DEPARTMENT OF
ECOLOGY
State of Washington

Final Regulatory Analyses

Including the:

- Final Cost-Benefit Analysis
- Least-Burdensome Alternative Analysis
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

Chapter 173-185 WAC

Oil Movement by Rail and Pipeline Notification

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Chapter 173-185 WAC

Oil Movement by Rail and Pipeline Notification

by

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Acronyms

APA	Administrative Procedure Act
ASTM	American Society for Testing and Materials
CBA	Cost-Benefit Analysis
CFR	Code of Federal Regulations
ESHB	Engrossed Substitute House Bill
ESSB	Engrossed Substitute Senate Bill
LBA	Least Burdensome Alternative Analysis
PHMSA	Pipeline and Hazardous Materials Safety Administration
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
UTC	Utilities and Transportation Commission
WAC	Washington Administrative Code

Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Oil Movement by Rail and Pipeline Notification rule (chapter 173-185 WAC; the "rule"). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes. Chapter 6 of this document describes that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination. Appendix A of this document provides the documentation for these determinations.

The Washington Regulatory Fairness Act (RFA; chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on businesses in an industry. It compares the relative compliance costs for small businesses to those of the largest businesses affected. Chapter 7 of this document documents that analysis, when applicable.

All determinations are based on the best available information at the time of publication.

Ecology is adopting amendments to the Oil Movement by Rail and Pipeline Notification rule (chapter 173-185 WAC; the "rule") to incorporate changes made in 2019 to chapter 90.56 RCW, Oil and Hazardous Substance Spill Prevention and Response (2019 ESHB 1578 and ESSB 5579). Through ESHB 1578 and ESSB 5579, the Legislature expanded reporting requirements for regulated facilities, pipelines, and Ecology.

The rule amendments make the following changes:

General requirements

- Adding sharing non-aggregated information with the Utilities and Transportation Commission (UTC), per statutory requirement.
- Adding new definitions.

Advance notice – Facility requirements

- Aligning the requirement to include gravity with statutory language.
- Adding type of crude oil to advance notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Adding vapor pressure to advance notice requirements.
- Clarifying that facilities may choose to update advance notice information after receipt of crude oil, and limiting time for advance notice information to be updated.

Biannual notice – Pipeline requirements

- Adding gravity, by weighted average, to notice requirements.
- Adding type of crude oil to notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Clarifying that notification may be submitted by email or by web site, and requiring notification submittal by Ecology form.

Disclosures

- Requiring Ecology to share advance notice information with the UTC, per statutory requirement.
- Adding type of oil and vapor pressure to Ecology's quarterly online report of crude oil movement, per statutory requirement.

Other changes

- Clarification without material impacts, including removal of unneeded language.

Cost-Benefit Analysis Summary

The costs and benefits of the adopted amendments depend heavily on the choices that covered parties, and specifically facilities, would make to comply with the baseline. This is because the underlying broad requirements of the amendments already exist under the baseline (existing federal and state laws and rules) (e.g., the statute already requires reporting oil type and vapor pressure) and the amendments specify methodology. In the extreme case that covered parties interpreted the baseline to require testing under ASTM Standard D6377-20, the amendments would have little impact beyond creating consistency and clarity. To conservatively reflect a more realistic scenario, we assumed that facilities and pipelines would comply with statutory

requirements using due diligence, and taking cost-effectiveness and existing methods and equipment into consideration. This means:

- For advance notice:
    - Requesting vapor pressure information from crude oil sources, or
    - Testing vapor pressure using currently available analytical methods after receipt of oil to determine expected vapor pressure for the next shipment from each source, if they cannot obtain vapor pressure information from oil sources in advance.

We estimated that the adopted amendments will create the following costs and benefits, as compared to the assumed baseline above for facilities, and the clearer baseline for pipelines.

Costs (20-year present values)

- Facility costs for advance notice:
    - Testing costs:
        - Up to $1.2 million, if all facilities request vapor pressure information from oil sources, and none of the oil sources currently use ASTM Standard D6377-20, **or**
        - $240,000, if all facilities immediately purchase analytical equipment to meet ASTM Standard D6377-20 because they cannot obtain vapor pressure information from oil sources in advance.
        - If a facility can receive vapor pressure information from oil sources using existing practices, these costs would be minimal.
    - Reporting costs of $42,905 to $86,947.
- Pipeline costs for biannual notice:
    - Reporting costs of $1,100 to $2,229.

Benefits

Because we are not amending existing statutory requirements, but instead specifying the method for how facilities will meet the requirements, it was not possible to quantify the benefits below. This is because quantification requires a quantifiable understanding of the relationships between the adopted amendments, resulting changes in behavior, how they play out in real spill or emergency scenarios, how those incrementally affect outcomes like public or first-responder health, and finally the value of avoiding those outcomes.

The adopted amendments will generate benefits based on guaranteeing accurate, representative, and consistent information in advance notice and biannual reports. It is difficult to quantify the degree of this accuracy relative to the baseline, as well as specifically how it relates to beneficial outcomes. We therefore presented the following benefits of the amendments qualitatively. See Chapter 4 for more discussion of each benefit.

- Improved information available for first responders to better prepare for potential safety hazards (including flammability, corrosiveness, and inhalation hazards) and potential impacts to natural resources.
- Using up-to-date and verified precise ASTM standards for vapor pressure testing, and reflecting representative vapor-liquid ratios and temperatures while allowing flexibility.
- Added clarity (and potential cost-savings) for pipelines, by potentially significantly reducing the amount of data they report from hundreds of values for gravity to a weighted average.
- Flexibility in allowing facilities to request approval for alternative analytical testing methods.

Conclusion

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, as compared to the baseline, that the benefits of the rule amendments are greater than the costs.

Least-Burdensome Alternative

Ecology considered the following alternative rule content, and did not include it in the amended rule because it would not have met statutory goals and objectives, would have imposed more cost on covered parties, or both.

- Not implementing the authorizing statute.
- For facilities receiving crude oil by rail and pipelines transporting crude oil through the state that must now report the type of crude oil to Ecology, require type to be marketable crude oil name.
- Require vapor pressure testing to be conducted at 100 degrees Fahrenheit.
- Not specifying weighted average for pipeline biannual notice.

After considering alternatives to the amended rule's contents, within the context of the goals and objectives of the authorizing statute, we determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting the goals and objectives.

Regulatory Fairness Act

The Regulatory Fairness Act (chapter 19.85 RCW) according to RCW 19.85.025(4), states, "This chapter does not apply to the adoption of a rule if an agency is able to demonstrate that the proposed rule does not affect small businesses."

