

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [Supplemental Sheet For Nonproject Actions \(Part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

BNSF Railway Black Tank Deep Contamination Cleanup Action

2. Name of applicant:

BNSF Railway Company and Husky Oil Operations Limited

3. Address and phone number of applicant and contact person:

	BNSF Railway Company	Husky Oil Operations Limited
Contact Name	Shane DeGross	Renée Bellavance
Address	605 Puyallup Avenue Tacoma, Washington 98421	707 8 th Ave S.W., Box 6525, Stn. D, T2P 3G7, Calgary, Alberta
Phone Number	(253) 591-2567	(403) 298-6278

4. Date checklist prepared:

3/15/2019

5. Agency requesting checklist:

Washington State Department of Ecology (Ecology)

6. Proposed timing or schedule (including phasing, if applicable):

The proposed project involves a base remedy (bioventing/biosparging and natural source zone depletion [NSZD]) and a contingent remedy (steam-enhanced extraction [SEE]). The schedule for the base remedy is described in this section and is subject to change because the work needs to be coordinated with construction of the North Spokane Corridor (NSC) project. The schedule for a contingent remedy is described under question 7 below. The first phase of the base remedy is to conduct pre-engineering field testing and prepare an Engineering Design Report (EDR). One pre-engineering field test (bioventing/biosparging radius of influence) will be performed in late summer/early fall 2019, and the other pre-engineering field test (a steam propagation study) will be performed in 2020. The EDR will be prepared concurrent with and follow these tests. Ecology approval of the EDR is anticipated by early spring 2021.

The second phase of the base remedy is construction, startup, system shakedown and operation, maintenance, and monitoring of the bioventing/biosparging system. These activities are anticipated to begin in late spring/early summer 2021. System construction, startup, and shakedown could take up to 2 years to complete following Ecology approval of the EDR. Active operation of the bioventing/biosparging system could take up to approximately 20 years following system shakedown.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Optimization of the base remedy is expected to occur throughout the active operation of the system. Optimization techniques could include changing and/or increasing the air flow to bioventing/biosparging wells, cycling, combining air injection with extraction in a push-pull configuration, increasing the density of bioventing and/or biosparging wells, bioaugmentation, and/or heated bioventing. Heated bioventing includes injecting dry heated air into the subsurface via the bioventing/biosparging wells. The blower would be outfitted with an in-line heater to heat and dry the air injected into the bioventing/biosparging wells. The optimization techniques used and the schedule for implementing those optimization techniques will depend on the performance of the base remedy. Optimization could begin soon after system shakedown.

Furthermore, the contingent remedy will be considered for implementation if performance monitoring after optimization of the base remedy shows that achieving cleanup standards within the 20-year restoration time frame (RTF) is at material risk. The contingent remedy may be implemented if (1) the steam propagation study shows that SEE is technically feasible at the Site; (2) optimization of the base remedy has occurred to the extent practicable; (3) Ecology determines, based on the criteria specified in the Cleanup Action Plan, that the base remedy cannot achieve cleanup standards within the 20-year RTF; and (4) the results of a SEE pilot test verifies that SEE is technically feasible. These four decision-making activities would be performed concurrent with operation of the base remedy and are not expected to extend the schedule described in question 6. If the contingent remedy is required, preparation of an updated EDR and additional permitting will begin following Ecology approval of the SEE pilot study report and take approximately 1 year to complete. Construction, startup, and system shakedown of the SEE system would commence following Ecology approval of the updated EDR and would require approximately 1 year to complete. It is assumed that the SEE system would operate for up to 3 years. The intent is for implementation of the base remedy optimization or the contingent remedy to occur as needed to ensure the proposed project is completed within the 20-year RTF.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- *Remedial Investigation/Feasibility Study (RI/FS) Report, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* ERM-West, Inc. (ERM), March 2017.
- *Cleanup Action Plan, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* Ecology, TBD.
- *Consent Decree, BNSF Railway Black Tank Property Site.* Ecology, TBD.
- *Work Plan for Determination of Deep Contamination Cleanup Action Design Parameters, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* ERM, TBD.
- *Steam Propagation Test Completion Report, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* ERM, TBD.
- *Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Bioventing/Biosparging Treatment System, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* ERM, TBD.
- *Construction Plans and Specifications for Bioventing/Biosparging System, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington.* ERM, TBD.

