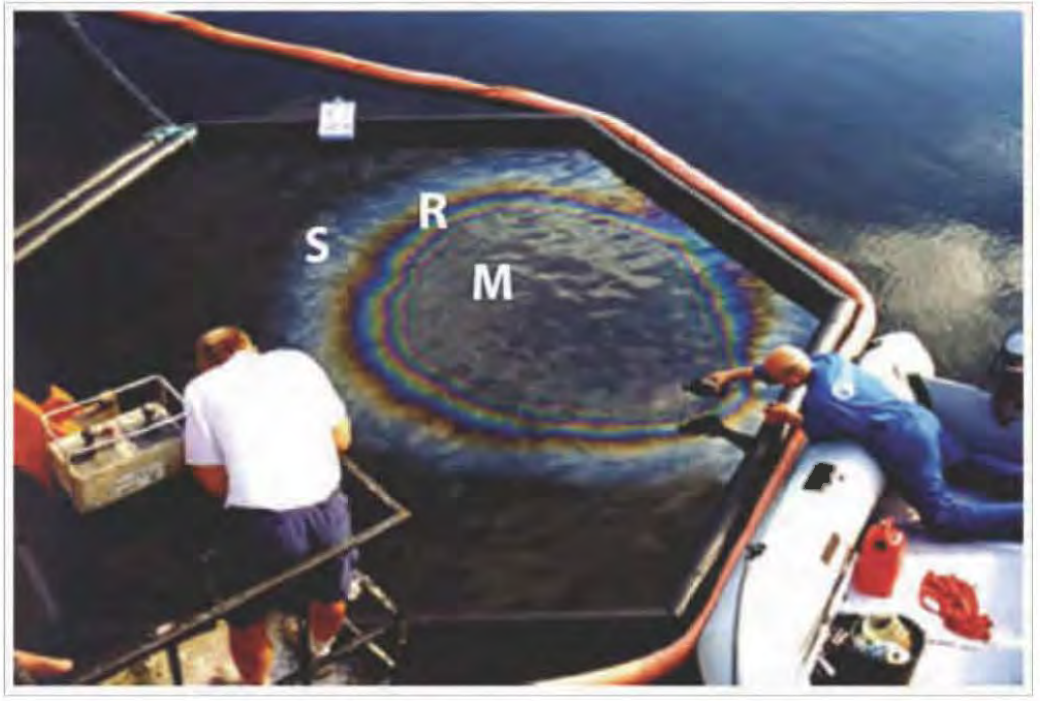
OIL COLOR/APPEARANCE



Petroleum product creates a **silver/gray (S)** sheen, **rainbow (R)** sheen, and **metallic (M)** dull brown color in a controlled, indoor environment.

Source: Alum Lewis & SINTEF (Dec. 2002)

OIL COLOR/APPEARANCE

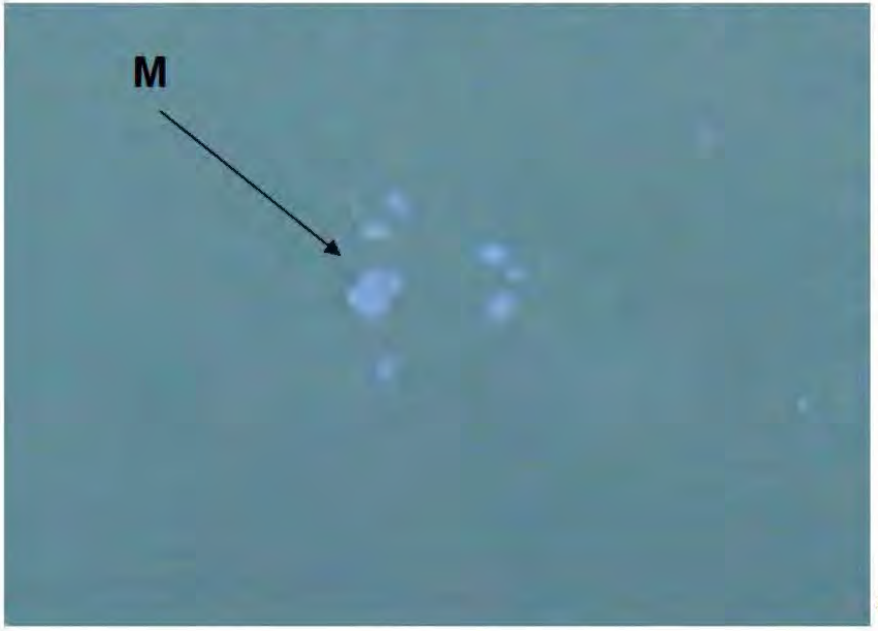


A controlled petroleum release in calm water created a **silver/gray (S)** sheen, **rainbow (R)** sheen, and **metallic (M)** color.

Source: Alum Lewis & SINTEF (Dec. 2002)

OIL COLOR/APPEARANCE

PETROLEUM SURFACING FROM A CRUISE SHIP AZIPOD

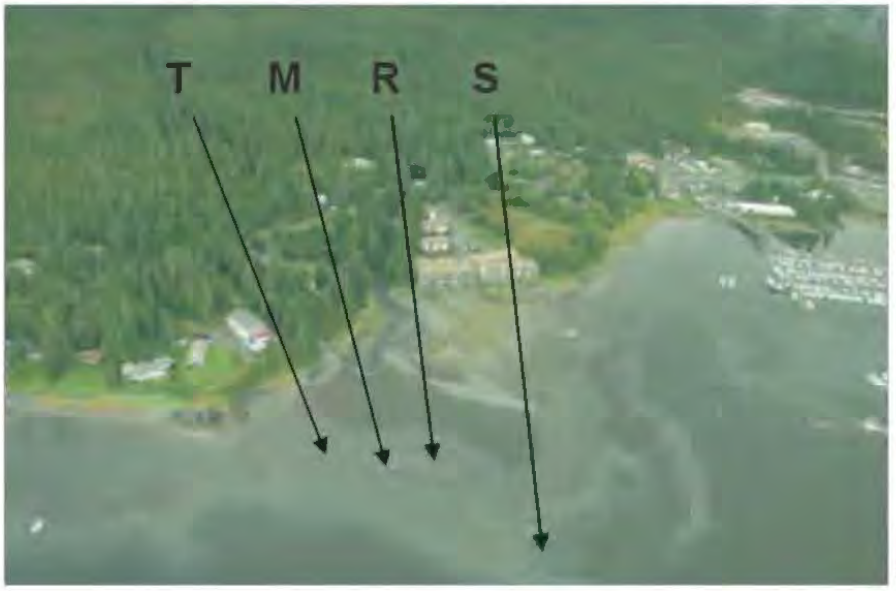


Metallic (M) oil droplets surface from a leaking azipod. The largest droplet is approximately 2 inches across. Lubricating oil and grease from an azipod has a very distinctive coloration dissimilar to diesel and gasoline.

Source: Ed White, ADEC (2008)

OIL COLOR/APPEARANCE

DIESEL SPILL IN AUKE BAY HARBOR

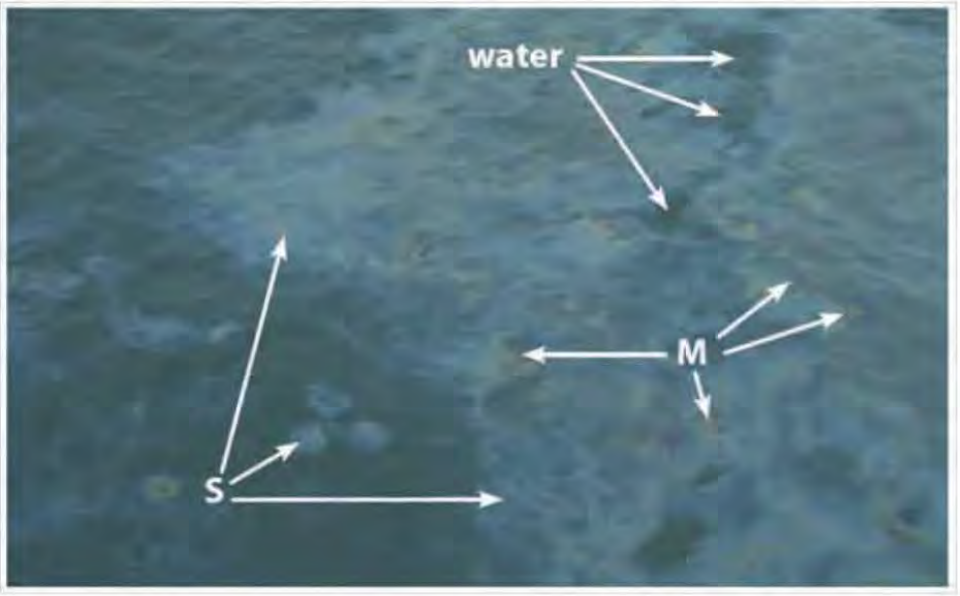


Transitional (T) coloring spreading out into **metallic (M)**, **rainbow (R)** and **silver/ gray (S)** sheens. Approximately 1,600 gallons of diesel was lost during this pollution event.

Source: ADEC (Sept. 2004)

OIL COLOR/APPEARANCE

SHEEN SURFACING FROM SUNKEN VESSEL

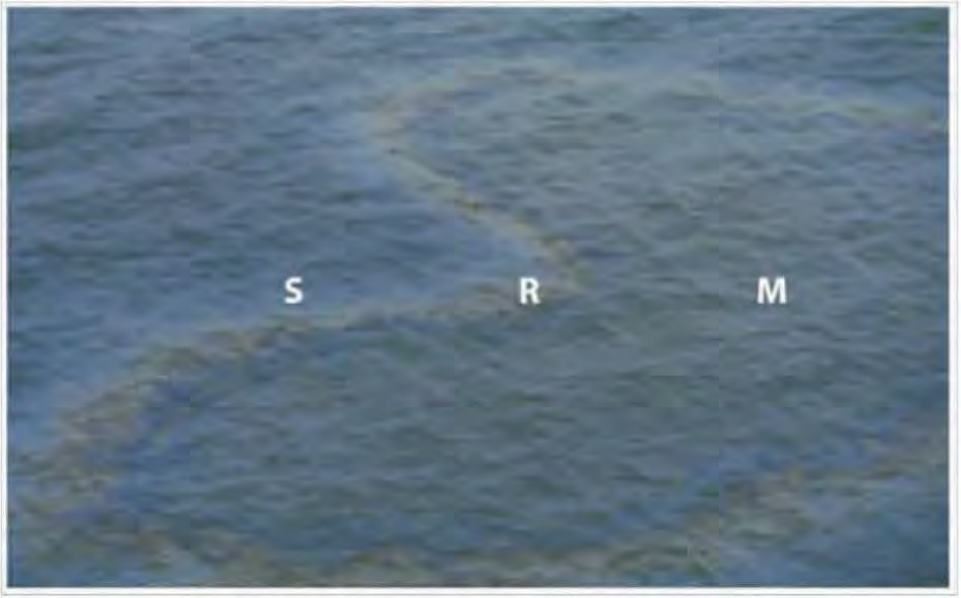


Patches of **silver/grey (S)** sheen with minimal **rainbow (R)** sheen and **metallic (M)** dull brown color.

Open Water Oil Identification Job Aid (Nov 2007)

OIL COLOR/APPEARANCE

FRESH DIESEL SLICK



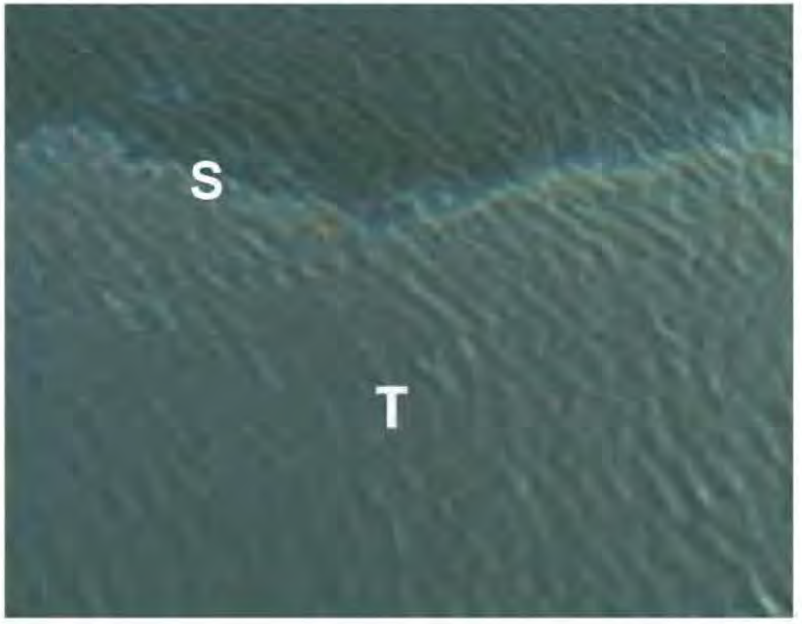
A **metallic (M)** dull brown slick in the center fades to **rainbow (R)** and **silver/ grey (S)** sheens along the edges.

Open Water Oil Identification Job Aid (Nov 2007)

OIL COLOR/APPEARANCE

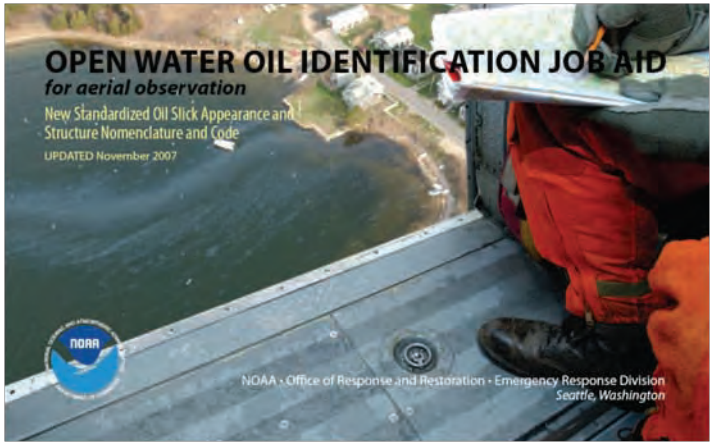
TRANSITIONAL (T) OIL, RECOVERABLE QUANTITIES

Transitional (T) oil color with light **silver/gray (S)** sheen along edges. Transitional oil color typically indicates a recoverable quantity of product.



Open Water Oil Identification Job Aid (Nov 2007)

This document was developed using information from the NOAA Open Water Oil Identification Job Aid and documents from the Alaska Department of Environmental Conservation (ADEC) Division of Spill Prevention and Response (SPAR). Photos for the 2007 version of the Open Water Oil Identification Job Aid were contributed by NOAA, U.S. Coast Guard, Washington Department of Ecology, ADEC, the oil industry, and Alan Allen of Spiltec. The complete job aid can be ordered at http://www.response.restoration.noaa.gov/jobaid/orderform.



SPILL REPORT INFORMATION FOR ADEC

OIL SPILL OBSERVATION CHECKLIST

___ Date of Spill

___Time of Spill / Time Observed

___ Reported By (name and contact number)

___ Vessel from which Observation was Made

___ Location of Pollution

___ Color and Appearance (silver/gray, rainbow, metallic, Transition, dark)

___ Size of Affected Area (length and width, or area)

___ Source (if known)

___ Cause of Spill (if known)

Alaska DEC

DIVISION OF SPILL PREVENTION AND RESPONSE

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

OIL & HAZARDOUS SUBSTANCES SPILL NOTIFICATION

PERSON REPORTING:	VESSEL STATIONED ABOARD:	PHONE NUMBER or EMAIL:
DATE & TIME OF SPILL:	DATE & TIME DISCOVERED:	PRODUCT SPILLED:
DISCRIPTION OF LOCATION:		LATITUDE:
		LONGITUDE:

QUANTITY SPILLED: ☐ gallons ☐ pounds	AREA AFFECTED:	COLOR AND APPEARANCE: ☐ silver/gray ☐ rainbow ☐ metallic ☐ transition ☐ dark/true
POTENTIAL RESPONSIBLE PARTY (PRP): Name/Business: Vessel Name: Mailing Address: Contact Name: Contact Number:		IS PRP VESSEL AWARE OF INCIDENT? ☐ yes ☐ no
		WILL VESSEL BE SELF-REPORTING INCIDENT TO ADEC-SPAR? ☐ yes ☐ no
SOURCE OF SPILL: ☐ >400 GT Vessel		CAUSE OF SPILL:
CLEANUP ACTIONS:		
COMMENTS:		

DEC USE ONLY

ADEC SPILL #	ADEC FILE #	ADEC LC
SPILL NAME, IF ANY:	CASE MANAGER:	DATE / TIME REPORTED:
DEC RESPONSE ☐ phone follow-up ☐ field visit ☐ took report	CASELOAD CODE ☐ First and Final ☐ Open/No LC ☐ LC Assigned	CLEANUP CLOSURE ACTION ☐ NFA ☐ Monitoring ☐ Transferred to CS or STP

Status of Case ☐ Open ☐ Closed Date Case Closed >

COMMENTS:

REPORT PREPARED BY:	DATE :

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
PREVENTION AND EMERGENCY RESPONSE PROGRAM
SOUTHEAST ALASKA RESPONSE TEAM

410 Willoughby Ave., Ste. 303
Juneau, AK 99801-1795
PHONE: (907) 465-5340
FAX: (907) 465-2237
http://www.dec.state.ak.us/spar/

August 22, 2008

Re: State Reporting Requirements: Oil and Hazardous Substances Spills

This letter was sent to your office via certified mail in April of 2008. Please consider this a mid-season reminder of cruise ship reporting requirements for the State of Alaska.

Dear Sir or Madam:

As the 2008 Alaskan cruise ship season begins we would like to re-familiarize your company with the pollution reporting requirements in the State of Alaska. While the federal reporting requirements are always the same, companies operating in multiple states have to remember many variations of local reporting requirements. With that thought in mind, I decided to send this letter to remind cruise ship companies operating in Alaska of the state reporting requirements and proper reporting procedures.

The Department has developed placards that outline state pollution reporting requirements and contact information as a shipboard reference guide on pollution reporting. These documents are available on the state's website at: www.dec.state.ak.us/spar/perp/docs/placard_may2005.pdf. The State laws and regulations relating to spill reporting are outlined and explained in greater detail below.

The criteria for reporting a spill or discharge to the state is based on the receiving environment. Spills to water have the most stringent reporting requirements while spills exclusively to land have a variety of reporting levels. I will focus solely on spills impacting water in this letter.

Alaska law prohibits the pollution of all environments in the state. Alaska Statute Section 46.03.710 (AS 46.03.710) states that "A person may not pollute or add to the pollution of the air, land, subsurface land, or water of the state." AS 46.03.740 further details that petroleum may not be discharged to the land or water of the state.

INITIAL REPORTING

If an oil pollution incident does occur, AS 46.03.755 states in paragraph (a): "A person in charge of a facility, operation, or vessel, as soon as the person has knowledge of any discharge…, shall immediately notify the department of the discharge." AS 46.09.010 (a) requires that discharges of hazardous materials, other than oil, also be reported to the department "promptly after learning of the release."

Title 18 of the Alaska Administrative Code (AAC) contains the regulations for reporting discharges to the department. 18 AAC75.300(a)(1)(B) requires notification to be by telephone

printed on recycled paper

and followed by a facsimiled, hand delivered or first class mailed report. Third party reports such as from the local United States Coast Guard office or the National Response Center (NRC) do not meet state reporting requirements. A spill reporting form is available from the state's website at: http://www.dec.state.ak.us/spar/spillreport.htm

FINAL REPORTS

In addition to the initial spill report, 18 AAC 75.300(e) requires that a written report be submitted within 15 days after containment and cleanup are completed or, if no cleanup occurs, within 15 days after the discharge or release. An incident final report is also available as the website reference above.

REPORTING TELEPHONE NUMBERS

After Business Hours: To report spills from anywhere in the state outside of regular business hours call **1-800-478-9300**.

During Business Hours: The reporting number during business hours will depend upon the location of the ship at the time of the incident.

- For incidents within Southeast Alaskan waters please call our Juneau office: **907-465-5340**.
- For incidents north of Icy Bay please call our Anchorage office: **907-269-3063**.

I am enclosing a complete copy of the Alaska Statues and Alaska Administrative Codes cited above for your reference. If you have any questions or comments, please call Sarah Moore at 465-5239. She is also available by email at sarah.moore@alaska.gov.

Sincerely,

Scot Tiernan
State on Scene Coordinator

Alaska Statutes

Sec. 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.

Sec. 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.

Sec. 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 AS46.09.010 (b), a person may not cause or permit the release of a hazardous substance as defined in AS 46.09.900.

Sec. 46.03.755. DISCHARGE REPORTING.
(a) A person in charge of a facility, operation, or vessel, as soon as the person has knowledge of any discharge from the facility, operation, or vessel in violation of AS 46.03.740 or 46.03.750, shall immediately notify the department of the discharge.
(b) Notwithstanding (a) of this section, the department may enter into a written agreement with a person for the periodic reporting of minor discharges other than into the waters of the state.

Sec. 46.09.010. REPORT OF HAZARDOUS SUBSTANCE RELEASES.
(a) Except as provided in (b) of this section, a person in charge of a vehicle, vessel, or container from which, or a place at which, a hazardous substance is released shall report the release to the department and appropriate public safety agencies promptly after learning of the release.
(b) The commissioner may enter into an agreement with a person for the periodic reporting of a controlled release of a hazardous substance if the release is not into water.

:: ONLINE REPORTING > VESSEL REPORT ::

Fields displayed in RED are mandatory entries. Please fill out the form as completely as possible.

Is this a DRILL Report ? ○ YES ◉ NO	E-Mail Address:
REPORTING PARTY	**SUSPECTED RESPONSIBLE PARTY**
Phone 1: Type: Phone Type	Last Name:
Last Name:	First Name:
First Name:	Phone 1: Type: Phone Type
Phone 2: Type: Phone Type	Phone 2: Type: Phone Type
Phone 3: Type: Phone Type	Phone 3: Type: Phone Type
Company:	Company:
Org Type: Organization Type	Org Type: Organization Type
Address:	Address:
City:	City:
State: Choose State	State: Choose State
ZIP:	ZIP:
Are you calling on behalf of responsible party:	○ Yes ◉ No
Are you or your company responsible for Material released:	○ Yes ◉ No

INCIDENT DESCRIPTION

Description of Incident:

Incident Date: Day Month 2007 Time: Occurred/Discovered/Planned: Choose ODP

Type of Incident: *VESSEL* Incident Cause: Choose Cause

INCIDENT LOCATION

Location Description:

Address Location:	State: Choose State County:

ZIP:

Nearest City: Distance from Nearest City: Units: Choose Unit

Direction: Choose Direction Range: Section: Township:

Latitude: Degrees: Minutes: Seconds: Quadrant: Choose Quadrant

Longitude: Degrees: Minutes: Seconds: Quadrant: Choose Quadrant

VESSEL DETAILS

VESSEL #1

Vessel Type: Choose Vessel Type Vessel Name:

Vessel #: Flag: Length: Beam: Draft:

Hull Construction: Choose Hull Construction Vessel Aground: Yes No

Fuel Capacity: Choose Unit Fuel on Board: Choose Unit

Cargo Capacity: Choose Unit Cargo on Board: Choose Unit

VESSEL #2

Vessel Type: Choose Vessel Type Vessel Name:

Vessel #: Flag: Length: Beam: Draft:

Hull Construction: Choose Hull Construction Vessel Aground: Yes No

Fuel Capacity: Choose Unit Fuel on Board: Choose Unit

Cargo Capacity: Choose Unit Cargo on Board: Choose Unit

MATERIAL INVOLVED

MATERIAL #1

Material: CHRIS Code: CAS Code:

Amount Released: Units: Choose Unit Amount in Water: Units: Choose Unit

MATERIAL #2

Material: CHRIS Code: CAS Code:

Amount Released: Units: Choose Unit Amount in Water: Units: Choose Unit

MATERIAL #3

Material: CHRIS Code: CAS Code:

Amount Released: Units: Choose Unit Amount in Water: Units: Choose Unit

MATERIAL #4

Material: CHRIS Code: CAS Code:

Amount Released: Units: Choose Unit Amount in Water: Units: Choose Unit

MATERIAL #5

Material: CHRIS Code: CAS Code:

Amount Released: Units: Choose Unit Amount in Water: Units: Choose Unit

MATERIAL IN WATER INFORMATION

Body of Water Affected: Offshore: Yes No River Mile Marker:

Tributary of: Water Supply Contaminated: Yes No Unknown

Water Temperature: Units: Choose Unit

Wave Condition: Choose Condition Speed: Units: Choose Unit Direction: Choose Direction

SHEEN INFORMATION

Sheen Length: Units: Choose Unit Sheen Width: Units: Choose Unit

Color: Choose Color Direction of Movement: Choose Direction

Odor Description:

IMPACT INFORMATION

Medium Affected: Choose Medium Detailed Medium Information:

Fire:	Yes No Unknown	Fire Extinguished: Yes No Unknown
Injuries:	Yes No Unknown	Number of Injuries: Number to Hospital: Rail Employee Injuries: Rail Passenger Injuries:
Fatalities:	Yes No Unknown	Number of Fatalities: Employee Fatalities: Passenger Fatalities: Vehicle Fatalities:
Evacuations:	Yes No Unknown	Number Evacuated: Radius/Area in Miles: Who was Evacuated: Choose Who was Evacuated
Damages:	Yes No Unknown	Damage in Dollars:
Road Closed:	Yes No Unknown	Road: Major Artery: Yes No Hours Closed: Direction of Closure: Choose Closure Direction
Track Closed: Passengers Transferred:	Yes No Unknown Yes No Unknown	Track: Hours Closed: Direction of Closure: Choose Closure Direction
Air Corridor Closed:	Yes No Unknown	Air Corridor: Hours Closed:
Waterway Closed:	Yes No Unknown	Waterway: Hours Closed:
Environmental Impact:		

○ Yes ○ No ◉ Unknown	Type of Impact: Choose Type of Impact
	Media Interest: Choose Media Interest

WEATHER INFORMATION

Weather Conditions: Choose WX Air Temperature: Choose Unit

Wind Speed: Unit: Choose Unit Wind Direction: Choose Wind Direction

REMEDIAL ACTION INFORMATION

Remedial Action Taken:

Release Secured: ○ Yes ○ No ◉ Unknown Release Duration: Unit: Choose Rate

Rate of Release: Unit: Choose Unit Per: Choose Rate

ADDITIONAL AGENCY INFORMATION

Federal Agency Notified:	
State/Local Agency Notified:	
State/Local Agency On-Scene:	
State Agency's Report Number:	

ADDITIONAL INFORMATION

Additional Information:

Submit Vessel Report

Top of Page | NRC Home

Copyright © 2007, National Response Center

the declaration of inspection available for inspection by the COTP during the transfer operation.

(f) The operators of each vessel and facility engaged in the transfer operation shall retain a signed copy of the declaration of inspection on board the vessel or at the facility for at least 1 month from the date of signature.

[CGD 75–124, 45 FR 7177, Jan. 31, 1980, as amended by CGD 86–034, 55 FR 36256, Sept. 4, 1990; CGD 93–056, 61 FR 41461, Aug. 8, 1996]

§ 156.160 Supervision by person in charge.

(a) No person may connect or disconnect a hose, top off a tank, or engage in any other critical procedures during the transfer operation unless the person in charge, required by § 156.120(s), supervises that procedure.

(b) No person may start the flow of oil or hazardous material to or from a vessel unless instructed to do so by either person in charge.

(c) No person may transfer oil or hazardous material to or from a vessel unless each person in charge is in the immediate vicinity and immediately available to the transfer personnel.

[CGD 75–124, 45 FR 7177, Jan. 31, 1980, as amended by CGD 86–034, 55 FR 36256, Sept. 4, 1990]

§ 156.170 Equipment tests and inspections.

(a) Except as provided in paragraph (d) of this section, no person may use any equipment listed in paragraph (c) of this section for transfer operations unless the vessel or facility operator, as appropriate, tests and inspects the equipment in accordance with paragraphs (b), (c) and (f) of this section and the equipment is in the condition specified in paragraph (c) of this section.

(b) During any test or inspection required by this section, the entire external surface of the hose must be accessible.

