

# Exhibit C

## Scope of Work and Schedule

**EXHIBIT C**  
**BNSF Railway Black Tank Property Site**  
**Scope of Work and Schedule**

This Scope of Work (SOW) implements the Cleanup Action Plan (CAP) (Exhibit B) to address soil and groundwater contamination at the BNSF Railway Black Tank Property Site (Site) in Spokane, Washington, generally described in Exhibit A. BNSF Railway (BNSF) and Marathon Oil Company (Marathon), the potentially liable persons (PLPs), will implement this Scope of Work to perform Site cleanup; Marathon's obligations for this project are performed by Husky Oil Operations Limited (Husky). The PLPs shall furnish all personnel, materials, and services necessary for, or incidental to, performing the cleanup action selected for the Site. All work completed for this SOW must meet the requirements of the Model Toxics Control Act (MTCA) Cleanup Regulation, Chapter 173-340 Washington Administrative Code (WAC). The cleanup action shall be considered complete when cleanup levels for the Site have been achieved at the designated points of compliance for the Site, as detailed in the CAP.

The actions to be accomplished under this SOW are described in Section 7 of the CAP (Exhibit B) with the following clarifications:

**A. Cleanup Action for Shallow Soil Contamination**

The cleanup of shallow soil contamination described in Section 7.1 of the CAP (Exhibit B) has been initiated as an interim action under Amendment No. 1 to Agreed Order No. 9188. To the extent not already completed under Amendment No. 1 to Agreed Order No. 9188, the PLPs shall complete the Cleanup Action for Shallow Soil Contamination as a task under this Consent Decree. A Final Interim Action Work Plan (IAWP) describing the shallow soil cleanup action was prepared by the PLPs and submitted to Ecology on August 27, 2018. The IAWP includes construction plans and specifications that comply with WAC 173-340-400(4)(b), a Health and Safety Plan (HASP), and a Confirmational Monitoring Plan with a Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP). Permits needed to perform the work have been obtained, and the first of two phases of the cleanup will have been completed prior to the start date of the Consent Decree. Reporting for the first phase and implementation and reporting for the second phase of the shallow soil contamination cleanup will be completed as part of this SOW using the plans, procedures and specifications presented in the IAWP and permits. Per the IAWP, the work will include submittal of Draft and Final Shallow Soil Cleanup Action Completion Reports (and an addenda for the second phase of the cleanup) in accordance with WAC 173-340-400 (6)(b).

**B. Cleanup Action for Deep Contamination**

The cleanup of deep contamination described in Sections 7.2 and 7.3 of the CAP (Exhibit B) will be organized into the following required tasks and deliverables:

**Task B1: Work Plan and Implementation to Determine Deep Contamination Cleanup Action Design Parameters**

The scope of Task B1 includes the submittal of Draft and Final Work Plans for: (1) the work items described in paragraphs 2 through 5 of Section 7.2.1 of the CAP (Exhibit B), and (2) a

biosparge radius of influence test. It also includes the execution of the work outlined in the approved Final Work Plan, except the steam propagation test.

### **Task B2: Execution of Steam Propagation Test and Reporting**

The scope of Task B2 includes the execution of the steam propagation test as described in the Work Plan from Task B1 and the submittal of Draft and Final Steam Propagation Test Completion Reports evaluating steam propagation according to paragraph 4 of Section 7.2.1 of the CAP (Exhibit B).

### **Task B3: Engineering Design Report – Bioventing/Biosparging**

The Engineering Design Report (EDR) for the bioventing/biosparging system will present the results of the Task B1 activities and provide engineering concepts and design criteria for major components of the bioventing/biosparging system as described in Section 7.2.1 of the CAP (Exhibit B). The EDR will comply with the requirements of WAC 173-340-400(4)(a). The EDR should be adequate to obtain the necessary permits or meet the substantive provisions of laws for which there is a permit exemption in MTCA for the Site remediation. In addition, the EDR shall include a draft Environmental Covenant and describe the Institutional Controls that may be necessary to limit or prohibit activities that interfere with the integrity of the cleanup actions or result in exposure to hazardous substances at the site, as described in section 7.5 of Exhibit B. Institutional Controls will be addressed in more detail in the Operations and Maintenance Plan – Bioventing/Biosparging (Task B6). The scope of Task B3 includes the submittal of Draft and Final EDRs.