- *If required, Work Plan for Steam-Enhanced Extraction Pilot Study, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington. ERM, TBD.*
- *If required, SEE Pilot Study Report, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington. ERM, TBD.*
- *If required, Updated Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – SEE System, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington. ERM, TBD.*
- *If required, Updated Construction Plans and Specifications – SEE System, BNSF Railway Black Tank Property, 3202 East Wellesley Avenue, Spokane, Washington. ERM, TBD.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

BNSF Railway Company (BNSF), Marathon Oil Company (Marathon), and Ecology will enter into a Consent Decree to implement the Cleanup Action Plan developed by Ecology to address soil and groundwater contamination at the Site. Marathon's obligations for the proposed project are being performed by Husky Oil Operations Limited (HOOL). The Consent Decree requires the cleanup of deep soil and groundwater contamination identified at the Site. The Consent Decree also requires the cleanup of shallow soil contamination to the extent not already completed under Amendment No. 1 to Agreed Order No. 9188. Amendment No. 1 to Agreed Order 9188 required BNSF and HOOL (for Marathon) to conduct an Interim Action for Shallow Soil Contamination (interim action) at the Site. A SEPA checklist was previously prepared for the interim action and the cleanup of shallow soil contamination received a determination of non-significance from Ecology on 15 May 2018. Therefore, the work described herein is to address the cleanup action for deep soil and groundwater contamination.

The Site is within the proposed pathway of the NSC project under the jurisdiction of the Washington State Department of Transportation (WSDOT). BNSF, WSDOT, and Ecology entered into an agreement that: (1) provides WSDOT with right-of-way access to certain BNSF property for the NSC project, and (2) allows BNSF and HOOL to implement an Ecology-approved cleanup action at the Site concurrent with the planning/design, construction, and operation of the NSC freeway. WSDOT likely has applications pending for governmental approvals of various aspects of the NSC project.

10. List any government approvals or permits that will be needed for your proposal, if known.

Washington State Department of Ecology

- Approval of the following documents:
 - *Work Plan for Determination of Deep Contamination Cleanup Action Design Parameters;*
 - *Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Bioventing/Biosparging Treatment System;*
 - *Construction Plans and Specification for Bioventing/Biosparging System;*
 - *If required, Work Plan for Steam-Enhanced Extraction Pilot Study;*

- *If required, Updated Engineering Design Report, Operations and Maintenance Plan, and Compliance Monitoring Plan – Steam-Enhanced Extraction System; and*
- *If required, Updated Construction Plans and Specifications – Steam-Enhanced Extraction System.*
- Well Construction Permit – Monitoring wells will require construction as part of the proposed project.
- Well Abandonment Permit – Some monitoring wells will require abandonment to accommodate construction of the NSC and all monitoring wells will require abandonment at the completion of the proposed project.
- SEPA determination (RCW 43.21C and Chapter 197-11 WAC).

City of Spokane

- Grading Permit – Unlikely to be required for proposed project due to limited size of areas requiring grading.
- Building Permit – May be required for the base and/or contingent remedy depending on the size and temporary nature of facilities constructed to house operating equipment.
- Wastewater Discharge Permit – Required for the contingent remedy.
- Critical Areas Review.

Spokane Regional Clean Air Agency

- Notice of Construction Approval Permit – Required for the boiler for the steam propagation test and the contingent remedy.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The base remedy for deep contamination at the Site (Figure 1) uses NSZD in the low RTF area and bioventing/biosparging in the medium and high RTF areas (Figure 2). SEE has been selected as a contingent remedy for the high RTF area. Descriptions of the selected cleanup technologies are provided below:

- NSZD – Natural biodegradation to reduce the mass of petroleum hydrocarbon light non-aqueous phase liquid (LNAPL).
- Bioventing/biosparging – Forced circulation of air into the subsurface via a network of wells screened above (bioventing) and below (biosparging) the groundwater table to encourage aerobic biodegradation of petroleum hydrocarbon contamination.
- SEE – Steam (condensed potable water) injected into the subsurface near the groundwater table to reduce the viscosity of the LNAPL, thereby potentially increasing

its recoverability. LNAPL and groundwater are pumped from a network of extraction wells and processed at the ground surface to separate water and oil.

The first phase of the base remedy is to conduct pre-engineering field testing and prepare an EDR. The pre-engineering field testing will include bioventing/biosparging radius of influence (ROI) tests and a steam propagation study. The ROI tests involve injecting air above and below the groundwater table (bioventing and biosparging, respectively) and measuring air flow and pressure at various distances from the air injection wells to assess the ROI of the bioventing and biosparging wells. The steam propagation study will involve installing a steam injection well, approximately six thermal monitoring points at various distances from the injection well, and a temporary steam boiler system at the Site. The system will inject steam into the target treatment zone via the injection well and temperature will be monitored at the thermal monitoring points over a period of time to assess temperature propagation distance from the injection well.

The base remedy includes installing and operating a network of bioventing and biosparging wells at the Site. It is assumed that approximately seven bioventing and seven biosparging wells would be installed at the Site to depths ranging approximately 150 to 190 feet below ground surface (bgs; Figure 3). Piping between process equipment and each well would be buried below ground. Up to three independently operated equipment enclosures containing up to two blowers and ancillary equipment and instrumentation would be used to service the bioventing and biosparging wells (Figure 3).