We analyzed the compliance costs of the adopted rule amendments in Chapter 3 of this document, and list the covered parties in Chapter 2. All but one of the parties covered by this rule are businesses with more than 50 employees, and the remaining party is government-owned. Therefore, this rulemaking is exempt from the requirements of the Regulatory Fairness Act.

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Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Oil Movement by Rail and Pipeline Notification rule (chapter 173-185 WAC; the "rule"). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes. Chapter 6 of this document describes that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination. Appendix A of this document provides the documentation for these determinations.

The Washington Regulatory Fairness Act (RFA; chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rules that impose costs on businesses in an industry. It compares the relative compliance costs for small businesses to those of the largest businesses affected. Chapter 7 of this document documents that analysis, when applicable.

All determinations are based on the best available information at the time of publication.

1.1.1 Background

In 2016, Ecology adopted Chapter 173-185 WAC to enhance crude oil spill preparedness and response in Washington State. The rule established reporting standards for facilities that receive crude oil by rail and pipelines that transport crude oil through the state. Additionally, the rule describes reporting standards for Ecology to share information with tribes, emergency responders, local governments, and the public. It was adopted as a

result of 2015 legislative direction to provide a better understanding of the changing risk picture for crude oil transported by rail and pipeline in Washington State.

The rule supports our understanding of the risks associated with changes in both the volume and properties of crude oil moving through Washington. Timely notice of crude oil movement information is necessary for emergency responders and planners to effectively prepare for and respond to oil spills and other incidents associated with transporting crude oil by rail and pipeline. Providing adequate information about the dates, routes, and properties of crude oil can help protect people living and working near railroads and pipelines, the economy, and the environment.

1.2 Summary of the rule amendments

The rule amendments make the following changes:

General requirements

- Adding sharing non-aggregated information with the Utilities and Transportation Commission (UTC), per statutory requirement.
- Adding new definitions.

Advance notice – Facility requirements

- Aligning the requirement to include gravity with statutory language.
- Adding type of crude oil to advance notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Adding vapor pressure to advance notice requirements.
- Clarifying that facilities may choose to update advance notice information after receipt of crude oil, and limiting time for advance notice information to be updated.

Biannual notice – Pipeline requirements

- Adding gravity, by weighted average, to notice requirements.
- Adding type of crude oil to notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Clarifying that notification may be submitted by email or by web site, and requiring notification submittal by Ecology form.

Disclosures

- Requiring Ecology to share advance notice information with the UTC, per statutory requirement.
- Adding type of oil and vapor pressure to Ecology's quarterly online report of crude oil movement, per statutory requirement.

Other changes

- Clarification without material impacts, including removal of unneeded language.

1.3 Reasons for the rule amendments

Ecology needed to amend the rule to incorporate statutory changes made in the 2019 legislative session. Through changes to chapter 90.56 RCW, Oil and Hazardous Substance Spill Prevention and Response (2019 ESHB 1578 and ESSB 5579), the Legislature expanded reporting requirements for regulated facilities, pipelines, and Ecology.

Expanded reporting requirements will help Ecology and other emergency responders understand the crude oil movement picture statewide, and to better assess potential impacts of crude oil movement by rail and pipeline. The additional data will help Ecology and emergency response agencies determine the need for additional prevention and preparedness measures.

1.4 Document organization

The remainder of this document is organized in the following chapters:

- **Baseline and the rule amendments (Chapter 2):** Description and comparison of the baseline (what would occur in the absence of the rule amendments) and the amended rule requirements.
- **Likely costs of the rule amendments (Chapter 3):** Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule amendments.
- **Likely benefits of the rule amendments (Chapter 4):** Analysis of the types and sizes of benefits we expect to result from the rule amendments.
- **Cost-benefit comparison and conclusions (Chapter 5):** Discussion of the complete implications of the CBA.
- **Least-Burdensome Alternative Analysis (Chapter 6):** Analysis of considered alternatives to the contents of the rule amendments.
- **Regulatory Fairness Act Compliance (Chapter 7):** When applicable. Comparison of compliance costs for small and large businesses; mitigation; impact on jobs.
- **APA Determinations (Appendix A):** RCW 34.05.328 determinations not discussed in chapters 5 and 6.

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Chapter 2: Baseline and the Rule Amendments

2.1 Introduction

We analyzed the impacts of the rule amendments relative to the existing rule, within the context of all existing requirements (federal and state laws and rules). This context for comparison is called the baseline, and reflects the most likely regulatory circumstances that entities would face if the amended rule was not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

The baseline for our analyses generally consists of existing rules and laws, and their requirements. This is what allows us to make a consistent comparison between the state of the world with and without the adopted rule amendments.

For this rulemaking, the baseline includes:

- The existing rule, chapter 173-185 WAC, Oil Movement by Rail and Pipeline Notification.
- The authorizing statute, chapter 90.56 RCW, Oil and Hazardous Substance Spill Prevention and Response. This includes specific requirements regarding notice requirements in RCW 90.56.565, Facilities that receive crude oil from a railroad car—Advanced notice system—Department required to report information—Adoption of rules.

Current covered parties include the following.

- Facilities:
    - BP Cherry Point Refinery
    - Andeavor Anacortes Refinery
    - Shell Puget Sound Refinery
    - Phillips 66 Refinery
    - U.S. Oil and Refining
    - SeaPort Sound Terminal
- Pipelines:
    - TransMountain Pipeline (Puget Sound)
    - BP Olympic Pipeline

Due to the financial, infrastructural, and timing burden associated with opening new facilities or pipelines, we do not expect significant changes to these covered parties for the timespan of this analysis.

2.3 Rule amendments

The rule amendments make the following changes:

General requirements

- Adding sharing non-aggregated information with the Utilities and Transportation Commission (UTC), per statutory requirement.
- Adding new definitions.

Advance notice – Facility requirements

- Aligning the requirement to include gravity with statutory language.
- Adding type of crude oil to advance notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Adding vapor pressure to advance notice requirements.
- Clarifying that facilities may choose to update advance notice information after receipt of crude oil, and limiting time for advance notice information to be updated.

Biannual notice – Pipeline requirements

- Adding gravity, by weighted average, to notice requirements.
- Adding type of crude oil to notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Clarifying that notification may be submitted by email or by web site, and requiring notification submittal by Ecology form.

Disclosures

- Requiring Ecology to share advance notice information with the UTC, per statutory requirement.
- Adding type of oil and vapor pressure to Ecology's quarterly online report of crude oil movement, per statutory requirement.

