

Guidance Document for

Covered Vessel Technical Manual Planning Standard

WAC 173-182-349



Introduction

Vessel oil spill contingency plan holders are required to submit technical manuals if they operate or transit in the Neah Bay, Cathlamet, or San Juan Islands planning standard areas. The technical manual must include all of the equipment appropriate for the operating environment that is necessary to meet the recovery and storage requirements for the worst case discharge volume through a forty-eight hour time frame.

The technical manuals will be used to inform the five year Best Achievable Protection (BAP) Review cycle by supporting Ecology's determination that the response systems, training levels, and staffing demonstrate BAP.

Technical manual review

This guidance document should be utilized by regulated industry in the development of Technical Manuals in accordance with WAC 173-182-349.

This guidance document may also be used by interested tribes, agencies, and public to better understand the content included in required technical manuals.

In order for the technical manual to be accepted it must be developed to address the elements required in the rule at **WAC 173-182-349 Covered Vessel Plan Holders Technical Manual Requirement**. You are not required to use the template developed by Ecology in the development of your technical manual. The sample technical manual is provided as one option for fulfilling the requirements.

Elements of the Technical Manual

- Cover page
- Recovery Systems Detail
- Storage Systems Detail

Submitting your technical manual

Many vessel plan holders do not own equipment and rely entirely on their Primary Response Contractor to provide spill response assets. If this is the case, the plan holder may choose to develop a manual which details the equipment assets they can access through their Primary Response Contractor or the Primary Response Contractor can submit the technical manual as an addendum to their Primary Response Contractor application for reference by the plan holder.

If a PRC submits a technical manual on behalf of their plan holder(s), and lists the plan holder(s) in the manual, they should work with the plan holder(s) to identify relevant information including oil types covered under the plan and worst case discharge (WCD) volumes covered under the plan.

All technical manuals submitted to Ecology will be subject to public review and comment periods in accordance with WAC 173-182-640. Approved technical manuals will be made available for review via the Spills Program [FTP](#) internet site.

Technical Manual Cover Page

Technical Manual Planning Standard: Separate technical manuals must be created for each of the areas covered by the vessel contingency plan:

- Neah Bay Planning Standard 173-182-395
- San Juan County Planning Standard 173-182-370
- Cathlamet Planning Standard WAC 173-182-415

Description: Briefly describe what a technical manual is and the intended use. For example, the technical manual must include all of the equipment appropriate for the operating environment that is necessary to meet the recovery and storage requirements based on the worst case discharge covered in the plan through the 48 hour timeframe.

Worst Case Discharge: The technical manual is developed based on the worst case discharge covered in the plan. Identify the WCD volume used to calculate the recovery and storage requirements. For example a technical manual may be developed for Neah Bay to cover tank vessels with a WCD of 813,000 barrels.

Oil types: List all oil types the technical manual covers. The technical manual should be developed to demonstrate equipment appropriate to the oil types covered in the plan.

Technical manual planning assumptions: Describe the key technical manual planning assumptions applied when developing the technical manual.

Two assumptions to be applied during the development of the technical manuals include:

- All work boats can be used once
- Vessels and boom which would be used for GRP deployment are not represented in the technical manual

Training level of personnel used to perform recovery and storage under the plan: Generally describe the roles and training levels of personnel who will perform the recovery and storage tactics described in the technical manual.

Updates and distribution: Technical manuals may be utilized as planning and training documents. Please consider how these documents will be updated and distributed if lessons learned from their use in training or drills results in changes to the document.

Recovery System Guidance

We recommend creating a unique two page document describing all of the details called out in WAC 173-182-349 for each recovery system. These two pagers will serve to fully explain the recovery system and its capabilities.

Recovery System Narrative: In a narrative format describe the recovery system. For example does the recovery system utilize an OSRV and two workboats to enhance the OSRV in a V enhanced skimming formation?

Another example could be a workboat with a portable skimmer dropped into a J shaped boom. This system could be further enhanced by two workboats forming a U shape ahead of the skimmer vessel.

Operational Picture: The operational picture requirement is intended to provide a clear image of the response system. This may be met with a diagram of the system or by submitting a photograph of the equipment as it would be deployed. In the sample technical manual we utilized a diagram of the system and included individual photographs of all vessels and skimmers that make up the system.

Intended operating environment for recovery system: For our purposes operating environment is based on the ASTM standard, F625-94 Classifying Water Bodies for Spill Control Systems, called out in the rule. Additional information provided in the World Catalog or Manufacturers specifications can be used to determine the operating environment.

Developers of technical manuals should evaluate not just the operating environment for each discrete piece of equipment in the system but also the system as a whole to determine the operating environment based on their best professional judgment. When determining the operating environment select the highest wave energy environment the entire recovery system is capable in; open, open water rough, protected, and calm. If the system is shallow water capable (< 10ft deep) you may also indicate shallow capable as appropriate to the system.