(c) For the purpose of paragraph (a) of this section:

(1) Each nonmetallic transfer hose must:

(i) Have no unrepaired loose covers, kinks, bulges, soft spots or any other defect which would permit the discharge of oil or hazardous material through the hose material, and no gouges, cuts or slashes that penetrate the first layer of hose reinforcement as defined in § 156.120(i).

(ii) Have no external deterioration and, to the extent internal inspection is possible with both ends of the hose open, no internal deterioration;

(iii) Not burst, bulge, leak, or abnormally distort under static liquid pressure at least 1½ times the maximum allowable working pressure; and

(iv) Hoses not meeting the requirements of paragraph (c)(1)(i) of this section may be acceptable after a static liquid pressure test is successfully completed in the presence of the COTP. The test medium is not required to be water.

(2) Each transfer system relief valve must open at or below the pressure at which it is set to open;

(3) Each pressure gauge must show pressure within 10 percent of the actual pressure;

(4) Each loading arm and each transfer pipe system, including each metallic hose, must not leak under static liquid pressure at least 1½ times the maximum allowable working pressure; and

(5) Each item of remote operating or indicating equipment, such as a remotely operated valve, tank level alarm, or emergency shutdown device, must perform its intended function.

(d) No person may use any hose in underwater service for transfer operations unless the operator of the vessel or facility has tested and inspected it in accordance with paragraph (c)(1) or (c)(4) of this section, as applicable.

(e) The test fluid used for the testing required by this section is limited to liquids that are compatible with the hose tube as recommended by the hose manufacturer.

(f) The frequency of the tests and inspections required by this section must be:

(1) For facilities, annually or not less than 30 days prior to the first transfer conducted past one year from the date of the last tests and inspections;

(2) For a facility in caretaker status, not less than 30 days prior to the first transfer after the facility is removed from caretaker status; and

Alaska Department of Environmental Conservation
Certificate of Approval
Nontank Vessel Streamlined Plan

Certificate Number: 09-NTV-S0000

Plan Number: S0000

Planholder: Cruiseship Ltd.
1111 Ship Way
Miami, FL 11111-1111

Region(s) of Operation (18 AAC 75.495): 1,2,3,4,5,6,7,8,9 (will list one or more regions, with 9 the max.)

Vessel Name(s): Gigantitus (IMO 11234567)

Date of Approval: 0/0/0000

Expiration Date: 0/0/0000

This approval is subject to the terms and conditions of the applicable Department of Environmental Conservation contingency plan approval letter and continuing compliance with the requirements of AS 46.04 and 18 AAC 75. Application for renewal of this plan must be submitted to the Department at least 5 days prior to the expiration date listed above.

Signature

John Doe, Approving Authority
Section Manager, Marine Vessels

Approval date

Date

STATE OF ALASKA

SARAH PALIN, GOVERNOR

Po Box 1709
Valdez, AK 99686
PHONE: (907) 835-4698
FAX: (907) 835-2429
http://www.dec.state.ak.us

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
INDUSTRY PREPAREDNESS PROGRAM
Marine Vessels Section

February 11, 2009

File No.: 450.S0000.300

NONTANK VESSEL STREAMLINED PLAN APPROVAL

Mr. I. M. Sailor
Cruiseship Ltd.
1111 Ship Way
Miami, FL 11111-1111

Subject: **Nontank Vessel Streamlined Plan ADEC # S0000**

Dear Mr. Sailor,

The Alaska Department of Environmental Conservation received an application from The O'Brien's Group in accordance with 18 AAC 75.426 for approval of a Nontank Vessel Streamlined Plan for the vessel(s) *Cruise Ship* (IMO 1234567). The Department reviewed this application for compliance with the Alaska Administrative Code at 18 AAC 75.426 and 18 AAC 75.456 and has determined that the plan meets the Streamlined Plan requirements.

This approval applies to the following Streamlined Plan:

Plan Number:	**S0000**
Supporting Documents:	**Contractor Company Name Here** **Response Planning Facilitator certification**
Plan Holder:	**Cruiseship Ltd.**
Covered Vessel(s):	***MV Gigantitus* (IMO 11234567)**

Region(s) of operation: **1,2,3,4,5,6,7,8,9** (will list one or more regions, with 9 the max.)

PLAN APPROVAL: The referenced plan is hereby approved, **effective 6/27/2008.**

This approval is subject to the following terms and conditions.

TERMS AND CONDITIONS:

1. The Planholder must immediately notify the Department in writing of any change in the contractual relationship with the Planholder's Response Planning Facilitator, Incident Management Team or Cleanup Contractor, including, but not limited to, any breach by either party to the response contract that may excuse a response contractor from performing, that indicates a response contractor may fail or refuse to perform, or that may otherwise affect the response, prevention, or preparedness capabilities described in the approved Nontank Vessel Streamlined Plan.

This condition is reasonable and necessary because there are certain risks associated with allowing a Planholder to rely in part or total upon a response contractor instead of obtaining its own response capability. The risks arise, in part, because the certainty of the contractor's response is dependent upon the continuation of the legal relationship between it and the Planholder.

2. The Planholder must ensure a copy of this approval letter, a copy of the certificate of approval and a copy of the streamlined plan are aboard the approved vessel when it is in Alaska waters.

This condition is reasonable and necessary to meet the requirements of 18 AAC 75.426.

EXPIRATION: This approval **expires 6/26/2013.** After the approval expires, Alaska law prohibits operation of any vessel until an approved plan is again in effect.

RENEWAL: To renew this approval, the Planholder must submit a completed renewal application and plan to the Department no later than 5 days prior to the expiration date in this approval.

REVOCATION, SUSPENSION, OR MODIFICATION: This approval is effective only while the Planholder is in compliance with the plan as approved on **6/27/2008** and any subsequent amendments approved by the Department while the plan is in force, and with all of the terms and conditions described above. The Department may, after notice and opportunity for a hearing, revoke, suspend, or require the modification of an approved plan if the Planholder is not in compliance with it, or for any other reason stated in AS 46.04.030(f).

In addition, Alaska law provides that a vessel or facility that is not in compliance with the plan may not operate (AS 46.04.030). The Department may terminate approval prior to the expiration date if deficiencies are identified that would adversely affect spill prevention, response or preparedness capabilities.

DUTY TO RESPOND: Notwithstanding any other provisions or requirements of this contingency plan, a person causing or permitting the discharge of oil is required by law to immediately contain and cleanup the discharge regardless of the adequacy or inadequacy of a contingency plan (AS 46.04.020).

CIVIL AND CRIMINAL SANCTIONS: Failure to comply with the plan may subject the Planholder to civil liability for damages and to civil and criminal penalties. Civil and criminal sanctions may also be imposed for any violation of AS 46.04, any regulation issued thereunder, or any violation of a lawful order of the Department.

INSPECTIONS, DRILLS, RIGHTS TO ACCESS, VERIFICATION OF EQUIPMENT, SUPPLIES AND PERSONNEL: The Department has the right to verify the ability of the Planholder to carry out the provisions of its contingency plan and access to inventories of equipment, supplies and personnel through such means as inspections and discharge exercises,

without prior notice to the Planholder. The Department has the right to enter and inspect the covered vessel or facility in a safe manner at any reasonable time for these purposes and to otherwise ensure compliance with the plan and the terms and conditions (AS 46.04.030(e) and AS 46.04.060). The Planholder shall conduct exercises for testing the adequacy of the Nontank Vessel Streamlined Plan and its implementation (18 AAC 75.480 and 485).

FAILURE TO PERFORM: In granting approval of the plan, the Department has determined that the plan, as represented to it by the applicant in the plan and application for approval, satisfies the minimum planning standards and other requirements established by applicable statutes and regulations, taking as true all information provided by the applicant.

The Department does not warrant to the applicant, the Planholder, or any other person or entity: (1) the accuracy or validity of the information or assurances relied upon; (2) that the plan is or will be implemented; or (3) that even full compliance and implementation with the plan will result in complete containment, control, or clean-up of any given oil spill, including a spill specifically described in the planning standards.

The Planholder is encouraged to take any additional precautions and obtain any additional response capability it deems appropriate to further guard against the risk of oil spills and to enhance its ability to comply with its duty under AS 46.04.020(a) to immediately contain and clean up an oil discharge.

COMPLIANCE WITH APPLICABLE LAWS: If amendments to the approved plan are necessary to meet the requirements of any new laws or regulations, the Planholder must submit an application for amendment to the Department at the above address. The Planholder must adhere to all applicable state statutes and regulations as they may be amended from time to time.

This approval does not relieve the Planholder of the responsibility for securing other federal, state or local approvals or permits, and the Planholder is still required to comply with all other applicable laws.

APPEAL: This is a final decision. Aggrieved persons with standing may appeal this decision to the Alaska Superior Court within 30 days as provided by the Alaska Rules of Appellate Procedure.

Sincerely,

Signature

John Doe
Section Manager

Enclosure (1) Certificate of Approval 09-NTV-S0000
cc: Ms. Jane Doe, Contractor Company Name Here
Project file

STATE OF ALASKA

Department of Environmental Conservation
Division of Spill Prevention & Response
555 Cordova Street
Anchorage, Alaska 99501

NONTANK VESSEL STREAMLINED OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN

APPLICATION FOR APPROVAL & PLAN DOCUMENT

Please read instruction sheet before completing this form. This application is submitted in accordance with AS 46.04.055 & 18 AAC 75.

Date of this application: June 27, 2008

Vessel name: Gigantitus

Application type:

- ☑ New Plan
- ☐ Renewal, plan # S_____
- ☐ Amendment, plan # S_____:
  - ☐ Add vessel
  - ☐ Delete vessel
  - ☐ Change region of operation
  - ☐ Change contractor
  - ☐ Other (specify):_____

Region(s) of Operation *(see map, Section B)*:

- ☐ Statewide
- ☑ 1 Southeast
- ☑ 2 Prince Wm. Sound
- ☑ 3 Cook Inlet
- ☑ 4 Kodiak
- ☑ 5 Aleutians
- ☑ 6 Bristol Bay
- ☑ 7 Western AK
- ☑ 8 NW Arctic
- ☑ 9 North Slope

SECTION A. PLANHOLDER INFORMATION

1. **Applicant/Planholder name** (include English equivalent of legal name if customarily written in a language other than English):
   Cruiseship Ltd.

Complete mailing address (street number, post office box, city, state, country, postal code):	Telephone number: xxx-xxx-xxxx
1111 Ship Way Miami, FL 11111-1111	FAX number: xxx-xxx-xxxx
	E-mail address: info@cruiseship.com
Name of primary contact: Mr. I. M. Sailor	**24-hour** telephone number: xxx-xxx-xxxx

Applicant is: [as defined by 18 AAC 75.400(a)(5)]

- ☑ Operator
- ☐ Owner (who retains operational control)
- ☐ Charterer (Demise only)
- ☐ Person other than operator, owner, or charterer with primary operational control

2. **Qualified Individual(s) for this plan**: [as defined by 18 AAC 75.426(4) and 18 AAC 75.990(155)]

Name/Company	Title within Company	24-hour telephone	FAX #	E-mail address
Contact Name Here	Title Here	xxx-xxx-xxxx	xxx-xxx-xxxx	contact@email.com

3. **Person(s) responsible for spill notification**:

Title/Company	24-hour telephone	FAX #	E-mail address
Contact Here	xxx-xxx-xxxx	xxx-xxx-xxxx	ccontact@email.com

Government Agencies to be notified if a spill occurs:

National Response Center: +1-800-424-8802 (International +1-202-267-2675) Telex 45-305

ADEC Phone Numbers:
Southeast Response Team +1-907-465-5340
Central Response Team +1-907-269-3063
Northern Response Team +1-907-451-2121

Statewide during non-working hours: +1-800-478-9300 (International +1-907-428-7200)

ADEC Use Only	Plan #: S	Approval Date:	Certificate #: -NTV-S

SECTION B. VESSEL INFORMATION

1. Vessel Particulars *Fill out a separate copy of this page for each vessel on this application.*

For multiple-vessel application: This is vessel number 1 of 1

Vessel name	Date due in Alaska waters (mm/dd/yy)	Vessel flag (nation of registry)	Unique number (IMO/Lloyd's)	Official number	Call Sign	Alaska COFR no. (1-4 digit suffix only)	Vessel type (see codes below)	GRT (Gross Reg. Tons)	Length overall	Beam	Draft	Dimensions units
Cruise Ship	Jun 30, 08	Bahamas	1234567	D1234	SIGN	0	Pass	78,491.0	279.0	32.2	7.8	☐ Feet ☑ Meters

BULK–Bulk Cargo CABL–Cable Layer/Repair CHEM–Chemical CONT–Container FISH–Fishing LNPG–LNG/LPG PASS–Passenger REEF–Reefer MISC–Other_____

2. Vessel Oil Capacity Information *Enter all volumes in barrels.*

"Total fuel volume" is the total fuel tankage of the vessel. The Response Planning Standard Volume is 15% of *either* the total fuel volume (A) *or* the demonstrated actual maximum fuel volume the vessel will carry in state waters (B), as certified by the operator (18 AAC 75.441). **1 barrel = 42 U.S. gallons = 0.1590 m³** See 33 CFR 155.1020 for definitions of persistent and non-persistent fuel types.

A. Total Fuel Volume	B. Maximum Fuel Volume in Alaska (if less than total)	Response Planning Standard (RPS) Volume	Basis for calculating RPS Volume	Persistent fuel volume	Non-Persistent fuel volume	Lubrication Oil volume
18,907 bbl	bbl	2,836 bbl	☑ A ☐ B	18,907 bbl	bbl	1,199 bbl

3. Vessel Principals

Owner Name and Address	Operator Name and Address
Gigantitus, Inc. C/ O Cruiseship Ltd. 1111 Ship Way Miami, FL 11111-1111	Cruiseship Ltd. 1111 Ship Way Miami, FL 11111-1111

4. Vessel Diagrams

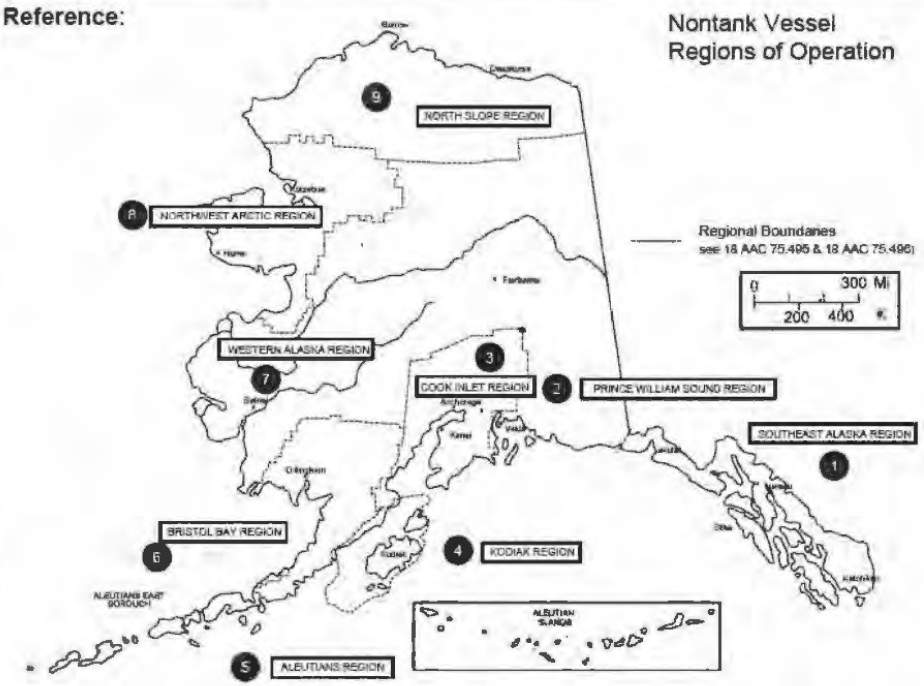
Attach a vessel description/diagram (e.g., general arrangement, capacity plan) for each covered vessel. Locations of each oil storage tank and other features pertinent to an emergency spill response must be clearly identified. The size, storage capacity, and type of oil carried must be specified for each tank. Diagrams must be 8½ x 11 inches or larger, and all required information must be legible.
A plan will not be approved without an adequate diagram.

Emergency Contact for Detailed Vessel Diagrams

Name and Address	24-hour phone
Mr. I.M. Sailor Cruiseship Ltd. 1111 Ship Way Miami, FL 11111-1111	xxx-xxx-xxxx

Reference:

Nontank Vessel Regions of Operation



FORM NTV-SLAP Dec. 2005

SECTION C. CONTRACTOR INFORMATION

1. **Application submitted by:** ☑ Response Planning Facilitator (RPF) – ***go to C(2)*** ☐ Applicant/Planholder – ***skip to C(3)***

2.

For RPF only RPF type – I am providing services under (check one): A. ☐ 18 AAC 75.428(a)(1) [as an intermediary] ***complete C(2) and C(3)*** B. ☑ 18 AAC 75.428(a)(2) [as a contract provider] ***complete C(2), then skip to section D***	RPF Company Name: Contractor Company Primary contact Name and Title: Jane Doe/Manager	
	Telephone number: xxx-xxx-xxxx	FAX number: xxx-xxx-xxxx
	Email address: debbie.senay@theobriensgroup.com	24-hour phone *(if B checked)*: xxx-xxx-xxxx

3. **Nontank Vessel Cleanup Contractor(s)**

Name	Telephone no.	FAX no.	Email address	Region(s) covered

Nontank Vessel Incident Management Team

Name	Telephone no.	FAX no.	Email address	Region(s) covered

SECTION D. CERTIFICATION

By signing below, I certify:

a. that the applicant has a contract with, or is a member of, each of the Nontank Vessel Cleanup Contractors identified in Section C(3) of this application for the region(s) of operation identified for that contractor, and that the contract or membership agreement with the contractor demonstrates that the contractor will respond on behalf of the applicant.

b. that the Nontank Vessel Cleanup Contractors identified in Section C(3) of this application are registered with the department for the appropriate vessel fuel volume(s) and appropriate region(s) of operation identified in the application;

c. that the applicant has a contract with each of the Incident Management Teams identified in Section C(3) of this application for the region(s) of operation identified for that contractor, and that the contract or membership agreement with the contractor demonstrates that the contractor will respond on behalf of the applicant.

d. that the Incident Management Teams identified in Section C(3) of this application are registered with the department for the appropriate vessel fuel volume(s) and appropriate region(s) of operation identified in the application;

e. that the Response Planning Facilitator identified in Section C(2) of this application, if box C(2)(A) is checked, is registered with the Department and obligated under contract to provide response planning facilitation services for the Applicant under 18 AAC 75.428(a)(1);

f. that the Response Planning Facilitator identified in Section C(2) of this application, if box C(2)(B) is checked, is registered with the department, obligated under contract to the applicant to provide oil spill response services to the applicant to meet the applicable requirements of 18 AAC 75.400 – 18 AAC 75.496, and that the RPF is registered with the Department to provide these response services under 18 AAC 75.428(a)(2) for the region(s) of operation and vessel fuel volume(s) identified in this application;

g. that each vessel covered by this plan complies with applicable federal and international maritime requirements; and

h. that if the response planning standard calculation was based on a volume less than the maximum fuel capacity of the vessel, the vessel will not exceed that fuel volume while in Alaska waters.

I certify, under penalty of unsworn falsification in violation of AS 11.56.210, that I am the applicant, a principal of the applicant, an authorized agent for the applicant, or an official of the applicant; that I have authority to sign this application and commit the resources necessary to implement the plan on behalf of the applicant; and that I have examined this application in its entirety and to the best of my knowledge, information, and belief, find it to be true, correct and complete. I acknowledge that failure to operate in compliance with the applicable provisions of AS 46.04.055 and 18 AAC 75 may result in the revocation of approval for the vessel(s) named in this application to operate in Alaska waters.

Signature_____ Typed/Printed Name Jane Doe

Title and Company Contractor Company Name Here

STATE OF ALASKA

Department of Environmental Conservation
Division of Spill Prevention and Response
Industry Preparedness Program
P. O. Box 111800 · Juneau, Alaska 99811-1800
Phone: 907-465-5283 · Fax: 907-465-5245

CERTIFICATE FOR PROOF OF FINANCIAL RESPONSIBILITY

NON-TANK VESSELS EXCEEDING 400 GT & RAILROADS

No. 08-308NT-298-0411-775

Owner: **Gigantitus, Inc.**, c/o Cruiseship Ltd., 1111 Ship Way, Miami, FL 11111-1111, USA

Operator: **Cruiseship Ltd.**, 1111 Ship Way, Miami, FL 11111-1111, USA

Vessel: **GIGANTITUS** **11234567**

Vessel Size:	78491 GT	Vessel Capacity:	Persistent Oil:	**20106** bbls
Vessel Type:	Passenger		Non-Persistent Oil:	**0** bbls

This application has been made in the name of **Cruiseship Ltd.**
This applicant has met the minimum requirements for proof of financial ability to respond to oil spill damages as required by Alaska Statute 46.04.055 and regulations at 18 AAC Chapter 75, Article 2.

Approval expires: February 20, 2009 **Approval Type: Approved**

******* See certificate requirements under regulations at 18 AAC 75.240 *******

Effective date: February 20, 2008

Approved by: Joe Schmoe

Joe Schmoe, Financial Responsibility Program

Revised 7/08

Potable Water Guidelines

- Water should only be bunkered from an ADEC approved drinking water system.
- The water pipe/hose, valves, and all other surfaces coming into contact with the Bulk Water should be constructed of smooth, nonabsorbent, corrosion-resistant, and nontoxic material safe for contact with potable drinking water.
- Prior to initial use, all hoses, valves, caps, etc. which will come in contact with the potable water should be properly disinfected with a 50-60 ppm chlorine solution.
- All hose ends should be sealed with sanitary caps when not in use. In the event that a hose, hose end, or hose cap is potentially contaminated, they should each be disinfected with a 50-60 ppm chlorine solution.
- All hoses should be stored in a sanitary container, free from contamination, when not in use. Hoses should be kept off the ground at all times.
- All connections between the ship and shore should have some form of approved backflow prevention – either an air gap or backflow assembly device.
- Free chlorine residual reading should be taken from the source water prior to bunkering to ensure that adequate disinfectant is present.
- All equipment surfaces that contact the potable water, including fill-point equipment, containers, caps, valves, filters, fittings, and other plumbing attachments should be regularly inspected and either disinfected or replaced as needed.
- All equipment used in the bunkering process, including hoses, caps, valves, filters, pumps, etc. should be marked Potable Water and only used specifically for that purpose.

If the potable water system is suspected of being contaminated. A sample of the water from your tap can be put into a sample bottle and sent to a lab to be checked. Schedule the taking of the sample so that the sample can be delivered to a laboratory in Ketchikan or Juneau within 24 hours from the time the sample was taken. Be sure to notify the Crowley program managers if a water sample needs to be tested at a laboratory.

Additional information on potable water is available in chapter 5 of the below operations manual.

- **Vessel Sanitation Program Operations Manual August 2005**
  http://www.cdc.gov/nceh/vsp/operationsmanual/OPSManual2005.pdf
  (A copy of this manual is also located on the ocean ranger laptop computer in the reference materials folder on the desktop.)

Vessel Sanitation

Ocean rangers provide observations of the general sanitary condition of the cruise ship using the checklist section E. Observation areas include the galley area, public toilets, swimming pools, spas, and barber/hairdresser areas.
Ocean rangers should concentrate on a general observation the checklist items as the cruise ship goes through a more detailed inspection with professional inspectors that have authority to enforce any changes needed.

The US government Centers for Disease Control and Prevention (CDC) is the portion of the federal government that takes responsibility for health issues onboard cruise ships. The CDC's National Center for Environmental Health (NCEH) plans, directs, and coordinates a national program to maintain and improve the health of the American people by promoting a healthy environment and by preventing premature death and avoidable illness and disability caused by non-infectious, non-occupational environmental and related factors. There is a program of vessel sanitation that applies to cruise ships. The Vessel Sanitation Program assists the cruise ship industry to prevent and control the introduction, transmission, and spread of gastrointestinal illnesses on cruise ships.

CDC inspectors conduct operational sanitation inspections to determine how well ships are operating and maintaining sanitation standards in accordance with the VSP Operations Manual (pdf). Inspectors provide public health guidance to cruise ship staff when standards are out of compliance and at the end of the inspection, write a report describing inspection findings and recommendations. Inspections are conducted while a ship is in a U.S. port.

Links for ocean rangers

- **Electronic Training: Health Practices on Cruise Ships**
  http://www.cdc.gov/nceh/vsp/training/training_videos.htm
- **Cruise ship inspection scroes**
  http://wwwn.cdc.gov/vsp/InspectionQueryTool/Forms/InspectionSearch.aspx
- **Vessel Sanitation Program Operations Manual August 2005**
  http://www.cdc.gov/nceh/vsp/operationsmanual/OPSManual2005.pdf
  (A copy of this manual is also located on the ocean ranger laptop computer in the reference materials folder on the desktop.)

Depending on the size of the ship, one to four inspectors will examine a ship to determine if it complies with the public health standards found in the VSP Operations Manual. The major areas that CDC inspects include the following parts of the ship:

- **medical facilities: for gastrointestinal illness surveillance documentation and medical logs;**
- **potable water systems: for source to storage, distribution, protection and any cross-connection, and the disinfection process;**
- **swimming pools and whirlpool spas: for filtration, disinfection, general maintenance, and safety;**
- **galleys and dining rooms: for food protection during sourcing, provisioning, storage, preparation, and service. Employee health and personal hygiene are evaluated as well as facility equipment maintenance and dishwashing;**
- **child activity centers: for properly equipped diaper changing stations, toilets, and handwashing stations; facility disinfection; infection control for ill children;**
- **hotel accommodations: for routine cleaning sequences and infection control procedures during outbreaks of gastrointestinal illness, including the use of appropriate disinfectants and outbreak policies;**
- **ventilation systems: for maintenance and cleaning of air handling systems; and**
- **common areas of the ship: for integrated pest management strategies, general cleanliness, and maintenance.**

At the conclusion of each inspection, CDC inspectors meet with ship management to discuss inspection violations and provide them with a draft report. Within 2 weeks of the inspection, CDC sends a final copy of the inspection report to the corresponding cruise line.

Cruise ships under VSP's jurisdiction are subject to two inspections each year. If a ship sails outside of the United States for an extended period of time, it may not be inspected twice a year but will be inspected again when it returns to the United States. The twice-yearly inspections are unannounced. All sanitation inspections occur while ships are in U.S. ports.

Cruise ships are scored on a 100-point scale. Inspection criteria, defined in the VSP Operations Manual, are assigned a point value (the major areas are listed above); when the criteria are violated, inspection points are deducted from the score. Points are deducted from that score based on significance. An 85 or below is considered a failing score. All scores are posted on the VSP Web site.

Some of the violations are corrected during the inspection while others may take longer to correct. Although ships are responsible for correcting all violations, some critical violations must be corrected immediately. Each ship must submit a Corrective Action Statement that states how the violations were corrected.

Ships that fail inspections are re-inspected within a reasonable time period of the failure. If a ship fails an inspection because of an imminent public health risk, VSP may recommend that the ship not sail. Imminent public health risks include the following violations:

- **inability to properly chlorinate potable water;**
- **inability to keep food within safe temperatures;**
- **inadequate facilities for cleaning and sanitizing equipment;**
- **inability to properly dispose of solid or liquid waste; and**
- **an infectious disease outbreak where continuing normal operations may subject newly arriving passengers to disease.**

Alaska Safe Food Worker Handbook

Food Safety Is In Your Hands

ALASKA Department of Environmental Conservation

1-87-SAFE-FOOD (1-877-233-3663)
www.dec.state.ak.us.eh/fss

Table of Contents

Part 1: Food Worker Knowledge and Health 2
Foodborne Illness 2
What if I am sick at work? 3
Handwashing 4
Working with ready-to-eat foods 6
Using gloves correctly 7
Personal hygiene checklist 9
Part 2: Prevent Cross-Contamination 12
Store Food Safely 13
Wash, rinse and sanitize 14
Use chemicals safely 15
Part 3: The Right Temperatures 17
The Danger Zone 18
Using your thermometer 18
Cooking and holding temperatures 20
Cooling, thawing and reheating 21
Part 4: Safe Food Sources 25
Approved sources 25
Consumer advisories 26
Part 5: Proper Dishwashing 28
Manual dishwashing 28
Mechanical dishwashing 29
Using sanitizers 30
Glossary of Food Safety Terms 32
Answers to the Self-Check Activities 33

Part 1:
Food Worker Knowledge and Health

Food safety is in your hands. As a food worker, it is part of your job to handle food safely to prevent the spread of illness through food.