Other changes

- Clarification without material impacts, including removal of unneeded language.

2.3.1 General requirements

Baseline

Under the baseline statute, sharing non-aggregated information with the Utilities and Transportation Commission (UTC) is required.

Adopted

The adopted amendments add language on information sharing, to match the statutory language.

They also add new definitions to facilitate implementation of the rule, including:

- **"American Petroleum Institute (API) gravity"** is a measure of how heavy or light a petroleum liquid is compared to water.
- "**Sour crude oil**" means crude oil that has a sulfur content greater than 0.5 percent by weight.
- "**Sweet crude oil**" means crude oil that has a sulfur content that does not exceed 0.5 percent by weight.
- **"Vapor-liquid ratio"** means the ratio of the vapor volume to the liquid volume of the sample, in equilibrium, under specified conditions.
- **"Vapor pressure"** means the pressure exerted by the vapor of a liquid when in equilibrium with the liquid. Vapor pressure varies based on specified temperature and vapor-liquid ratio.

Expected impact

Amendments addressing information sharing do not differ from the baseline, and do not have any impact.

The definitions themselves do not, in this case, change any requirements, as they are only applicable in the context of other amendments. As such, we reflect their impacts as part of the impacts of the relevant amendments, below.

2.3.2 Advance notice – Facility requirements

Baseline

The baseline statute includes requirements that advance notice include:

- Gravity.
- Type of oil.
- Vapor pressure.

The baseline does not directly address updating advance notice information. As such, it is not limited or banned under the baseline, and Ecology currently allows it.

Adopted

The amendments add requirements to advance notice to match the statutory inclusion of gravity, oil type, and vapor pressure. They also add specifications, including:

- Adding designation as sweet or sour to information about the type of oil.

- Allowing for expected vapor pressure if it is not known at reporting time.
- Requiring vapor pressure to be measured using American Society for Testing and Materials (ASTM) Standard D6377-20 or another analytical method approved by Ecology.
- Requiring testing to be done at the expected temperature of the crude oil and with a vapor-liquid ratio between 1.5:1 and 4:1.

They also limit the time when covered parties can update the advance notice information after they submit it to Ecology to within 15 days after the end of the quarter containing the scheduled crude oil delivery date.

Expected impact

The additional specifications in the adopted amendments are likely to result in costs associated with:

- Reporting additional information.
- Using the specified analytical test methods (as compared to methods facilities might choose if unspecified).
- Using the specified temperature and vapor-liquid ratio.

The amendments are likely to result in benefits of improved knowledge about the type and vapor pressure of oil, allowing first responders to better prepare for potential safety hazards.

While the time limit on updating advance notice information may appear to impose costs, we do not believe costs are likely, as facilities currently use the existing online advance notice system weekly, and any information they may need to update is readily available before the end of the quarter.

2.3.3 Biannual notice – Pipeline requirements

Baseline

The baseline statute includes requirements that biannual notice include:

- Gravity.
- Type of oil.

Under the baseline, biannual notice must be sent to Ecology by email.

Adopted

The amendments add specifications to the biannual notice requirements for covered parties to:

- Report gravity as a weighted average.

- Designate oil as sweet or sour to describe the type of oil.

The amendments also clarify the different options covered parties can use to submit their biannual notice on the required form:

- By email.
- Through Ecology web site.

Expected impact

The amendments are likely to result in added clarity (and potential cost-savings) for pipelines, by reducing the amount of data they may need to report. Pipelines will be required to report a weighted average gravity for each type of oil (sweet/sour and light/medium/heavy/extra heavy), instead of potentially hundreds of gravity values reported for individual shipments. This will also facilitate data management for Ecology, and get more meaningful data.

Reporting of sweet/sour designation will result in some time cost for reporting known information, as well as benefits of improved knowledge about the type of oil, allowing first responders to better prepare for potential inhalation safety hazards.

Amending the rule to require the use of the Ecology form to submit the biannual notice generates both costs and benefits, but this is in line with Ecology's current practice for receiving this information from pipelines.

2.3.4 Disclosures

Baseline

The baseline statute includes a requirement for Ecology to share advance notice information with the UTC.

For Ecology's quarterly online report of crude oil movement in the state, the baseline statute also requires Ecology to report on types of oil and vapor pressure.

Adopted

The amendments add requirements to match statutory requirements, without modification or additional specifications:

- Sharing advance notice information with the UTC.
- Reporting on oil types and vapor pressure in Ecology's quarterly online report of crude oil movement.

Expected impact

As these amendments do not differ from the baseline, we do not expect costs or benefits to result from them.

2.3.5 Other changes

The amendments make additional changes that have no material impact on requirements:

- Changes to section titles to clarify contents.
- Updating cross-references to correct rule sections.
- Removing unneeded language, including definitions.
- Updating definitions to align with statute, where needed.

These changes are not likely to result in costs or benefits beyond the benefit of a clearer rule reducing potential confusion and time lost to determining compliance requirements.

Chapter 3: Likely Costs of the Rule Amendments

3.1 Introduction

We analyzed the likely costs associated with the rule amendments, as compared to the baseline. The rule amendments and the baseline are discussed in detail in Chapter 2 of this document.

3.2 Cost analysis

The rule amendments make the following changes:

General requirements

- Adding sharing non-aggregated information with the Utilities and Transportation Commission (UTC), per statutory requirement.
- Adding new definitions.

Advance notice – Facility requirements

- Aligning the requirement to include gravity with statutory language.
- Adding type of crude oil to advance notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Adding vapor pressure to advance notice requirements.
- Clarifying that facilities may choose to update advance notice information after receipt of crude oil, and limiting time for advance notice information to be updated.

Biannual notice – Pipeline requirements

- Adding gravity, by weighted average, to notice requirements.
- Adding type of crude oil to notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Clarifying that notification may be submitted by email or by web site, and requiring notification submittal by Ecology form.

Disclosures

- Requiring Ecology to share advance notice information with the UTC, per statutory requirement.
- Adding type of oil and vapor pressure to Ecology's quarterly online report of crude oil movement, per statutory requirement.

Other changes

- Clarification without material impacts, including removal of unneeded language.

3.2.1 General requirements

Amendments to information sharing will not result in costs, as they do not differ from the baseline.

Amendments to definitions (new definitions) will not, in this case, change the applicability or implementation of existing requirements, and do not result in costs on their own, as compared to the baseline. As applied in other amendments, they are part of requirements resulting in costs. These costs are discussed in their relevant sections, below.