Performance monitoring will be conducted to assess: (1) progress of the cleanup action, (2) whether achieving cleanup standards throughout the Site within the 20-year RTF is at material risk, (3) adaptive management actions (system optimizations) to be taken to keep the cleanup action on track, and (4) whether remedial actions are mobilizing contamination. Performance monitoring will consist of measuring LNAPL thicknesses and sampling groundwater from a network of groundwater monitoring wells located on the Site and collecting respiration rate data from a network of soil vapor monitoring points located on the Site.

If performance monitoring following optimization of the base remedy shows that achieving the cleanup standards in the high RTF area within the 20-year RTF is at material risk, the contingent remedy (SEE) will be considered for implementation in that area. To support preparation of the updated EDR for the contingent remedy, a SEE pilot test must be completed.

The SEE pilot test will consist of constructing a pilot-scale system (one extraction well and four steam injection wells) in a portion of the high RTF area. In general, the SEE system modules are (1) temporary steam generation plant consisting of a natural gas-fired boiler; (2) below ground systems (i.e., extraction wells, paired steam injection wells, and temperature monitoring points to depths up to 190 feet bgs); and (3) aboveground air, water, and LNAPL process equipment (Figure 4). The pilot system will be operated and monitored over a period of time to verify the injection well ROI, determine mass removal rates, and assess potential mobilization of contaminants. If the pilot test verifies SEE feasibility, then the data obtained from the pilot system will be used to design the contingent remedy and update the EDR. The full-scale SEE system would include installing up to 16 pairs of steam injection wells and 12 recovery wells to depths ranging between 175 feet and 190 feet bgs. Multi-level temperature monitoring points would also be installed to monitor the temperature propagation front. Piping between process equipment and each well would be buried below ground.

The extracted fluids (LNAPL and water) would be pretreated on-Site, as necessary, and discharged to the municipal sewer under a City of Spokane discharge permit.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Site, referred to as the BNSF Railway Black Tank Property, is generally located at 3202 East Wellesley Avenue in Spokane, Washington (Figure 1). It is situated in an industrial and transportation corridor in the Hillyard neighborhood of northeast Spokane. The Site is located in the northwest quarter of Section 3, Township 25 North, Range 43 East, of the Willamette Meridian, along a main north-south trending BNSF railway line. The proposed project will be completed on Spokane County Tax Parcel Numbers 35032.4501, 35032.4401, and 35032.2701 and near the BNSF railway right-of-way.

Spokane County Parcel 35032.4501 legal description:

MINNEHAHA ADDITION NORTH BEG AT NE COR OF LT 6, BK 108, TH S ALG E LNS OF STS 6 & 7 OF BK 108 TO SE COR OF LT 7, TH W ALG S LN OF LT 7 & ALG SD S LN EXTENDED W ACROSS RALPH ST TO SE COR OF BK 109, THS ALG E LN OF BK 109 EXTENDED S ACROSS HOFFMAN AVE TO NE COR BK 102, TH CONTINUING S ALG E LN OF BK 102 TO SE COR OF BK 102, TH W ALG S LN OF BK 102 TO SE COR OF LT 7 IN SD BK 102, TH S ALG E LN OF SDLT 7 EXTENDED S ACROSS HEROY AVE TO NE COR OF LT 3 OF BK 95, TH CONTINUING S ALG E LNS OF LTS 3, 4, 5, 6 & 7 OF BK 95 & ACROSS LONGFELLOW AVE TO NE COR OF LT 3 OF BK 88 & CONTINUING S ALG E LNS OF LTS 3, 4, 5, 6 & 7 OF BK 88 & ACROSS RICH AVE TO NE COR OF LT 3 OF BK 81, TH W ALG N LN OF LT 3 TO NW COR OF SD LT 3 OF BK 81, TH N ACROSS RICH AVE TO SW COR OF BK 88, TH CONTINUING N ALG W LNS OF BKS 88, 95, 102 & 109 A ALG SD W LNS EXTENDED ACROSS LONGFELLOW AVE & HEROY AVE & HOFFMAN AVE TO NW COR OF BK 109, TH E ALG N LN OF BK 109 & ALG SD N LN EXTENDED ACROSS RALPH ST TO NW COR OF LT 6 OF BK 108 & ALG N LN OF SD LT 6 TO POB & INCLUDING ALL STREETS & AVENUES & ALLEYS CONTAINED WITHIN THE ABOVE DESCRIPTION.

