Spill Prevention, Preparedness, and Response Program

Washington State's Voluntary Program for Tank Barges and Articulated Tank Barges (ATBs)

Voluntary Best Achievable Protection (VBAP) Standards and Exceptional Compliance Program (ECOPRO) Standards

May 2023 (Revised)
ECY Publication 00-08-021

printed on recycled paper

Abstract: A compilation of 31 standards addressing operating procedures, personnel policies, management practices, marine safety technology, oil spill preparedness, and oil spill response for companies participating in Washington State's Voluntary Program for Tank Barges and Articulated Tank Barges (ATBs). Tank barge and ATB companies meeting these standards receive public recognition for their commitment to marine safety and environmental stewardship.

This publication is also available on the Department of Ecology website https://ecology.wa.gov/Spills-Cleanup/Spills.
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Refer to Publication Number 00-08-021 (Rev. May 2023)

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Voluntary Best Achievable Protection (VBAP) Standards and Exceptional Compliance Program (ECOPRO) Standards

To maintain membership in Washington State's Voluntary Program for Tank Barges and Articulated Tank barge4sd (ATBs), the owner or operator of a tank vessel operating in Washington State waters must meet all Washington State laws pertaining to oil spill prevention, preparedness, and response. The applicable laws, known as the Washington Administrative Code (WAC), include:

WAC 173-180	Facility Oil Handling Standards
WAC 173-182	Oil Spill Contingency Plan
WAC 173-183	Oil Spill Natural Resource Damage Assessment
WAC 173-184	Vessel Oil Transfer Advance Notice and Containment Requirements
WAC 173-228	Vessel Sewage No Discharge Zones
WAC 317-40	Bunkering Operations
WAC 317-50	Financial Responsibility for Small Tank Barges and Oil Spill Response Barges

In addition to complying with applicable state, federal, and international standards, the owner or operator of a tank vessel operating in Washington State waters must meet the following standards to qualify as a VBAP or ECOPRO company. In order to meet an ECOPRO standard, the corresponding VBAP standard must also be met.

Contents

1: Navigation Watch Composition 4
2: Pilot House Resource Management 5
3: Navigational Assessment 6
4: Safety Rounds 7
5: Voyage Planning 8
6: Bar Crossing Procedures 9
7: Tug Escort 10
8: Pre-arrival and Pre-departure Tests and Inspections (Navigation Equipment) 11
9: Pre-Arrival And Pre-Departure Tests and Inspections (Engine Equipment) 12
10: Emergency Procedures 14
11: Event Reporting 15
12: Tug, barge, and ATB Crewing 17
13: Familiarization (Orientation) Training 18
14: Position-Specific Training and Training Records 19
15: Refresher Training 20
16: Emergency Drills 20
17: Drug and Alcohol Policies 22
18. Work Hours (Rest Periods) 22
19: Vessel Visitation 23
20. Planned Maintenance (PM) Program 23
21: Technology – Navigation Equipment 24
22: Technology - Tank level sensing equipment and emergency shut-down system 25
23: Technology – Emergency Towing 26
24: Technology – Towing Equipment 26
25: Technology – Emergency Reconnection Equipment 31
26: Technology – Fenders 32

27: Technology - Navigation Lights 32
28: Technology - Tug–Tow Match 32
29: Waste Oil and Oily Water Management System 33
30: Automated Identification System (AIS) 34
31: Spill Preparedness Forms and Checklists 34

Acronyms:

ABS:	American Bureau of Shipping
AED:	Automated External Defibrillator
AIS:	Automatic Identification System
ARPA:	Automatic Radar Plotting Aid
ASTM	American Society for Testing Materials
ATB:	Articulated Tug Barge
CPR:	Cardio Pulmonary Resuscitation
CFR:	Code of Federal Regulations
ECDIS	Electronic Display and Information System
ECOPRO:	Exceptional Compliance Program
ECS:	Electronic Chart System
ERS	Emergency Release System
GPS:	Global Positioning System
IASC:	International Association of Classification Societies
ICS:	Incident Command System
IMO:	International Maritime Organization
ISM:	International Safety Management
LED:	Light Emitting Diode
MARPOL:	International Convention for the Prevention of Pollution from Ships
MSA:	A brand of self-contained breathing apparatus
NVIC:	U.S. Coast Guard Navigation and Vessel Inspection Circular
OOW:	Officer of the Watch
OPA:	Oil Pollution Act of 1990
OWS:	Oily water separator
PIC:	Person In Charge
PM:	Planned Maintenance
RCW:	Revised Code of Washington

Scott Pack:	A brand of self-contained breathing apparatus
SMS:	Safety Management System
STCW:	International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, 1978
TSMS:	Towing Safety Management Systems
TSS:	Traffic Separation Scheme
TVO:	Tug Vessel Operator
VBAP:	Voluntary Best Achievable Protection
VHF:	Very high frequency
WAC:	Washington Administrative Code
WEMD:	Washington Emergency Management Division