For some recovery systems the vessels may be rated for open water, the skimmer may be rated for open water, but the boom arm used to create a collection point for the skimmer is rated for a protective environment. In this case the entire system should be defined as protected environment capable.

Skimming device detail: For the recovery device identified for the system include the following information.

- Western Response Resource List (WRRL) identification number or other unique identifier.
- Effective daily recovery capacity of the skimmer (EDRC) in barrels calculated in accordance with WAC 173-182-348.
- Identify the pump and the expected rate of transfer of product when temporary storage is full. Transfer of recovered product may be to other on-water storage or shore side storage.
- Volume and type of temporary storage associated with the skimmer. For an OSRV this is the tank built into the vessel for oily water recovery. This volume may also be from a portable tote staged on the deck of a vessel or a bladder towed behind a vessel.
- Support resources & Infrastructure necessary for mobilization of the skimmer. If the skimmer is staged in a trailer, support resources could include the trailer, a truck to move the trailer, and a crane to deploy the skimmer onto the vessel.

- Support resources and infrastructure for deployment. The skimmer may be fully contained with an associated pump and storage such as in an OSRV or the skimmer may require the response contractor to identify a pump and temporary storage. Describe as appropriate.
- Include the homebase for the equipment as listed on the WRRL. The homebase is used to verify that the equipment can be mobilized within the 6, 12, 24, and 48 hour timeframes called out in the planning standards.
- Mechanism for access, list whether the skimmer is plan holder owned, PRC owned, or non-dedicated to oil spill response and available through an agreement such as a letter of intent (LOI) or a contracted vessel of opportunity.
- Mobilization times under the rule per plan holder owned equipment receives a mobilization time of 30 minutes, PRC equipment receives a mobilization time of 1 hour and non-dedicated equipment receives a mobilization time of 3 hours.
- Mobilization method, list whether the equipment is mobilized over land or water. Equipment mobilized over land receives a transit speed of 35 mph and equipment traveling over water receives a mobilization speed of 5 kts unless an alternative has been granted.
- Vessel transit speeds, list any alternative transit speeds granted for the vessel by Ecology.
- Time to arrive on scene, list the total time based on mobilization time and travel time to the planning standard.

Oil type(s) the skimmer is optimized for: List the oil types the skimmer is optimized for. This can be listed by group or common name and should align with best professional judgment or the manufactures specifications for the skimmer.

Enhanced skimming vessels: For all vessels identified to enhance recovery or as part of the system list the following:

- Vessel WRRL ID#
- Vessel kind/ type
- Homebase
- Mechanism for access
- Mobilization time
- Mobilization method
- Time to arrive on scene

Support resources for mobilization and deployment detail of the vessels: If the vessels require additional resources for deployment, such as a truck and trailer it should be described with the following information; mechanism for access, mobilization time, and mobilization method.

Boom to enhance skimmer recovery: Describe the boom used to enhance the recovery system. Include the following information.

- Boom WRRL ID#
- Kind and type of the boom

- Length of boom used to enhance (this should be at least 300ft or other based on manufacturers recommendations)
- Homebase
- Mechanism for access
- Mobilization time
- Mobilization method

Support resources for mobilization and deployment of the boom detail: If the boom requires additional resources for deployment, such as a truck and trailer it should be described with the following information; mechanism for access, ownership, mobilization time, and mobilization method.

Supporting night operations: Describe whether the recovery system is 24 hour capable or only capable during daylight hours. This can be identified by a simple YES/ NO and a brief description of what makes the system capable, such as a vessel mounted FLIR system.

Minimum number of personnel to support recovery system operations for a 12 hour shift: List the number of personnel necessary to deploy the recovery system for a 12 hour shift. Also include the number of people for a 24 hour shift if this system can be used to support night operations.

Storage System Guidance

We recommend creating a unique two page document describing all of the details called out in WAC 173-182-349 for each storage system. These two pagers will serve to fully explain the storage system and its capabilities.

Storage System Narrative: In a narrative format describe the storage system. For example is the storage system a large on-water barge that serves as a mother ship that multiple recovery systems utilize to offload the recovered product. Or is the storage system a mini barge used to offload recovered product from one skimming system to shoreside storage.

Operational Picture: The operational picture requirement is intended to provide a clear image of the storage system. This may be met with a diagram of the system or by submitting a photograph of the equipment as it would be deployed. In the sample version we utilized a diagram of the system and included photographs of the equipment.

Intended operating environment for the storage system: For our purposes operating environment is based on the ASTM standard, F625-94 Classifying Water Bodies for Spill Control Systems, called out in the rule. Additional information provided in the World Catalog or Manufactures specifications for the equipment can be used to determine the operating environment the storage system is capable in.