3.2.2 Advance notice – Facility requirements

The additional specifications in the adopted amendments are likely to result in costs associated with reporting additional information, using the specified analytical test methods (as compared to methods facilities might choose if unspecified), and using the specified temperature and vapor pressure.

Compared to baseline requirements, the following elements of advance notice will be new under the amendments:

- Designation of oil as sweet or sour.
- Expected vapor pressure if it is not known at reporting time.
- Using ASTM Standard D6377-20, or another analytical method approved by Ecology, to determine vapor pressure.
- Testing at the expected temperature and using a vapor-liquid ratio between 1.5:1 and 4:1.

Designation as sweet or sour is likely known as a component of the type of oil that facilities are purchasing, but not reported in existing paperwork. This additional information could be requested from oil sources, or identified in purchasing systems, with minimal cost.

Under the flexibility allowed under the amendments, facilities could:

- Request vapor pressure information based on the specified analytical methods, from their crude oil sources.
- Perform testing on site if facilities cannot obtain vapor pressure information from oil sources in advance.
- Repeat known or acquired information for each source, as expected for future shipments if facilities cannot obtain vapor pressure information from oil sources in advance.

Requesting information from oil sources to set expectations

Ecology cannot require oil sources out of state to change their practices, but their customers can request additional testing and information. Any additional effort on the part of the oil source is likely to be reflected in higher prices passing the costs on to facilities in Washington State.

If oil sources do not currently have the ability to use the analytical vapor pressure testing methods specified in the amendments, this cost increase will reflect additional employee time and testing costs, as well as the distributed cost of acquiring the necessary equipment if testing on site. If oil sources already have the ability to use the methods specified in the amendments, this cost increase will reflect additional employee time and incremental testing costs.

Performing testing on site to set expectations

If facilities do not currently have the ability to use the analytical vapor pressure testing methods specified in the amendments, but must test on site if they cannot obtain vapor pressure information from oil sources in advance, they will incur the costs of additional employee time and testing costs, as well as the distributed cost of acquiring the necessary testing equipment. If facilities already have the ability to use the methods specified in the amendments, they will only incur the costs of additional employee time and incremental testing costs.

Existing information and testing capacity

Facilities generally test vapor pressure after they receive a crude oil shipment, and so likely have current data for each oil source. Under the amendments, they could use this information to estimate the characteristics of the crude oil they expect to receive next from each source if they cannot obtain vapor pressure information from oil sources in advance. This information will be sufficient for advance notice vapor pressure reporting requirements.

Some facilities will also have existing data to base expectations on.[1] At least one facility has equipment to use ASTM Method D6377-20, but indicated they would require additional equipment purchases to comply with the amendments.[2]

3.2.2.1 Costs – sweet/sour designation advance notice

We do not expect reporting sweet or sour designation as an additional component of existing advance notice behavior to result in significant costs as compared to the baseline. This will involve adding one known designation element to existing advance notices.

[1] Ecology communication with regulated facilities during rule development.
[2] Ecology communication with US Oil.

3.2.2.2 Costs– vapor pressure advance notice

Due to uncertainty regarding the following behaviors, we estimated a range of potential costs of the amendments requiring advance notice to include vapor pressure:

- How facilities would determine expected vapor pressure to comply with the baseline (in the absence of the methods and parameters specified by the amendments).
- Whether facilities have the necessary equipment for on-site testing using their chosen baseline method.
- Out-of-state capacity to provide vapor pressure information using existing equipment.
- Whether oil sources would choose to acquire additional equipment and perform testing prior to shipment, if requested by their customers.

Baseline

Under the baseline of the statutory requirements, facilities already need to report expected vapor pressure as part of advance notice. In the absence of rule requirements specifying how this must be done, we needed to make assumptions about how facilities would comply with the baseline.

In the most optimistic scenario, facilities would choose to comply with the baseline statutory requirements using ASTM Standard D6377-20 (by requesting information from oil sources using that standard or by testing on-site if they cannot obtain vapor pressure information from oil sources in advance), which would mean the adopted amendments result in zero cost since they will result in the same compliance behaviors as the baseline. As the baseline statutory language is broad, however, and other sampling and testing standards are available, this is not necessarily the most likely scenario.

To reflect a more realistic baseline scenario, we assumed facilities would do their due diligence in a cost-effective manner. Specifically, since facilities have existing sampling and testing capabilities, they would seek to determine vapor pressure using existing methods and standards available to them, which may differ from ASTM Standard D6377-20, including:

- Requesting vapor pressure information from crude oil sources.
- Testing vapor pressure after receipt of oil to determine expected vapor pressure for the next shipment from each source, if they cannot obtain vapor pressure information from oil sources in advance.

This would result in costs, as applicable, of:

- Additional fees paid to source facilities for the added service of providing vapor pressure.
- Sampling and sample preparation.

- Testing using existing equipment.

Additional fees paid to source facilities will reflect the cost of added effort to determine vapor pressure at those facilities. This is not required under the adopted amendments, but facilities could request this service as customers. This cost will likely be similar to the cost of facilities testing on site using existing analytical methods available to them, including the time costs of sampling and testing using existing methods and equipment.

Sampling and testing were assumed to take one to two hours, based on an in-stream (but not continuously monitored) sampling system. If this work is performed by either a "petroleum engineer" or a "petroleum pump operator, refinery operator, or gauger", with median hourly wages of between $30.18 and $61.16, it will result in additional per-shipment costs of $30 to $122.[3]

Scenarios under the adopted amendments

Our **off-site cost estimates** were based on the assumption that:

- Low cost: Crude oil sources already have the equipment necessary to provide customers vapor pressure information upon request, using ASTM Standard D6377-20. This would mean facilities in Washington State would incur no direct costs of compliance beyond adding the additional information to the online advance notice form as part of their regular notice, as this would be no change from the baseline.
- High cost: Crude oil sources do not already have the equipment necessary to provide customers vapor pressure information upon request using ASTM Standard D6377-20, but would choose to purchase equipment necessary to do so. As oil sources would incur additional testing (equipment and time) costs under this scenario, compared to the baseline, they would likely pass these costs on to Washington State facilities, which could make purchasing decisions based on testing capabilities and total prices. Sampling and sample preparation costs would be incurred under either the baseline or amended rule.

Our **on-site cost estimate** was based on the assumption that facilities will all purchase analytical equipment and perform testing on site, after receipt of oil, to estimate expected vapor pressure for future shipments. This means they incur the direct costs of equipment as well as operating and maintenance costs, including associated employee time costs. Sampling and sample preparation costs would be incurred under either the baseline or amended rule.