1: Navigation Watch Composition

VBAP Standard	ECOPRO Standard
a. The navigation watch on the tow vessel, or Articulated Tug Barge (ATB), consists of at least one licensed deck officer or tow vessel operator tow vessel operator (TVO) or Officer of the Watch (OOW). b. The TVO or OOW will assign a lookout, considering at least the following: weather, visibility, traffic density, tug escort, proximity of dangers to navigation, and the attention necessary when navigating in areas of increased vessel traffic. c. The lookout is assigned to provide: 1. A state of vigilance on any significant change in the operational environment; 2. An ongoing assessment of the situation and the risk of collision/allision; 3. Awareness of stranding risks and other dangers to navigation; d. The lookout is assigned to the navigation watch and stationed in a safe location that allows sight and hearing of all navigational hazards and other vessels, and there is a rapid and reliable means of communication between the lookout and the TVO or OOW; e. The TVO or OOW, records in the deck log the date and time restricted visibility begins and ends; f. The names of each navigation watch member are logged in the deck log at the time the member assumes duties. g. When automatic pilot is used in high traffic conditions, restricted visibility, or other hazardous navigational conditions, the following steps will be taken: 1. Automatic pilot can be immediately changed to manual control; 2. A competent person will be immediately available to take over steering control; and 3. The change from automatic to manual or manual to automatic will be made by, or under, the direct supervision of the TVO or OOW.	While underway in Washington state waters, cell phone use for non-operational purposes is prohibited by persons on navigational watch. **AND** Operational calls are kept to an absolute minimum. **AND** When in high traffic conditions, under tug escort, in restricted visibility, or other hazardous navigational conditions the vessel will be under the manual control of a trained and competent person. **AND** When navigating in Traffic Separation Schemes (TSS) or east of the line extending from Discovery Island light south to New Dungeness light, a lookout will be assigned to the watch.

2: Pilot House Resource Management

VBAP Standard	ECOPRO Standard
a. The TVO or OOW will: 1. Ensure all navigational watch members have working knowledge of: i. The voyage plan. ii. The chain of command and decision-making process. iii. The importance of information sharing. 2. Ensure the voyage plan is complete, updated, and posted in the wheelhouse. 3. Monitor the fitness for duty of oncoming watchstander and act if there is reasonable cause to believe that an oncoming watchstander is not capable of carrying out his or her duties effectively. b. Before assuming duties, the TVO or OOW will: 1. Complete a navigational assessment. 2. Check all navigation equipment is operational. 3. Ensure adequate personnel available to assume the watch. 4. If at anchor, review chart and identify potential hazards in the vicinity. c. The TVO or OOW will not relieve the watch during a maneuver or when other action is occurring to avoid a hazard.	Each vessel has written policies and procedures for bridge organization which includes vessel navigation, collision avoidance, and the navigational watch duties. Policies and procedures include, but are not limited to: ▪ Defined duties for navigational watch personnel when underway in open sea transits, coastal and restricted navigation, and navigation in restricted visibility; ▪ Navigation with pilot (if applicable); ▪ Clear delegation of duties, responsibilities, and authority between watch personnel; ▪ Responsibilities for navigational personnel in an emergency; and ▪ Navigational assessment and voyage planning requirements.

3: Navigational Assessment

VBAP Standard	ECOPRO Standard
a. The TVO or OOW must conduct a navigation assessment for the intended route and operations prior to getting underway. This assessment must include at least the following: 1. Tides, currents, water depth, and river stage (if applicable) along the route and at the mooring location; 2. Current visibility and weather conditions and forecasted changes; 3. Current traffic density and anticipated changes; 4. Status of navigational equipment and controls including alarms, communication systems, variation and deviation errors of the compass, and any known nonconformities or deficiencies; 5. Navigation hazards such as logs, wrecks, or other obstructions in the water; 6. Any broadcast notice to mariners, safety or security zones or special navigation areas; 7. Configuration of the vessel and tow, including handling characteristics, field of vision from the pilothouse, and activities taking place onboard; and 8. The knowledge, qualifications, and limitations of crewmembers who are assigned as members on watch and the experience and familiarity of crewmembers with the towing vessels particulars and equipment. b. The officer in charge of a navigational watch will keep the navigation assessment up to date to reflect changes in conditions and circumstances. At each change of the navigational watch, the oncoming officer in charge of the navigational watch will review the current navigation assessment. c. The officer in charge of a navigational watch will ensure that the navigation assessment and any updates are communicated to other members of the navigational watch. d. A navigation assessment entry is recorded in the official log, or in accordance with the Towing Safety Management System (TSMS) applicable to the vessel. The entry will include the name of the individual making the assessment, and the starting and ending points of the voyage or trip that the assessment covers.	The ECOPRO standard is identical to the VBAP standard.

4: Safety Rounds

VBAP Standard	ECOPRO Standard
a. Safety rounds are conducted in spaces designated by the vessel's operator to identify and to correct, if feasible, safety hazards such as potential fire hazards, defective machinery, hull and bulkhead integrity, malfunctioning safety equipment, potential sources of pollution, and potentially dangerous crew activities. 1. Safety rounds are conducted when the vessel is underway, anchored, or moored. 2. Safety rounds are conducted on as much of the vessel as the operator deems safe for the crew member making the round. 3. Safety rounds include, at a minimum: i. Visual inspection of the barge/tug connection system and associated machinery. ii. Visual inspection of the barge to the extent it can be done safely, with particular attention to navigation lights. 4. For moored barges: i. If attended by tow vessel -Inspection of tank barge to the extent it can be done safely. ii. if not attended by the tow vessel, inspections that comply with 46 CFR Sec. 35.05 15(b). b. Crew members making safety rounds are provided appropriate training and checklist and instructed to first notify the officer in charge of the watch before attempting corrective action, when a hazard is noted. c. Safety rounds are made at least every two hours. On vessels with functioning automated fire and flooding detection systems, safety rounds may be made at least every four hours. d. The officer in charge of the watch logs the completion of each safety round in the deck log.	Safety rounds are conducted at least every two hours on all vessels, including those with functioning automated fire and flooding detection systems. When conducting cargo operations and the tug is near the barge, the tug can detect 10 percent of the flammable lower limit of vapors on the tug itself to prevent itself from becoming an ignition source.