Storage device detail: For the storage device indentified for the system include the following information.

- Western Response Resource list (WRRL) identification number or other unique identifier. If the storage device is a barge available under a LOI or mutual aid and is not listed on the WRRL, instead of the WRRL ID number list “LOI.”
- Volume of storage in barrels
- Identify the pump and the expected rate of transfer of product when the storage device is full.
- Support resources & infrastructure necessary for mobilization and deployment of the storage device. For example if the storage device is a large barge that requires a tug for mobilization, describe the tug.
- Include the homebase for the equipment as listed on the WRRL. The homebase is used to verify that the equipment can be mobilized within the 6, 12, 24, and 48 hour timeframes called out in the planning standards. If the storage device is a barge of opportunity available under LOI list the area the barge would be sourced from, either Puget Sound or Columbia River, and identify the company that would supply the barge
- Mechanism for access: list whether the storage device is plan holder owned, PRC owned, or non-dedicated to oil spill response.
- Mobilization time under the rule: plan holder owned equipment receives a mobilization time of 30 minutes, PRC equipment receives a mobilization time of 1 hour and non-dedicated equipment receives a mobilization time of 3 hours.
- Mobilization method: list whether the equipment is mobilized over land or water. Equipment mobilized over land receives a transit speed of 35 mph and equipment traveling over water receives a mobilization speed of 5 kts unless an alternative has been granted.
- Time to arrive on scene: list the total time based on mobilization time and distance that the equipment can be counted to meet the planning standard.

Associated vessels: For all vessels identified to support the storage system list the following:

- Vessel WRRL ID#, or LOI
- Vessel kind/ type
- Homebase
- Mechanism for access
- Mobilization time
- Mobilization method
- Time to arrive on scene

Supporting night operations: Describe whether the storage system is 24 hour capable or only capable during daylight hours. This can be identified by a simple YES/ NO. If the system is capable with modifications describe the necessary modifications.

Minimum number of personnel to support storage system operations for a 12 hour shift: List the number of personnel necessary to deploy the storage system for a 12 hour shift. This number can be taken from the WRRL. Also include # of people for a 24 hour shift if this system can be used to support night ops.

Oil type(s) the storage is optimized for: List the oils by common name or group (GROUP 1-5, diesel, crude, etc).

Definitions

“Alternative Transit Speed” Each piece of equipment is assigned a travel time. The default travel times are 35 mph over the road and 5 knots over water. PRCs may submit documentation and request for alternate travel speeds. Based on the documentation submitted by a PRC, alternate transit speeds may be assigned and these decisions are communicated in a letter back to the owner. Ecology maintains a list of alternatives travel speeds that have been granted.

"Best achievable protection" means the highest level of protection that can be achieved through the use of the best achievable technology and those staffing levels, training procedures, and operational methods that provide the greatest degree of protection achievable. Ecology's determination of best achievable protection shall be guided by the critical need to protect the state's natural resources and waters, while considering:

- (a) The additional protection provided by the measures;
- (b) The technological achievability of the measures; and
- (c) The cost of the measures.

"Best achievable technology" means the technology that provides the greatest degree of protection. Ecology's determination of best achievable technology will take into consideration:

- (a) Processes that are being developed, or could feasibly be developed, given overall reasonable expenditures on research and development;
- (b) Processes that are currently in use; and
- (c) In determining what is best achievable technology, ecology shall consider the effectiveness, engineering feasibility, and the commercial availability of the technology.

“Dedicated equipment” means equipment and personnel committed to oil spill response, containment, and cleanup that are not used for any other activity that would make it difficult or impossible for that equipment and personnel to provide oil spill response services in the time frames specified in this chapter.

“Effective Daily Recovery Capacity” means the calculated capacity of oil recovery devices that accounts for limiting factors such as daylight, weather, sea state, and emulsified oil in the recovered material, simplified to 20% of the pump throughput.

“Oil Type” is based on the oils viscosity and density.

Type/Group	Viscosity	Density
		0.90 to
1	150 to 250	0.93
2	1,500 to 2,500	0.92 to

		0.95
		0.95 to
3	17,000 to 23,000	0.98
		0.96 to
4	50,000 to 70,000	0.99
	130,000 to	0.96 to
5	170,000	0.99

"Interim storage" means a site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site.

"Mobilization time" means the time it takes to get response resources readied for operation and ready to travel to the spill site or staging area. Mobilization time for plan holder owned equipment is 30 minute, for primary response contractor equipment is 1 hour, and for non-dedicated equipment 3 hours.

"Non-dedicated Equipment" means those response resources listed by a primary response contractor for oil spill response activities that are not dedicated response resources.