The consequences of an illness from food can be disastrous.

- In the U.S, about 76 million people a year get sick from food. Of those, about 5,000 people die.
- A foodborne illness outbreak can result in customer complaints, loss of customers, and even closure of business.
- Foodborne illness can seriously harm your customers.

What can you do to make sure that the food you serve is safe? **Handle it safely!** After completing this section of the training you will be able to:

- Define foodborne illness
- Decide what to do when you are sick
- Prevent the spread of germs by washing your hands properly
- Avoid bare hand contact when working with ready-to-eat food by using tongs, gloves, tissues, scoops and other tools
- Decide when to change your single-use gloves

Foodborne Illness

Have you ever been sick with a foodborne illness? If you have had diarrhea or vomiting, it is likely that you have experienced a foodborne illness.

A ***foodborne illness*** is any disease caused by eating or drinking contaminated food. In fact, the Centers for Disease Control estimates that about 1 in 5 of all foodborne illness outbreaks is caused by ill employees contaminating food with germs from their hands.

Germs are microorganisms too small to be seen with the naked eye and include both bacteria and viruses. One of the most important ways that you can avoid spreading germs that cause illness is to wash your hands often. By removing germs from your hands, you can prevent the spread of illness through food. One person can make a lot of people sick by spreading germs to their food!

High risk populations are groups of people who get sick more easily than others from contaminated food, or get more serious sicknesses. People in this group include babies and young children, elderly people, pregnant women, and immune compromised individuals due to illness or another factor.

Sick – What Should You Do?

You should go home or not work with food or food contact surfaces (like dishes or equipment) while you have:

- Diarrhea
- Vomiting
- Sore throat with fever
- Jaundice (yellow skin/eyes)
- Uncovered or infected wounds
- Abdominal cramping

If you have any of these *symptoms* let your SUPERVISOR know immediately!

Some examples of *illnesses* that can be spread through food include:

Norovirus Causes severe vomiting and known as the 24 hour flu.	***Salmonella* Typhi** Frequently from poultry and eggs. Only 15-20 cells may infect you.	***Shigella*** Salads and veggies contaminated by feces from water or dirty hands.
E. coli 0157:H7 Undercooked hamburger, raw produce – only 10 organisms can make you sick!	**Hepatitis A** Passed through feces on hands and can cause liver damage.	**Let your supervisor know if you have contact with anyone who has these illnesses!**
If you are diagnosed by a health care professional with any of these illnesses you can NOT go to work.		

Handwashing

Your hands touch many surfaces throughout the day, and are the part of the body that is most likely to be exposed to germs. You need to wash your hands correctly to get rid of the dirt and germs that transfer from your hands to your customer's food.

When to Wash Your Hands

When you are at work, it should seem like you are ALWAYS washing your hands! Be sure to wash your hands:

- Before starting work
- When changing gloves
- After using the bathroom
- After break time, smoking, eating, or drinking
- After clearing tables or handling dirty dishes
- Before handling clean dishes
- Before and after handling raw foods
- After coughing, sneezing, blowing or touching your nose
- After touching your head, hair, mouth, wounds or sores
- After touching trash, floors, soiled linens, etc.
- After using cleaners or chemicals
- During food preparation whenever you change tasks

Eating or drinking

Smoking

Handling raw foods

Using tissue

Handling garbage

Using the restroom

CHECK your ***handwashing station.***
It should have:

- hot and cold running water
- soap
- dispensed paper towels

If one is missing, let your supervisor know there is a problem.

Steps for Proper Handwashing

These steps only take 20 seconds!

1. Wet hands and arms up to the elbow, using warm water

2. Apply hand soap

3. Rub hands and forearms briskly for 15 seconds

4. Rinse under warm water

5. Towel dry with dispensed paper towels

6. Turn off faucet with paper towels

7. Open the door by using a paper towel to touch the handle

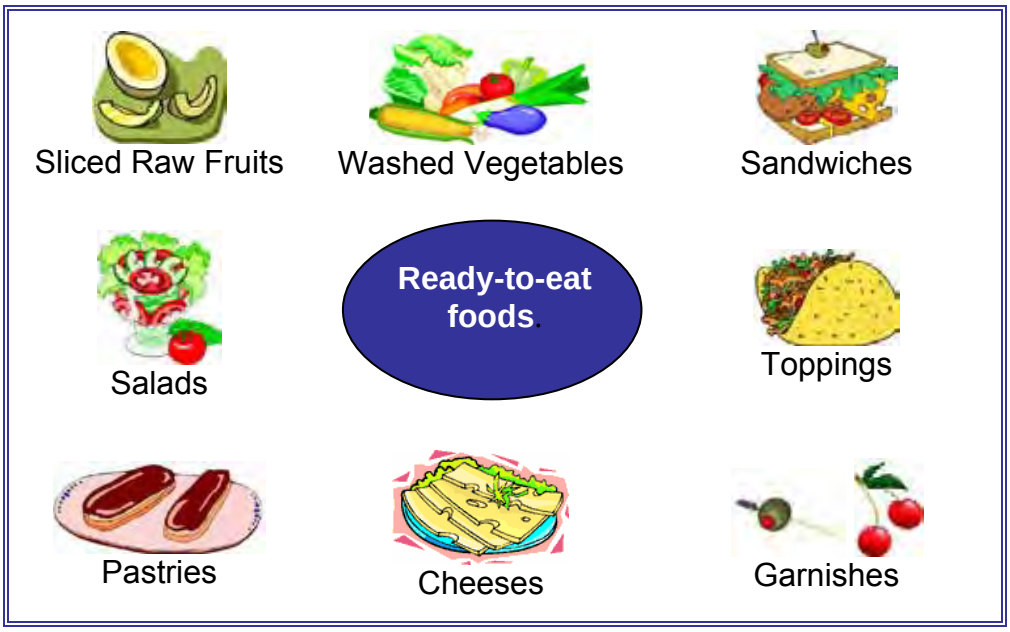
Working with Ready-to-Eat Foods

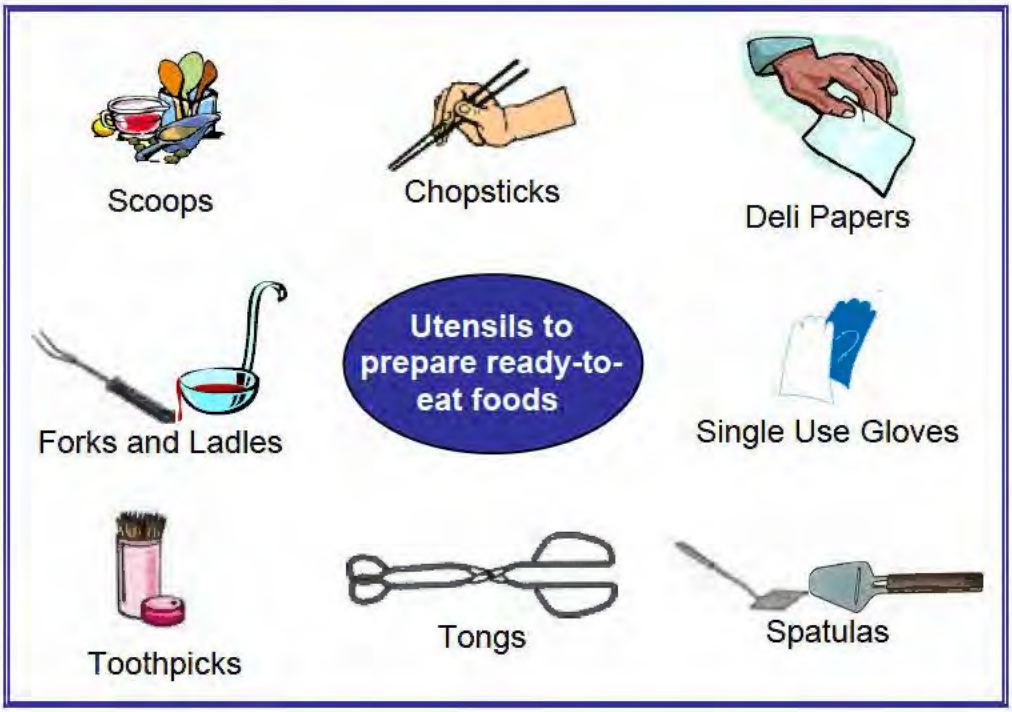
Germs can be spread from a food worker even when the food worker looks and feels healthy. To prevent spreading germs, the best thing you can do as a food worker, is wash your hands and avoid touching certain foods with your bare hands. Handwashing does not remove all of these germs from your hands, even if you do a good job. There can still be enough germs on your hands to cause illness.

In addition to proper handwashing another way to prevent spreading these illnesses is for food workers to avoid touching ***ready-to-eat foods*** with their bare hands. ***Ready-to-eat foods*** are foods that are eaten without additional cooking or washing to remove germs. You can use utensils such as scoops, tongs, or gloves to prepare and serve tacos, salads, sandwiches and other foods that are not cooked before serving. This will keep germs from your bare hands from getting on foods.

Ready-to-eat foods include:

- Any food that will NOT be cooked after final preparation, such as sushi and sandwiches
- Washed produce that is eaten raw, such as fruits and salads
- Bakery or bread items, such as toast and rolls
- Cooked foods, such as pizza and hamburgers
- Garnishes like parsley, lemon wedges, or pickles on plates
- Fruit or vegetables for mixed drinks
- Ice





Glove Use

Sometimes it will not be practical to use other utensils, such as deli paper, spatulas or tongs, to avoid bare hand contact with ***ready-to-eat foods***. In these cases, you may choose to use single use gloves to prepare and serve the foods.

Even if you are using single use gloves, you will still need to **wash your hands** before you put them on. How do you know when it is time to change your gloves and wash your hands? Pay attention to these reminders for proper glove use:

1. Wash hands before putting on gloves
2. Change gloves that get ripped
3. Change gloves that get contaminated
4. Never wash or reuse gloves
5. Change gloves between working with raw and ready-to-eat foods
6. Throw gloves away after use
7. Wash hands after taking gloves off

Every time you change tasks, sneeze, or use the toilet you need to wash your hands and put on new gloves.

GLOVES are no substitute for good handwashing!

GLOVE USE REMINDERS!

Wash hands before putting on gloves.

If you wear artificial fingernails or fingernail polish – you have to wear gloves when working with exposed food.

Put gloves on only when you are ready to handle ***ready-to-eat foods***.

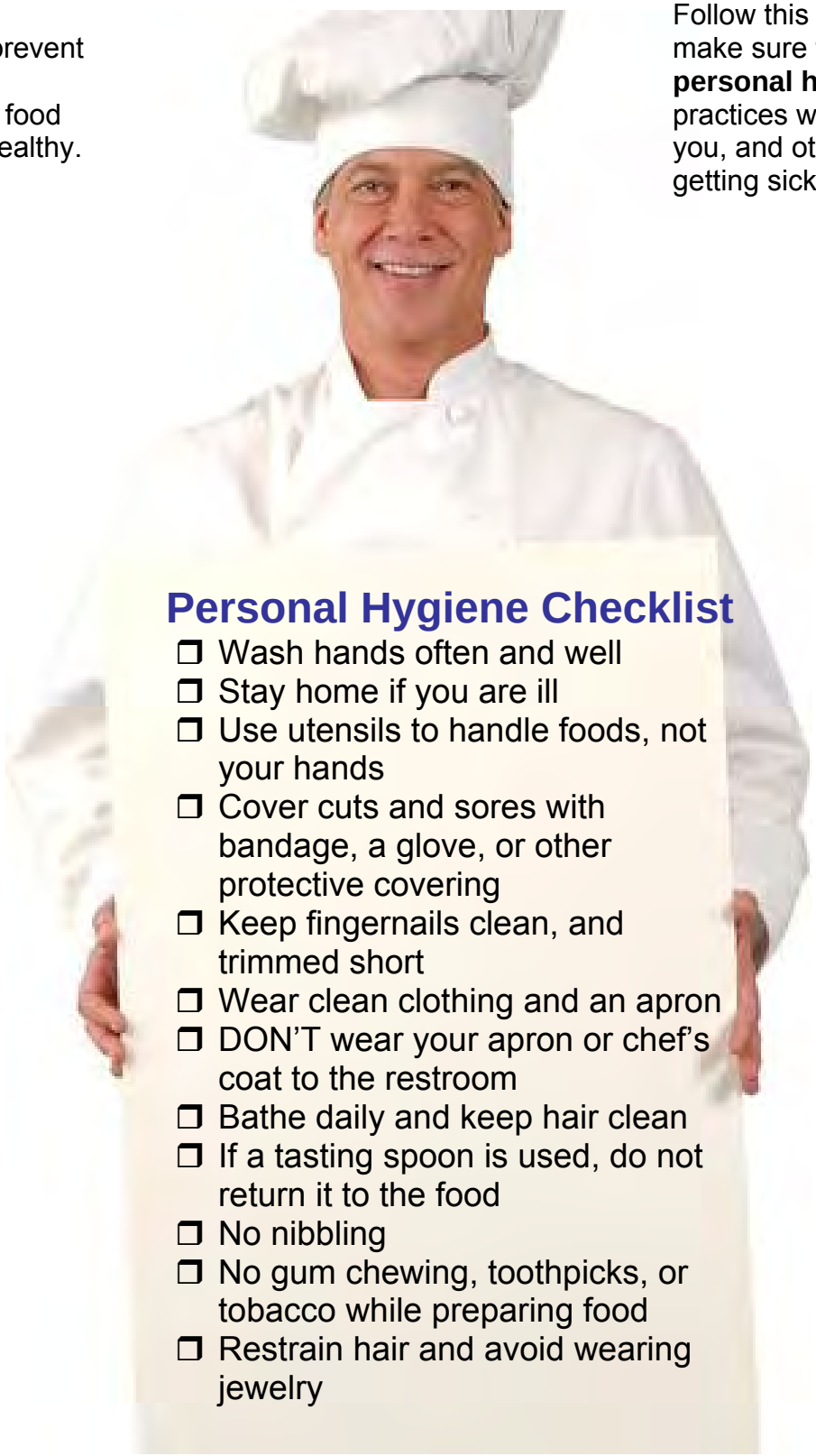
When you change tasks, remove gloves and throw them in the trash. Use clean gloves when you resume food preparation.

Do NOT use fabric or re-usable gloves with ready-to-eat food.

If you have a cut wash your hands, put on a clean bandage, and wear gloves.

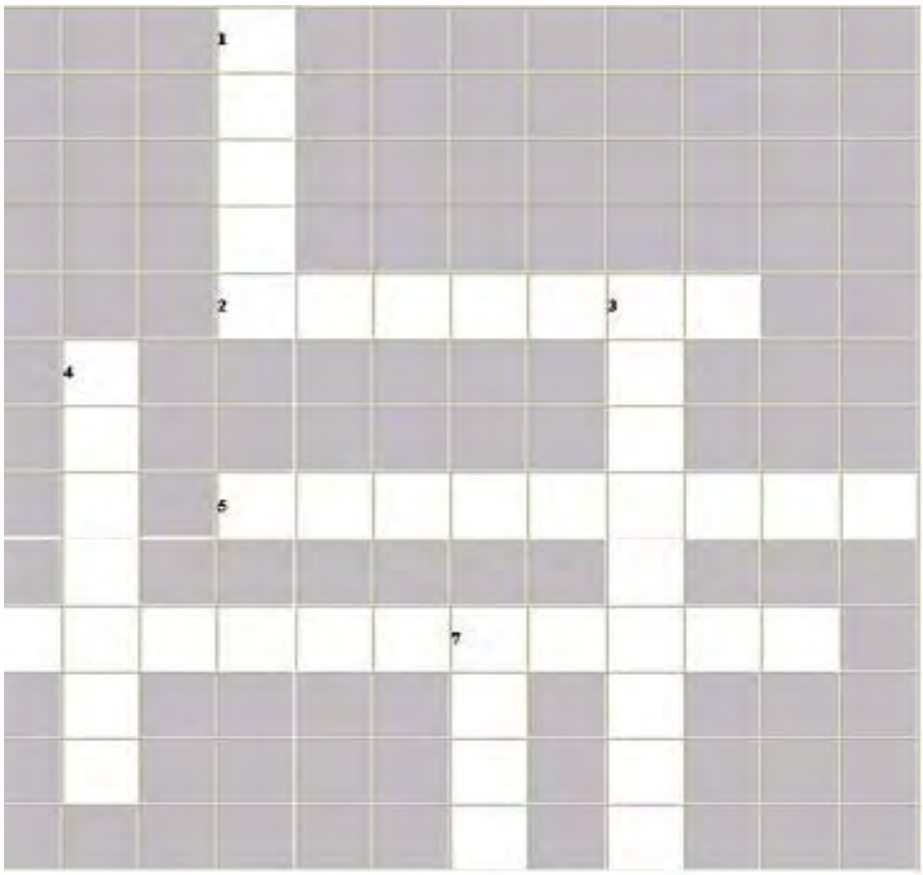
Good **personal hygiene** habits prevent disease, the contamination of food and keeps you healthy.

Follow this checklist to make sure that your **personal hygiene** practices will protect you, and others, from getting sick.



Part 1: Food Worker Knowledge Activities

Answers to self-check activities are located on page 33.



Down:

1 Keep ____ from your bare hands from getting on ready-to-eat foods.

3 If you were sick with this virus you would stay home from work.

4 If you have diarrhea or vomiting, you should not work with food, or food _____surfaces.

7 A handwashing station needs hot and cold running water, _____ and paper towels.

Across:

2 Ready-to-eat foods are foods that are not cooked before _____.

5 Any disease caused by eating or drinking contaminated food is called a _____ illness**.**

6 What is one of the most important things you can do to prevent foodborne illness?

What Would You Do?

1) You are at work and are just about to put on some gloves to prepare hamburger set-ups. You go to the hand sink to wash your hands, but there is no hot water. What would you do?
2) You observe your coworker eating his lunch with his gloves on. Then he goes to the restroom, comes back out with the gloves on his hands, and heads for the kitchen. What would you do?

Back on the Job

Think about how you will apply these food safety principles on the job. See if you can answer these questions about **YOUR** workplace.

Who are the key people who monitor the food safety at your workplace?	
Where are the handwashing stations located?	
What are the ***ready-to-eat foods*** you might help to prepare?	What will you use to avoid touching these foods with your bare hands?
Example: *tomatoes for tacos*	*use tongs to assemble*

Part 2:
Prevent Cross-Contamination

Cross-contamination is the spread of germs from one place to another. Usually, this means that blood or juice from raw meat or poultry gets on food that won't be cooked. This would happen if you used the same cutting board for raw meat and bread. Another example of cross-contamination would be if you used a knife to cut up raw chicken and then used the same knife to cut up salad ingredients. You can also spread germs to clean equipment or cooked food from your dirty hands. ***Cross contamination*** also happens when unwanted chemicals end up in food.

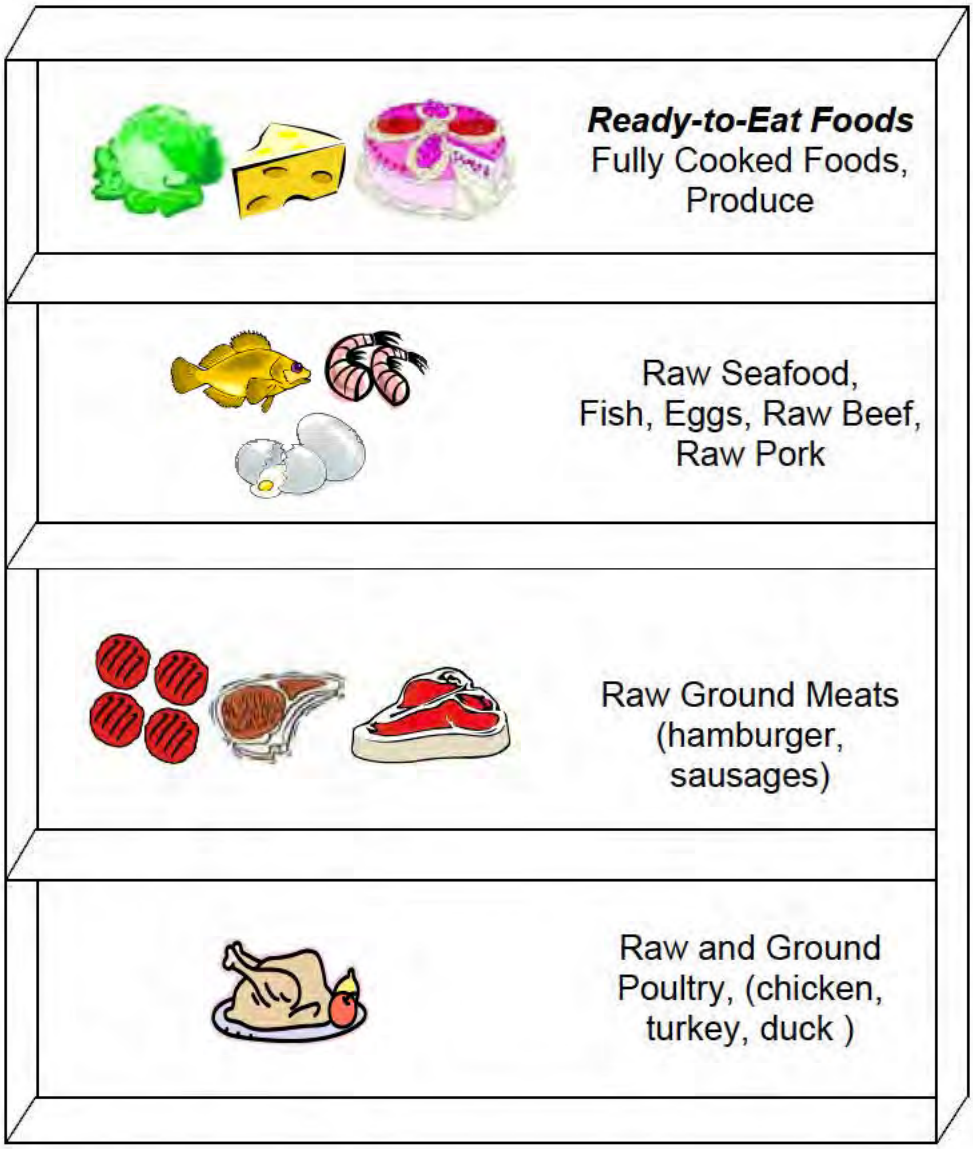
After completing this section of the training you will be able to:

- Define cross-contamination
- Store food safely
- Avoid cross-contamination by washing, rinsing and sanitizing cutting boards and other food contact surfaces
- Decide when to wash your hands to prevent the spread of germs
- Store and use chemicals safely

Store Food Safely

It is very important to keep raw meat away from other foods to prevent cross contamination. Place raw meat, fish, and poultry on shelves **below** other foods in the refrigerator. Keep food that does not require further washing or cooking separate from food that will be cooked.

Safe Refrigerator Storage



Wash, Rinse and Sanitize

The best way to prevent cross-contamination is to WASH, RINSE and SANITIZE food contact surfaces every time you switch from raw to ***ready-to-eat foods***, and between different types of raw meat, fish, and poultry.

- Wash, rinse, sanitize, and air dry equipment and utensils used on a continuous basis every 4 hours.
  - This equipment includes cutting boards, frothing pitchers, knives, and serving utensils.

- Keep cutting boards and prep tables easy to clean by replacing them when worn
  - Deep grooves or scratches in those surfaces provide places for germs to hide, and make it more difficult for you to clean and sanitize them properly.

Use soap or detergent

Wash and rinse food contact surfaces

Sanitize food contact surfaces

Don't forget cutting boards, equipment, prep tables

Cleaning and sanitizing are NOT the same!
Cleaning uses soap and water to remove dirt and food from surfaces.

Sanitizing is using heat or chemicals to reduce germs to safer levels.
- Sanitizers must be mixed correctly to work properly
- Follow the directions on the label of the sanitizer to mix up your solution. Do NOT add soap or detergent to your sanitizer solution (like bleach water)
- Always use test strips to check the sanitizer strength
- Change sanitizer solution often, because grease, dirt and food pieces will make it less effective

Prevent Contamination from Hands

Not only can you cross contaminate during the storage of food and with utensils, you can also spread germs to food or clean equipment from your dirty hands!

- When handling ready-to-eat (RTE) food, use utensils such as gloves, tongs, spatulas, etc.
- Wash your hands often, and always wash them between tasks
- Wash hands before and after handling food

Wash hands before & after handling food

Use utensils for ready-to-eat foods

Safe Chemical Storage and Use

To prevent contamination of food store and use chemicals safely.

- Do not store chemicals above or next to food
- Make sure you mix chemicals according to the label directions
- Use test strips to check sanitizers
- Label spray bottles

Store Chemicals Safely

Mix according to the directions on the label

Check sanitizer strength with a test strip

Part 2: Cross-Contamination Activities

Circle the answers to these questions in the Word Search Puzzle below:

1. Cross contamination is the spread of _____ from one place to another.
2. Raw _____ should be stored below and away from other foods.
3. After cutting raw meat on the cutting board, you must WASH, RINSE and _____ the cutting board before cutting up lettuce.
4. Wash your hands _____ and after handling food.
5. A _____ sink needs hot and cold running water, soap and paper towels.
6. Do NOT add soap or _____ to your sanitizer solution.
7. Check the strength of your sanitizer with _____ strips.

I	L	T	W	C	O	V	E	T	C	R	Y
E	G	E	Q	F	C	A	L	D	M	G	B
I	I	K	A	S	E	P	J	R	E	S	Y
G	N	I	H	S	A	W	D	N	A	H	A
E	D	E	T	E	R	G	E	N	T	Z	K
R	O	R	N	C	F	R	I	R	F	M	E
M	H	G	S	S	O	T	S	E	T	B	S
S	F	T	G	F	I	R	A	U	V	O	N
T	N	C	E	Z	O	A	A	A	S	U	T
T	C	B	E	H	A	R	G	Y	Y	H	L

What Would You Do?

1) A pan full of bloody raw chicken is sitting on a box of iceberg lettuce in the refrigerator. A cook goes to remove the chicken from the reach in and drops the pan. Chicken and its bloody juices land in the iceberg lettuce. What should the cook do?

2) A line cook reaches in the refrigerator and picks up raw hamburger patties with bare hands. The cook places the hamburger patties on the grill and then turns around to set-up the bun, lettuce, onion and tomatoes for the sandwich. What should the cook have done?

Back on the Job

Think about how you will apply these food safety principles on the job. See if you can answer these questions about **YOUR** workplace.

What food items are stored on the shelves of your refrigerator or walk-in at work? List or draw them below. Are all foods protected from cross-contamination?

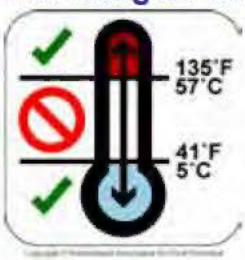
Safe Refrigerator Storage at your Workplace

Part 3:
The Right Temperatures

Foods that are not kept hot or cold enough or cooked to safe temperatures can be unsafe to eat. By using a thermometer to check food temperatures, you may be able to prevent foodborne illness. After completing this part of the training you will be able to:

- Define the Danger Zone temperatures that allow bacteria to grow rapidly
- Define Potentially Hazardous Food
- Use a thermometer to see if food is cooked to the right temperature to kill germs
- Calibrate a thermometer
- Keep hot or cold foods at safe temperatures to keep bacteria from growing in the food
- Cool hot foods safely
- Thaw frozen food safely
- Reheat foods properly
- Decide when to throw out foods that may be unsafe

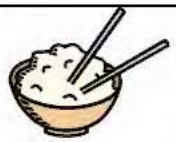
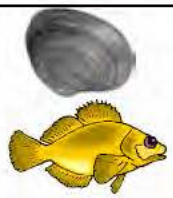
The Danger Zone (41°F and 135°F)



- Germs will grow more rapidly in food when the food is between the temperatures of **41°F** and **135°F**. This range of temperatures is called the ***Danger Zone***.
- How do you know when the food is in the Danger Zone?
  - Use a ***calibrated food thermometer*** to check the temperature of food (cooking, cooling, storing and holding for service).
- ***Potentially hazardous food*** left in the Danger Zone for 4 hours or more must be thrown away.
- Move food rapidly through the ***Danger Zone***!