5: Voyage Planning

VBAP Standard	ECOPRO Standard
A written berth-to-berth voyage plan is used and reviewed prior to taking over the watch. A standard voyage plan for consecutive voyages along the same routes may be used if updated as changes occur. The voyage plan includes, at a minimum, the following: a. Channel depth, turning areas, and navigational obstructions, based on current and up-to-date charts and navigational publications; b. Identification of commercial and recreational fishing grounds to be avoided or navigated; c. Identification of areas where tank barges or ATBs may not transit (Deception Pass, Swinomish Slough, and Hadlock Cut in Puget Sound); d. Identification of area to be avoided on Washington Coast; e. Accuracy, dependability, and functioning of available navigational aids; f. Marine sanctuaries, traffic separation systems, areas-to-be-avoided, landfalls, routes expected to be transited at night, and other areas where extra caution should be exercised; g. Predicted weather, currents, and tides; h. Expected vessel traffic; i. Review of the information in, and accuracy of, available charts, notices to mariners, and other navigational publications; j. The magnetic heading corresponding to each gyro heading; and k. Pre-voyage inspections immediately prior to and after the voyage including inspections of hull integrity, towing equipment, and navigation lights.	Regular voyage plan updates are made by a TVO or OOW. **AND** Voyage plans are displayed prominently, either electronically or as a paper copy. **AND** Voyage plans are retained for at least 6 months. **AND** Captain reviews plans regularly to ensure they are kept up to date.

6: Bar Crossing Procedures

VBAP Standard	ECOPRO Standard
Companies have written guidelines for crossing ocean bars which include, at a minimum: a. For towing astern: 1. Tandem tows are prohibited. 2. All generators and tow winch engines are running. 3. Tow winch brakes are set with the air brake off and the hand brake set hand-tight. 4. The TVO pilots the vessel, a crew member is stationed at the tow winch controls with a rapid and reliable means of communication with the operator, and a crew member is on call to respond to machinery space alarms. 5. Chafing gear does not restrict release or recovery of wire. b. For towing configuration including towing alongside and ATBs: 1. Crossings are prohibited in heavy weather and/or sea conditions, or when the swell height is excessive. 2. All main deck hatches and ports on the tow vessel and barge are closed and secured.	The ECOPRO standard is identical to the VBAP standard.

7: Tug Escort

VBAP Standard	ECOPRO Standard
a. A written plan for tug escort to include: 1. Method of communication including establishing working channels and testing prior to commencing tow. 2. Pre-escort conference including at least the following: i. Intended route; ii. Speed of barge; iii. Position of escort tug relative to barge being escorted; iv. How emergency connection would be made between tug and barge; v. Radio communications including primary and secondary; and vi. Forecasted weather, tides, and traffic conditions. 3. Procedures for restricted visibility and heavy weather. 4. Standard orders and tug acknowledgement and response. 5. A formal risk assessment covering escort tug operations with risks identified and mitigated to the extent practicable. 6. Conduct a briefing prior to each job to discuss potential hazards and safety issues. b. Escort tug requirements: 1. Towline requirements: i. Strength - The towline should be of sufficient strength to cope with the forces that can be experienced during ship handling operations. ii. Stretch - Dynamic loads should be well compensated by the towline and/or load reducing system on the winch to avoid excessive loads in the towline and attachment points. iii. Weight/Diameter - The towline should be manageable on board the tug as well as on board the ship. When no towing winch is used the towline should be flexible enough for easy handling.	The ECOPRO standard is identical to the VBAP standard.

2. Horsepower requirement: Aggregate shaft horsepower equivalent to at least five percent of the deadweight tons of a forty thousand deadweight ton oil tanker. 3. Fendering requirement: Fendering appropriate to absorb the impact of normal skin-to-skin operations, protecting both the tank vessel and the escort tug from metal-to-metal contact. 4. Escort tug winch requirement i. For power operated drum brakes, manual operation is also available. ii. Drum brakes can be quickly released from the bridge, as well as locally. iii. If a multi-drum winch is used, each winch drum must be capable of independent operation. iv. The winch drum is visible from all control stands, unless provided with a self-rendering device.	

8: Pre-arrival and Pre-departure Tests and Inspections (Navigation Equipment)

VBAP Standard	ECOPRO Standard
Twelve hours or less before entering or getting underway in Washington State waters, the following pre-arrival/departure tests or inspections (as appropriate for the system) are conducted and logged in the deck or engineering log: a. Navigational equipment (at the minimum) checked, prepared, tested and ready for use: 1. Radar 2. Electronic Display and Information System (ECDIS) 3. Automatic Identification System (AIS) 4. Echo sounder b. Manual inputs correct for (other equipment as appropriate): 1. ECDIS 2. AIS c. Gyro and repeaters checked (as applicable). d. All compass errors known and logged. e. Magnetic heading corresponding to true north compass is posted and easily updated.	The ECOPRO standard is identical to the VBAP standard.

f. Magnetic compass is calibrated, and a deviation table is prepared annually. g. Steering gear tested and logged. h. Internal communications between bridge and engine room tested and clocks synchronized. i. Updated route displayed on ECDIS and/or other navigational devices as appropriate.	