[3] US Bureau of Labor Statistics, 2019. May 2019 State Occupational Employment and Wage Estimates. Washington State. https://www.bls.gov/oes/current/oes_wa.htm

Off-site cost estimate – low

Under this scenario, vapor pressure is a known quantity, or easily accessed quantity based on current practices at oil source facilities. This would mean facilities incur minimal costs of requesting the information from their suppliers, as compared to the assumed baseline.

Off-site cost estimate – high

Based on the regions from which Washington State facilities received oil by rail in 2019,[4] there are up to 55 oil by rail facilities from which those shipments could have originated, in North Dakota, Alberta, and Saskatchewan.[5] In 2019, over 91 percent of the volume of crude oil came from North Dakota, which has 22 transloading (loading from one mode of transport to another, e.g., trucks to rail) facilities that handle crude oil.[6,7] Not all of these facilities are necessarily crude oil sources that are current or future locations that crude oil coming by rail to Washington State would be loaded. As a result of this uncertainty, we assumed up to 30 loading facilities at oil train sources would purchase necessary analytical equipment to test vapor pressure.

Stakeholder communication indicated that the testing equipment required for testing under ASTM Standard D6377-20 costs $20,000, and that two analyzers would likely be necessary for a source facility testing crude oil.[8] This $40,000 per-facility cost incurred by 30 facilities would result in analytical equipment costs of $1.2 million.

As would be the case under the assumed baseline (see above), sampling and testing would result in time costs of $30 to $122 per shipment.

For Regulatory Analyses, Ecology reports quantifiable values in present value terms. This means future streams of costs or benefits are converted to current dollar values, accounting for inflation and the opportunity cost of capital. The equivalent 20-year present value cost under this scenario, as compared to the baseline, would be the present value of the difference of purchasing analytical equipment meeting ASTM Standard D6377-20. Assuming this cost is incurred immediately, this total 20-year present value would be $1.2 million, plus any future maintenance costs of the equipment.[9]

[4] Ecology, 2019. Quarterly Oil Movement by Rail and Pipeline. Q1 – Q4. Ecology publications no. 17-08-012, 17-08-013, 17-08-020, and 18-08-004.
[5] North Dakota Department of Transportation, 2017. 2040 North Dakota State Rail Plan. November 2017.
[6] Oil Sands Magazine, 2020. Crude Oil Rail Terminals. Midstream. https://www.oilsandsmagazine.com/projects/crude-oil-rail-terminals
[7] For this analysis, we used only publicly available data to avoid disclosing facility-specific information that could be confidential business data.
[8] Ecology communication with US Oil.
[9] When costs are incurred immediately, their present value is the same as the undiscounted value.

On-site cost estimate

For the six facilities potentially affected by the amendments, stakeholder communication indicated that the testing equipment required for sampling and testing under ASTM Standard D6377-20 costs $20,000, and that two analyzers would be necessary for a facility testing crude oil. This would result in analytical equipment costs of $240,000.

As would be the case under the assumed baseline (see above), sampling and testing would result in time costs of $30 to $122 per shipment.

The equivalent 20-year present value cost under this scenario, as compared to the baseline, would be the present value of the difference of purchasing analytical equipment meeting ASTM Standard D6377-20. Assuming this cost is incurred immediately, this total 20-year present value would be $240,000, plus any future maintenance costs of the equipment.[10]

3.2.2.3 Reporting costs

We assumed adding known or easily acquired information on sweet/sour designation, and vapor pressure information, will add 15 minutes to each weekly access to online advance notice forms. If this work is performed by either a "petroleum engineer" or a "petroleum pump operator, refinery operator, or gauger", with median hourly wages of between $30.18 and $61.16, it will result in additional annual costs of between $392 and $795 at each of the six facilities.[11] The equivalent 20-year present value of this cost is between $42,905 and $86,947.[12]

3.2.2.4 Time limit on updating advance notice information

While the adopted time limit on updating advance notice information may appear to impose costs, we do not believe costs are likely, as facilities currently access the existing online advance notice system weekly, and updated information is readily available at those times before the end of the quarter. This amendment is therefore a change, as compared to the baseline not addressing updates at all (not specifically allowing or disallowing), but is not likely to result in costs.

[10] When costs are incurred immediately, their present value is the same as the undiscounted value.
[11] US Bureau of Labor Statistics, 2019. May 2019 State Occupational Employment and Wage Estimates. Washington State. https://www.bls.gov/oes/current/oes_wa.htm
[12] Present value calculations use an annual discount rate based on a historic average risk-free rate of return, 1998 – present. US Treasury Department, 2020. Series I Savings Bonds Rates & Terms: Calculating Interest Rates. https://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm

3.2.3 Biannual notice – Pipeline requirements

The adopted amendments for pipeline biannual notice include specification to report weighted average gravity, which will not result in net costs as this simple calculation allows for a significant reduction in the number of data points reported.

Reporting of sweet/sour designation will result in some time spent reporting known information from purchasing or sources, but we do not expect this to be significant as part of existing biannual notice practices. It will entail adding the designation to existing data. We assumed this will add 30 minutes to each biannual notice. If this work is performed by a either a "petroleum engineer" or a "petroleum pump operator, refinery operator, or gauger", with median hourly wages of between $30.18 and $61.16, it will result in additional annual costs of between $30 and $61, at each of two pipelines.[13] The equivalent 20-year present value of this cost is between $1,100 and $2,229.[14]

While updating the submittal of the biannual notice form to online using an Ecology form would appear to generate costs of using this specific method, it is in line with Ecology's current practice for receiving this information from pipelines.

3.2.4 Disclosures

As the amendments to disclosures do not differ from the baseline, they do not result in any costs as compared to the baseline.

3.2.5 Other changes

Other amendments (clarification, removal of unneeded language) do not have material impact on rule requirements. They do not, therefore, result in costs as compared to the baseline.

[13] US Bureau of Labor Statistics, 2019. May 2019 State Occupational Employment and Wage Estimates. Washington State. https://www.bls.gov/oes/current/oes_wa.htm

[14] Present value calculations use an annual discount rate based on a historic average risk-free rate of return, 1998 – present. US Treasury Department, 2020. Series I Savings Bonds Rates & Terms: Calculating Interest Rates. https://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm

Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

We analyzed the likely benefits associated with the adopted rule amendments, as compared to the baseline. The rule amendments and the baseline are discussed in detail in Chapter 2 of this document.

4.2 Benefits analysis

The rule amendments make the following changes:

General requirements

- Adding sharing non-aggregated information with the Utilities and Transportation Commission (UTC), per statutory requirement.
- Adding new definitions.