Potentially Hazardous Foods

Potentially Hazardous Foods are foods that when held in the danger zone may support the rapid growth of disease-causing bacteria and lead to foodborne illness. Some examples are:

Cut melons	 Rice	 Seafood	Sprouts & Cooked vegetables
Garlic in Oil	Red Meat	Poultry	Dairy

Thermometers

Thermometers get bumped and jarred frequently, even if they are used correctly. This causes them to get out of adjustment.

Calibrate thermometers to maintain accuracy

- Periodically (about once per week)
- If they are dropped
- After measuring extreme temperatures
- New thermometers before use

Calibrate Your Thermometer

Ice Point Method		• Fill glass with ice, add cold water. Accurate reading depends on having enough ice ▪ Insert sensing area of thermometer into ice slush at least two inches avoiding sides and bottom of container ▪ Allow the temperature to stabilize (at least a minimum of 30 seconds) ▪ With sensing area in the ice water adjust calibration nut so indicator (or dial) reads 32°F
Boiling Point Method		• Insert sensing area of thermometer into boiling water avoiding sides and bottom of pan ▪ Allow the temperature to stabilize (at least a minimum of 30 seconds) ▪ With sensing area in the boiling water adjust calibration nut so indicator reads 212°F. Water boils at lower temps at high altitude. Subtract 1°F for each 550 feet above sea level

Cooking

Germs that cause foodborne illness are killed when foods are cooked to the proper temperatures. Use a ***calibrated food thermometer*** to check the internal temperature of food and be sure that is it cooked to the correct temperature.

Check Cooking Temperatures with a Thermometer

- **Wash, Rinse and Sanitize** your thermometer
- Insert the probe into the center, or thickest part of the food, and check different spots to compare the temperatures
- Make sure the food is cooked for 15 seconds at the proper temperature

165°F (for 15 seconds)		▪ Poultry (chicken and turkey) ▪ Stuffed foods or stuffing ▪ All raw animal products cooked in a microwave ▪ All reheated potentially hazardous foods for hot holding
155°F (for 15 seconds)		▪ Hamburger ▪ Sausage (ground pork)
145°F (for 15 seconds)		▪ Eggs ▪ Fish ▪ Pork ▪ Beef
135°F (for 15 seconds)		▪ Packaged ***ready-to-eat foods*** that are heated for hot holding; such as hot dogs, canned chili ▪ Vegetables that will be hot held

Cold Holding

- Keep ***cold*** food for display or service at 41°F or colder at all times.
- When using ice to keep food cold, make sure that the food container is surrounded by ice is to the level of the food. Use a thermometer to check the temperatures every 2 hours to see if the food is 41°F or colder.
- If food has been held in the Danger Zone for longer than 4 hours you will need to throw it away.

Hot Holding

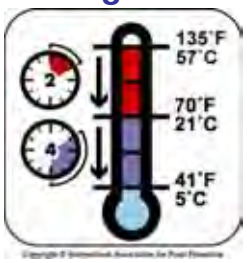
- Keep it hot, at least 135°F, until it is served. This keeps germs from growing rapidly in the food.
- Preheat your equipment to at least 135°F before adding food.
- Stir the food frequently to evenly distribute the heat.
- Check the temperature every 2 hours to make sure that it is 135°F.
- Throw out food that has been held in the Danger Zone for longer than 4 hours.

Cooling food from ambient (room) temperature

Some foods start out at room temperature like tuna salad. Once the ingredients are mixed together it is important to cool these foods rapidly.

- Cool from room temperature to 41°F in 4 hours or less
- Use pre-chilled ingredients to speed cooling
- Use small or shallow containers

Cooling Hot Foods

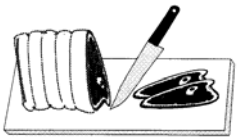
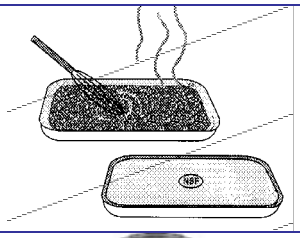


Cool foods from:

- 135°F to 70°F within 2 hours
- Then from 70°F to 41°F within 4 more hours

Cooling large batches of food and roasts safely can be challenging. Foods must be cooled quickly to keep bacteria from growing in the food. **Use your thermometer to make sure that the food is cooled rapidly.**

Here are some methods you can use to cool food quickly:

	Ice Bath Method ▪ Ice/water mixture should be the same level as the food ▪ Stir frequently ▪ Use of ice wands will speed cooling ▪ Refrigerate
	Smaller Portions ▪ Cut solid foods into smaller pieces ▪ Spread out in thin layers ▪ Refrigerate
	Shallow Metal Pans ▪ Divide food into smaller pans ▪ 2-inch depth for thick food ▪ While cooling keep uncovered ▪ Refrigerate ▪ Don't stack hot containers
	Add ice instead of water to soups or stews ▪ Add half of the water before cooking ▪ After cooking, add the other half as ice ▪ Refrigerate

Graphics Courtesy of DuPage County Health Department

Cooling Tips

- Label containers that are cooling with date and time cooling began
- Stir food often
- Thick foods such as refried beans should be no more than 2 inches deep
- Do **NOT** cover until food reaches 41°F
- Make sure there is good air circulation around food
- Do **NOT** stack food

Reheating

When you are reheating cooled, cooked foods for hot holding, you need to be sure that food is moved rapidly through the Danger Zone.

- They need to be heated to 165°F or hotter within 2 hours
- Reheat on stove or in oven
- Check temperature with thermometer
- Do NOT reheat in hot holding equipment such as steam tables, warmers or crock pots

Thawing

Thaw foods safely:

- in the refrigerator
- in the microwave as long as food is cooked immediately
- under cold running water (70 °F or colder)
- as part of the cooking process

Part 3: The Right Temperature Activities

Write in the correct temperature using the list of temperatures below. You may use some temperatures more than once.

165 °F **41°F to 135 °F** **135°F** **155°F** **145°F** **41°F**

	The Right Temperature(s):
Ground beef cook temperature	
Danger Zone	
Fish cook temperature	
Chicken cook temperature	
Reheated food for Hot Holding	
Cold hold temperature	
Heating commercially canned foods for Hot Holding	
Hot Holding temperature	
Sausage and ground beef lasagna	

Now list several foods **prepared at your work** and the correct cook temperatures:

Is it done?

Decide if these foods are safely cooked. Check the correct box below.

	Cooking Example – Is it Safely Cooked?	Yes	No	Not enough info
1.	Deep fried chicken breast cooked to 165°F			
2.	Hamburger cooked until it looks brown in the middle			
3.	Commercially precooked ham for hot buffet cooked to 135°F			
4.	Beef roast cooked to 140°F			
5.	Carrots for hot holding heated to 130°F			
6.	Raw sausage for the hot breakfast buffet cooked in the microwave to 155°F			
7.	Pork tenderloin baked until it reaches 145°F			
8.	Whole turkey breast reaches 165°F			

What Would You Do?

1) You arrive in the morning and find ground beef sitting on the counter. The night cook had set it out to thaw the night before. When you take the temperature it is at 73 °F. What should you do?

2) The day cook sets a 10 gallon stock pot full of soup in the refrigerator with an ice wand in it. He labels it with the date and time the cooling (135 °F) started. It says cooling started at 3:00 p.m. It is 4:30 p.m. now and the temperature is at 87 °F. What should you do?

Back on the Job

List what you learned in this section and how you will apply it back on your job.

Part 4:
Safe Food Sources

Food safety starts when you bring the food into your establishment. Make sure that you receive safe food from an ***approved source***. All food must come from a source approved by the State of Alaska Food Safety Program or the Municipality of Anchorage Health Department. After completing this part of the training you will be able to:

- Decide if the food you order or receive is from an approved source
- Check food shipments for damage and proper temperatures
- Explain what a consumer advisory is and know why it is needed

Approved Sources for Food

- Meat and poultry must come from a USDA inspected plant
- Seafood must come from a permitted facility
- Shellstock containers must have an identification tag attached. Keep the tags for 90 days
- Canned food must come from an inspected facility
- Other types of food need to come from a permitted and inspected facility

Never serve home canned food, wild game meat or sport caught fish in a food establishment.

Shellstock Tag

(Poultry & Meat)
USDA Inspection Legend

X No home canned
X No wild game meat
X No sport fish

Check Food Deliveries

- Check the condition of delivery truck
- Check food temperatures
- Check for inspection legend on meat, poultry, eggs
- Make sure shellstock have their tags
- Condition of the food – no signs of damage/thawing
- Keep receiving area clean, well lit and free of pests
- Limit time in the Danger Zone (41°F to 135°F)

Storage Basics

- Protect ***ready-to-eat foods*** from raw foods and store them separately
- Separate fish, raw meat, and poultry
- Keep food in clean wrappers or containers
- Keep storage areas, food-transporting carts and trays clean and dry
- Remove trash periodically - don't let it build up
- Keep all chemicals in their original labeled containers
- Store chemicals away from food
- Store food at least 6 inches off of the floor

Consumer Advisories

A ***consumer advisory*** lets customers know that food served in the raw or undercooked state may be more likely to cause illness. This advisory needs to be written and available to the customers.

Food allergies can be serious and life threatening. Symptoms of an allergic reaction include a tingling sensation, hives, swelling of the mouth and throat, difficulty breathing, and loss of consciousness. If a customer asks about the ingredients in a menu item, you should know what ingredients it contains. If you are not sure, then you should ask your supervisor or the person in charge.

Part 4: Safe Food Source Activities

Unscramble these words related to safe and unsafe food sources.

Scrambled word	Unscramble!	HINTS:
1) trpos hfis		Catch and release – don't serve these.
2) lidw meag tmae		This meat is not inspected…
3) eohm nancde		Food that you preserve at home
4) olesthkcs		These come with a special "tag"
5) SADU ptdecsein		Meat should be…
6) naergd ozen		The ____ _____is between 41F and 135F

Put an **X** next to the foods that are NOT from an approved source:

_ Your grandma's homemade pumpkin pie	_ Home canned green beans
_ USDA inspected chicken	_ Dried fish sticks from fish camp
_ Sport caught fish	_ Reindeer meat from the local farmer that slaughtered it himself
_ Milk and dairy products	_ Bagels from the local permitted bagel shop
_ Raw milk from your neighbor's cow	_ Moose meat
_ Pickle relish from your friend Jane	

What Would You Do?

1) Steaks are delivered to your restaurant. The boxes and packages do not have a USDA inspection legend on them. What should you do?

2) Grandma delivered her famous home-baked pies to sell at your restaurant. What would you do?

Back on the Job

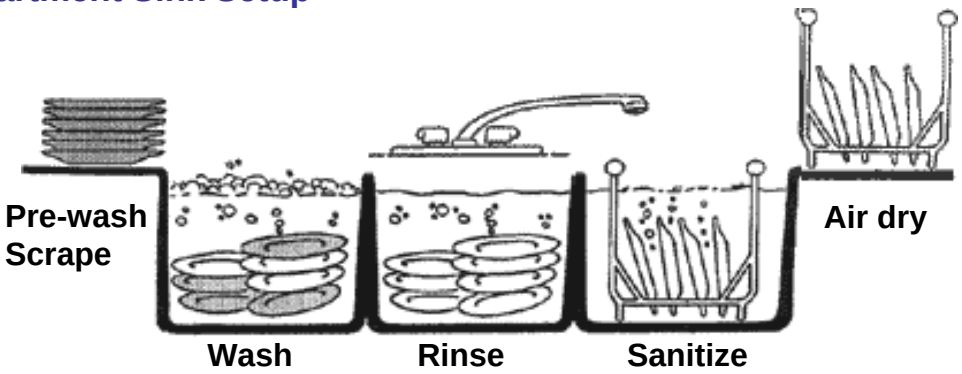
List what you learned in this section and how you will apply it back on your job.

Part 5:
Proper Dishwashing

Washing, rinsing and ***sanitizing*** dishes and utensils are important in reducing the disease causing germs that will get transferred to food and your customers. Whether you use a 3-compartment sink or a dishwashing machine, you will need to follow certain steps to make sure that the dishes and utensils are cleaned properly and sanitized. After completing this part of the training you will be able to:

- Wash dishes properly using a 3-compartment sink or dishwashing machine
- Use a sanitizer correctly to kill germs on clean surfaces
- Know the methods for testing sanitizers for both manual and mechanical dishwashing

Manual Dishwashing
3-Compartment Sink Setup



Change water frequently!

*Graphic courtesy of the City of Toronto Public Health Department

A 3-compartment sink is required for manual dishwashing. Clean the dishes using the steps below:

1. Clean and sanitize the sinks
2. Pre-wash/Scrape
3. Wash in hot water with detergent
4. Rinse
5. Sanitize with an approved sanitizer following manufacturer's directions
6. Test sanitizer
7. Air dry

When washing a lot of very soiled dishes, you should drain and fill each compartment with fresh water, detergent and sanitizer several times.

Reminder! Sanitizer must be used properly to work effectively. The amount of time that dishes soak in a sanitizer may vary. Be sure to follow the manufacturer's directions for soaking times and concentrations.

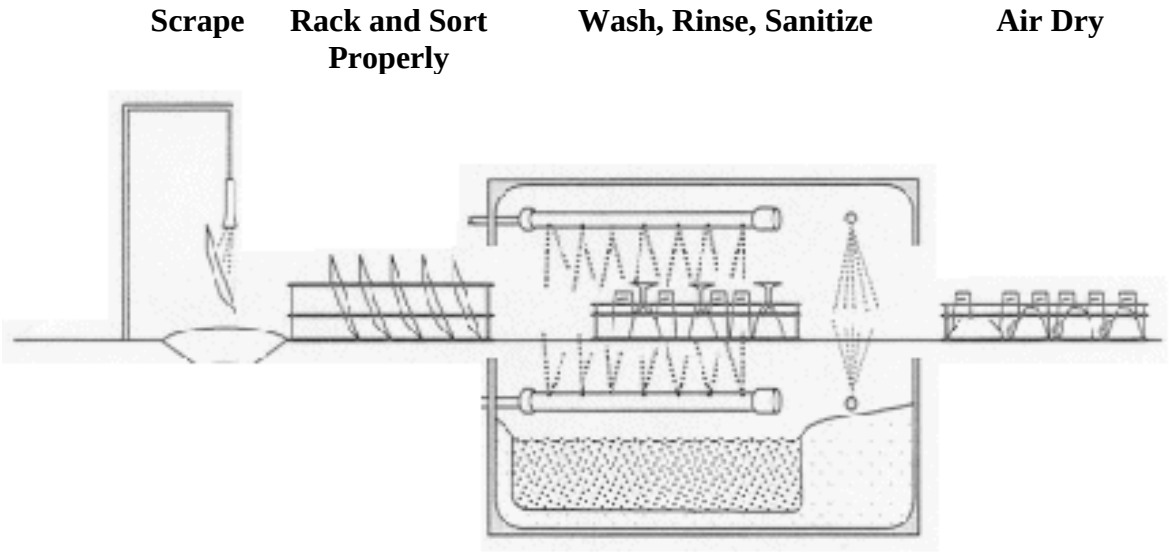
Clean in Place

For equipment that is too large to wash in the three compartment sink the same principles apply:

- Wash, rinse and sanitize each removable part in 3-compartment sink or dish machine.
- Use the three step method to wash, rinse and sanitize stationary surfaces
- Air dry all parts
- Reassemble
- Re-sanitize any food-contact parts you touch
- Remember to wash, rinse and sanitize equipment that is used on a continuous basis at least every 4 hours

Mechanical Dishwashing

Your workplace may have a mechanical dishwasher that will wash, rinse and sanitize the dishes. You will need to know how your machine operates so that you can monitor the temperature and sanitizer levels.



Graphic Courtesy of DuPage County Health Department

Follow these steps to use a mechanical dishwasher:

1. Make sure the machine is clean, follow manufacturer's directions
2. Before starting the mechanical dishwasher, check the detergent and sanitizer dispenser levels
3. Scrape, rinse or soak items
4. Check manufacturer's recommended wash and rinse temperatures
5. Sanitizing rinse-check periodically
   a. Hot temperature sanitizing-temperature sensitive tape to ensure plate temperature reaches 160°F
   b. Chemical sanitizing-check with test strip
6. Check final rinse water pressure gauge and make sure that it is within the manufacturer's recommendations
7. Air dry
8. Wash hands then unload clean dishes from racks

Commonly used sanitizers include:

Sanitizer	Concentration
Chlorine (i.e. bleach)	50 ppm
Quaternary Ammmonia (Quat)	200 ppm or specified by manufacturer
Iodine	12.5-25 ppm

Chemical Sanitizing

- Water temperature according to the manufacturer
- Detergent and sanitizer must be automatically dispensed
- Chlorine at 50 ppm
- Check concentration with a test strip
- Change the sanitizer solution often

Hot Water Sanitizing

- Wash temperature according to the manufacturer
- Final rinse temperature at least 180°F
- Check with temperature sensitive strip to make sure plate surface reaches 160°F

Tips for using moist wiping cloths:

- Wiping cloths do not replace proper Washing, Rinsing and Sanitizing
- Store wiping cloths in clean sanitizer
- Use different wiping cloths for cleaning raw meat and ready to eat foods
- Use different cloths for food and non food-contact areas
- Clean and rinse soiled wiping cloths before storing in the sanitizer
- Use test strips to check the sanitizer strength
- The amount of sanitizer can vary- check the sanitizer solution with a test strip

Part 5: Dishwashing Activities

Fill in the blanks to finish these sentences:

1. The correct steps to clean dishes are W_____, R_____, S_____, A_____ D_____.
2. You should wash your hands b_____ handling the clean dishes.
3. Chlorine sanitizer should be at _____ppm for dishwashing.
4. What are three kinds of commonly used sanitizers? Q_____, C_____, and I_____.
5. Bleach is a C_____ sanitizer.

What Would You Do?

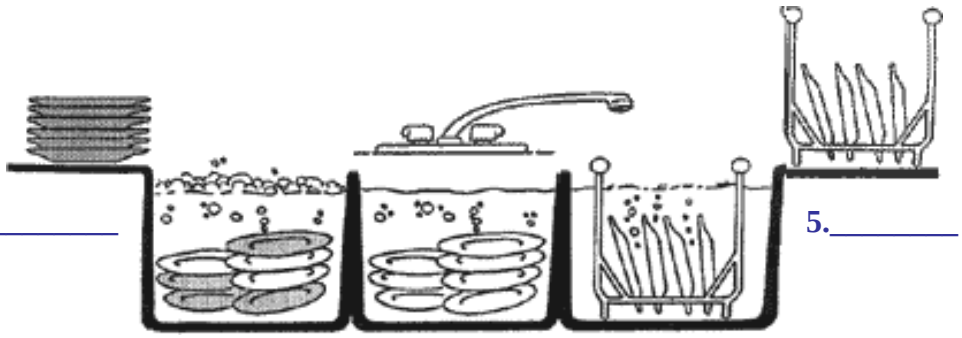
1) The evening shift dishwasher comes on duty. He checks the sanitizer concentration in mechanical dishwashing machine as he was trained to do. He notices that the strip shows no chlorine sanitizer being dispensed. He checks the sanitizer bucket and notices that someone had hooked up a bucket of drain cleaner to the dishwashing machine by mistake. What should he do?

2) The dishwasher runs a temperature sensitive strip through the dishwashing machine after he notices the rinse temperature isn't getting up to the correct temperature. It indicates that the dishes are not being sanitized as required. It

is in the evening so the repair man is not available until tomorrow. How can he make sure the dishes are being sanitized until the repairman fixes the machine?

Match the steps for manual dishwashing in the **3-compartment sink** setup below**:**

Rinse **Scrape/Pre-wash** **Wash** **Air dry** **Sanitize**



1._____ **5.**_____

2._____ **3.**_____ **4.** _____

Back on the Job

Think about how dishes are cleaned and sanitized where you work. Check methods below that are used at your job.

☐ Manual (3-Compartment Sink) ☐Mechanical (Dishmachine)

☐ Chemical ☐Hot Water

- ☐Chlorine Bleach
- ☐Iodine
- ☐Quaternary Ammonium

List what you learned in this section and how you will apply it back on your job.

Glossary of Food Safety Terms

Approved source: Means a food establishment or facility that is permitted or certified by the federal,state or local government agency with jurisdiction. Meat and poultry must come from a USDA inspected plant; seafood, canned and other types of food must come from a permitted facility; shellstock containers must have an identification tag attached.

Bare hand contact: Touching foods with bare hands instead of using utensils such as gloves, tongs, deli papers, ladles, scoops, chopsticks, etc.

Calibrated food thermometer: Food thermometers that are checked to make sure that they are showing the correct temperature are “calibrated”. Use the ice point or boiling point method to calibrate thermometers.

Consumer advisory: A written advisory that lets customers know that food served in the raw or undercooked state may be more likely to cause illness.

Cross-contamination: Is the spread of germs from one place to another.

Danger Zone: Germs will grow more rapidly in food when the food is between the temperatures of **41°F** and **135°F.** This range of temperatures is the Danger Zone.

Food allergies: Some people have an allergic reaction when they eat certain food. Allergic reactions can be serious and life threatening. Symptoms of an allergic reaction include a tingling sensation, hives, swelling of the mouth and throat, difficulty breathing, and loss of consciousness.

Foodborne illness: Is any disease caused by eating or drinking contaminated food.

Germs: Microorganisms too small to be seen with the naked eye and include both bacteria and viruses.

High Risk populations: Are groups of people who get sick more easily than others from contaminated food, or get more serious sicknesses. People in this group include babies and young children, elderly people, pregnant women and immune compromised individuals.

Potentially hazardous food: Germs grow easily in these foods, such as fish, eggs animal products, sprouts, cooked rice, sliced melons, and tofu.

Ready-to-eat food: Foods that are eaten without additional cooking or washing to remove germs.

Sanitizing: Using heat or chemicals to reduce the number of germs on a surface to a safe level.

Symptoms: Changes in the body that are signs of sickness, like diarrhea, vomiting, fever, or jaundice.

Answers to the Self-Check Activities

Part 1: Food Worker Knowledge (page 10)

Crossword

Down:	1-Germs	Across:	2-serving
	3-Norovirus		5-foodborne
	4-contact		6-handwashing
	7-soap		

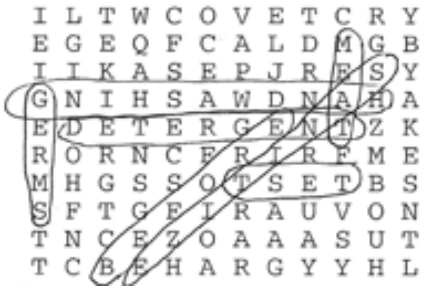
What Would You Do? (page 10)

1) Tell the manager or person in charge that there is no hot water, then use another handsink to wash hands.
2) Stop the food worker off and remind him that gloves are a single task utensil. They need to be removed between tasks, hands washed and then a new pair put on.

Part 2: Prevent Cross-Contamination

Word Search (page 16)

1) *Germs*
2) meat
3) sanitize
4) before
5) handwash
6) detergent
7) test



What Would You Do? (page 16)

1) Cook should discard the lettuce. It would be difficult to wash and remove all the possible germs (bacteria) that would have spilled on the lettuce.
2) Cook needs to wash his hands and use an utensil for handling ready to eat foods such as the lettuce, tomatoes, onion, etc. He may want to develop a system where he can use utensils for handling the raw meats too so his hands do not become contaminated from bacteria from the raw meats.

Part 3: The Right Temperature

Temperature Activities (page 23)

Ground beef cook temperature	**155°F**
Danger Zone	**41°F to 135 °F**
Fish cook temperature	**145°F**
Chicken cook temperature	**165 °F**
Reheated food for Hot Holding	**165 °F**
Cold hold temperature	**41°F**
Commercially canned foods for Hot Holding	**135°F**
Hot Holding temperature	**135°F**
Sausage and ground beef lasagna	**155°F**

Is it Done? (page 24)

Cooking Example – Is it Safely Cooked?	**Yes**	**No**	**Not enough info**
1. Deep fried chicken breast cooked to 165°F	X		
2. Hamburger cooked until it looks brown in the middle			X
3. Commercially precooked ham for hot buffet cooked to 135°F	X		
4. Beef roast cooked to 140°F			X
5. Carrots for hot holding heated to 130°F		X	
6. Raw sausage for the hot breakfast buffet cooked in the microwave to 155°F		X	
7. Pork tenderloin baked until it reaches 145°F	X		
8. Whole turkey breast reaches 165°F	X		

What Would You Do? (page 24)

1) Discard the ground beef. It is in the danger zone and you don't know how long it has been there. There is no way to make it safe.
2) It does not appear it will reach the 135 °F to 70 °F within the first two hours like it should for proper cooling. I would speed the cooling along by either putting it in shallow pans then refrigerate, use an ice wand and stir frequently or use an ice bath.

Part 4: Safe Food Sources

Word Scramble (page 26)

1) sport fish
2) wild game meat
3) home canned
4) shellstock
5) USDA inspected
6) Danger zone

Safe Source Activity (page 27)

X Your grandma's homemade pumpkin pie	X Home canned green beans
_ USDA inspected chicken	X Dried fish sticks from Fish Camp
X Sport caught fish	X Reindeer meat from the local farmer that slaughtered it himself
_ Milk and dairy products from grocery store	_ Bagels from the local permitted bagel shop
X Raw milk from your neighbor's cow	X Moose meat
X Pickle relish from your friend Jane	

What Would You Do? (page 27)

1) Do not use the steaks. Find out the source of steaks and find out if they are USDA inspected.
2) Thank Grandma, but explain to her that you can not serve them in your restaurant.

PART 5: PROPER DISHWASHING

Fill in the Blanks (page 30)

1) Wash, Rinse, Sanitize, Air Dry
2) before
3) 50
4) Quats, Chlorine, and Iodine
5) Chlorine

What Would You Do? (page 30)

1) Drain the machine, hook up the correct sanitizer, test the sanitizer, then rewash dishes that were washed earlier in the day.
2) Do a manual sanitizing rinse until the dishmachine can be repaired.

Match the Steps (page 31)

1) Scrape/Prewash
2) Wash
3) Rinse
4) Sanitize
5) Air Dry

CDC

Interim Guidance for Cruise Ships during the 2009-10 Influenza Season

January 29, 2010 5:45 PM ET

See: http://www.cdc.gov/h1n1flu/guidance/cruiseships.htm

Index

- Background
- Managing Passengers and Crew with Influenza-Like Illness
- Managing Passengers and Crew Following Exposure to an Ill Person
- Preventing Influenza Infection in Crew
- Additional Recommendations
- For More Information

This document provides interim guidance for crew members and passengers of cruise ships originating from or stopping in the United States during the 2009-10 influenza season. This guidance will be updated as needed. CDC recognizes that cruise ships travel worldwide, necessitating awareness of and responsiveness to local jurisdictional requirements. Cruise ship management and medical staff need to be flexible in identifying and caring for persons with influenza. The health-care provider's assessment of a patient's clinical presentation and underlying risk factors is always an essential part of decisions about the need for further medical evaluation or treatment.

Background

Commercial maritime travel is characterized by the movement of large numbers of people in closed and semi-closed settings. As with other close contact environments, these settings can facilitate the transmission of influenza from person to person or through contact with contaminated environmental surfaces. The Centers for Disease Control and Prevention (CDC) recommends that persons with influenza-like illness (ILI) not travel. Efforts to reduce the spread of influenza on cruise ships should focus on early identification and isolation of ill crew members and passengers, good cough and hand hygiene etiquette, and environmental controls to encourage proper hygiene. This document provides guidance for the management of ILI during and after a voyage, including personal protective measures for the crew, and is meant to supplement CDC's recent guidance for employers on ways to decrease the spread of seasonal and 2009 H1N1 influenza in the workplace. See CDC's Guidance for Businesses and Employers to Plan and Respond to the 2009-10 Influenza season.