9: Pre-Arrival And Pre-Departure Tests and Inspections (Engine Equipment)

VBAP Standard	ECOPRO Standard
Twelve hours or less before entering or getting underway the following is operationally checked or tested (as appropriate to the system) and logged: a. Emergency and stand-by ship service generators are started, and the switch gear proven to be working; b. All steering systems and local controls of the steering gear at the steering gear flat are inspected or tested in follow up and non-follow up mode and the steering gear flat inspected for unusual conditions such as leaks, fractures, and loose connections; c. Internal communications between bridge and engine room tested and clocks synchronized; d. The main engine, or engines, is tested ahead and astern, or through the full range of pitch of controllable pitch propellers if the tow vessel is so equipped; e. Main lubrication oil pumps are inspected or tested and ready for immediate use; f. For main engine lubrication and fuel oil systems fitted with duplex strainers, stand-by strainers are cleaned, purged, and made immediately available; and g. Fuel sufficient to operate the main engine or engines on the transit to berth or anchorage is transferred to the main engine settling or service tanks, or both.	Additional tests and inspections beyond those in the VBAP standard (e.g. communications, machinery alarms) are performed. Vessel has remote devices to monitor equipment subject to pre-arrival and pre-departure tests and inspections. **OR** Vessel conducts more tests and inspections than those required under the VBAP standard. <u>Example of an additional test:</u> Check storage batteries for emergency lighting and power systems in vessel control and machinery spaces.

h. Main and stand-by cooling water system circulating pumps are inspected or tested and ready for immediate use; i. Intake or charge air auxiliary electric blowers, if applicable, are inspected or tested and ready for immediate use; j. Starting and control air tanks are filled, blown down and ready for use; k. Main and stand-by air compressors are inspected or tested and ready for immediate use; l. The starting air piping system is aligned and drained of condensate, etc. m. Visual inspection of propulsion systems: 1. Spaces for main propulsion machinery 2. Machinery 3. Devices for monitoring machinery n. Prior to getting underway, but no more than once every 24 hours, the following are inspected or tested for immediate use: 1. Main and standby lube oil pumps; 2. Main engine oil pumps; 3. Main and stand-by cooling water system circulating pumps; 4. Start air system checked and drained of condensate, if installed; and 5. For main engine lubrication and fuel oil systems fitted with duplex strainers, stand-by strainers are cleaned, purged, and made immediately available. o. Emergency and stand-by ship service generators are started, and the switch gear proven to be working, at least monthly. p. Engine room alarm tested for visible and audible operation at each station.	

10: Emergency Procedures

VBAP Standard	ECOPRO Standard
Guidelines for emergency procedures are available on the bridge (electronic or hardcopy), in the engine room (if practicable), and in a conspicuous location in a space commonly visited by crewmembers. All personnel assigned emergency duties are trained in their use. These procedures include at least the following: a. Station bills are posted and clearly state crew assignments and duties for the following emergencies: 1. Shipboard fire; 2. Abandon ship; 3. Man overboard; and 4. Oil spill response. b. Written procedures and checklists for responding to: 1. Collisions and allisions; 2. Groundings; 3. Loss of propulsion; 4. Loss of steering; 5. Loss of electrical power; 6. Gyrocompass malfunction; 7. Gas / Toxic Vapor release; 8. ECDIS failure; 9. Flooding (engine room, barge, and pump room); 10. Responding to loss of throttle control from the bridge (if applicable); 11. Emergency towing (tow vessel), and lost barge retrieval; 12. Operator incapacitation; 13. Heavy Weather; and 14. Enclosed space rescue.	An emergency squad organization with clearly defined duties is in place. **AND** Crew members participate in an emergency preparedness training program for additional emergencies (e.g., Helicopter evacuation, or tank or void space evacuation). **AND** All emergency procedures required by the VBAP standard are contained in the vessel's drill schedule.

11: Event Reporting

VBAP Standard	ECOPRO Standard
If the vessel is involved in an event, as defined below, while in Washington state waters: a. An event report is submitted to the Department of Ecology that documents the following information about the event: 1. The date time and location of each event. 2. The weather conditions at the time of the event. 3. The vessel operations underway at the time. 4. The identity of any facilities and other vessels involved. 5. The type and amount of any oil spilled, and the estimated amount recovered. 6. A list of any government agencies to which the event was reported. 7. A brief analysis of any known causes and contributing factors for each event. 8. A description of measures taken to prevent a reoccurrence of each event, including changes to operating or maintenance procedures, personnel policies, vessel crew and organization, vessel equipment changes, and the vessel's technology. b. The position plotting records, whether written, typed, electronically, or otherwise recorded, and the comprehensive written, or electronic, voyage plan are not erased, discarded, or altered. c. If an event results in an oil spill or poses a significant threat of an oil spill, even if short in duration, Washington Emergency Management Division (WEMD) is notified within one hour. d. Notification procedures located on the bridge for the vessels state contingency plan must be followed and required notifications made.	If the tow vessel, barge, or ATB is involved in an event (as defined in the VBAP standard) worldwide, an event report will be submitted to the Department of Ecology. **EXCEPT** Near miss event reports are required only for near misses which occur in Washington state waters.

"Event" means a: 1. Collision. 2. Allision. 3. Near-miss incident which means a pilot, master, or other person in charge of navigating a tank vessel successfully takes action of a non-routine nature to avoid a collision with another ship, structure, or aid to navigation, or grounding of the vessel, or damage to the environment, and which trigger the company's causal analysis system. 4. Marine casualty which means those casualties described in 46 C.F.R. sec. 4.05-1, except subsections (a)(5), (a)(6) and (b), regardless of vessel type, nation of registry, or location. 5. Disabled vessel which means an accidental or intentional grounding, failure of the propulsion or primary steering systems, failure of a component or control system that reduces the vessel's maneuverability, or fire, flood, or other incident that affects the vessel's seaworthiness or fitness for service. 6. Spills of oil from a tank vessel. 7. Near-miss incidents involving towing gear.	