### **Task B4: Construction Plans and Specifications – Bioventing/Biosparging**

Construction Plans and Specifications for the bioventing/biosparging system will comply with WAC 173-340-400(4)(b). The Construction Plans and Specifications shall include plans and specifications for each component of the base bioventing/biosparging system described in the EDR. If and when it is determined that the bioventing/biosparging system requires optimization, the PLPs will develop addenda to the Construction Plans and Specifications as needed to describe the enhancements, and provide the draft addenda to Ecology for review and comment. The scope of Task B4 includes the submittal of Draft and Final Construction Plans and Specifications and Draft and Final Addenda to the Final Plans and Specifications, as needed.

### **Task B5: Compliance Monitoring Plan – Bioventing/Biosparging**

The Compliance Monitoring Plan for the bioventing/biosparging system is comprised of the following sub-plans:

1. Health and Safety Plan
2. Performance Monitoring Plan
3. Groundwater Monitoring Plan
4. Sampling and Analysis Plan
5. Quality Assurance Project Plan

These plans will present applicable compliance monitoring background information, procedures and schedules as described in paragraph seven of Section 7.2.1, all of Sections 7.2.3 and 7.4 and the associated figures and tables of the CAP (Exhibit B). The Performance Monitoring Plan will also include procedures and a schedule for collection of baseline in-situ respiration rates for the saturated and unsaturated zones in the medium and high restoration timeframe (RTF) areas.

These areas are defined in the CAP (Exhibit B). In addition to the baseline parameters listed Section 7.2.1 of the CAP (Exhibit B), baseline respiration rate testing will be performed prior to initiating the bioventing/biosparging system utilizing the same procedures and equipment to be used for performance monitoring. This approach is intended to: (1) obtain data representative of the conditions in the treatment areas prior to bioventing/biosparging operation and (2) provide data that is directly comparable to the performance monitoring data. Extreme care shall be taken to ensure unsaturated zone respiration is not affecting the determination of saturated zone respiration rates. Each plan will comply with WAC 173-340-410 and Section X of the Consent Decree. The scope of Task B5 includes submittal of Draft and Final Compliance Monitoring Plans.

**Task B6: Operations and Maintenance Plan – Bioventing/Biosparging**

The Operations and Maintenance (O&M) Plan for the bioventing/biosparging system will comply with WAC 173-340-400(4)(c) and include information as described in paragraph seven of Section 7.2.1 of the CAP (Exhibit B). It shall also document that the financial assurance for the cleanup has been documented in accordance with Section VI.5 of the Consent Decree and that the institutional controls described in the EDR have been implemented. The O&M plan shall provide for continued implementation, inspection, and maintenance of the institutional controls required for the Site, including the filed Environmental Covenant, as described in Section 7.5 of Exhibit B. The scope of Task B6 includes submittal of Draft and Final O&M Plans.

**Task B7: Cleanup Action Implementation – Bioventing/Biosparging**

The bioventing/biosparging cleanup action will be implemented as described in Section 7.2 and the associated tables and figures of the CAP (Exhibit B). Implementation phasing and performance monitoring is described in Sections 7.2.2 and 7.2.3, respectively, of the CAP (Exhibit B). System performance will be assessed and reported as described in Section 7.7 and Table 7 of the CAP (Exhibit B). The scope of Task B7 includes submittal of an As-Built Report that complies with WAC 173-340-400(6)(b)(ii) and submittal of Draft and Final System Performance Reports.