Managing Passengers and Crew with Influenza-Like Illness

Influenza-Like Illness

Symptoms of influenza can include some or all of these symptoms: fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills, and sometimes diarrhea or vomiting. Not everyone with influenza will have a fever (a temperature of 100° F [37.8° C] or greater). Cruise ship medical personnel should consider someone to have a fever if the ill person feels warm to the touch, gives a history of feeling feverish, or has an actual measured temperature of 100° F (37.8° C) or greater. Because the symptoms of influenza are not specific and most persons who have a respiratory illness are not tested for influenza, an ILI has been defined as an illness with fever or feverishness plus either cough or sore throat.

Screening and Isolation

If a passenger has ILI at the time of embarkation, he or she should be advised against traveling until at least 24 hours after resolution of fever (100° F [37.8° C]) without the use of fever-reducing medications (e.g., aspirin, acetaminophen, ibuprofen).

Passengers with ILI who nonetheless decide to board, as well as passengers who develop ILI en route, should be medically evaluated (see next section) and remain isolated in their cabins or quarters until at least 24 hours after resolution of fever (100° F [37.8° C]) without the use of fever-reducing medications.
Crew members with ILI should take the following actions:

- Notify their supervisors.
- Report to the infirmary for medical evaluation, according to shipboard protocols.
- Remain isolated in their cabins or quarters until at least 24 hours after resolution of fever (100° F [37.8° C]) without the use of fever-reducing medications.

If a passenger or crew member with ILI is taken to a health-care facility off the ship, the facility should be informed before arrival.
While temporarily in common areas, passengers and crew members with ILI should be separated from other passengers and crew members by a distance of 6 feet or more, if possible, and should wear a facemask, if it can be tolerated.
Individuals with ILI should be advised of the importance of covering coughs and sneezes with a tissue or, in the absence of a tissue, their sleeves. Used tissues should be disposed of immediately in a disposable container (plastic bag) or a washable trash can.
Passengers and crew should also be reminded to wash their hands often with soap and water, especially after coughing or sneezing. If soap and water are not available, they can use an alcohol-based hand rub until soap and water become available.

Medical Evaluation and Management

Updated resources for clinicians and guidance on the medical evaluation and management of individuals with 2009 H1N1 influenza.

Influenza Diagnostic Tests

Interim recommendations for the clinical use of diagnostic testing for influenza infection during the 2009-10 influenza season are available at.

Disposition of Cases upon Disembarkation

A cruise ship passenger or crew member with ILI who is symptomatic or who has had fever 24 hours prior to disembarking should be advised to wear a facemask when disembarking the ship.
Individuals with ILI should stay in home or hotel isolation in the city of disembarkation and refrain from further travel until at least 24 hours after they are free of fever (100° F [37.8° C]) without the use of fever-reducing medications.

Managing Passengers and Crew Following Exposure to an Ill Person

Passengers and crew who may have been exposed to a person suspected of having influenza should monitor their health for 7 days after the exposure. Passengers and crew who are still onboard should report any of the following signs or symptoms to the shipboard infirmary immediately: fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills, and sometimes diarrhea or vomiting.

Antiviral Treatment and Prophylaxis Use and Outbreak Control

Interim recommendations for the use of antiviral medications in the treatment and prevention of influenza for the 2009-10 season.

Preventing Influenza Infection in Crew

The following recommendations should be followed, when possible, by crew members whose work activities involve contact with passengers and other crew members who have ILI.

- Practice good hand hygiene. Wash hands often with soap and water. If soap and water are not available and hands are not visibly soiled, an alcohol-based hand rub can be used as an interim measure.
- Maintain a distance of 6 feet or more from the ill person while interviewing, escorting, or providing other assistance.
- Keep interactions with ill persons as brief as possible.
- Limit the number of persons who interact with ill persons. To the extent possible, the ill person should receive care and meals from a single person.
- Ask the ill person to follow good cough and sneeze etiquette and hand hygiene, and to wear a facemask, if it can be tolerated.
- If a facemask cannot be tolerated, provide tissues and ask the ill person to cover his or her mouth and nose when coughing or sneezing. Used tissues should be disposed of immediately in a disposable container (plastic bag) or a washable trash can.

Personal Protective Equipment

Ships should carry a sufficient quantity of personal protective equipment (PPE) such as facemasks, N95 respirators, and disposable gloves. Crew members and other staff who may have contact with persons with ILI should be instructed in the proper use, storage, and disposal of PPE. Improper handling of PPE can actually increase transmission risk.

Gloves

Crew members should wear impermeable, disposable gloves if they need to have direct contact with ill persons or potentially contaminated surfaces, rooms, or lavatories used by ill passengers and crew members. Crew members should wash their hands with soap and water after gloves are removed. Gloves should be discarded in the trash and should not be rewashed or saved for reuse.
Crew members should avoid touching their faces with gloved or unwashed hands.

Facemasks and Respirators

Use of N95 respirators or facemasks are not generally recommended for cruise ship crew members for general work activities. CDC's Interim Recommendations for Facemask and Respirator Use to Reduce Novel Influenza A (H1N1) Virus Transmission.

Cruise ship workers who cannot avoid close contact with persons with ILI may consider voluntarily wearing a facemask or N95 respirator. Employers who allow workers to wear an N95 respirator voluntarily should review the Occupational Safety and Health Administration (OSHA) requirements for Employer Voluntary Use of Respirators in the workplace.

Crew members who are providing health care to passengers or to other crew members, e.g., onboard nurses and physicians, should follow the CDC's infection control guidelines for health-care personnel. These guidelines recommend the use of an N95 respirator when health-care personnel are in close contact (within 6 feet of the patient or entering a small enclosed airspace shared with the patient) with a person with suspected or confirmed 2009 H1N1 influenza.

Additional Recommendations

Medications and Supplies

Ships should carry a sufficient quantity of supplies to meet day-to-day needs. Contingency plans are recommended for rapid resupply in outbreak situations. For antiviral treatment of 2009 H1N1 virus infection, either oseltamivir or zanamivir is recommended

Ships are encouraged to carry sterile viral transport media and sterile swabs to collect nasopharyngeal and nasal specimens. These optimal recommendations can be modified to reflect individual ship capabilities and characteristics.

Cleaning and Disinfection

Routine cleaning and disinfection strategies used during influenza seasons can be used for environmental management of 2009 H1N1 influenza. Commonly touched surfaces, such as handrails, countertops, and doorknobs, should be cleaned frequently with routine cleaning methods. Additional information on cleaning and disinfecting environmental surfaces can be accessed by using the links listed at the end of this document.

Reporting

Based on the prevalence and level of severity of 2009 H1N1 flu-related illness thus far, CDC does not recommend that ships traveling to or within the United States report individual cases of suspected or confirmed 2009 H1N1 influenza.
The following situations should be immediately reported to the CDC Quarantine Station in the jurisdiction of the U.S. seaport where the ship is expected to arrive:

- Changes in the clinical profile and severity of illnesses reported or severe complications among at least two epidemiologically linked cases.
- Outbreaks among both passengers and crew members at the same time.
- A death caused by or suspected to be associated with influenza or ILI onboard the vessel.

Vessel captains may request assistance from CDC to evaluate or control infection, as needed. If the ship will not be arriving imminently at a U.S. seaport, CDC quarantine officials will assist cruise ship officials with the management and isolation of the suspect case and with recommendations for other passengers and crew members.
For cases requiring hospitalization, CDC quarantine officials will work with the cruise line and local and state health departments to assist with medical transportation of the patient upon arrival. In outbreak situations, CDC staff may also assist with disease control and containment measures, passenger and crew notification and surveillance activities, communicating with local public health authorities, and ship cleaning procedures.
For ships on international voyages, if an illness has occurred onboard the Maritime Declaration of Health should be completed and sent to the competent authority, according to the 2005 International Health Regulations (IHR) and the national legislation of the country of disembarkation. Before entering a seaport, cruise ships may also be required to report the previous itinerary.

Prior to arrival, local port health authorities should be informed if any support is needed, including laboratory testing of clinical specimens and hospitalizations.

MMWR
Recommendations and Reports
June 01, 2001 / 50(RR09);1-18

"Norwalk-Like Viruses"

Public Health Consequences and Outbreak Management

Please note: An erratum has been published for this article. To view the erratum, please click here.

Summary

"Norwalk-like viruses" (NLVs) cause outbreaks of gastroenteritis and are spread frequently through contaminated food or water. Molecular diagnostics now enables detecting viruses in clinical and environmental specimens, linking of NLV strains causing outbreaks in multiple geographic locations, and tracing them to their sources in contaminated food or water. This report reviews recent advances in NLV detection and provides guidelines and recommendations for investigating NLV-related outbreaks, including specimen collection and disease prevention and control. This report also updates information provided in CDC's previously published, Viral Agents of Gastroenteritis: Public Health Importance and Outbreak Management (MMWR 1990;39 [No. RR-5]:1--24). These CDC recommendations are intended for public health professionals who investigate outbreaks of acute gastroenteritis but could be useful in academic and research settings as well.

INTRODUCTION

During the early 1970s, before the discovery of diarrhea-causing viruses, an etiologic agent could be detected only among a limited proportion of persons with gastroenteritis. Subsequently, with the discovery of Norwalk virus (*1*), rotavirus (*2*), astrovirus (*3,4*), and enteric adenovirus (*5*), researchers began to recognize viruses as causative agents of gastroenteritis. However, progress in detecting and managing outbreaks of disease caused by these agents was hampered by the unavailability of sensitive and specific diagnostic tests that could be applied outside research settings. Although outbreaks of nonbacterial gastroenteritis were recognized as a public health concern, electron microscopy (EM) proved to be a tedious and insensitive method for routine examination for enteric viruses in stool specimens collected during outbreak investigations.

Detection rates improved with the development of immunologic assays (*6--11*), and 19%--42% of nonbacterial outbreaks were attributed to Norwalk virus in targeted studies conducted during the late 1970s and 1980s (*12,13*). However, because reagents for these assays came from human volunteers, the reagents were available only in limited quantities and only at certain facilities. Consequently, outbreaks were not fully investigated, and a substantial number were still labeled as being of unknown etiology. Furthermore, because of the antigenic and genetic diversity of "Norwalk-like viruses"* (NLVs) and the inability to cultivate these viruses in cell lines, developing assays to detect the full spectrum of NLVs associated with outbreaks of gastroenteritis was not possible. To circumvent these obstacles to laboratory diagnosis, clinical and epidemiologic criteria were developed that correlate with the presence of NLVs in outbreaks of acute gastroenteritis (*14*). These criteria included a) stool specimens that are negative for bacterial and parasitic pathogens; b) percentage of cases with vomiting $\geq$50%; c) mean (or median) duration of illness of 12--60 hours; and d) if available, mean (or median) incubation period of 24--48 hours.

During the early 1990s, breakthroughs in cloning and sequencing of Norwalk virus and Southampton virus (*15--18*) led to the development of sensitive molecular assays (e.g., reverse transcription-polymerase chain reaction [RT-PCR]), nucleotide hybridization probes, and enzyme-linked immunosorbent assays (ELISA) that used baculovirus-expressed viral antigens (*19--33*). Using these assays, researchers demonstrated that NLVs caused a majority of foodborne gastroenteritis outbreaks in Minnesota and approximately 96% of 90 outbreaks of nonbacterial gastroenteritis reported to CDC during January 1996--June 1997 (*34,35*). These data demonstrate that NLVs are a common cause of outbreaks of nonbacterial gastroenteritis in the United States and similar findings have been reported in other countries (*36--42*).

In addition to improving detection rates of NLVs in outbreaks of gastroenteritis, advances in laboratory methods have also refined the epidemiologic investigation of these outbreaks. This progress is well-illustrated in reports of recent outbreaks linked to contaminated water, oysters, and other food items (*43--49*). In certain outbreaks, the detection of a genetically identical strain of NLV among patients from different geographic locations provided substantial evidence to support the link among the cases that was indicated by epidemiologic observations. In other outbreaks, the detection in the implicated vehicle of NLVs with a sequence identical to that of the strain detected from the patients confirmed the causal link.

Although diagnostic advances have improved the investigation of gastroenteritis outbreaks, they have also required that investigators collect clinical and environmental specimens accurately and in a timely manner and collaborate with the laboratory during the investigation. This report reviews recent advances in NLV diagnosis, and provides CDC's guidelines and recommendations for investigating gastroenteritis outbreaks, including methods for collecting specimens and preventing and controlling outbreaks.

BIOLOGY AND EPIDEMIOLOGY OF NLVs

Taxonomy

Norwalk virus is the prototype strain of genetically and antigenically diverse single-stranded RNA (ribonucleic acid) viruses, previously called *small round-structured viruses* (SRSVs), that are classified in the genus Norwalk-like viruses in the family *Caliciviridae* (*50*). Other genera in the *Caliciviridae* family include "Sapporo-like viruses," which also cause gastroenteritis among both children and adults, and *Lagovirus* and *Vesivirus*, neither of which are pathogenic for humans. NLVs can be divided into three distinct genogroups: GI, GII, and GIII (*51*). GI and GII NLVs infect humans and include 5 and 10 genetic clusters, respectively; GIII NLVs infect pigs and cows.

Endemic Disease

The burden of NLV-caused endemic disease is unknown because simple and sensitive diagnostic assays are not readily available. However, the potential burden of NLV disease can be understood by examining the disease burden of gastroenteritis of all causes with the insights obtained during the limited number of studies in which newer diagnostics for NLVs have been applied. Annually, approximately 267,000,000 episodes of diarrhea leading to 612,000 hospitalizations and 3,000 deaths occur among adults in the United States (*52*). An etiologic agent is identified in <10% of these cases, but studies to assess the disease burden of NLV among hospitalized adults are underway. In other countries (e.g., the Netherlands and England [*53--55*]), NLVs have been reported to account for 5%--17% of cases of diarrhea in the community and 5%--7% of cases requiring treatment by physicians.

Although rotavirus is the leading cause of severe diarrhea among children (*56*), data from recent studies demonstrate that NLVs also might be a factor in childhood gastroenteritis (*57--65*). For example, NLVs were detected in 20% of 783 stool specimens collected during acute gastroenteritis episodes among Finnish children prospectively followed from age 2 months to 2 years (*65*). "Sapporo-like viruses" were detected in an additional 9% of cases.

Clinical Features

NLV-caused gastroenteritis has an average incubation period of 12--48 hours and lasts 12--60 hours. Illness is characterized by acute onset of nausea, vomiting, abdominal cramps, and diarrhea. Vomiting is relatively more prevalent among children, whereas a greater proportion of adults experience diarrhea. Patients can experience vomiting alone, a condition first identified as *winter vomiting disease* (*66*). Constitutional symptoms (e.g., headache, fever, chills, and myalgia) are frequently reported. Although rare, severe dehydration caused by NLV gastroenteritis can be fatal, with this outcome occurring among susceptible persons (e.g., older persons with debilitating health conditions). No long-term sequelae of NLV infection have been reported.

Transmission Mode

Fecal-oral spread is probably the primary NLV transmission mode, although airborne and fomite transmission might facilitate spread during outbreaks (*67--71*). Frequently during an outbreak, primary cases result from exposure to a fecally contaminated vehicle (e.g., food or water), whereas secondary and tertiary cases among contacts of primary cases result from person-to-person transmission (*72*). For 348 outbreaks of NLV gastroenteritis reported to CDC during January 1996--November 2000, food was implicated in 39%, person-to-person contact in 12%, and water in 3%; 18% could not be linked to a specific transmission mode (Figure 1).

Previously, researchers believed that a person remained contagious 48--72 hours after recovery from NLV gastroenteritis (*73*). However, data from recent studies using more sensitive diagnostic assays demonstrate that this belief might require further evaluation. During a 1994 study of 50 volunteers exposed to NLV, 82% became infected; of these infections, 68% resulted in illness, whereas the remaining 32% were asymptomatic (*74*). Viral shedding in stool began 15 hours after virus administration and peaked 25--72 hours after virus administration. Unexpectedly, viral antigen could be detected by ELISA in stool specimens collected 7 days after inoculation in both symptomatic and asymptomatic persons. In a later study of infected volunteers, viral antigen in stool was detected ≤2 weeks after administration of virus (*75*). Anecdotal evidence from outbreak investigations also demonstrates that viral shedding can occur for a prolonged period and in the absence of clinical illness (*46,48,76--80*). However, the epidemiologic significance of these findings is unclear. Additional research is need to determine whether the viral antigen that is detectable for prolonged periods after recovery from illness is evidence of infectious virus or just a soluble antigen and to assess the time of maximal viral shedding so that control measures can focus on the period during which the person is most likely to be contagious.

Characteristics of NLVs facilitate their spread during epidemics (Table 1). The low infectious dose of NLVs (i.e., <100 viral particles [*81*]) readily allows spread by droplets, fomites, person-to-person transmission, and environmental contamination, as evidenced by the increased rate of secondary and tertiary spread among contacts and family members. Prolonged duration of viral shedding that can occur among asymptomatic persons increases the risk for secondary spread and is of concern in foodhandler-related transmission. The ability of the virus to survive relatively high levels of chlorine (*82*) and varying temperatures (i.e., from freezing to 60 C) (*81*) facilitates spread through recreational and drinking water and food items, including steamed oysters (*83*). Because of the diversity of NLV strains, lack of complete cross-protection, and lack of long-term immunity, repeated infections can occur throughout life.

Immunity

Studies of NLV immunity have been hampered by the inability of these viruses to be cultivated in cell lines, and thus, in vitro neutralization assays are not available. Early studies indicated that approximately 50% of persons exposed to NLVs experience illness and acquire short-term homologous immunity (i.e., against the same strain) that is correlated with serum antibody levels (*84*). Certain studies also demonstrated, paradoxically, that persons with higher levels of preexisting NLV antibodies would probably experience illness if exposed to the virus (*84,85*).

A recent study using molecular assays confirmed that approximately 50% of volunteers exposed to NLVs are susceptible to illness, but the study demonstrated also that approximately 80% become infected, with certain infections being asymptomatic (*74*). Although a trend for higher rates of viral shedding, seroconversion, and clinical illness was observed among those with higher levels of preexisting antibody, 60% of volunteers without

preexisting antibody also demonstrated a seroconversion. Researchers hypothesized that certain persons might be genetically more susceptible to NLV infection and disease. If true, this hypothesis could explain why those with greater levels of preexisting antibody are more likely to experience NLV infection and disease after reexposure to virus.

Outbreaks

Outbreaks of NLV gastroenteritis occur in multiple settings. Of 348 such outbreaks reported to CDC during January 1996--November 2000, a total of 39% occurred in restaurants; 29% occurred in nursing homes and hospitals; 12% in schools and day care centers; 10% in vacation settings, including cruise ships; and 9% in other settings (Figure 2).

Nursing Homes and Residential Institutions

Protracted outbreaks of NLV disease have been reported among elderly persons living in institutional settings, (e.g., nursing homes) (*86,87*). In certain cases, the outbreak was initially caused by a common-source exposure to a fecally contaminated vehicle (e.g., food or water). Later, the outbreak spreads through person-to-person transmission among the residents; this spread is facilitated by the enclosed living quarters and reduced levels of personal hygiene that result from incontinence, immobility, or reduced mental alertness. Because of underlying medical conditions, the disease among these persons can be severe or fatal.

Restaurants and Catered Events

A report from Minnesota demonstrates the relevance of NLVs as a cause of foodborne outbreaks (*34*). The survey determined that 41% of 295 foodborne outbreaks reported in Minnesota during 1981--1998 met the epidemiologic criteria for NLV gastroenteritis. Further, NLVs were detected in 70% of 23 foodborne outbreaks investigated during 1996--1998 in which molecular diagnostics were used to test stool specimens. Investigations of foodborne NLV outbreaks have implicated multiple food items, including oysters, salads, sandwiches, cakes, frosting, raspberries, drinking water, and ice (*43--49,88--91*). In certain outbreaks, the implicated food is fecally contaminated with NLVs at its source (e.g., oysters harvested from fecally contaminated waters or raspberries irrigated with sewage-contaminated water). However, foodhandlers might contaminate food items during preparation. The risk for contamination through foodhandlers is increased when the food item is consumed without further cooking (e.g., ready-to-eat foods) and when a semiliquid food (e.g., cake frosting or salad dressing) is contaminated so that a small inoculum is mixed and spread to multiple persons.

Cruise Ships

Passengers and crew members on cruise ships and naval vessels are frequently affected by outbreaks of NLV gastroenteritis (*35,92,93*). These ships dock in countries where levels of sanitation might be inadequate, thus increasing the risk for contamination of water and food taken aboard or for having a passenger board with an active infection. After a passenger or crew member brings the virus on board, the close living quarters on ships amplify opportunities for person-to-person transmission. Furthermore, the arrival of new and susceptible passengers every 1 or 2 weeks on affected cruise ships provides an opportunity for sustained transmission during successive cruises. NLV outbreaks extending beyond 12 successive cruises have been reported (*94*).

PREVENTION AND CONTROL OF NLV OUTBREAKS

Although person-to-person spread might extend NLV gastroenteritis outbreaks, the initiating event is often the contamination of a common vehicle (e.g., food or water). Consequently, efforts to prevent both the initial contamination of the implicated vehicle and subsequent person-to-person NLV transmission will prevent the occurrence and spread of NLV gastroenteritis outbreaks.

Foodborne Transmission

Theoretically, any food item can potentially be infected with NLVs through fecal contamination. However, certain foods are implicated more often than others in outbreaks of NLV gastroenteritis. Shellfish (e.g., oysters or clams) tend to concentrate in their tissues NLVs that contaminate the waters from which they are harvested (*95*,*96*), and even harvests meeting bacteriologic standards of hygiene can contain NLVs. In addition, cooking (e.g., steaming) might not completely inactivate NLVs (*83*). Until reliable indicators for routine monitoring of viral contamination of harvest waters and shellfish are available, measures to prevent the contamination of harvest waters with human waste (e.g., surveillance of the shoreline for potential sources of fecal contamination and restricting boaters from dumping waste overboard) are probably a useful means of preventing shellfish-associated NLV gastroenteritis outbreaks.

Food contamination by infectious foodhandlers is another frequent cause of NLV gastroenteritis outbreaks. Because of the low infectious dose of NLVs and the high concentration of virus in stool, even a limited contamination can result in substantial outbreaks. Ready-to-eat foods that require handling but no subsequent cooking (e.g., salads and deli sandwiches) pose greater risk. Previously, the exclusion of ill foodhandlers for 48--72 hours after resolution of illness was recommended to prevent outbreaks caused by foodhandlers (*97*). Data from recent human volunteer and epidemiologic studies demonstrate that viral antigen can be shed for a longer duration after recovery from illness and in the absence of clinical disease. Although data are limited regarding whether this detectable viral antigen represents infectious virus, foodhandlers should be required to maintain strict personal hygiene at all times.

Waterborne Transmission

Although waterborne outbreaks are far less common than foodborne outbreaks, NLV gastroenteritis outbreaks have been associated with sources of contaminated water, including municipal water, well water, stream water, commercial ice, lake water, and swimming pool water. Because current analytic methods do not permit direct monitoring of NLVs in water, indicator organisms (e.g., coliform bacteria) have been used as proxy indicators of fecal contamination. However, because the size, physiology, and susceptibility to physical treatment and disinfection of bacterial indicators differ from those of NLVs, inherent limitations of this approach exist. Until reliable methods for assessing the occurrence and susceptibility to treatment of NLVs are available, prevention methods should focus on reducing human waste contamination of water supplies. If drinking or recreational water is suspected as being an outbreak source, high-level chlorination (i.e., 10 ppm or 10 mg/L for >30 minutes) might be required for adequate disinfection; however, even this method might be insufficient in certain cases (*82*).

Person-to-Person Transmission

Person-to-person spread of NLVs occurs by direct fecal-oral and airborne transmission. Such transmission plays a role in propagating NLV disease outbreaks, notably in institutional settings (e.g., nursing homes and day care centers) and on cruise ships. Although interruption of person-to-person transmission can be difficult, certain measures might help. Frequent handwashing with soap and water is an effective means of prevention. The recommended procedure is to rub all surfaces of lathered hands together vigorously for ≥10 seconds and then thoroughly rinse the hands under a stream of water. Because spattering or aerosols of infectious material might be involved in disease transmission, wearing masks should be considered for persons who clean areas substantially contaminated by feces or vomitus (e.g., hospital or nursing home personnel). Soiled linens and clothes should be handled as little as possible and with minimum agitation. They should be laundered with detergent at the maximum available cycle length and then machine dried. Because environmental surfaces have been implicated in the transmission of enteric viruses, surfaces that have been soiled should be cleaned with an appropriate germicidal product (e.g., 10% solution of household bleach) according to the manufacturer's instructions. In situations in which the epidemic is extended by periodic renewal of the susceptible population (e.g., camps and cruise ships), the facility or institution might have to be closed until it can be cleaned appropriately.

DIAGNOSTIC METHODS

Advances in methods for detecting NLVs have changed our understanding of the epidemiology of these viruses. The following sections provide a summary of the commonly available diagnostic methods, which are extensively reviewed elsewhere (*98*).

Electron Microscopy and Immune Electron Microscopy

Under the electron microscope, NLVs can be identified by their characteristic morphology. Approximately 10^6--10^7/ml of virus in stool is required for visualization by EM; therefore, this technique is useful only for specimens collected during the early stages of illness when substantial quantities of virus are shed. Even among experimentally infected volunteers, the virus can be found in only 10%--20% of fecal specimens collected on days 2 or 3 of illness.

Immune electron microscopy (IEM) can improve the sensitivity of EM by 10- to 100-fold. In one type of IEM, convalescent-phase serum from patients is coated on the examination grid of the microscope before stool specimens are applied. The antibody on the grid traps homologous virus, thereby increasing diagnostic yield. However, IEM has certain disadvantages, the greatest of which is that success is highly dependant on the skill and expertise of the microscopist. Furthermore, the virus might be totally masked if a large excess of antibody is present, resulting in a false-negative test.

Enzyme Immunoassays

The expression in baculoviruses of the capsid proteins of NLVs that self-assemble into stable virus-like particles has allowed the detection of these viruses by ELISAs. To develop assays to detect virus in fecal specimens, the expressed capsid antigens have been used to generate hyperimmune antibodies in laboratory animals. These assays have been reported to detect the presence of 10^4--10^6 viral particles/ml in clinical specimens. To date, these assays have been type-specific, but broadly reactive tests are under development.

The baculovirus-expressed viral antigen can be directly used for detection of antibodies to NLVs in patient's sera by enzyme immunoassay. Because certain adults have preexisting immunoglobulin G (IgG) antibodies to NLVs, a single serum specimen is insufficient to indicate recent infection. Seroconversion, defined as a $\geq$4-fold rise in IgG antibody titer during acute- and convalescent-phase sera, is indicative of a recent infection. In outbreak settings, if at least half of affected persons seroconvert to a specific NLV, that viral strain can be designated as etiologic. Titers can begin to rise by the fifth day after onset of symptoms, peak at approximately the third week, and begin to fall by the sixth week. Hence, for IgG assays, the acute-phase serum should be drawn within the first 5 days and the convalescent-phase serum during the third to sixth weeks. In certain cases where diagnosis is critical (e.g., when a foodhandler is implicated as the source of an outbreak), single assays of serum immunoglobulin A (IgA) antibody can be successful if specimens are collected 7--14 days after exposure. In addition to potential difficulties in obtaining an adequate number of serum specimens during outbreaks, serologic assays are currently limited by the fact that the available array of expressed NLV antigens is insufficient to detect all antigenic types of NLVs.

Nucleic Acid Hybridization Assays and RT-PCR

Nucleic acid hybridization assays and RT-PCR assays to detect NLV genome in clinical and environmental specimens have provided a sensitive and specific tool for NLV-outbreak investigations. High sensitivity of these assays (i.e., ability to detect 10^2--10^4 viral particles/ml in stool) is both an asset and a liability because extreme care is required to avoid contamination in the laboratory. In addition, although the available primers for RT-PCR assays detect multiple strains of NLVs, certain strains can escape detection. Efforts are ongoing to develop universal or degenerate primers that would detect the majority of NLV strains that cause gastroenteritis outbreaks.