12: Tug, barge, and ATB Crewing

VBAP Standard	ECOPRO Standard
a. When working cargo: 1. Two persons, one of whom is a certified tankerman under 46 C.F.R. subpart 12.20, are on the barge deck during all cargo transfers; or 2. One certified tankerman is required if: i. the barge or ATB has a redundant high level alarm system; ii. the control room has an unrestricted view of entire deck; and iii. the valves are automated and redundant - for a barge greater than 300 feet long. OR The barge is using an installed intrinsically safe overfill control system per 46 CFR 39.2009 (a)(2). b. When under way: 1. For ATB, whenever possible while underway in coastal waters, a three-officer navigation watch rotation (for example 4 hours on – 8 hours off) is used.	The ECOPRO standard is identical to the VBAP standard.

13: Familiarization (Orientation) Training

VBAP Standard	ECOPRO Standard
Before being assigned to duties, crew members receive familiarization training in personal survival techniques including: a. Communicating with other persons on board about elementary safety matters and understanding safety information symbols, signs, and alarm signals. b. Prevention of falls overboard. c. How to respond to emergencies relative to the tow. d. What do if: 1. A person falls overboard. 2. Fire or smoke is detected. 3. The fire or abandon ship alarm is sounded. e. Identification of muster and embarkation stations and emergency escape routes. f. Location and donning of lifejackets and survival suits. g. Raising the alarm and basic knowledge of the use of portable fire extinguishers. h. Taking immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board. i. Closing and opening the weather-tight and water-tight doors, and fire-tight doors (if fitted). j. Confined space hazards. k. All crewmembers are familiar with how to report an oil spill in Washington state waters. l. Officers and crew (as appropriate) are trained in the winch emergency release system, if fitted.	A formal orientation checklist is used for all personnel at time of sign-on.

14: Position-Specific Training and Training Records

VBAP Standard	ECOPRO Standard
a. Personnel are trained in: 1. Inert Gas, if equipped; 2. Crude Oil Washing systems, if equipped; 3. Vapor recovery systems, if equipped; 4. Safe cargo handling (certified Tankerman Person In Charge (PIC)– Dangerous Liquids or equivalent); 5. Oil spill response responsibilities; and 6. Vessels contingency plan holder field guide and notification requirements. b. TVOs and OOWs are trained in: 1. Electronic Navigation equipment specific to the vessel; 2. Pilothouse or Bridge Resource Management; and 3. Tow vessel handling. c. Within three years from the date of employment by the owner or operator, a crew member completes the company's training program. **Training Records.** Detailed training records are maintained for all crew on each vessel or at a central location. The records include the training required to obtain a license or merchant marine document, completion dates, and performance evaluations of the training described in the training section.	Training in additional topics is provided. Examples of additional topics are: • Advanced marine firefighting. See Table A-VI/3 in Section A- VI/3 of STCW 95. • Confined Space entry • First Aid, CPR, AED training **AND** The company's training program is completed within one year of date of hire.

15: Refresher Training

VBAP Standard	ECOPRO Standard
a. Crew members receive refresher training at least once every five years. b. Refresher training includes examination of the crew member's skills to determine if they are able to safely and effectively perform in the position assigned.	Any training identified as necessary to improve performance is accomplished as soon as practical. **AND** Conduct annual oil spill notification training, including contingency plan holder field document or field guide training.

16: Emergency Drills

VBAP Standard	ECOPRO Standard
a. Drills must take place on the towing vessel, as if there is an actual emergency. b. All crew members must participate in drills. c. Emergency equipment is demonstrated, or its use is simulated. d. Monthly firefighting drills must include how to: 1. Operate all fire-extinguishing equipment onboard; 2. Stop engine room ventilation system and seal to keep extinguishing agent in; 3. Operate the fuel shut off valve; 4. Activate the general alarm; 5. Don a firefighter's outfit and test the self-contained breathing apparatus, if applicable; and 6. Report any alarms or fire-detection systems not operational. e. Monthly all fire and flooding system alarms and detection systems tested, if applicable. f. Crews conduct the following drills: 1. For coastal operations (Outside of Cape Flattery):	Drills on the emergency procedures required by the VBAP Standard # 10, are held at least once a year, and may be combined: Crew members participate in a formal critique of the drill. **AND** Items requiring follow-up corrective action are logged. **AND** A crew person is assigned to take the required corrective action, if identified.

i. Monthly abandon ship, firefighting, man overboard, and oil spill response. ii. Review of lost barge retrieval procedures and oil spill response procedures at least once per voyage. iii. Annual barge retrieval drill, not more than one month after master or mate responsible for overseeing the drill comes onboard. Lost barge retrieval drill includes at least: (1) Each drill must allow every participant to demonstrate the knowledge, skills, and abilities needed to ensure they can perform their duty. (2) If the drill includes actual operation of the system, it must be conducted under the supervision of the master or mate responsible for retrieval and be in open waters free of navigational hazards. 2. For inland operations: i. Monthly abandon ship, firefighting, recovering persons from water; ii. Tabletop lost barge retrieval drill quarterly; and iii. Oil spill response drills quarterly.	