"Operating environments" means the conditions in which response equipment is designed to function. Water body classifications will be determined using criteria found in the ASTM Standard Practice for Classifying Water Bodies for Spill Control Systems. Per WAC 173-182 shallow waters are classified as waters with a depth of 10 feet or less.

Water Body Classification ASTM F625	Wave Height
Calm Water	Waves 0-1'
Protected Water	Waves 0-3'
Open Water	Waves 0-6'

"Recovery system" means a skimming device, storage, work boats, boom, and associated material needed such as pumps, hoses, sorbents, etc., used collectively to maximize oil recovery.

"Systems approach" means the infrastructure and support resources necessary to mobilize, transport, deploy, sustain, and support the equipment to meet the planning standards, including mobilization time, trained personnel, personnel call out mechanisms, vehicles, trailers, response vessels, cranes, boom, pumps, storage devices, etc.

"Technical manual" means a manual intended to be used as a planning document to support the evaluation of best achievable protection systems and the potential response capability of plan holder owned, Primary Response Contractor (PRC) dedicated, and non-dedicated oil spill response equipment.

"Western Response Resource List (WRRL)" The WRRL is a database that stores data on various types of oil spill response equipment in the Pacific Northwest. The WRRL can be accessed by clicking on the following link, <http://www.ecy.wa.gov/programs/spills/preparedness/WRRL/WRRL.htm>

"Worst case spill volume" means a spill of the vessel's entire cargo and fuel complicated by adverse weather conditions

Relevant Rule Excerpts

WAC 173-182-345 Determining effectiveness of recovery systems. Plan holders and PRCs that own equipment shall provide information for ecology to determine the effectiveness of the recovery systems and how the equipment meets the planning standards. To avoid duplication, plan holders relying upon a PRC to meet the necessary planning standards may reference the information submitted in the PRC's application, as approved by the department. Ecology will use the criteria in ASTM International F 1780-97 (Reapproved 2002). Determination of efficiency of recovery systems in varied operating environments and product types:

- (1) For all skimmers, describe how the device is intended to be transported and deployed. List the boom and work boats associated with each water based skimming system. Identify the pumps and pumping capacity that will be used to transfer product to storage devices.
- (2) For all oil recovery systems that rely on a vessel of opportunity or nondedicated transport asset, include a statement on how the asset would be located and secured. Include in the plan the mobilization time needed to ensure the assets are available, as well as the time needed to set up the oil recovery system, and the personnel that will be used in the operations.
This may require longer mobilization time than those found in this chapter.

WAC 173-182-349 Covered vessel plan holders technical manuals. (1) Each covered vessel plan holder that operates or transits in the Neah Bay, Cathlamet, or San Juan Islands planning standard areas must provide a technical manual that includes all of the equipment appropriate for the operating environment that is necessary to meet the recovery and storage requirements, through the forty-eight hour time frame.

(2) The technical manuals will be used to inform the five year BAP cycle and support ecology's determination that the response systems, training levels, and staffing demonstrate best available protection.

(3) Plan holders must use a systems approach to identify the equipment, including WRRRL identification or other unique identification numbers, that will be used to describe the response systems in the technical manual. For each recovery system described include the following:

- (a) An operational picture or diagram of the recovery system, the EDRC for the system, and associated temporary storage;
- (b) The infrastructure and support resources necessary for deployment;
- (c) Associated vessels necessary to enhance the skimmer;
- (d) At least three hundred feet of boom to enhance the skimmer or an alternative based on manufacturers recommendations;
- (e) The mobilization time and home base for the equipment;
- (f) The ownership or mechanism for accessing the equipment for example, under contract, subcontract or letter of intent to the plan holder or other approved means;
- (g) If applicable, the ability of the recovery system to be used to support night operations;
- (h) The minimum number of personnel necessary to deploy the equipment for a twelve hour shift and the training level of personnel appropriate to operate the equipment and carry out recovery;
- (i) If alternative speeds are given for equipment associated with a recovery system the information should be included in the equipment description; and
- (j) The oil type(s) the associated skimmer is optimized for.

(4) For the storage requirement include the following:

- (a) An operational picture or diagram and capacity of the storage system;
- (b) The infrastructure and support resources necessary for deployment;
- (c) The mobilization time and home base for the equipment;
- (d) The ownership or mechanism for accessing the equipment for example under contract, subcontract or letter of intent to the planholder or other approved means;
- (e) The minimum number of personnel necessary to deploy the equipment for a twelve hour shift and the training level of personnel appropriate to operate the equipment;
- (f) If applicable the ability of the storage system to be used to support night operations;
- (g) If alternative speeds are given for equipment associated with the storage device the information should be included in the equipment description.

(5) The technical manual is a standalone planning standard and is not intended to be used to demonstrate compliance with any other planning standards. Technical manuals are not intended to bind the use of any specific tactics during a drill or spill or to imply a guarantee of what will occur in a real spill event.