Applying New Diagnostics in Outbreak Investigations

Application of new molecular diagnostics has expanded the scope of outbreak investigations, as demonstrated in

recent outbreaks (Table 2), because outbreak source vehicles (e.g., food or water) can be definitively implicated by detecting NLVs in environmental specimens. However, these methods are not sufficiently developed to be routinely applied. Through nucleotide sequencing, establishing an irrefutable genetic link between outbreaks that occur through a single contaminated vehicle that is distributed in multiple geographic locations is possible.

RECOMMENDATIONS REGARDING SPECIMEN COLLECTION FOR DIAGNOSIS OF NLVs*

Clinical Specimens

Stool

Timing. Specimen collection for viral testing should begin on day 1 of the epidemiologic investigation. Any delays to await testing results for bacterial or parasitic agents could preclude establishing a viral diagnosis. Ideally, specimens should be obtained during the acute phase of illness (i.e., within 48--72 hours after onset) while the stools are still liquid or semisolid because the level of viral excretion is greatest then. With the development of sensitive molecular assays, the ability to detect viruses in specimens collected later in the illness has been improved. In specific cases, specimens might be collected later during the illness (i.e., 7--10 days after onset), if the testing is necessary for either determining the etiology of the outbreak or for epidemiologic purposes (e.g., a specimen obtained from an ill foodhandler who might be the source of infection). If specimens are collected late in the illness, the utility of viral diagnosis and interpretation of the results should be discussed with laboratory personnel before tests are conducted.

Number and Quantity. Ideally, specimens from ≥10 ill persons should be obtained during the acute phase of illness. Bulk samples (i.e., 10--50 ml of stool placed in a stool cup or urine container) are preferred, as are acute diarrhea specimens that are loose enough to assume the shape of their containers. Serial specimens from persons with acute, frequent, high-volume diarrhea are useful as reference material for the development of assays. The smaller the specimen and the more formed the stool, the lower the diagnostic yield. Rectal swabs are of limited or no value because they contain insufficient quantity of nucleic acid for amplification.

Storage and Transport. Because freezing can destroy the characteristic viral morphology that permits a diagnosis by EM, specimens should be kept refrigerated at 4 C. At this temperature, specimens can be stored without compromising diagnostic yield for 2--3 weeks, during which time testing for other pathogens can be completed. If the specimens have to be transported to a laboratory for testing, they should be bagged and sealed and kept on ice or frozen refrigerant packs in an insulated, waterproof container. If facilities for testing specimens within 2--3 weeks are not available, specimens can be frozen for antigen or PCR testing.

Vomitus

Vomiting is the predominant symptom among children, and specimens of vomitus can be collected to supplement the diagnostic yield from stool specimens during an investigation. Recommendations for collection, storage, and shipment of vomitus specimens are the same as those for stool specimens.

Serum

Timing. If feasible, acute- and convalescent-phase serum specimens should be obtained to test for a diagnostic ≥4-fold rise in IgG titer to NLVs. Acute-phase specimens should be obtained during the first 5 days of symptoms, and the convalescent-phase specimen should be collected from the third to sixth week after resolution of symptoms.

Number and Quantity. Ideally, 10 pairs of specimens from ill persons (i.e., the same persons submitting stool specimens) and 10 pairs from well persons (controls) should be obtained. Adults should provide 5--7 ml of blood, and children should provide 3--4 ml.

Storage. Specimens should be collected in tubes containing no anticoagulant, and the serum should be spun off and frozen. If a centrifuge is not available, a clot should be allowed to form, and the serum should be decanted and frozen. If this step cannot be accomplished, the whole blood should be refrigerated but not frozen.

Environmental Specimens

NLVs cannot be detected routinely in water, food, or environmental specimens. Nevertheless, during recent outbreaks (*33*--*36*), NLVs have been detected successfully in vehicles epidemiologically implicated as the source of infection. If a food or water item is strongly suspected as the source of an outbreak, then a sample should be obtained as early as possible and stored at 4 C. If the epidemiologic investigation confirms the link, a laboratory with the capacity to test these specimens should be contacted for further testing. If drinking water is suspected, special filtration (*45*) of large volumes (i.e., 5--100 liters) of water can concentrate virus to facilitate its detection.

CONSULTATION AND ASSISTANCE

During any outbreak, CDC's National Center for Infectious Diseases, Division of Viral and Rickettsial Diseases, Respiratory and Enteric Viruses Branch, Viral Gastroenteritis Section, (Telephone: [404] 639-3607) is available to provide assistance. If, after consultation, viral diagnostic services would be useful, specimens may be shipped to CDC's Viral Gastroenteritis Section with the following provisions:

- A unique identifier for each patient (preferably not the patient's name) should be included on each specimen.
- Stool specimens should be shipped as soon as they can be batched. Individual containers should be verified as being leak proof and then enclosed in a plastic bag. The entire collection should be bagged in plastic and placed in a padded, insulated box with refrigerant packs.
- Frozen acute- and convalescent-phase serum samples should be batched and sent in a single shipment. Waterproof, padded, insulated boxes should be used, with dry ice added to maintain freezing. Whole-blood samples should not be frozen, and refrigerant packs should be used instead of dry ice.
- Final notification should be made by telephone to (404) 639-3607 immediately before shipping.
- All shipments should be sent by overnight mail, to arrive on a weekday, addressed to

  NCID/DVRD/REVB/VGS
  Attention: Dash Unit 75
  Centers for Disease Control and Prevention
  1600 Clifton Road, N.E.
  Atlanta, GA 30333

Reporting of Outbreaks to CDC

All suspected foodborne outbreaks of viral gastroenteritis for which specimens are sent to CDC for laboratory testing should be reported to CDC on a standard form. This form and instructions for completing it are available on the Internet at <http://www.cdc.gov/ncidod/dbmd/outbreak/report_f.htm> (accessed May 1, 2001).

CDC Answers Your Questions About

Noroviruses and Food Handlers

What are noroviruses?

Noroviruses are members of a group of viruses called caliciviruses also known previously as "Norwalk-like viruses." Infection with norovirus affects the stomach and intestines, causing an illness called gastroenteritis, or "stomach flu." This "stomach flu" is ***not*** related to the flu (or influenza), which is a respiratory illness caused by influenza virus. In addition, noroviruses are not related to bacteria and parasites that can cause gastrointestinal illnesses. Norovirus is not a "new" virus, but interest in it is growing as more is learned about how frequently noroviruses cause illness in people (see – "Why is norovirus infection important for food handlers?").

What are the symptoms of infection with norovirus?

Norovirus infection causes gastroenteritis, which is an inflammation of the stomach and the small and large intestines. The symptoms of gastroenteritis are nausea, vomiting, and/or diarrhea accompanied by abdominal cramps. Some people also complain of headache, fever/chills, and muscle aches. Symptoms are usually brief and last only 1 or 2 days. However, during that brief period, people can feel very ill and vomit, often violently and without warning, many times a day. Symptoms usually begin 24 to 48 hours after ingestion of the virus, but can appear as early as 12 hours after exposure (see – "How is norovirus spread?"). There is no evidence that sick persons can become long-term carriers of the virus, but the virus can be in the stool and vomit of infected persons, from the day they start to feel ill to as long as 2 weeks after they feel better.

Other infectious and non-infectious agents can cause symptoms similar to those of norovirus gastroenteritis; people who have these symptoms and have questions about the cause of their illness should consult a physician.

How serious is norovirus gastroenteritis?

Norovirus gastroenteritis is usually not a serious illness, and other than drinking liquids to prevent dehydration, there is no specific treatment. Most people recover completely within 1 to 2 days, with no long-term complications of norovirus illness. However, persons who are unable to drink enough liquids to replace those lost with vomiting and/or diarrhea may become dehydrated and require special medical attention. These people include young children, the elderly, and persons of any age unable to care for themselves.

How is norovirus spread?

Noroviruses are found in the stool or vomit of infected people. People can become infected with the virus in several ways, including:

- eating food (see food handler fact sheet) or drinking liquids that are contaminated with norovirus;
- touching surfaces or objects contaminated with norovirus, and then placing their hand in their mouth;
- having direct contact with another person who is infected and showing symptoms (for example, when caring for someone with illness, or sharing foods or eating utensils with someone who is ill).

Food and drinks can very easily become contaminated with norovirus because the virus is so small and because it probably takes fewer than 100 norovirus particles to make a person sick. Food can be contaminated either by direct contact with contaminated hands or work surfaces that are contaminated with stool or vomit, or by tiny droplets from nearby vomit that can travel through air to land on food. Although the virus cannot multiply outside of human bodies, once on food or in water, it can cause illness.

Some foods can be contaminated with norovirus ***before*** being delivered to a restaurant or store. Several outbreaks have been caused by the consumption of oysters harvested from contaminated waters. Other produce such as salads and frozen fruit may also be contaminated at source.

Why is norovirus infection important for food handlers?

People working with food who are sick with norovirus gastroenteritis are a particular risk to others, because they handle the food and drink many other people will consume. Since the virus is so small, a sick food handler can easily – without meaning to – contaminate the food he or she is handling. Many of those eating the contaminated food may become ill, causing an outbreak.

Outbreaks of norovirus gastroenteritis have taken place in restaurants, cruise ships, nursing homes, hospitals, schools, banquet halls, summer camps, and family dinners – in other words, places where often people have consumed water and/or food prepared or handled by others. It is estimated that as many as half of all food-related outbreaks of illness may be caused by norovirus. In many of these cases, sick food handlers were thought to be implicated.

What can I do to prevent norovirus gastroenteritis?

Many local and state health departments require that food handlers and preparers with gastroenteritis ***not*** work until 2 or 3 days after they feel better. In addition, because the virus continues to be present in the stool for as long as 2 to 3 weeks after the person feels better, strict hand washing after using the bathroom and before handling food items is important in preventing the spread of this virus. Food handlers who were recently sick can be given different duties in the restaurant so that they do not have to handle food (for example, working the cash register or hostessing).

People who are sick with norovirus illness can often vomit violently, without warning, and the vomit is infectious; therefore, any surfaces near the vomit should be promptly cleaned and disinfected with bleach solution and then rinsed. Furthermore, food items that may have become contaminated with norovirus should be thrown out. Linens (including clothes, towels, tablecloths, napkins) soiled to any extent with vomit or stool should be promptly washed at high temperature. Oysters should be obtained from reputable sources and appropriate documentation kept. Washing raw vegetables thoroughly before eating and appropriate disposal of sewage and soiled diapers also help to reduce the spread of norovirus and prevent illness. In small home-based catering businesses or family owned or operated restaurants, sick children and infants in diapers should be excluded from food preparation areas.

How is norovirus gastroenteritis diagnosed?

In special cases, when there is an outbreak of gastroenteritis there is a need to identify norovirus as the cause of the illness. In these cases, norovirus can often be found in stool samples of infected persons by using special tests. Sometimes blood tests looking for antibodies against norovirus are also performed, when the stool tests are inconclusive or were not done. Food handlers will often be asked for a stool sample or even a blood sample to help investigate the cause of an outbreak.

Can a person have norovirus gastroenteritis more than once?

Yes, a person can be infected with norovirus more than once in their lifetime. This is because there are many different noroviruses, and being infected with one type does not prevent infection from another type later. For this reason, it is difficult to develop a vaccine against norovirus.

SEVERE ACUTE RESPIRATORY SYNDROME

GUIDELINES AND RECOMMENDATIONS

Interim Guidelines about Severe Acute Respiratory Syndrome (SARS) For Cruise Ship Passengers and Crew Members

Background:
The Centers for Disease Control and Prevention (CDC) is tracking reports of outbreaks of a respiratory illness called severe acute respiratory syndrome (SARS). Because the outbreak has affected international travelers who have recently visited mainland China; Hong Kong; Singapore; and Hanoi, Vietnam, CDC issued a travel advisory for people traveling from those areas (http://www.cdc.gov/travel/other/acute_resp_syn_multi.htm). You can learn more about SARS at the CDC web site and the World Health Organization (WHO) web site. These websites are updated continually as new information about SARS and the areas affected is learned.

The primary way that SARS appears to spread is by close person-to-person contact. Most cases of SARS have involved people who cared for or lived with someone with SARS, or had direct contact with infectious material (for example, respiratory secretions) from a person who has SARS. Potential ways in which SARS can be spread include touching the skin of other persons or objects that are contaminated with infectious droplets and then touching the eye, nose, or mouth. This can happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other persons, or nearby surfaces. It is also possible that SARS can be spread more broadly through the air or by other ways that are currently not known.

International and domestic conveyances, including cruise ships, have been asked to report suspect cases of SARS to U.S. public health authorities. Since the beginning of the SARS epidemic, the cruise industry and the Centers for Disease Control and Prevention (CDC) have a shared interest in preventing SARS from being introduced on cruise ships, and controlling its spread when it is inadvertently introduced, to protect the health of the traveling public and the crew members who live and work on the ship.

General hygiene:
As with all infectious illnesses, the first line of defense is careful hand hygiene. As a general rule, it is good practice to wash hands frequently with soap and water; if hands are not visibly soiled, alcohol-based hand rubs may be used as an alternative.

Management of possible cases of SARS during a cruise:
The interim U.S. case definition of SARS is available at the following website: http://www.cdc.gov/ncidod/sars/casedefinition.htm. If a passenger or crew member on a cruise ship who has traveled from or transited through one of the areas listed above becomes ill with a respiratory illness consistent with SARS, that person should be isolated from the other passengers and crew members as much as possible. Cruise ship personnel and close contacts of this person should follow the recommendations for close contacts of SARS cases outlined on the following website: http://www.cdc.gov/ncidod/sars/ic-closecontacts.htm. Health-care personnel aboard the ship should follow recommendations for health-care personnel described on the following website: http://www.cdc.gov/ncidod/sars/clinicians.htm.

Interim Guidelines about Severe Acute Respiratory Syndrome (SARS) For Cruise Ship Passengers and Crew Members
(continued from previous page)

If a suspect SARS case is identified aboard a ship, the captain of the ship should immediately report the illness to the nearest U.S. Quarantine Station (http://www.cdc.gov/ncidod/dq/quarantine_stations.htm). This reporting is required by law. If the ship will not be arriving imminently at a U.S. port, Quarantine health authorities will assist ship officials with the management and isolation of the suspect case and the recommendations among other passengers and crew members. When the ship arrives, Quarantine officials will arrange for appropriate medical assistance to be available and assist with the provision of information for other passengers and crew members.

While in areas affected by SARS:
Be aware of the symptoms described in (http://www.cdc.gov/ncidod/sars/factsheet.htm). If you become ill and you are concerned about SARS, seek medical attention from the cruise ship medical personnel. If additional medical attention is required, and you do not have information about a local health-care provider in the country you are visiting, you can contact the U.S. embassy or consulate to ask about finding a health-care provider. Limit your contact with others as much as possible to help prevent the spread of any infectious illness you may have. CDC does not recommend the routine use of masks or other personal protection equipment while in public.

When you return home from areas affected by SARS:
CDC health officials or their local designees handing out travel alert cards to people returning from areas affected by SARS. A copy can be found at: (http://www.cdc.gov/ncidod/sars/travel_alert.htm). If you return home and become sick, see your health-care provider as soon as possible and tell him/her about your symptoms and the countries you visited.

For more information, visit www.cdc.gov/ncidod/sars or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Outbreak Investigation Overview

Background

Since 1970, CDC's Vessel Sanitation Program has maintained a surveillance and reporting system for cruise ships that have both a U.S. and foreign itinerary and carry 13 or more passengers. The system was designed to minimize the introduction, transmission, or spread of gastrointestinal (GI) illnesses into the United States. This reporting system, along with other Vessel Sanitation Program components have reduced and controlled the number of passengers and crew members aboard cruise ships with GI illnesses.

The cruise industry is rapidly growing and now serves more travelers and has more extensive itineraries than ever before. Because of the increases in itineraries and the number of passengers on cruise ships, itineraries and the number of passengers on cruise ships, more people are at risk for GI illnesses while traveling. Cruise ship passengers and crews are also at risk for new patterns of old diseases or newly recognized causes of diseases. VSP protects passenger and crew health by minimizing the risk of GI illness aboard cruise ships.

What Are Cruise Ships Required To Do?

Cruise ships are required to log and report the number of passengers and crew members that have reported having symptoms of GI illness. Additionally, vessels are required to keep a list of all passengers and crew members that have requested anti-diarrheal medication.

What Does VSP Look for When Monitoring GI Illness Reports?

VSP provides assistance to cruise ships when the number of ill passengers or crew members has reached 2% or more of the total number of passengers or crew members or when an unusual GI illness pattern or characteristic is found. VSP monitors and evaluates GI illnesses aboard ships to determine the cause of the outbreaks and to make recommendations for control. To accomplish this, VSP officials do the following

1. Review the magnitude of GI illnesses among passengers and crew.
2. Monitor distribution of GI illnesses among both passengers and crew members.
3. Assist in the assessment of changes in sanitation practices, in infectious agents, and in types of diseases.
4. Evaluate the effectiveness of prevention and control strategies.
5. Provide lab support to confirm the cause of the illness.

What Is a Reportable Case of GI Illness?

A reportable case of GI illness is three or more loose stools within a 24-hour time period, or vomiting along with one of the following symptoms: muscle ache, headache, abdominal cramp, or fever.

What Are Unusual GI Illness Patterns or Characteristics?

Examples of unusual GI illness pattern or characteristic are relatively high incidences of illnesses in successive cruises, unusual severity of illnesses or complications, high numbers of persons reporting illnesses over a brief period, or suspicion of an uncommon causative agent.

When Does CDC Conduct an Investigation?

VSP and other CDC officials may conduct an investigation if at least 3.0% of the ship's passengers or crew members have GI illness, or if an unusual GI illness pattern or characteristic is found (even if the illness rate is less than 3%).

What Happens During an Onboard Investigation?

During an onboard investigation, CDC officials work with cruise ship staff to determine the cause of illness.

The objectives of an investigation are to:

1. Determine the magnitude of illness aboard the ship.
2. Identify the agent causing the illness.
3. Identify risk factors associated with the illness.
4. Formulate control measures to prevent or stop the spread of illness.

By determining the cause of an outbreak, CDC officials can help devise effective intervention strategies to prevent a recurrence of the outbreak.

The investigation has three parts:

1. **Epidemiological investigation:** The incidence and distribution of the GI illness is evaluated on the basis of passenger and crew member activity questionnaires, general cruise ship layout, menus, medical records, and other pertinent data.
2. **Laboratory investigation**: Medical staff may collect stool, blood, or vomit specimens to send to a land-based lab to confirm the cause of illness.
3. **Environmental health investigation:** An environmental health investigation is based on the preliminary findings of the epidemiological investigation. For example, if water is suspected to be the source of the illness, more attention will be spent reviewing the water source.

What Happens to the Information Collected During

an Investigation?

When possible, VSP officials present a preliminary report of findings and recommendations to the master of the ship before leaving the ship.

When the investigation is complete, a final report is sent to the cruise line results on of the epidemiological, laboratory, and environmental analyses. Summary recommendations for control and prevention are also included in the report.

How Is This Information Made Available to the Passengers?

Passengers can find a copy of the report on this website, emailing CDCINFO@cdc.gov (mailto:CDCINFO@cdc.gov), or by writing:

Chief
Vessel Sanitation Program
Centers for Disease Control and Prevention
4770 Buford Highway, N.E., Mailstop F-59
Atlanta, Georgia 30341-3724

Outbreak Updates for International Cruise Ships (/nceh/vsp/surv/GIlist.htm)

Page last reviewed: July 15, 2009
Page last updated: July 20, 2009
Content source: **National Center for Environmental Health**

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

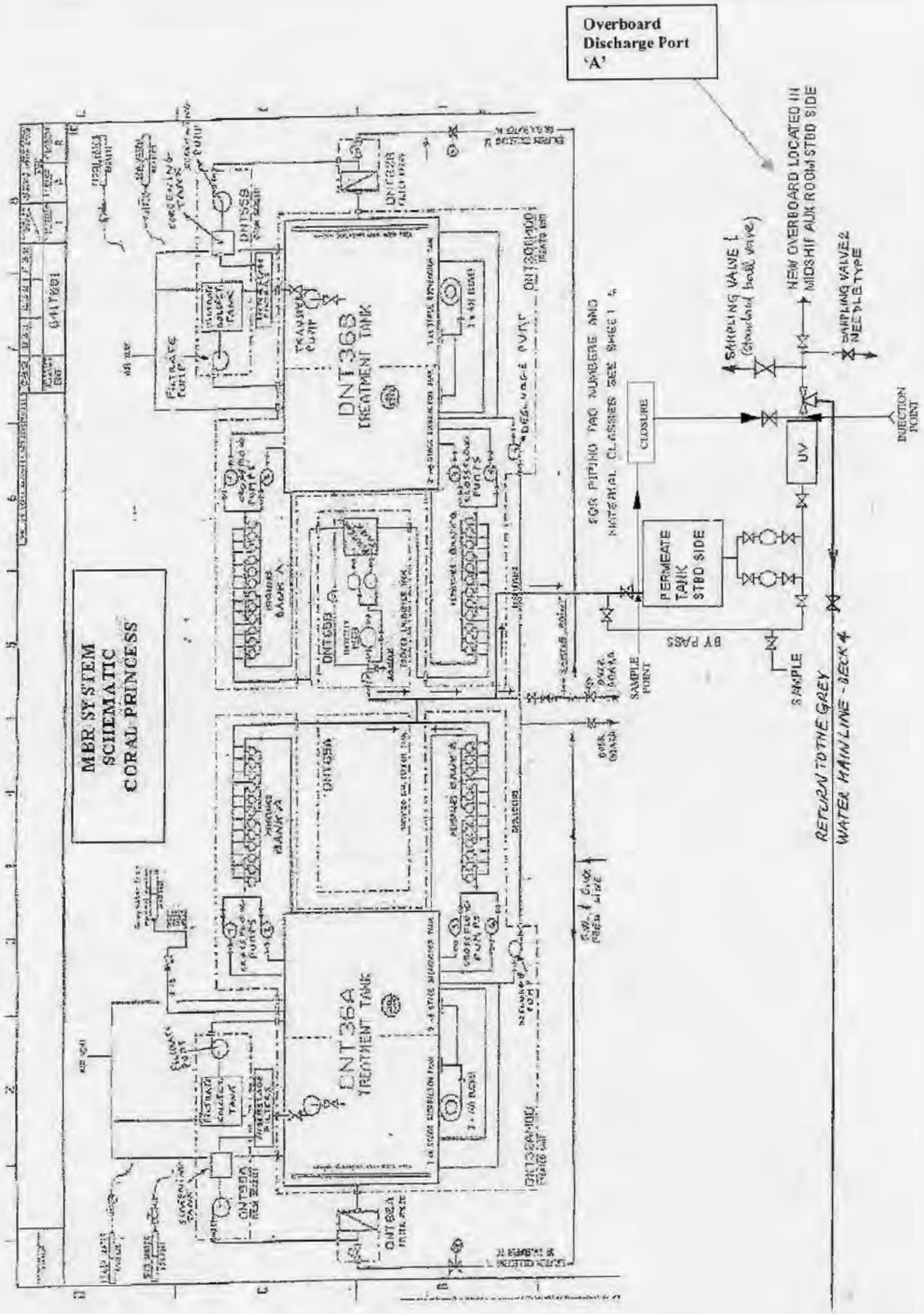
Hamworthy AWT Systems

Coral Princess
Dawn Princess
Sapphire Princess
Star Princess
Sun Princess
Diamond Princess
Golden Princess
Island Princess
Seven Seas Mariner

All black water and accommodations gray water with MBR #1 and MBR #2. Black water is delivered directly from the collecting EVAC tanks to the MBR's. Gray water from accommodations is delivered from the dedicated gray water collection tanks and then to one of two MBR's buffer tanks where the grey water is provided with some aerobic aeration through the usage of blowers. The gray water and black water are then mixed into a common line before entering the MBR's. Gray water from the galleys and laundry are not treated by the MBR's and is held into 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. The screenings are collected from the dry waste outlet and into a bagging unit. The bagging is manually removed periodically throughout the day and delivered to the incinerator for incineration while at sea. The feed then flows into the 1st Stage of the Bioreactor which operates as an aerobic biological treatment system. Incoming feed enters into a high strength biomass within which there is a diverse microbial ecology that breaks down and consumes the raw sewage and grey water 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 atmosphere (outside the Engine Room) along with the air that is used for the aeration of the biomass. This air supply to the biomass via fine-bubble diffusers also lowers the chemical oxygen demand (COD) of the waste. 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 Ultra Violet (UV) System for further disinfection before it is finally pumped overboard. This ship is also being fitted with a new CloSure system. This system will further eliminate any potential presence of Fecal Coliform.

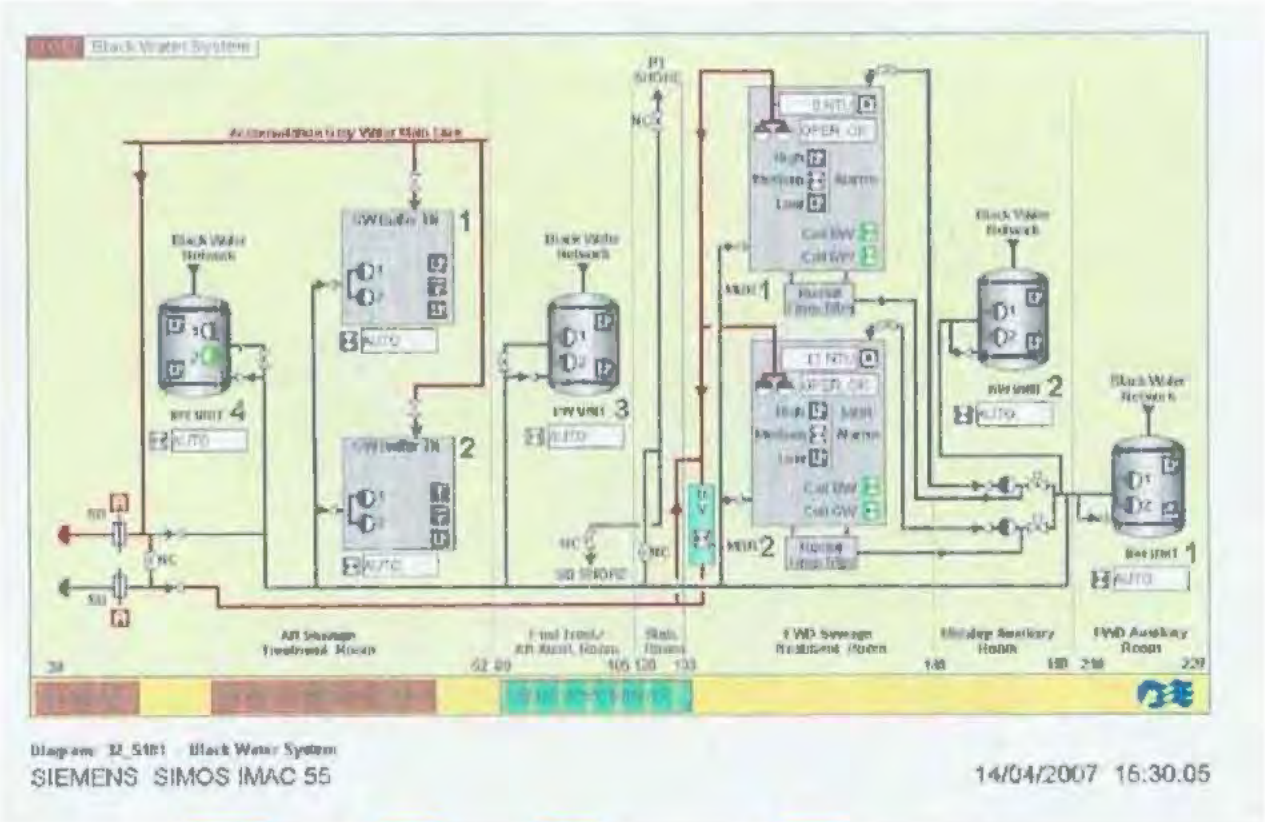
Hamworthy System

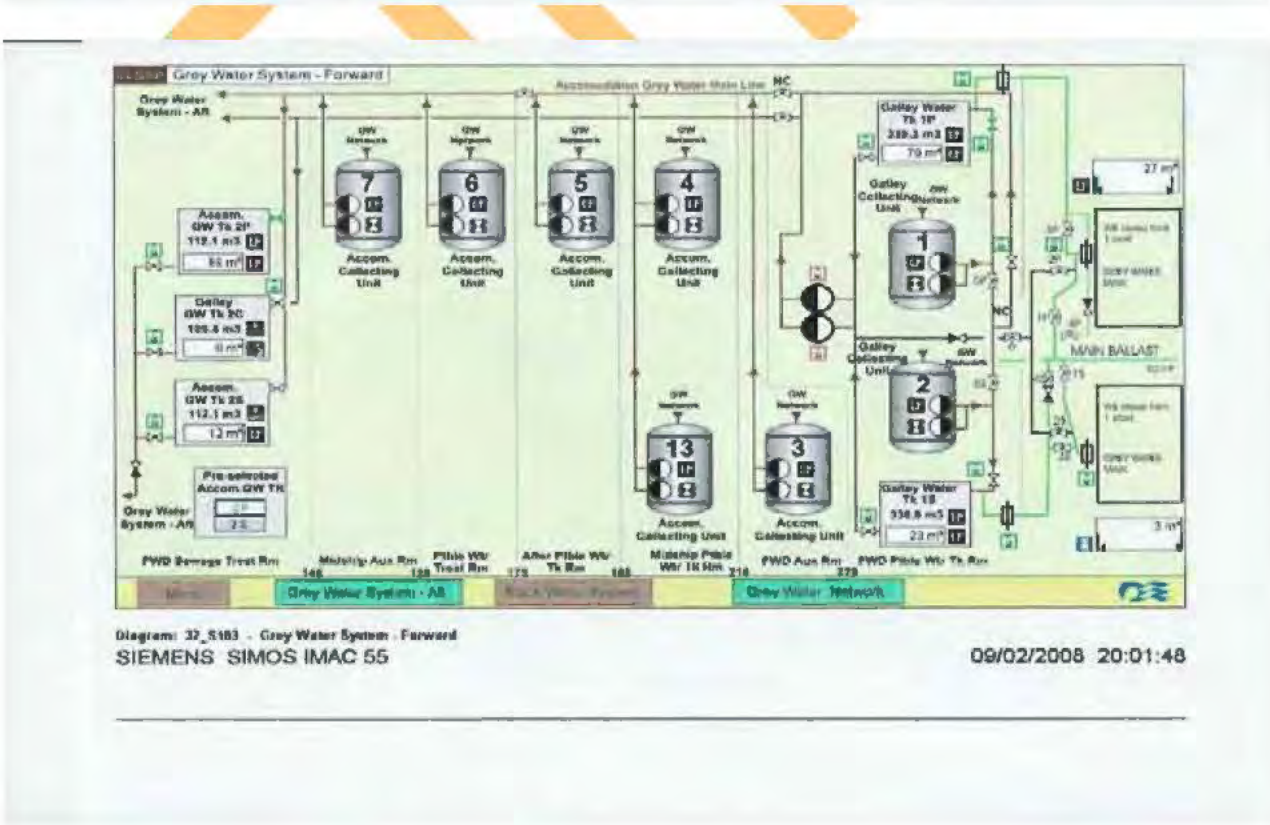
Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.