Advance notice – Facility requirements

- Aligning the requirement to include gravity with statutory language.
- Adding type of crude oil to advance notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Adding vapor pressure to advance notice requirements.
- Clarifying that facilities may choose to update advance notice information after receipt of crude oil, and limiting time for advance notice information to be updated.

Biannual notice – Pipeline requirements

- Adding gravity, by weighted average, to notice requirements.
- Adding type of crude oil to notice requirements, and requiring gravity and designation of oil as sweet or sour to describe type of oil.
- Clarifying that notification may be submitted by email or by web site, and requiring notification submittal by Ecology form.

Disclosures

- Requiring Ecology to share advance notice information with the UTC, per statutory requirement.
- Adding type of oil and vapor pressure to Ecology's quarterly online report of crude oil movement, per statutory requirement.

Other changes

- Clarification without material impacts, including removal of unneeded language.

4.2.1 General requirements

Amendments to information sharing will not generate benefits, as they do not differ from the baseline.

Amendments to definitions (new definitions) do not, in this case, change the applicability or implementation of existing requirements, and do not result in benefits on their own, as compared to the baseline. As applied in other amendments, they will be part of new requirements generating benefits. These benefits are discussed in their relevant sections, below.

4.2.2 Advance notice – Facility requirements

The additional specifications in the adopted amendments are likely to generate benefits of reporting additional information, using the specified analytical test methods (as compared to methods facilities might choose if unspecified), and using the specified temperature and vapor pressure.

For information designating oil as sweet or sour, the amendments are likely to result in benefits of improved knowledge about the type of oil, allowing first responders to better prepare for potential safety hazards. Sour crude oil tends to have higher levels of hydrogen sulfide. This gas is flammable, corrosive, poisonous, and heavier than air. Inhaled, it primarily affects the nervous system, and has toxicity comparable to carbon monoxide.[15] First responders to a spill will benefit from this information by being better able to prepare with equipment like appropriate respirators, as well as with improved knowledge about potentially flammable gas. Additional information about oil type will also help spill responders be prepared to better protect potentially affected natural resources.

Amendments regarding vapor pressure all differ from the baseline in specifying how vapor pressure is sampled for and tested – using the most up-to-date and verified precise ASTM standard for vapor pressure of crude oil. Additional parameters specified further improve the accuracy of vapor pressure testing by requiring it to represent expected crude oil temperatures. Flexible vapor-liquid ratios allow for accurate representation while including the industry standard ratio of 4:1. Generally, lower ratios are more representative for railroad cars, and a 1.5:1 ratio is the bottom testing limit for accuracy.

4.2.3 Biannual notice – Pipeline requirements

The adopted amendments are likely to result in added clarity (and potential cost-savings) for pipelines, by reducing the amount of data they may need to report. Pipelines will be required to report a weighted average gravity for each type of oil (sweet/sour and

[15] Lindenmann, J.; Matzi, V.; Neuboeck, N.; Ratzenhofer-Komenda, B.; Maier, A; Smolle-Juettner, F. M. (December 2010). Severe hydrogen sulphide poisoning treated with 4-dimethylaminophenol and hyperbaric oxygen". Diving and Hyperbaric Medicine. 40 (4): 213–217.

light/medium/heavy/extra heavy), instead of potentially hundreds of gravity values reported for individual shipments. This will also facilitate data management for Ecology, and get more meaningful data.

As with the benefits of designating oil as sweet or sour for facilities, the amendments are likely to result in benefits of improved knowledge about the type of oil in pipelines, allowing first responders to better prepare for potential inhalation safety hazards. Sour crude oil tends to have higher levels of hydrogen sulfide. This gas is flammable, corrosive, poisonous, and heavier than air. Inhaled, it primarily affects the nervous system, and has toxicity comparable to carbon monoxide.[16] First responders to a spill will benefit from this information by being better able to prepare with equipment like appropriate respirators, as well as with improved knowledge about potentially flammable gas. Additional information about oil type will also help spill responders be prepared to better protect potentially affected natural resources.

Updating the submission of notice to online using an Ecology form would appear to generate benefits of streamlining reporting, but this is in line with Ecology's current practice for receiving this information from pipelines.

4.2.4 Disclosures

As the amendments to disclosures do not differ from the baseline, they will not generate any benefits as compared to the baseline.

4.2.5 Other changes

Other amendments (clarification, removal of unneeded language) do not have material impact on rule requirements. They do not, therefore, generate benefits as compared to the baseline, beyond potential benefit of reducing time lost to determining compliance requirements.

[16] Ibid.

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Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the rule amendments

The costs and benefits of the adopted amendments depend heavily on the choices covered parties, and specifically facilities, would make to comply with the baseline. This is because the underlying broad requirements of the amendments already exist under the baseline (e.g., the statute already requires reporting oil type and vapor pressure), and the amendments specify methodology. In the extreme case that covered parties interpreted the baseline to require testing under ASTM Standard D6377-20, the amendments would have little impact beyond creating consistency and clarity. To conservatively reflect a more realistic scenario, we assumed that facilities and pipelines would comply with statutory requirements using due diligence, and taking cost-effectiveness and existing methods and equipment into consideration. This means:

- For advance notice:
    - Requesting vapor pressure information from crude oil sources, or
    - Testing vapor pressure using currently available analytical methods after receipt of oil to determine expected vapor pressure for the next shipment from each source, if they cannot obtain vapor pressure information from oil sources in advance.

We estimated that the amendments would create the following costs and benefits, as compared to the assumed baseline above for facilities, and the clearer baseline for pipelines.

Costs (20-year present values)

- Facility costs for advance notice:
    - Testing costs:
        - Up to $1.2 million, if all facilities request vapor pressure information from oil sources, and sources do not currently use ASTM Standard D6377-20, or
        - $240,000, if all facilities immediately purchase analytical equipment to meet ASTM Standard D6377-20 because they cannot obtain vapor pressure information from oil sources in advance.
    - Reporting costs of $42,905 to $86,947.
- Pipeline costs for biannual notice:
    - Reporting costs of $1,100 to $2,229.

Benefits

Due to the nature of this rulemaking adopting not overall requirements themselves, but instead specifying how those requirements would be met, it was not possible to quantify the benefits below. This is because quantification requires a quantifiable understanding of the relationships between the amendments, resulting changes in behavior, how they play out in real spill or

emergency scenarios, how those incrementally affect outcomes like public or first-responder health, and finally the value of avoiding those outcomes.