17: Drug and Alcohol Policies

VBAP Standard	ECOPRO Standard
The owner's or operator's policies, procedures, and practices ensure that: a. A person neither consumes, nor is under the influence of, alcohol on a tank barge or tow vessel while in state waters unless that person is a passenger who does not perform any duty on the tow vessel or tank barge in Washington state waters; and b. A person neither consumes, nor is under the influence of, illicit drugs on a tank barge or tow vessel while in Washington state waters.	Vessel personnel are trained in both drug and alcohol abuse awareness and in drug and alcohol testing for post-accident and probable cause. **AND** Random testing is conducted more frequently than annually, including random testing of the Master and Chief Engineer.

18. Work Hours (Rest Periods)

VBAP Standard	ECOPRO Standard
a. Crew members comply with OPA 90 work hour restrictions or STCW ChapterVIII, Section A-V III/1 rest period requirements. Company policies ensure crew members are well-rested and able to perform their duties. b. Work hours (rest periods) are documented and maintained for all personnel on tow boat and tow vessel, and if requested, made available to the Department of Ecology. c. Company policy specifies that driving hours, paperwork, receiving stores, and bunkering are counted in the computation of work hours (rest periods). d. Bunkering on arrival is discouraged. e. Musters and drill are conducted in a manner that causes minimum disruption to rest periods and does not induce fatigue.	Work hour restrictions exceed OPA 90 requirements or rest periods exceed STCW 95 requirements. A computerized program is used to help track work hours for crew. Policies and procedures demonstrate how officers and crew meet the 6 hours of rest required by STCW95 when working 6 on/ 6 off taking into account handover during watch changes, safety rounds after watch, or drills, etc.

19: Vessel Visitation

VBAP Standard	ECOPRO Standard
a. Quarterly visits are conducted by company management, such as port captains or port engineers, either in person or virtually, with the Master and senior officers, to review shipboard management and operations and provide guidance in correcting identified problem areas; and b. The time and date of the vessel visitation are recorded in a shipboard log, and findings are properly documented.	The ECOPRO standard is identical to the VBAP standard.

20. Planned Maintenance (PM) Program

VBAP Standard	ECOPRO Standard
A planned maintenance (PM) program for a tow vessel's navigation, propulsion, steering, communications, electrical, and tank barge's cargo handling systems that: a. Complies with ISM, International Maritime Organization (IMO) and International Association of Classification Societies (IASC) standards; b. Includes, at a minimum, the maintenance schedule for each system according to company Safety Management System (SMS) procedures, Classification Society requirements, and the recommended frequency of the machine's or equipment's manufacturer; c. Has the ability to track the history of maintenance work; d. Includes inventory control and tracking of necessary replacement parts; e. Includes a hull inspection program; and f. Includes a critical equipment planned maintenance schedule with a list of critical equipment (main and standby) including the supply of electrical power to essential services, propulsion, steering, and generators. Written procedures are contained in the	PM program is computerized. **AND** PM program includes additional modules such as: • Drydocking • Surveys and certificates • Quality management • Documentation management **AND** Company uses Predictive Maintenance: • Maintenance is condition-based. • System involves proactive, non-intrusive analysis of equipment or machinery using monitoring systems with

SMS on how critical equipment maintenance and adjustment should be performed in accordance with equipment's manufacturer.	statistical processes that determine when components will need corrective maintenance. • Technologies utilized include infrared, corona detection, vibration analysis, acoustic, oil analysis, and other tests. • Results are measured and used for trend investigations.

21: Technology – Navigation Equipment

VBAP Standard	ECOPRO Standard
Tow vessels transporting tank barges and ATBs are equipped with: a. Two functional radars; b. Two Global positioning system (GPS) receivers; c. At least two Very High Frequency (VHF) radios; d. Automated Identification System (AIS) Class A device; e. Pilothouse alerter system; and f. Simplified voyage data recorder.	One of the two radars is equipped with Automatic Radar Plotting Aid (ARPA). **AND** Navigation equipment includes a standalone Electronic Chart System (ECS) or ECDIS.

22: Technology - Tank level sensing equipment and emergency shut-down system

VBAP Standard	ECOPRO Standard
a. All cargo tanks are equipped with audible and visual high level and high-high level alarms. b. All cargo tank high and high-high alarms are tested prior to loading.	For tug and tow: When the tank barge is discharging cargo, the tank barge provides the receiving facility or vessel with a means of remotely shutting down the cargo pump (s) on the tank barge. **OR** The barge is using an installed intrinsically safe overfill control system per 46 CFR 39.2009 (2).

23: Technology – Emergency Towing

VBAP Standard	ECOPRO Standard
a. An ATB operating in Washington State waters has functional emergency towing gear. In addition, the following items must be met: 1. Detailed guidelines and vessel-specific information regarding Emergency Towing is available in the respective vessel-specific Emergency Towing Booklet. 2. The gear is inspected quarterly, and any maintenance and repair effected immediately. 3. At least one quarterly drill per year for emergency towing includes demonstrating use of equipment. b. A tug and tow vessel operating in Washington, must have a barge retrieval system. In addition, the following items must be met: 1. The emergency towline must be readily available on the tug or barge. 2. They system must be able to regain control of the barge without putting crew members onboard the barge. 3. The system must be ready for immediate use in an emergency.	Senior officers practice an emergency towing (vessel being towed) scenario during a live exercise or as part of their regularly scheduled simulator training. **OR** Alternatively, the requirement may be met with tabletop exercises.