Hamworthy

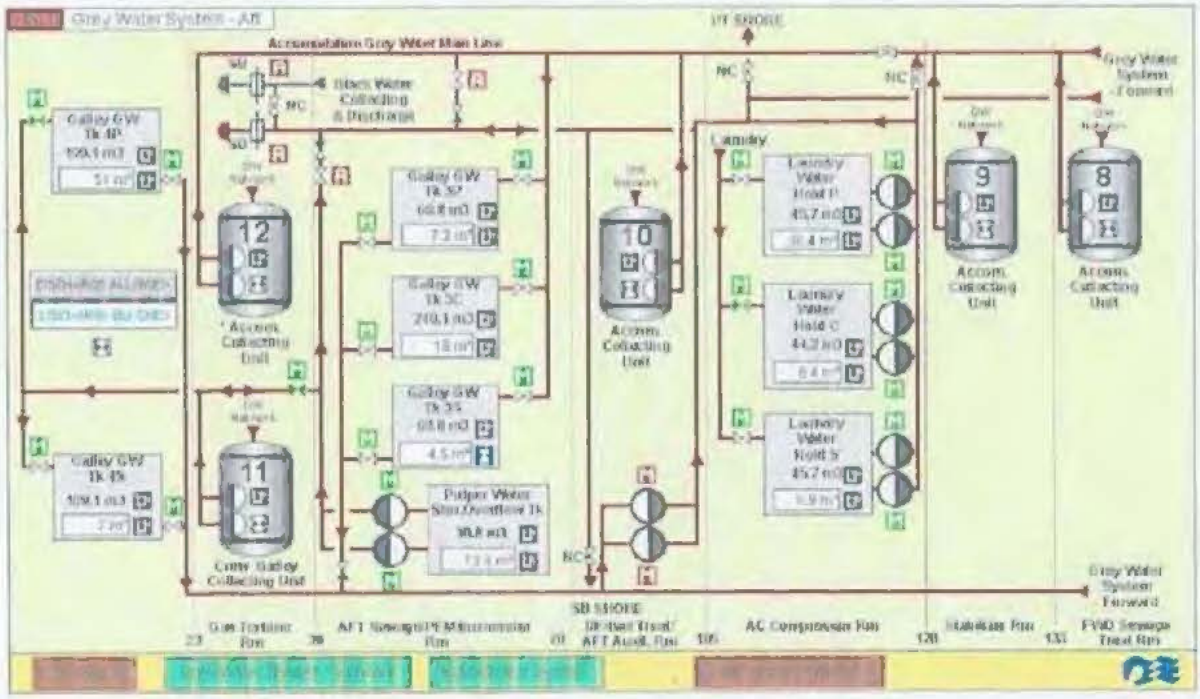
Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.

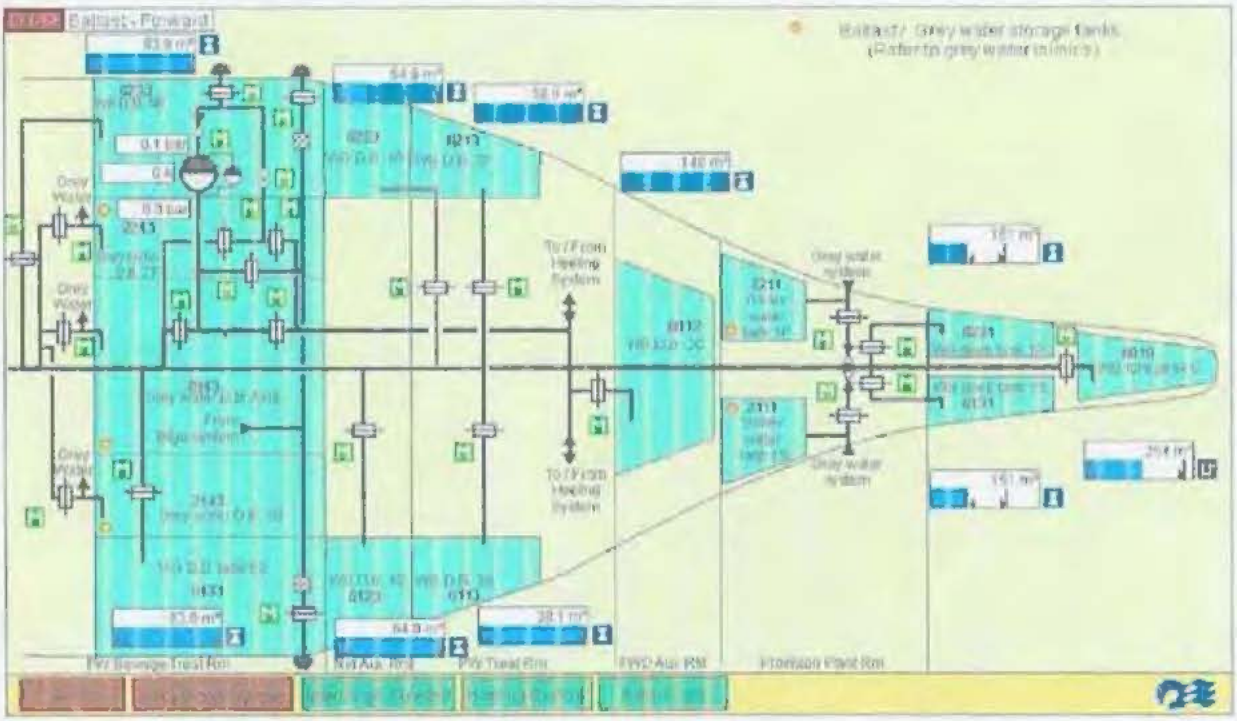


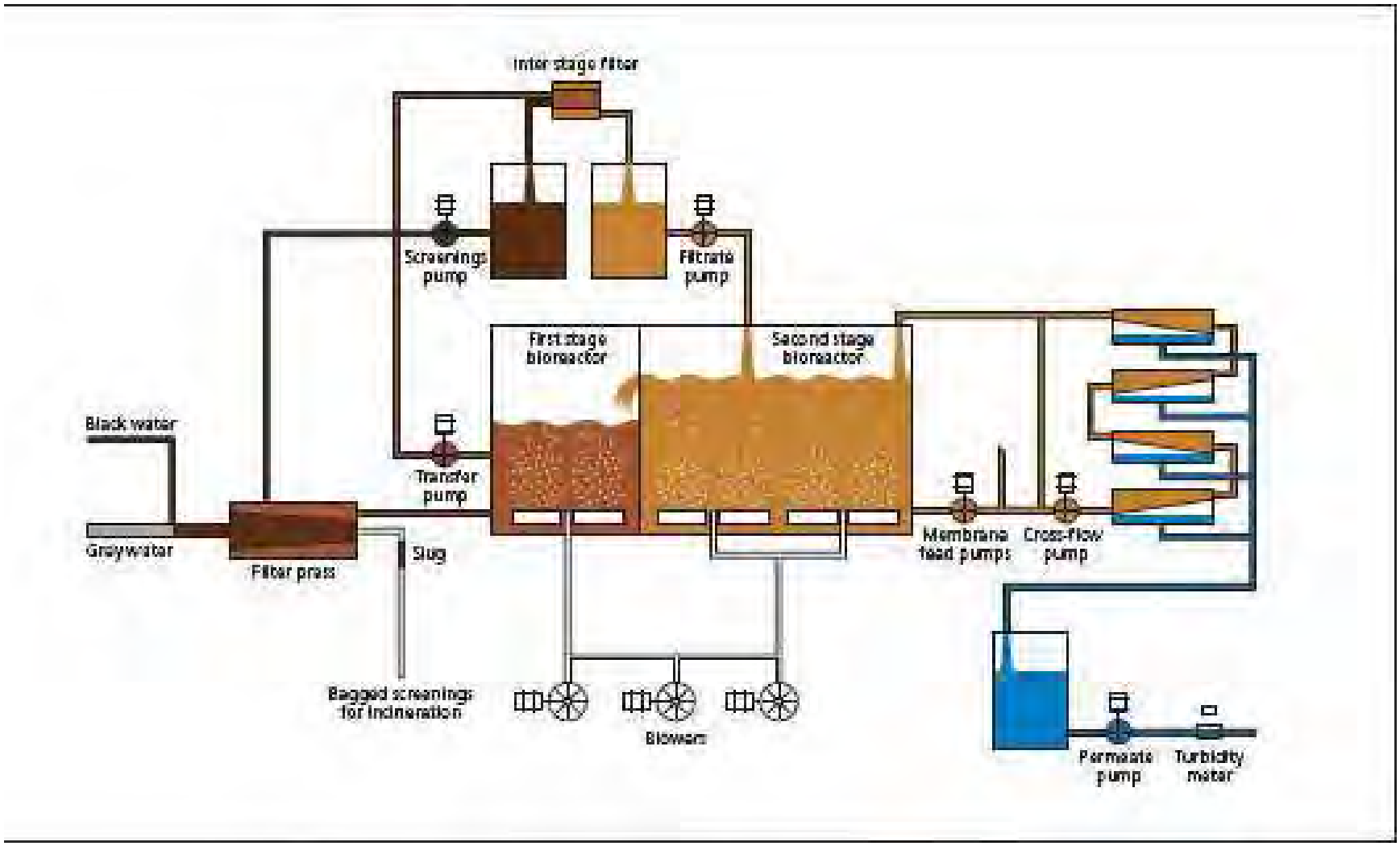


Hamworthy

Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.





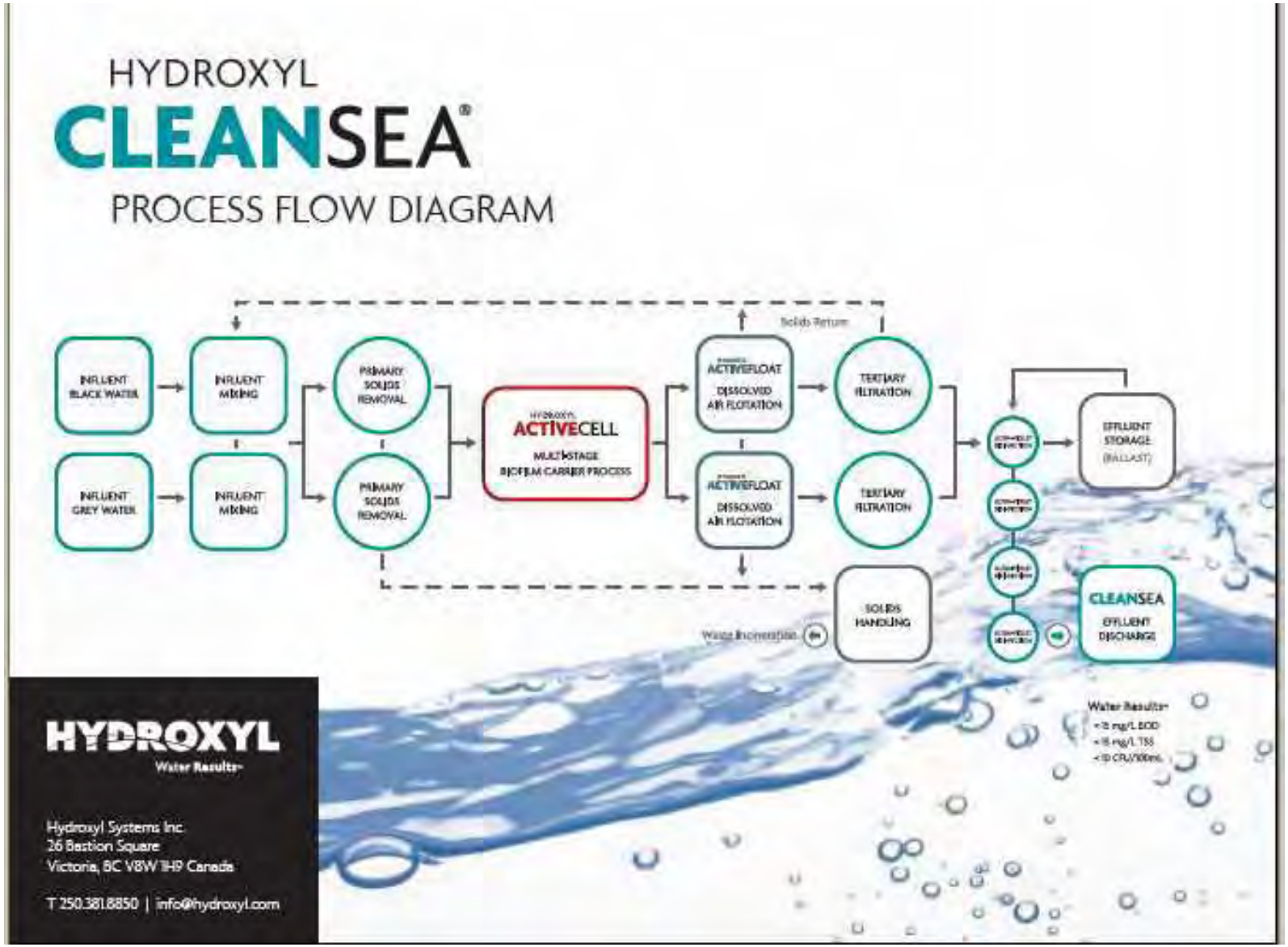


Hamworthy Waste Water System

Hydroxyl System/CleanSea System

Millennium
Radiance of the Seas
Wastewater Treatment

The vessels mixed gray and black water from mixing TK are filtered by two screen filters; the filtered wastewater is introduced into the Bioreactors. The solids, which are collected by the primary screen filters are transferred, by the solids transfer pump into the stbside bio-residue TK. The solids that are collected into the stbdside bio-residue TK transferred by the sludge transfer pump into the two dewatering units (SOMAT) and with the help of the chemical named polymer the separation of solids and water is achieved.. The solids are then collected into the solids collecting TK of the SOMAT system and then transferred into the incinerator for burning. The water that remains from the separation, which the dewatering system achieves, is transferred by gravity into the mixing TK. The wastewater that is introduced into the bioreactors is treated and the treated permeate water is stored into treated gray water holding tanks. The treated permeate water passes through UV units before it is discharged into the sea.



Hydroxyl waste water system

Marisan System

Silver Shadow

Wastewater Treatment

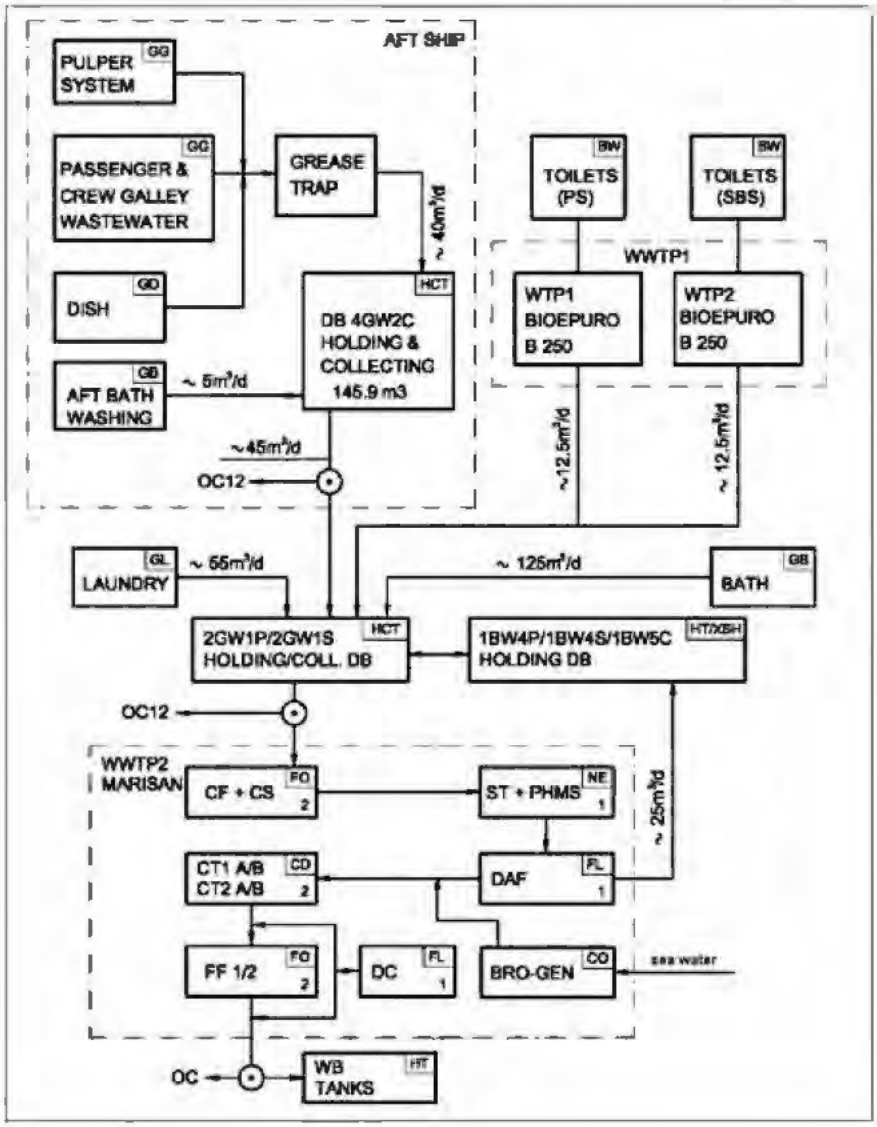
Black water are treated by two Sewage Treatment Unit BIOEPURO B250, its effluent is mixed with grey waters (coming from accommodations, galleys and laundry) and treated by No. 1 AWWTP MariSanTM 250, which handles 250 m3 per day.

MariSanTM system has two stages treatment and that is:

- First stage consist of solids separation by coarse filter and dissolved air flotation

Marisan System

Attach sketch of vessel with treatment system, tanks, discharge pumps, discharge lines, sampling locations, and overboard ports.

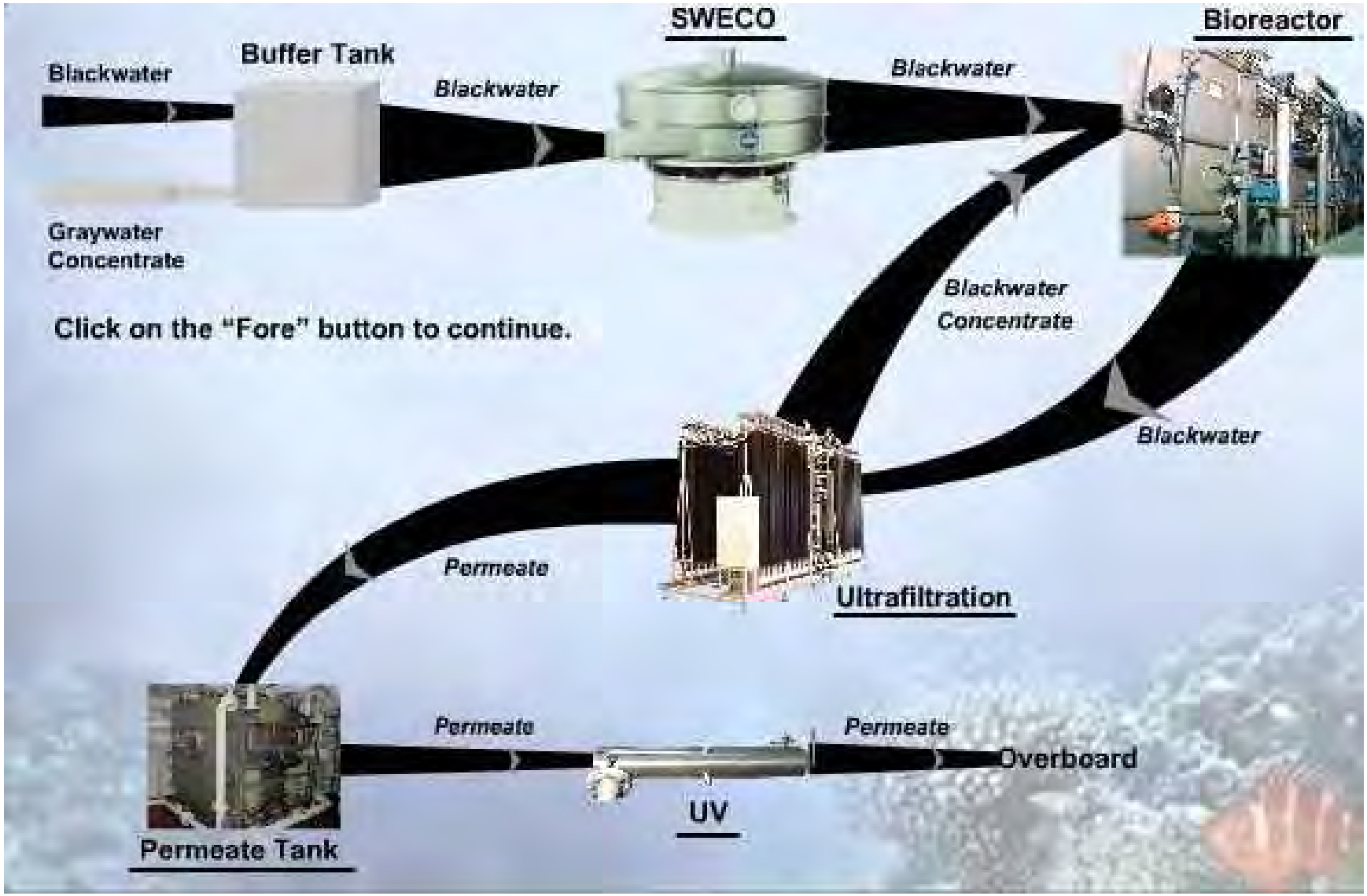


Rochem AWT System

Oosterdam
Westerdam

Wastewater Treatment
The ship's Type II Marine Sanitation Device (MSD) and Wastewater Treatment Plant is a Rochem Plant. The ROCHEM Plant treats black water and some gray water (for dilution purposes) in a bioreactor system, membrane ultra-filtration, and ultraviolet irradiation system.

The Rochem Low Pressure Reversed Osmosis (ROCHEM LPRO 120-10) plant will not be used this season. As a result all untreated gray water will be stored in the tanks noted on page 2 of this VSSP, and the gray water discharged >4NM outside of Alaska waters.



Rochem wastewater system

Scanship System

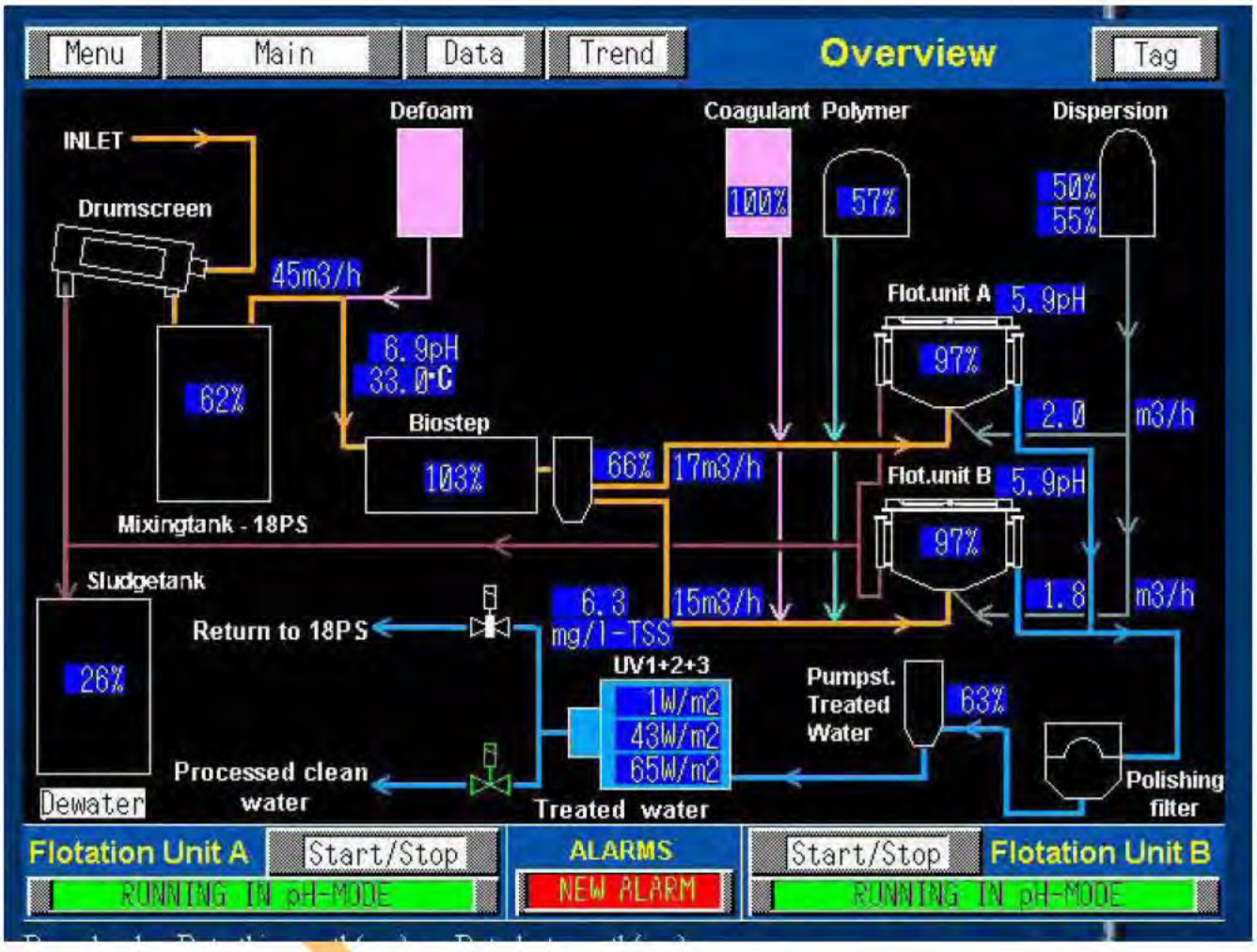
Norwegian Pearl
Norwegian Star
Norwegian Sun

Wastewater Treatment

Five step process:
1. Screening 2. Biological 3. Floatation 4. Polishing 5. Disinfection.