**Task B8: Determination of Contingent Remedy Implementation**

This task will be performed only if the results of Task B2 satisfy the criteria for effective propagation set forth in paragraph 4 of Section 7.2.1 of the CAP (Exhibit B). The decision process and the conditions for determining when and if the Contingent Remedy (a steam-enhanced extraction [SEE] system) shall be considered for implementation in the high restoration timeframe (RTF) area<sup>1</sup> are described in Sections 7.3 and 7.3.3 of the CAP (Exhibit B). The System Performance Reports prepared for Task B7 shall present the bioventing/biosparging performance data and an assessment of the performance data relative to the criteria described in Section 7.3.3 of the CAP (Exhibit B). Performance assessments performed for Years 5 through 15 will be used to make a determination regarding implementation of the contingent remedy.

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<sup>1</sup> Because Contingent Remedy infrastructure cannot be installed within the footprint of an active freeway, portions of the high RTF area, if any, that are inaccessible because of the NSC freeway may not be addressed using the Contingent Remedy.

Ecology will notify the PLPs in writing if it determines that implementation of the Contingent Remedy is required as described in Sections 7.3 and 7.3.3 of the CAP (Exhibit B).

**Task B9: Pilot Testing – Contingent Remedy**

Task B9 will be performed only after Ecology determines that implementation of the Contingent Remedy is preliminarily feasible and required based on the results of Task B2 and Task B8, respectively. The scope of Task B9 includes: (1) submittal of Draft and Final Work Plans for a Steam-Enhanced Extraction [SEE] pilot test as described in Section 7.3.4 of the CAP (Exhibit B), (2) execution of the work outlined in the approved Final Work Plan, and (3) submittal of Draft and Final SEE Pilot Study Reports.

**Task B10: Update of Engineering Design Report – Contingent Remedy**

Task B10 will be performed if the results of Task B9 show that SEE is technically feasible as described in Section 7.3.4 of the CAP. The scope of Task B10 includes updating the EDR prepared for Task B3 to provide engineering concepts and design criteria for major components of the Contingent Remedy (a SEE system) as described in Section 7.3.4 of the CAP (Exhibit B). The Updated EDR will comply with the requirements of WAC 173-340-400(4)(a) and should be adequate to obtain the necessary permits or meet the substantive provisions of laws for which there is a permit exemption in MTCA for the SEE system. The scope of Task B10 includes the submittal of Draft and Final Updated EDRs.

**Task B11: Update of Construction Plans and Specifications – Contingent Remedy**

Task B11 will be performed if the results of Task B9 show that SEE is technically feasible as described in Section 7.3.4 of the CAP. The Construction Plans and Specifications prepared for Task B4 will be updated to include plans and specifications for each component of the SEE system described in the Updated EDR. The Updated Construction Plans and Specifications will comply with WAC 173-340-400(4)(b). The scope of Task B11 includes the submittal of Draft and Final Updated Construction Plans and Specifications.

**Task B12: Update of Compliance Monitoring Plan and O&M Plan – Contingent Remedy**

Task B12 will be performed if the results of Task B9 show that SEE is technically feasible as described in Section 7.3.4 of the CAP. The Compliance Monitoring Plan (and all sub-plans) prepared for Task B5 will be updated to include applicable compliance monitoring background information, procedures and schedules needed for the Contingent Remedy. The Updated Compliance Monitoring Plan will comply with WAC 173-340-410 and Section X of the Consent Decree. The O&M Plan prepared for Task B6 will be updated to include information needed for the Contingent Remedy as described in Sections 7.3 and 7.3.1 of the CAP (Exhibit B). The Updated O&M Plan will comply with WAC 173-340-400(4)(c). The scope of Task B12 includes submittal of Draft and Final Updated Compliance Monitoring Plans and Draft and Final Updated O&M Plans.

**Task B13: Cleanup Action Implementation – Contingent Remedy**

Task B13 will be performed if the results of Task B9 show that SEE is technically feasible as described in Section 7.3.4 of the CAP. The Contingent Remedy will be implemented as described in Section 7.3 and the associated tables and figures in the CAP (Exhibit B). Implementation phasing and performance monitoring are described in Sections 7.3.1 and 7.3.2,

respectively, of the CAP (Exhibit B). System performance will be assessed and reported as described in Section 7.7 and Table 7 of the CAP (Exhibit B). The scope of Task B13 includes submittal of an As-Built Report that complies with WAC 173-340-400(6)(b)(ii) and submittal of Draft and Final System Performance Reports.