24: Technology – Towing Equipment

VBAP Standard	ECOPRO Standard
a. **Coastal Tow Wire**. The tow wire for coastal hawser towing has: 1. A nominal breaking strength of two one-half times the bollard pull of the tow vessel; 2. An independent wire rope core for wires two inches and greater; 3. Improved plow steel or extra improved plow steel wire; 4. Been heavily lubricated or galvanized at the time of manufacture; 5. A right or left regular lay and is six-by-nineteen construction or larger; and 6. A tow line that terminates in either: I. A spelter or thermo-set resin poured socket sized to exceed the breaking strength of the tow wire; or	Tow line components exceed VBAP standards for breaking strength. **AND** Tow vessel is able to abort and reset the tow winch brake from each steering station on the tow vessel. **AND**

II. A spliced eye with a thimble sized to exceed the breaking strength of the tow wire. b. **Inland Tow Wire.** The tow wire for inland hawser towing meets with the requirements in (a.) of this section except: 1. The primary tow line for inland towing may be synthetic fiber; and 2. Swaged eyes and wire clips are not used on the primary tow line. c. **Bridles and Surge Chains**. 1. For coastal hawser towing, a tow bridle and surge chains where the: I. Breaking strength of each bridle leg and the surge chain is 1.3 times the nominal breaking strength of the primary tow line; II. Chain used is certified and is Grade Two or higher, welded or forged, integral stud link chain; and III. Surge chain may have an end link or one studless link. 2. For inland hawser towing, tow bridles made of chain or synthetic fiber or wire-rope where the breaking strength of each bridle leg is equal to or better than 2 ½ times the bollard pull of the tug. d. **Barge Fittings**. Tank barges are equipped with: 1. Two tow pads to which the tow bridle is connected where the: I. Tow pad and supporting structure have a yield strength of 1.25 times the nominal breaking strength of the tow line; II. Tow pad can carry the load applied throughout the full arc possible in normal Service; and III. The axis of the tow pads lies along the axis of the attached bridle leg when towing straight ahead. 2. Towing fairleads, if the tow pads are not located at the extreme bow, and where: I. Closed fairleads or chocks are installed so that each leg of the tow bridle leads straight from the bridle apex through the center of the fairlead to the tow pad; II. The fairlead opening is round or oval, and large enough to pass all parts of the bridle in either direction but without allowing excessive lateral motion; and	The above system is tested monthly. **AND** The monthly test is documented in the logbook. **AND** Company has a proactive written maintenance program for tow wires taking into account hours, environment, and service.

III. All fairlead surfaces are ground smooth with a radius four times greater than the bar diameter of the chain, or the diameter of the synthetic or wire-rope used. e. **Shackles**. All shackles used are: 1. Rated with a breaking strength of 1.3 times the nominal breaking strength of the primary tow line; 2. Either round pin anchor shackles or chain safety shackles with a locking nut secured by a nut and bolt or cotter pin; 3. Forged or cast; and 4. Marked with the shackle's safe working load and the shackle's rated or minimum breaking strength. f. **Shackle and Flounder Plates**. Shackle and flounder plates are: 1. Constructed of whole plates with no welding other than on assembly gussets and reinforcing rings; and 2. Triangular cast, forged, or fabricated steel equal to the American Society for Testing Materials (ASTM)-36 standard with all corners rounded. g. **Wire Rope Records, Inspections and Maintenance**. All wire rope towing equipment described in (a) through (c) of VBAP Standard 25 are inspected and maintained in accordance with the standards in U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 5-92, enclosure 1, part B. h. **Chafing Protection**. All towing equipment described in (a) through (d) of this section are protected from chafing where the component contacts a surface that could cause wear during normal operation. i. **Tow Winches**. Tank barge tow winches: 1. Accept and hold a load equal to the breaking strength of the tow line without damage to the winch, its foundation, or brakes; 2. Have a brake on the main cable drum capable of holding the breaking strength of the innermost layer of the tow line without power to the winch; 3. Have a towing winch cable drum with a minimum diameter 12 times the diameter of the tow line;	

4. Have a connection between the tow line bitter end and the winch cable drum with a holding capacity no greater than fifteen (15) percent of the breaking strength of the tow line;
5. Always have ten or more wraps of the tow line on the bottom layer of the cable drum while towing; and
6. Have control stations located where emergency release of the tow line does not endanger operating personnel.
7. Clear operating instructions are available near all the manual and emergency controls. The working of the winch emergency release system (ERS), if fitted, should always be understood by those operating the winch.

j. The PM Program should ensure the equipment inspections occur on a regular basis including at least:
   1. Towing hooks and arrangements;
   2. Towing hooks quick release systems;
   3. Hydraulic system, pins, shark jaws or equivalent;
   4. Towing winches;
   5. Bollards, fairleads and sheaves;
   6. Ropes and wires;
   7. Ancillary equipment, i.e. shackles, thimbles, eyes, rings and plates;
   8. Emergency retrieval system; and
   9. Approved test certificates are received for new lifting and towing equipment and wires and are maintained in an ordered system and available for inspection.