Galley Water, Gray Water, and Laundry Water are collected in GW Collection Tanks; Black Water is held in the vacuum units. All GW and BW is pumped to Drum Screens, which removes and sends sludge and particles to Sludge Holding Tank 15P (Bio-sludge). From the Drum Screens, the water is led to a small Buffer Tank and is then pumped to 18 CTR P/S, GW/BLKW MIXING TANK. From here the water is pumped to Bio Tank 1 then to Bio Tank 2. After the Bio Tanks, Polymer and Coagulant is added into the water and pumped into the Floatation Module, where more sludge is separated from the water and pumped to 15P. The water goes from the Flotation Module and into the Polishing Screen where it is finely filtered before passing through the UV units. If the treated water after the UV Units is within the limits of the Turbidity meter/ TSS (<30 mg/l limit setting) it is allowed to go overboard via WTC13 or to holding tanks 4P & 4S or 18P & 18S if overboard discharge is not permitted at that time. If it is not within the limits (TSS >30 mg/l or high or low pH), the water is re-circulated back to the Mixing Tank (18 CTR S/P) for re-treatment.

Scanship System Onboard/ Intranet Monitoring Schematic



Zenon system

Ryndam
Statendam
Volendam
Zaandam
Ryndam
Veendam

Waste Streams into the Zenon System
All gray water from the accommodation plus all wastewater, i.e. galley, laundry & Somat is collected in the equalization (holding) tanks. This wastewater is then pumped with the gray water pumps to the Masko-Zoll filters. Black Water is pumped from the Evac units towards the Masko-Zoll filters. Just prior to entering the Masko-Zoll filters the black & gray water is mixed.

1st Process – Solid Filters
This mixed stream of black & gray water is filtered in the Masko-Zoll screens and the screened water runs into tank-70. The plastics & other solids filtered from the black & gray water, produces a waste stream called solid waste that is stored in tank-72. This solid waste is landed ashore approximately every 4 weeks.

2nd Process – Biological
The biological process happens mainly in the bioreactor & partly in the membrane tank. This screened black & gray water (called screened raw water) is pumped out of tank-70 by the raw water pumps into the bioreactor, (previously 3P FW tank). The water in the bioreactor is now known as biomass. In the bioreactor the bacteria (bugs) eat the waste products and convert these into CO2, H2O and some other products plus heat. Therefore the biological process partly cleans up the biomass preparing it for the next process i.e. ultra filtration. It is necessary to waste biomass to keep the bacteria at the correct level. Biomass waste is transferred to 6 Port/Stbd DB's. It is legally regarded as untreated black water and therefore may only be pumped directly overboard when >12' from shore & not in a special area. Biomass wasting is a daily routine.

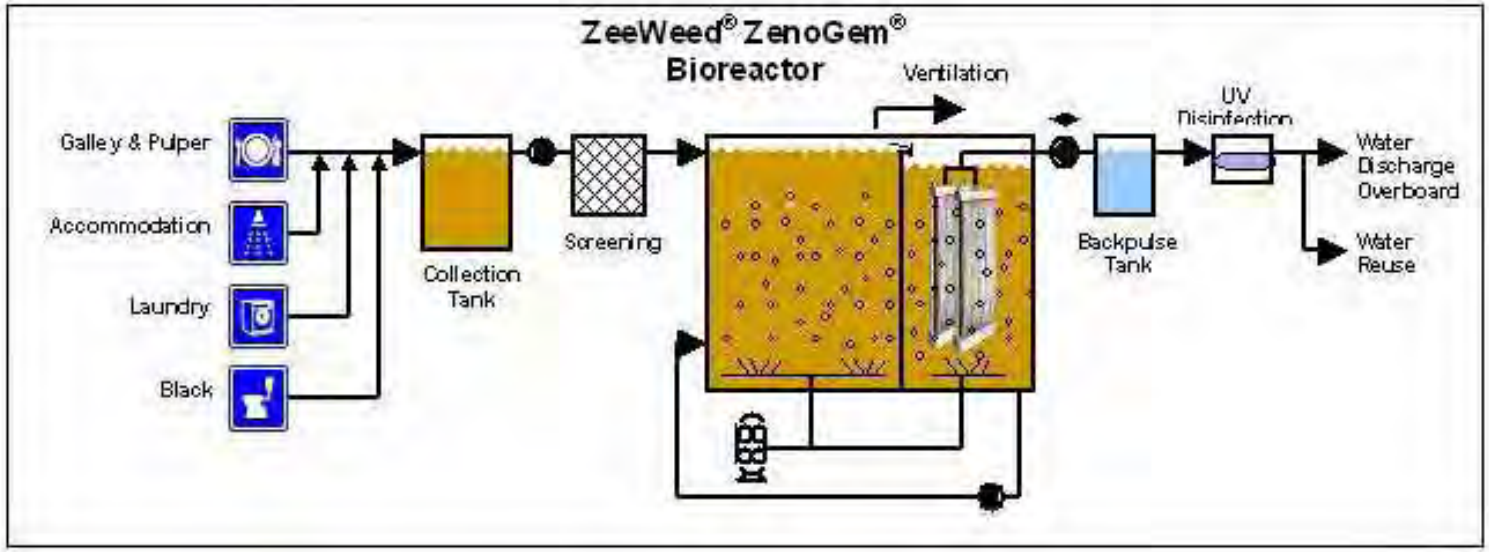
3rd Process -Ultra filtration
The biomass is pumped out from the bioreactor using the recirculation pumps and into the membrane tank, (previously 4P FW tank). It then overflows back into the bioreactor where it is subject to further biological process. Ultra filtration occurs in the membrane tank. Here permeate is drawn out of the biomass through the millions of microscopic pores in the membrane fibres (looks rather like hollow spaghetti) by means of 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 & is pumped back through the membranes. This is done to clean the pores in the membrane fibres.

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 as a final disinfection unit before the water is used for other purposes e.g. technical water, or into the main ballast or simply system discharged overboard where allowed.

Note: It appears that some of the Zenon Systems get an upgrade in 2011. At this time detailed information of the AWTS system is not provided by the vessels.

ZeeWeed® ZenoGem® Technology Shipboard Process Design



imagination at work

24 /
GE /

Zenon Waste Water System

International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code)

Development of the ISM Code

A number of very serious accidents which occurred during the late 1980's, were manifestly caused by human errors, with management faults also identified as contributing factors.

At its 16th Assembly in October 1989, IMO adopted resolution A.647(16), Guidelines on Management for the Safe Operation of Ships and for Pollution Prevention.

The purpose of these Guidelines was to provide those responsible for the operation of ships with a framework for the proper development, implementation and assessment of safety and pollution prevention management in accordance with good practice.

The objective was to ensure safety, to prevent human injury or loss of life, and to avoid damage to the environment, in particular, the marine environment, and to property. The Guidelines were based on general principles and objectives so as to promote evolution of sound management and operating practices within the industry as a whole.

After some experience in the use of the Guidelines, in 1993 IMO adopted the International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code).

In 1998, the ISM Code became mandatory.

The Code establishes safety-management objectives and requires a safety management system (SMS) to be established by "the Company", which is defined as the ship owner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship.

The Company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support.

Every company is expected "to designate a person or persons ashore having direct access to the highest level of management".

The procedures required by the Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board.

Below is the ISM compliance Assessment Tool (CG-840G addendum) from NVIC 04-05

ISM Compliance Assessment Tool			
ISM Code Reference	**Description of Non-Conformity (NC)**	**Problem Apparent**	
		Yes	**No**
ISM Guidelines 1.1.11	Are deficiencies present that pose a serious threat to personnel, the ship, or serious risk to the environment, and require immediate corrective action?	O	O
ISM Guidelines 1.1.11	Is there an apparent lack of effective and systematic implementation of a requirement of the ISM Code? If so, does such apparent failure apply to:	O	O
ISM Code 1.4	• The adherence to the ship's approved, self-developed Safety Management System?	O	O
ISM Code 4	• The responsiveness of the Company's Designated Person(s) to the ship's non-conformity reporting and requests for assistance/corrective action?	O	O
ISM Code 5	• The Master's defined responsibilities, authority, and his performance of those responsibilities?	O	O
ISM Code 6	• Critical crewmember's knowledge and familiarity with the ship-specific SMS?	O	O
ISM Code 1.4, 7, 8, 9, 10, 11, 12	Are the SMS-specified reporting and documentation procedures being followed? *(Note: This is a broad, catch-all topic. Use judiciously when hard documentation of NCs posing serious threat are apparent due to the lack of adherence to the reporting and documentation requirements throughout the Code. Cite the specific Code ref. for the evidence discovered.)*	O	O
ISM Code 10	• Do the maintenance procedures for the ship systems identified in the SMS; include frequency, scope, and documentation for the maintenance and necessary corrective action(s)?	O	O
ISM Code 6	• Does the overall performance of the crew indicate that they have been trained to perform their assigned tasks in accordance with the training needs identified in the SMS?	O	O
Familiarity with the Code is critical to the identification of specific SMS breakdowns. The PSCO must document on the boarding report (Form B) those items suspected to be ISM-related deficiencies, citing the ISM Code element(s) associated with the non-conformity (deficiency). The thoroughness of the explained non-conformity will play an essential role in the external audit, enabling the Auditor for the RO to focus on the non-conformities identified by the PSCO as the impetus for the external audit.			

Conducting the Expanded Exam

The purpose of the expanded exam is to identify the weak or neglected areas of the ship's SMS. The PSCO can take a clear snapshot of the system by focusing on six key elements of the SMS:

- Designated Person, Section 4, ISM Code
- Master's Responsibilities, Section 5, ISM Code
- Resources and Personnel, Section 6, ISM Code
- Non-Conformities, Accidents and Hazardous Occurrences, Section 9, ISM Code
- Maintenance, Section 10, ISM Code
- Documentation, Section 11, ISM Code

The following tables list a series of questions the PSCO may ask during an Expanded Exam:

ISM Element	Question	Remarks
Designated Person, Section 4, ISM Code	• Captain, who is your Designated Person Ashore (DPA)? • Are you in regular contact with this person? • How do you contact this person?	Caution, do not make this an interrogation process. Use common sense and a non-judgmental attitude.
Master's Responsibilities, Section 5, ISM Code	• Captain, may I please see your SMS manual? • Can you explain the company's Quality and Safety Policy in your own words? • Did you receive training for your SMS duties prior to taking command? • May I see the documentation for that training? • Do you feel that you can take all necessary action to protect the ship, crew, and environment in the case of emergency without approval from the company? • How often are you required to conduct a Master's review of the SMS? • Can you show me the procedures for this review and documentation of your last review? • How often is the company required to conduct an internal audit? • Can you show me the procedures for internal audits and documentation for the last internal audit?	Review the SMS manual and any documentation presented. If it appears the Captain has a good grasp of the program move along and do not belabor the process.

Resources and Personnel, Section 6, ISM Code	• Captain, can you show me the procedures for change of command? Do you have documentation of this activity? • Captain, are you required to familiarize new joining crew with there duties when they join the ship? Can you show me the procedures and documentation of this activity? • Captain, may I interview your crew? **<u>Questions for the Chief Officer</u>** • Did you receive training in your SMS duties by the company prior to reporting onboard the ship? Do you have documentation of this activity? • What certificate indicates the types of cargo this ship may load? • What publication would assist you in knowing the proper handling procedures for these cargos? • Can you show me the procedures for drafting a stowage plan? • Can you explain the ship's stability calculations? What shipboard manual would assist you in developing these calculations? • Can you show me the procedures in your SMS for making a tank safe for entry? Can I see the documentation for the last such tank entry? • What are the requirements for the use of personal protective equipment in your SMS? Can you show me the procedures in your manual? **<u>Questions for the Second Mate</u>** • Second, did you receive training in your SMS duties prior to assuming them onboard the ship? • Are you responsible for voyage planning? • Can you show me the procedures in your SMS for drafting a voyage plan? Can you show me the most recent voyage plan?	As above Ask the following question to key crewmembers. IOPP, Certificate of Fitness, Sub O Endorsement BCH Code, ISGOTT, etc. Stability Book

	• Are you responsible for chart corrections? Can you show me documentation of this activity? • Can you show me the procedures for making the ship ready to get underway? Can you show me documentation of this activity? • What nautical publications are you required to maintain onboard the ship? **<u>Questions for the Chief Engineer</u>** • Chief, did you receive training in your SMS duties from the company prior to assuming them onboard? Do you have documentation of that training? • Can you show me the procedures for bunkering the ship? Do you have documentation of this activity? • Can you show me the procedures for reporting damage to machinery and associated systems in your SMS? Can you show me your last damage reports? • What equipment onboard is critical equipment in your SMS? • Can you show me the procedures for performing preventive maintenance in your SMS? Can you show me when the last PM was done to the OWS (or any other identified critical piece of equipment)? • Chief, does your SMS require you to issue night orders? May I see your last set of night orders?	

ISM Element	Question	Remarks
Non-conformities, Accidents and Hazardous Occurrences, Section 9, ISM Code	• Captain, what is the definition of a non-conformity in your SMS? • Can you give me some examples of issues you would raise a non-conformity? • Are damages to equipment and ship structure considered non-conformities in your system? • Who is authorized to raise a non-conformity in your SMS? • Can you show me the procedures for reporting non-conformities to the company? • I see here in your procedures that several of the deficiencies I have noted are considered non-conformities in your SMS. Can you show me documentation on reporting these deficiencies to your company in accordance with your SMS procedures?	The PSCO should determine through this line of questioning if any of the deficiencies noted are considered non-conformities in the ship's SMS. Deficiencies with critical equipment will always be non-conformities.
Maintenance, Section 10, ISM Code:	• Captain, may I interview your Chief (Mate/Engineer based on the department with deficiencies)? • Chief Mate, could you show me your maintenance procedures related to maintaining compliance with your Load Line certificate? • Chief Mate, I see here your maintenance procedure requires inspection of the cargo hold hatch covers, coamings and holds prior to loading, do you have documentation of this activity?	

ISM Element	Question	Remarks
Documentation, Section 11, ISM Code	• Captain, can you explain to me how your company maintains control of SMS documents? • Can you show me the list of controlled documents (May also be called a forms list)? • I see here on your control list a Damage Report Form No.xxxxx, can you show this form in your SMS? • How are obsolete documents disposed of?	All procedures, forms, schedules and checklists identified in the SMS must be controlled. This means they should have a control number and revision date on the document and be registered on a control list. Verify proper form identification number and revision date, matching the control list. Check several other forms. Typically the company wants them sent back so they know they have been removed.

Engineering conversions and tables

Into Metric

If you know	Multiply by	To Get
Length		
inches	2.54	centimeters
foot	30	centimeters
yards	0.91	meters
miles	1.6	kilometers
Area		
sq. inches	6.5	sq. centimeters
sq. feet	0.09	sq. meters
sq. yards	0.8	sq. meters
sq. miles	2.6	sq. kilometers
acres	0.4	hectares
Mass (Weight)		
ounces	28	grams
pounds	0.45	kilograms
short ton	0.9	metric ton
Volume		
teaspoons	5	milliliters
tablespoons	15	milliliters
fluid ounces	30	milliliters
cups	0.24	liters
pints	0.47	liters
quarts	0.95	liters
gallons	3.8	liters
cubic feet	0.03	cubic meters
cubic yards	0.76	cubic meters
Temperature		
Fahrenheit	Subtract 32, then multiply by 5/9ths	Celsius

Out of Metric

If you know	Multiply by	To Get
Length		
millimeters	0.04	inches
centimeters	0.4	inches
meters	3.3	feet
kilometers	0.62	miles
Area		
sq. centimeters	0.16	sq. inches
sq. meters	1.2	sq. yards
sq. kilometers	0.4	sq. miles
hectares	2.47	acres
Mass (Weight)		
grams	0.035	ounces
kilograms	2.2	pounds
metric tons	1.1	short tons
Volume		
milliliters	0.03	fluid ounces
liters	2.1	pints
liters	1.06	quarts
liters	0.26	gallons
cubic meters	35	cubic feet
cubic meters	1.3	cubic yards
Temperature		
Celsius	Multiply by 9/5ths, then add 32	Fahrenheit

C=5/9 (F-32) F=(9/5C) +32

TEMPERATURE CONVERSION TABLE

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
-40	-40	-10	14	20	68	50	122	80	176	110	230	140	284
-39	-38.2	-9	15.8	21	69.8	51	123.8	81	177.8	111	231.8	141	285.8
-38	-36.4	-8	17.6	22	71.6	52	125.6	82	179.6	112	233.6	142	287.6
-37	-34.6	-7	19.4	23	73.4	53	127.4	83	181.4	113	235.4	143	289.4
-36	-32.8	-6	21.2	24	75.2	54	129.2	84	183.2	114	237.2	144	291.2
-35	-31	-5	23	25	77	55	131	85	185	115	239	145	293
-34	29.2	-4	24.8	26	78.8	56	132.8	86	186.8	116	240.8	146	294.8
-33	-27.4	-3	26.6	27	80.6	57	134.6	87	188.6	117	242.6	147	296.6
-32	-25.6	-2	28.4	28	82.4	58	136.4	88	190.4	118	244.4	148	298.4
-31	-23.8	-1	30.2	29	84.2	59	138.2	89	192.2	119	246.2	149	300.2
-30	-22	0	32	30	86	60	140	90	194	120	248	150	302
-29	-20.2	1	33.8	31	87.8	61	141.8	91	195.8	121	249.8	151	303.8
-28	-18.4	2	35.6	32	89.6	62	143.6	92	197.6	122	251.6	152	305.6
-27	-16.6	3	37.4	33	91.4	63	145.4	93	199.4	123	253.4	153	307.4
-26	-14.8	4	39.2	34	93.2	64	147.2	94	201.2	124	255.2	154	309.2
-25	-13	5	41	35	95	65	149	95	203	125	257	155	311
-24	-11.2	6	42.8	36	96.8	66	150.8	96	204.8	126	258.8	156	312.8
-23	-9.4	7	44.6	37	98.6	67	152.6	97	206.6	127	260.6	157	314.6
-22	-7.6	8	46.4	38	100.4	68	154.4	98	208.4	128	262.4	158	316.4
-21	-5.8	9	48.2	39	102.2	69	156.2	99	210.2	129	264.2	159	318.2
-20	-4	10	50	40	104	70	158	100	212	130	266	160	320
-19	-2.2	11	51.8	41	105.8	71	159.8	101	213.8	131	267.8	161	321.8
-18	-0.4	12	53.6	42	107.6	72	161.6	102	215.6	132	269.6	162	323.6
-17	1.4	13	55.4	43	109.4	73	163.4	103	217.4	133	271.4	163	325.4
-16	3.2	14	57.2	44	111.2	74	165.2	104	219.2	134	273.2	164	327.2
-15	5	15	59	45	113	75	167	105	221	135	275	165	329
-14	6.8	16	60.8	46	114.8	76	168.8	106	222.8	136	276.8	166	330.8
-13	8.6	17	62.6	47	116.6	77	170.6	107	224.6	137	278.6	167	332.6
-12	10.4	18	64.4	48	118.4	78	172.4	108	226.4	138	280.4	168	334.4
-11	12.2	19	66.2	49	120.2	79	174.2	109	228.2	139	282.2	169	336.2

Example: 80 degrees C = 176 degrees F & 14 degrees F = -10 degrees C

PRESSURE CONVERSION CHART PSI-BAR

1-40		*41-80*		*81-200*		*205-500*		*510-900*		*910-1500*	
psi	**bar**	**psi**	**bar**	**psi**	**bar**	**psi**	**bar**	**psi**	**bar**	**psi**	**bar**
1.00	0.07	41.00	2.83	81.00	5.59	205.00	14.13	510.00	35.17	910.00	62.76
2.00	0.14	42.00	2.90	82.00	5.65	210.00	14.48	520.00	35.86	920.00	63.45
3.00	0.21	43.00	2.97	83.00	5.72	215.00	14.82	530.00	36.55	930.00	64.14
4.00	0.28	44.00	3.03	84.00	5.79	220.00	15.17	540.00	37.24	940.00	64.83
5.00	0.34	45.00	3.10	85.00	5.86	225.00	15.51	550.00	37.92	950.00	65.52
6.00	0.41	46.00	3.17	86.00	5.93	230.00	15.86	560.00	38.62	960.00	66.21
7.00	0.48	47.00	3.24	87.00	6.00	235.00	16.20	570.00	39.31	970.00	66.90
8.00	0.55	48.00	3.31	88.00	6.07	240.00	16.55	580.00	40.00	980.00	67.59
9.00	0.62	49.00	3.38	89.00	6.14	245.00	16.89	590.00	40.69	990.00	68.28
10.00	0.69	50.00	3.45	90.00	6.21	250.00	17.24	600.00	41.37	1000.00	68.95
11.00	0.76	51.00	3.52	91.00	6.27	255.00	17.58	610.00	42.07	1010.00	69.66
12.00	0.83	52.00	3.59	92.00	6.34	260.00	17.93	620.00	42.76	1020.00	70.34
13.00	0.90	53.00	3.65	93.00	6.41	265.00	18.27	630.00	43.45	1030.00	71.03
14.00	0.97	54.00	3.72	94.00	6.48	270.00	18.62	640.00	44.14	1040.00	71.72
15.00	1.03	55.00	3.79	95.00	6.55	275.00	18.96	650.00	44.82	1050.00	72.41
16.00	1.10	56.00	3.86	96.00	6.62	280.00	19.31	660.00	45.52	1060.00	73.10
17.00	1.17	57.00	3.93	97.00	6.69	285.00	19.65	670.00	46.21	1070.00	73.79
18.00	1.24	58.00	4.00	98.00	6.76	290.00	20.20	680.00	43.90	1080.00	74.48
19.00	1.31	59.00	4.07	99.00	6.83	295.00	20.34	690.00	47.59	1090.00	75.17
20.00	1.38	60.00	4.14	100.00	6.90	300.00	20.69	700.00	48.27	1100.00	75.86
21.00	1.45	61.00	4.21	105.00	7.24	310.00	21.37	710.00	48.97	1120.00	77.24
22.00	1.52	62.00	4.28	110.00	7.58	320.00	22.06	720.00	49.66	1140.00	78.62
23.00	1.59	63.00	4.34	115.00	7.93	330.00	22.75	730.00	50.34	1160.00	80.00
24.00	1.65	64.00	4.41	120.00	8.27	340.00	23.44	740.00	51.03	1180.00	81.38
25.00	1.72	65.00	4.48	125.00	8.62	350.00	24.13	750.00	51.71	1200.00	82.76
26.00	1.79	66.00	4.55	130.00	8.89	360.00	24.82	760.00	52.41	1220.00	84.14
27.00	1.86	67.00	4.62	135.00	9.31	370.00	25.51	770.00	53.10	1240.00	85.52
28.00	1.93	68.00	4.69	140.00	9.65	380.00	26.21	780.00	53.79	1260.00	86.90
29.00	2.00	69.00	4.76	145.00	10.10	390.00	26.89	790.00	54.48	1280.00	88.28
30.00	2.07	70.00	4.83	150.00	10.34	400.00	27.85	800.00	55.16	1300.00	89.66
31.00	2.14	71.00	4.90	155.00	10.69	410.00	28.27	810.00	55.86	1320.00	91.03
32.00	2.21	72.00	4.97	160.00	11.03	420.00	28.96	820.00	56.55	1340.00	92.41
33.00	2.28	73.00	5.03	165.00	11.38	430.00	29.65	830.00	57.24	1360.00	93.79
34.00	2.34	74.00	5.10	170.00	11.72	440.00	30.34	840.00	57.93	1380.00	95.17
35.00	2.41	75.00	5.17	175.00	12.07	450.00	31.03	850.00	58.61	1400.00	96.55
36.00	2.48	76.00	5.24	180.00	12.41	460.00	31.72	860.00	59.31	1420.00	97.93
37.00	2.55	77.00	5.31	185.00	12.76	470.00	32.41	870.00	60.00	1440.00	99.31
38.00	2.62	78.00	5.38	190.00	13.10	480.00	33.10	880.00	60.69	1460.00	100.69
39.00	2.69	79.00	5.45	195.00	13.45	490.00	33.79	890.00	61.38	1480.00	102.07
40.00	2.76	80.00	5.52	200.00	13.79	500.00	34.48	900.00	62.06	1500.00	103.45

Terms, Abbreviations, and 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.

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.

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.
Conventional Pollutants: Statutorily listed pollutants understood well by scientists. These may be in the form of organic waste, sediment, acid, bacteria, viruses, nutrients, oil and grease, or heat.

Ballast:Used to improve the stability and control the draft of a ship.

Black Oil: A viscous and black or very dark brown colored oil. Depending on the quantity spilled, oil tends to quickly spread out over the water surface to a thickness of about one-millimeter.

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. Discharge: In this context, any

solid or liquid material that emanates from a vessel to a body of water, including anything spilled, leaked, poured, pumped, emitted or dumped from the vessel.

Black Water System: includes marine sanitation devices (MSDs) and other systems to treat, store, and discharge sewage. MSD approvals by USCG, IMO, or Administration Approved to MARPOL Annex IV.

Chemical Oxygen Demand (COD): A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water.

Conductivity: A measure of the ability of a solution to carry an electrical current.

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.
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.

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.

Equipment having and 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.

Free Cl2 Free Chlorine test method

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.

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. These may be held in large tanks before being pumped overboard. The handling and discharge of gray water will vary from ship to ship.

ICCL: International Council of Cruise Lines, a cruise ship industry association which participates in industry standards and policy development process to promote all measures that foster a safe, secure, healthy cruise ship environment.

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)

Hazardous waste: includes dry cleaning (containing Perchloroethylene, or commonly- called “PERC”) waste, used paints and thinners that contain hazardous substances, silver-bearing photo-processing waste, cleaning solutions and other items that contain hazardous substances. Each vessel may vary in both the type and volumes of hazardous waste generated depending on the technology and processes used aboard.

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.

MARPOL: The International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978.

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.

Oil Content Meter: 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). (MARPOL Annex I, Reg 16)

Oil pollution prevention systems: include the oily water separator, the fuel/lubricating oil transfer, and sludge containment system.

Oily Water Separator (OWS): The basic principle of oil / water separation is their difference in specific gravity. The specific gravity of most oils is less than water; therefore, it will naturally float to the top of an oil and water solution. Small droplets of oil float to the top much slower than large droplets. This is due to the large surface area to mass ratio. To speed up the process of separation, OWS units form larger oil droplets out of smaller ones, thus decreasing the surface area to mass ratio. The increased mass of the oil droplet increases its buoyancy, thus causing it to rise more quickly. Gravitational-based systems are not effective processors of oil-water emulsions formed by detergents or mixtures containing high specific gravity oils.

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. Natural waters usually have a pH between 6.5 and 8.5.

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.

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.

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.

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 Cl2 Total Chlorine test method

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.

Acronyms/Abbreviations Used

ADEC	Alaska Department of Environmental Conservation
BNA	Base/Neutrals, Acids
BOD	Biochemical Oxygen Demand – 5-day test
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
EPA	Environmental Protection Agency
HDPE	High Density Polyethylene
HCl	Hydrochloric Acid
H2SO4	Sulfuric Acid
HNO3	Nitric Acid
MDL	Method Detection Limit
MSD	Marine Sanitation Device
HSSC	International Convention to Harmonized System of Survey and Certification.
NaOH	Sodium Hydroxide

%R	Percent Recovery
PQL	Practical Quantitation Limit (Minimum Reporting Level)
QA	Quality Assurance
QA/QCP	Quality Assurance/Quality Control 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
VOCs	Volatile Organic Chemicals
VSSP	Vessel Specific Sampling Plan