The amendments would generate benefits based on guaranteeing accurate, representative, and consistent information in advance notice and biannual reports. It is difficult to quantify the degree of this accuracy relative to the baseline, as well as specifically how it relates to beneficial outcomes. We therefore presented the following benefits of the adopted amendments qualitatively.

- Improved information available for first responders to better prepare for potential safety hazards (including flammability, corrosiveness, and inhalation hazards) and potential impacts to natural resources.
- Using up-to-date and verified precise ASTM standards for vapor pressure testing, and reflecting representative vapor-liquid ratios and temperatures while allowing flexibility.
- Added clarity (and potential cost-savings) for pipelines, by potentially significantly reducing the amount of data they report from hundreds of values for gravity to a weighted average.
- Flexibility in allowing facilities to request approval for alternative analytical testing methods.

5.2 Conclusion

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, as compared to the baseline, that the benefits of the rule amendments are greater than the costs.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(c) requires Ecology to "…[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection." The referenced subsections are:

> (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
>
> (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
>
> (c) Provide notification in the notice of proposed rulemaking under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
>
> (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

In other words, to be able to adopt the rule, we are required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

We assessed alternative rule content, and determined whether they met the goals and objectives of the authorizing statute(s). Of those that would meet the goals and objectives, we determined whether those chosen for inclusion in the rule amendments were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute

The authorizing statute for this rule is chapter 90.56 RCW, Oil and Hazardous Substance Spill Prevention and Response. Its goals and objectives are:

- Ensure the citizens of the state that the waters of the state will be protected from oil spills.
- Achieve a zero spills strategy to prevent any oil or hazardous substances from entering waters of the state.
- Establish state agency expertise in marine safety and centralize state activities in spill prevention and response activities.

- Prevent spills of oil and promote programs that reduce the risk of both catastrophic and small chronic spills.
- Ensure that responsible parties are liable, and have the resources and ability, to respond to spills and provide compensation for all costs and damages.
- Provide for state spill response and wildlife rescue planning and implementation.
- Support and complement the federal oil pollution act of 1990 and other federal law, especially those provisions relating to the national contingency plan for cleanup of oil spills and discharges, including provisions relating to the responsibilities of state agencies designated as natural resource trustees.
- Provide broad powers of regulation to Ecology relating to spill prevention and response.
- Provide for independent review on an ongoing basis the adequacy of oil spill prevention, preparedness, and response activities in this state.
- Provide an adequate funding source for state response and prevention programs.
- Maintain the best achievable protection that can be obtained 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.

RCW 90.56.565 also explicitly includes:

- Notice requirements, including gravity, type of oil, and vapor pressure.
- Information sharing requirements, including vapor pressure.

6.3 Alternatives considered and why they were excluded

We considered the following alternative rule content, and did not include it in the adopted rule amendments for the reasons discussed in each subsection below.

- Not implementing the authorizing statute.
- For facilities receiving crude oil by rail and pipelines transporting crude oil through the state that must now report the type of crude oil to Ecology, require type to be marketable crude oil name.
- Require vapor pressure testing to be conducted at 100 degrees Fahrenheit.
- Not specifying weighted average for pipeline biannual notice.

6.3.1 Not implementing the authorizing statute

Not implementing the authorizing statute through rule is an alternative to the adopted amendments. Ecology could implement the requirements without incorporating them into the rule. While the authorizing statute sets a number of requirements on its own, RCW 90.56.565 originally directed Ecology to adopt rules to implement the advance notice system. Ecology also received legislative direction through funding to support

rulemaking that aligns the rule with the statute. This alternative would therefore not have met the goals and objectives of the authorizing statute and legislative intent.

6.3.2 Require oil type to be marketable crude oil name

Ecology considered that the amendments could require marketable crude oil name to be used as the reported oil type. This alternative would have potentially increased burden on covered parties by exposing them to proprietary risk. Marketable crude oil names have the potential to disclose confidential information for facilities and pipelines. Also, although detailed, this information may be burdensome to emergency response agencies if the name does not provide information on the properties of the crude oil.

6.3.3 Testing vapor pressure at 100 degrees

Ecology considered requiring testing of vapor pressure to be performed at 100 degrees Fahrenheit. This requirement would not have been more burdensome, but it would not have accurately represented railroad car conditions. It therefore would not have met the goals and objectives of the authorizing statute, by not providing accurate and representative information to accurately implement reporting requirements.

6.3.4 Not specifying weighted average for biannual notice

Had Ecology not added specification to the requirement to report gravity as a weighted average, and retained only the statutory requirement to report gravity, the amendments would have potentially resulted in additional burden on pipelines, as well as unmanageable or unnecessarily detailed data for Ecology. Without the specification, pipelines could potentially need to report for hundreds of shipments. Weighted average gravity by oil type (sweet/sour and light/medium/heavy/extra heavy) is sufficient to meet the statutory goals.

6.4 Conclusion

After considering alternatives to the amended rule's contents, within the context of the goals and objectives of the authorizing statute, we determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting the goals and objectives.

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Chapter 7: Regulatory Fairness Act Compliance

We analyzed the compliance costs of the adopted rule amendments in Chapter 3 of this document, and list the covered parties in Chapter 2. All but one of the parties covered by this rule are businesses with more than 50 employees, and the remaining party is government-owned:[17]

- BP Cherry Point Refinery: BP has over 10,000 employees.
- Andeavor Anacortes Refinery: Andeavor has over 10,000 employees.
- Shell Puget Sound Refinery: Shell has over 10,000 employees.
- Phillips 66 Refinery: Phillips 66 has over 10,000 employees.
- U.S. Oil and Refining: U.S. Oil and Refining has between one hundred and 249 employees.
- TransMountain Pipeline (Puget Sound): Trans Mountain Pipeline is a wholly owned subsidiary of Canada Development Investment Corporation, which is owned by the Canadian government. As a public entity, it is not a business.
- BP Olympic Pipeline: BP has over 10,000 employees.
- SeaPort Sound Terminal: This terminal is owned by Targa Resources, which has 1,000 – 4,999 employees.

Therefore, this rulemaking is exempt from the requirements of the Regulatory Fairness Act (chapter 19.85 RCW) according to RCW 19.85.025(4), which states, "This chapter does not apply to the adoption of a rule if an agency is able to demonstrate that the proposed rule does not affect small businesses."

[17] Infogroup employment database purchased by Ecology, accessed 05/11/2020. Note that the highest employment category for this data is 10,000+ employees.