#### **Task B14: Progress Reports**

Written progress reports shall be submitted to Ecology in accordance with Section VI.7 of the Consent Decree.

#### **Task B15: Cleanup Action Report**

After completion of all elements of the cleanup action, except long-term confirmational monitoring, the PLPs will submit a Cleanup Action Report. The Cleanup Action Report shall contain the following:

1. A summary of all phases of the cleanup action.
2. A summary of monitoring data collected during the cleanup action.
3. Summary graphical representations of the work performed.
4. Reference to or attachment of previous reports that present detailed descriptions of the cleanup action and the site monitoring data, including the raw data, data validation memoranda and graphical representations of the work performed.
5. Draft institutional controls to be implemented, including a draft environmental covenant, figures depicting contamination remaining on-site, and any subordination agreements or other supporting documentation.
6. A confirmational monitoring plan to confirm the long-term effectiveness of the cleanup action once cleanup standards have been met or other performance standards have been attained. The confirmational monitoring plan will be an updated version of the groundwater monitoring plan described in Task B5, but it will have a scope and frequency appropriate for monitoring post-active cleanup conditions. The monitoring and reporting frequency will initially align with the schedule for periodic reviews (e.g., once at least every 5 years), but the plan will include flexibility to reduce the scope and frequency of the monitoring and reporting over time. The scope of Task B15 includes submittal of Draft and Final Cleanup Action Completion Reports.

#### **Task B16: Periodic Reviews**

After completion of the cleanup action, the PLPs will perform periodic reviews in accordance with WAC 173-340-420 and paragraph one of Section 7.7 of the CAP (Exhibit B). The periodic reviews will include the performance of sampling and analyses specified in the confirmational monitoring plan and presentation of the results of confirmational monitoring and an assessment of the long-term effectiveness of the cleanup action.

#### **C. Schedule**

Each of the documents required below are subject to Ecology's review and approval. Ecology will approve, approve with conditions, or disapprove of such documents. If Ecology disapproves of a draft document, Ecology will provide comments to the PLPs who will submit a revised document that addresses Ecology's comments.

<b><u>Task(s)</u></b>	<b><u>Deliverable/Milestone</u></b>	<b><u>Date Due</u></b>
	Effective date of Consent Decree	Start
A1	PLPs submit Draft Shallow Soil Cleanup Action Report	60 days after shallow soil cleanup action is complete
A1	PLPs submit Final Shallow Soil Cleanup Action Report	30 days after PLPs receive Ecology's written comments on the Draft document
A2	Complete second phase of shallow soil cleanup action	120 days after the BNSF Railway main rail line realignment becomes operable
A3	PLPs submit Draft Addendum to Shallow Soil Cleanup Action Report	60 days after completion of the second phase of the shallow soil cleanup action
A3	PLPs submit Final Addendum to Shallow Soil Cleanup Action Report	30 days after PLPs receive Ecology's written comments on the Draft document
B1	PLPs submit Draft Work Plan for the Determination of Deep Contamination Cleanup Action Design Parameters	60 days after Start
B1	PLPs submit Final Work Plan for the Determination of Deep Contamination Cleanup Action Design Parameters	30 days after PLPs receive Ecology's written comments on the Draft document
B1	PLPs complete work outlined in the Final Work Plan for the Determination of Deep Contamination Cleanup Action Design Parameters (except steam propagation test)	90 days after PLPs receive Ecology's approval of the Final Work Plan
B2	Complete steam propagation test	Within two years of Ecology's approval of the Final Work Plan for the Determination of Deep Contamination Cleanup Action Design Parameters
B2	PLPs submit Draft Steam Propagation Test Completion Report	90 days after completion of the work