k. Monthly checks should include:
   1. Checks on the towing winch including:
      i. Effective operation of the braking system;
      ii. Winch power and hydraulic systems;
      iii. Signs of corrosion or fractures on the holding bolts, welds and supporting deck;
      iv. Effectiveness of the emergency release from the wheelhouse and/or the local activation point;
      v. Effectiveness of the spooling mechanisms;

vi. Connection end of the towline should always be fixed but with a force of less than 5 percent of the breaking load of the towline; and vii. The towing winch brakes provide a static holding capacity of at least 1.1 times the breaking load of the tow line. 2. Visual checks on towing hook prior to each tow: i. Release mechanism tested; and ii. Damage noted and reported, hook not used until damage rectified. 3. Monthly check on bollards, fairleads and sheaves includes at least: i. Regular inspection for wear, excessive corrosion and wastage; ii. Inspection for fractures to welds and supporting structures; and iii. Ensuring that all rotating sheaves are properly greased and free. 4. Maintenance and checks on towlines, wire and synthetic ropes includes: i. Pennants inspected prior to every use, annually and tested after a suitable period or five years; ii. Main tow wire 'end for end' every year, and replaced when appropriate; iii. Main tow wire physically inspected every month and/or before each tow; iv. Main tow wire physically inspected after every deployment for damage and abrasions such as: (1) Ultraviolet (sunlight), heat or chemical degradation (2) Wear, broken, cut or fused strands (3) Overstretched rope (can reduce the effective diameter of the rope) (4) Distortion and kinking of the rope, particularly wire rope indicating that the wire has been severely stressed; and (5) Proper storage of rope, to prevent deterioration or mold if stowed wet with no proper air flow. l. Prior to use, inspect the shackles and flounder plates for damage, distortion, fractures; and inspect the towing bridle for damage.	

25: Technology – Emergency Reconnection Equipment

VBAP Standard	ECOPRO Standard
A tank barge has emergency reconnection equipment for coastal hawser towing (towing astern) as follows: **Emergency Tow Line**. An emergency tow line and components where the: a. Breaking strength of the tow line and components is 1.5 times the bollard pull of the tow vessel; Tow line's bitter end is secured down the barge deck from bow to stern with break-away clips; b. Towing end of the tow line is attached to a trailing buoy with an appropriately sized polypropylene floating line; and c. The emergency reconnection equipment is inspected annually in accordance with the manufacturer's recommendations to verify it is ready for immediate use and the system is being maintained in accordance with the manufacturer's recommendations. **Hook retrieval device.** The hook retrieval device is slotted to lock into, and pick up, the tow bridle of the barge adrift. The purpose of the hook retrieval device is to reconnect the tow vessel's tow line to the towing bridle of the barge adrift.	• Tow line and components exceed minimum strength requirements specified under the VBAP standard. • The emergency reconnection equipment is inspected monthly in accordance with the manufacturer's recommendations to verify it is ready for immediate use and the system is being maintained in accordance with the manufacturer's recommendations.

26: Technology – Fenders

VBAP Standard	ECOPRO Standard
Tow vessels used to transport tank barges are equipped with a fender system capable of absorbing the impact of the tow vessel coming alongside the tank barge, and able to protect all parts of the tow vessel's bow and stern exposed to contact during normal operations.	The ECOPRO standard is identical to the VBAP standard.

27: Technology - Navigation Lights

VBAP Standard	ECOPRO Standard
a. Tank barge electrical systems meet American Bureau of Shipping (ABS) and U.S. Coast Guard standards for the most volatile cargo allowed on the barge according to the barge's certificate of inspection or other classification document. b. Tank barge is fitted with a redundant navigation light system, for example, automatic lamp changers, or LED lights for coastal tows.	The ECOPRO standard is identical to the VBAP standard.

28: Technology - Tug–Tow Match

VBAP Standard	ECOPRO Standard
Tow vessels that transport tank barges in Washington's coastal waters have: a. Twin screws; and b. Minimum bollard pull of four pounds per deadweight ton of the tank barge.	ALL tow vessels, regardless of operating area have Twin screws. **AND** Bollard pull greater than 4 lbs. per deadweight ton of the tank barge.

29: Waste Oil and Oily Water Management System

VBAP Standard	ECOPRO Standard
a. Waste oil management procedures are contained in the vessel's SMS. b. Training in waste oil and oily water handling procedures is provided for all engineering officers and all unlicensed crew members involved in the handling waste oil or oily water. This training includes the operation and maintenance of the oily water separator (OWS), and log entries related to waste oil and oily water. c. Written procedures or checklists for waste oil and oily water management are readily available. d. The oily water separator is maintained in accordance with manufacturer's recommendations and a record of maintenance is maintained, checked, and verified by the Chief Engineer. e. While in Washington waters, all waste oil and oily water is discharged to shore facilities or vacuum trucks. f. Overboard discharge valve is secured and controlled by Chief Engineer.	Only qualified officers will supervise operation of the OWS and incinerator. **AND** Company has an internal audit system in place to verify the crew is following CFR and MARPOL regulations regarding waste oil management. **AND** Company has seal system to monitor overboard valves.

30: Automated Identification System (AIS)

VBAP Standard	ECOPRO Standard
a. AIS equipment is calibrated, tested, and maintained according to the manufacturer's recommendations and regulatory requirements. b. Maintain a record showing dates and descriptions of AIS calibration, testing, maintenance, and operation. c. Pre-departure and pre-arrival checklists include checking AIS for proper operation and inputs. d. After anchoring, mooring, or getting underway, AIS is adjusted to transmit the correct status. e. Accurate draft is reported.	The ECOPRO standard is identical to the VBAP standard.

31: Spill Preparedness Forms and Checklists

VBAP Standard	ECOPRO Standard
a. Emergency oil spill response procedures and checklists are posted or readily available on board all tank barges. b. Appropriate state contingency plan field document located on the bridge and notification placard posted and bridge team is trained on making required notifications while operating in Washington waters.	All Qualified Individuals are trained in basic ICS procedures, such as filling out ICS Form 201 Incident Briefing before the spill response team arrives, if the spill occurs in Washington state waters. **AND** An ICS 201 form is used at every deployment drill and spill in Washington state waters.

END