References

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Lindenmann, J.; Matzi, V.; Neuboeck, N.; Ratzenhofer-Komenda, B.; Maier, A; Smolle-Juettner, F. M. (December 2010). "Severe hydrogen sulphide poisoning treated with 4-dimethylaminophenol and hyperbaric oxygen". Diving and Hyperbaric Medicine. 40 (4): 213–217.

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Appendix A: Administrative Procedure Act (RCW 34.05.328) Determinations

A. RCW 34.05.328(1)(a) – Clearly state in detail the general goals and specific objectives of the statute that this rule implements.

See Chapter 6.

B. RCW 34.05.328(1)(b) –

1. Determine that the rule is needed to achieve the general goals and specific objectives of the statute.

See Chapters 1 and 2.

2. Analyze alternatives to rulemaking and the consequences of not adopting this rule.

Rule revisions are needed to address legislative direction that came out of the 2019 legislative session. This rulemaking will implement sections of ESHB 1578 and ESSB 5579, both passed in 2019 and codified in RCW 90.56.565. The rule revisions will expand:

- Advance notice requirements for facilities that receive crude oil by rail.
- Biannual notice requirements for pipelines that transport crude oil in or through the state.
- Reporting requirements for Ecology to share crude oil movement information with the Utilities and Transportation Commission.

State law does not require rulemaking. Ecology could implement these requirements without incorporating them into the rule. However, we received legislative direction through funding to support rulemaking to align our rule with state law. There is also value in having all the requirements contained in the rule and having one well-defined public involvement process, the Administrative Procedure Act, to develop them. Without rulemaking, Chapter 173-185 WAC would not align with these new requirements in state law.

Please see the Least Burdensome Alternative Analysis, Chapter 6 of this document, for discussion of alternative rule content considered.

C. RCW 34.05.328(1)(c) - A preliminary cost-benefit analysis was made available.

When filing a rule proposal (CR-102) under RCW 34.05.320, Ecology provides notice that a preliminary cost-benefit analysis is available. At adoption (CR-103 filing) under RCW 34.05.360, Ecology provides notice of the availability of the final cost-benefit analysis.

D. RCW 34.05.328(1)(d) – Determine that probable benefits of this rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

See chapters 1 – 5.

E. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated in Chapter 6.

Please see Chapter 6.

F. RCW 34.05.328(1)(f) - Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The adopted rule does not require those to whom it applies to take an action that violates requirements of another federal or state law. Ecology has broad authority under Chapter 90.56 RCW to adopt rules for oil spill prevention and preparedness. During the 2019 legislative session, new provisions were added to Chapter 90.56 RCW that expanded reporting requirements for regulated facilities, pipelines, and Ecology. The rule amendments align with legislative direction.

The rule amendments expand biannual notice requirements for pipelines to include gravity and type of crude oil. These requirements do not conflict with the federal pipeline reporting requirements found in 49 CFR Part 195 or the *Federal Energy Regulatory Commission FERC Form No. 6: Annual Report of Oil Pipeline Companies*.

The rule amendments also expand advance notification requirements for facilities that receive crude oil by rail to include type and vapor pressure of crude oil. These requirements do not conflict with federal notification requirements regarding crude oil by rail that include a 2014 Bakken Crude Emergency Order from the U.S. Department of Transportation (Docket No. DOT-OST-2014-0067), the 2015 Pipeline and Hazardous Materials Safety Administration (PHMSA) final rule (Docket No. PHMSA-2012-0082 (HM-251)), and, most recently, the 2019 PHMSA final rule: Hazardous Materials: Oil Spill Response Plans and Information Sharing for High-Hazard Flammable Trains (FAST Act) (Docket No. PHMSA-2014-0105 (HM-251B)). Chapter 173-185 WAC regulates facilities that receive crude oil by rail in the state, not railroads. Therefore, while the information requirements for the state rule and federal requirements are similar, they regulate different entities and do not require actions that violate federal laws.

Additionally, the existing rule includes a directive to Ecology and any government entity, including emergency response agencies, that access individual or non-aggregated information provided by facilities that receive crude oil by rail to refrain from disclosing proprietary, commercial, and financial information to the public unless it is in an aggregated format. This complies with 2015 changes to RCW 42.56.270(23), which exempts proprietary, commercial, and financial information about crude oil movement from public disclosure requirements.

G. RCW 34.05.328 (1)(g) - Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The rule does not impose more stringent performance requirements on private entities than on public entities.

Chapter 173-185 WAC applies to all entities subject to the rule regardless of ownership. This rule expands advance notice requirements for facilities in the state, whether public or privately owned, that receive crude oil by rail and expands biannual notice requirements for publicly or privately owned pipelines that transport crude oil in or through the state. This rulemaking also expands reporting requirements for Ecology to share crude oil movement information with the Utilities and Transportation Commission.

H. RCW 34.05.328 (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter.

Yes

If **yes**, the difference is justified because of the following:

☐ (i) A state statute explicitly allows Ecology to differ from federal standards.

☒ (ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated in Chapter 6.

Chapter 173-185 WAC establishes reporting standards for facilities that receive crude oil by rail and pipelines that transport crude oil through the state. The rule also describes reporting standards for Ecology to share information with tribes, emergency responders, local governments, and the public. New provisions added to Chapter 90.56 RCW during the 2019 legislative session include expanded reporting requirements for regulated facilities, pipelines, and Ecology.

The expanded reporting requirements for pipelines that transport crude oil and facilities that receive crude oil by rail are broader than federal requirements on this subject matter. However, reporting requirements for crude oil transported by rail at the federal level apply to railroads, while the rule regulates facilities that receive crude oil by rail in the state. Expanded reporting requirements will help Ecology and other emergency responders understand the crude oil movement picture statewide, and to better assess potential impacts of crude oil movement by rail and pipeline. The additional data can help Ecology and emergency response agencies determine the need for additional prevention and preparedness measures.

Ecology has broad authority under Chapter 90.56 RCW to adopt rules for oil spill prevention and preparedness, which can include adopting regulations that are more stringent or broader in scope than federal requirements.

I. RCW 34.05.328 (1)(i) – Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter.

Federal and state agencies that regulate facilities and pipelines covered by this rule include the:

- United States Coast Guard
- Environmental Protection Agency
- United States Department of Transportation (Pipeline and Hazardous Materials Safety Administration and Federal Railroad Administration)
- Washington Utilities and Transportation Commission
- Oregon Department of Environmental Quality
- California Department of Fish and Wildlife Office of Spill Prevention and Response
- Alaska Department of Environmental Conservation Spill Prevention and Response
- Idaho Department of Environmental Quality

Ecology has notified and solicited input from these federal and state agencies, tribes, and other stakeholders throughout this rulemaking process.