<b><u>Task(s)</u></b>	<b><u>Deliverable/Milestone</u></b>	<b><u>Date Due</u></b>
B2	PLPs submit Final Steam Propagation Test Completion Report	30 days after PLPs receive Ecology's written comments on Draft document
B3, B5, B6	PLPs submit Draft Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Bioventing/Biosparging	90 days after completion of the work outlined in the Final Work Plan for the Determination of Deep Contamination Cleanup Action Design Parameters (except steam propagation test)
B3, B5, B6	PLPs submit Final Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Bioventing/Biosparging	45 days after PLPs receive Ecology's written comments on Draft document
B4	PLPs submit Draft Construction Plans and Specifications - Bioventing/Biosparging	60 days after Ecology approval of Engineering Design Report
B4	PLPs submit Final Construction Plans and Specifications - Bioventing/Biosparging	30 days after PLPs receive Ecology's written comments on Draft document
B7	PLPs initiate construction of bioventing/biosparging system	90 days after Ecology approval of Final Construction Plans and Specifications - Bioventing/Biosparging
B7	PLPs submit an As-Built Report for the Bioventing/Biosparging System	90 days after the initiation of the bioventing/biosparging system
B7	Perform monitoring as described in the Compliance Monitoring Plan	As described in the CAP (Exhibit B) and the Compliance Monitoring Plan
B7	Initiate "system operation and optimization" of bioventing/biosparging system	Within one year of Ecology's approval of Final Construction Plans and Specifications – Bioventing/Biosparging
B7	PLPs submit System Performance Reports	Annually as described in Sections 7.2.2 and 7.2.3 and Tables 5 and 6 of the CAP (Exhibit B)
B8	Determination of Contingent Remedy Implementation	As described in Sections 7.3 and 7.3.3 and Tables 5 and 6 of the CAP (Exhibit B)



<b><u>Task(s)</u></b>	<b><u>Deliverable/Milestone</u></b>	<b><u>Date Due</u></b>
B9	PLPs submit Draft Work Plan for SEE Pilot Study	90 days after PLPs receive Ecology's written determination that the Contingent Deep Contamination Remedy is required
B9	PLPs submit Final Work Plan for SEE Pilot Study	30 days after PLPs receive Ecology's written comments on Draft document
B9	PLPs complete work outlined in the Final Work Plan for the SEE Pilot Study	180 days after PLPs receive Ecology's approval of the SEE Pilot Test Work Plan
B9	PLPs submit Draft SEE Pilot Study Report	60 days after completion of SEE Pilot Test
B9	PLPs submit Final SEE Pilot Study Report	30 days after PLPs receive Ecology's written comments on Draft document
B10, B12	PLPs submit Draft Updated Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Contingent Remedy	120 days after determination that SEE is feasible as summarized in the Final SEE Pilot Study Report
B10, B12	PLPs submit Final Updated Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Contingent Remedy	30 days after PLPs receive Ecology's written comments on Draft document
B11	PLPs submit Draft Updated Construction Plans and Specifications – Contingent Remedy	30 days after Ecology approval of Updated Engineering Design Report – Contingent Remedy
B11	PLPs submit Final Updated Construction Plans and Specifications - Contingent Remedy	30 days after PLPs receive Ecology's written comments on Draft documents
B13	Complete installation and initiate operation of SEE treatment system	Within 180 days of Ecology's approval of the Construction Plans and Specifications – Contingent Remedy
B13	PLPs submit an As-Built Report for the Contingent Remedy	90 days after the initiation of the SEE system

<b><u>Task(s)</u></b>	<b><u>Deliverable/Milestone</u></b>	<b><u>Date Due</u></b>
B14	PLPs submit progress reports	As described in Consent Decree Section VI.7
B15	PLPs submit Draft Cleanup Action Report	120 days after remedy completion
B15	PLPs submit Final Cleanup Action Report	30 days after PLPs receive Ecology's written comments on Draft document
B16	Periodic Reviews	As described in Confirmational Monitoring Plan included in the Final Cleanup Action Report