Spokane County Parcel 35032.4401 legal description:

MINNEHAHA ADDITION NORTH BEG AT NE COR OF LT 6, BLK 108; TH S ALG E LNS OF LTS 6 & 7 OF BLK 108 TO SE COR OF LT 7; TH W ALG S LN OF LT 7 & ALG SD S LN EXTENDED W ACROSS RALPH ST TO SE COR OF BLK 109; TH S ALG E LN OF BLK 109 EXTENDED S ACROSS HOFFMAN AVE TO NE COR OF BLK 102; TH CONTINUING S ALG E LN OF BLK 102 TO SE COR OF BLK 102; TH W ALG S LN OF BLK 102 TO SE COR OF LT 7 IN SD BLK 102; TH SALG E LN OF SD LT 7 EXTENDED S ACROSS HEROY AVE TO NE COR OF LT 3 OF BLK 95; TH CONTINUING S ALG E LNS OF LOTS 3, 4, 5, 6, & 7 OF BLK 95 & ACROSS LONGFELLOW AVE TO NE COR OF LT 3 OF BLK 88 & CONTINUING S ALG E LNS OF LTS 3, 4, 5, 6, & 7 OF BLK 88 & ACROSS RICH AVE TO NE COR OF LT 3 OF BLK 81; TH W ALG N LN OF LT 3 TO NW COR OF SD LT 3 & OF SD BLK 81; TH S ALG W LN OF BLK 81 TO SW COR OF BLK 81; TH E ALG S LN OF SD BLK TO SE COR OF SD BLK 81; TH N ALG E LN OF BLK 81 & ALG SD E LN EXTENDED N ACROSS RICH AVE TO SE COR OF BLK 88; TH E ALG S LN EXTENDED E OF BLK 88 ACROSS RALPH ST TO SW COR OF BLK 89; TH CONTINUING E ALG S LNS OF BLKS 89 & 90 & ALG SD S LNS EXTENDED ACROSS THOR ST TO SE COR OF BLK 90; TH N ALG E LNS OF BLKS 90, 93, 104, & 107 & ALG SD E LNS EXTENDED ACROSS LONGFELLOW AVE & HEROY AVE & HOFFMAN AVE TO NE COR OF BLK 107; TH W ALG N LNS OF BLKS 107 & 108 & ALG SD N LNS EXTENDED ACROSS THOR ST TO NE COR OF LT 6 OF BLK 108 & POB & INCLUDING ALL THE STREETS & AVENUES & ALLEYS CONTAINED WITHIN THE ABOVE DESCRIPTION NOW FULLY VACATED.

Spokane County Parcel 35032.2701 legal description:

MINNEHAHA N PT OF B87& 96 N44FT L1-9-10-11 B87&N44FT VAC ALLEY; L1TO11 B96 INC VAC 20FT ALLEY&INC VAC 75FT STP S OF & ADJ; TOG W S 1/2 VAC HEROY N OF AND ADJ.

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

The interim action will be completed within the boundaries of the BNSF Railway Black Tank Property as shown on Figure 2. The Site is largely inactive, vacant, and unpaved. The majority of structures associated with previous operations have been removed. An active rail line traverses the Site along the western Site boundary and an active rail spur traverses the southern Site boundary and serves Western State Asphalt on the adjacent property, also referred to as the SemMaterials L.P. Spokane site.

The Site is situated at an elevation of approximately 2,035 feet above mean sea level. The Site is relatively flat with low areas up to 10 feet deep along the rail lines and at the former Black Tank excavation (Figure 2).

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the Site is the partially filled former Black Tank excavation area, which has slopes of approximately 1:1 (Figure 2). The partially filled excavation is located in an area planned for construction of a new rail line and will likely be backfilled prior to rail construction (Figure 2).

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The Site is located on Pleistocene glaciofluvial flood deposits, consisting of interbedded sand and gravel deposits. The sand and gravel deposits are generally gray to brown, poorly sorted, and contain more gravel at shallow depths. Lenses and ribbons of silt and silty sand are scattered throughout the sand and gravel deposits. The Natural Resources Conservation Services Soil Survey classifies the soils in the project area as disturbed Urban Land-Opportunity with 0 to 3 percent slopes. The Natural Resources Conservation Services data indicates the soils are not considered prime farmland.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are no known locations of unstable soils within the Site vicinity.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Trenching will be performed for the purpose of installing piping associated with the primary and/or contingent remedy. The trenches will be backfilled with soil removed during the installation of the system piping.

An area of up to 1,500 square feet may be graded (levelled) to construct level pads for housing operating equipment associated with the primary and/or contingent remedy. Importing or

disposal of fill material will not be necessary for construction of the primary or contingent remedy.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The Site is unpaved and erosion could occur during construction and concurrent heavy rainstorms. However, erosion potential will be minimized during Site construction through implementation of Best Management Practices (BMPs) and any additional erosion control measures required by regulatory agencies.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt, or buildings)?

None.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

During construction, a temporary erosion and sediment control plan and associated BMPs will be implemented to minimize and control potential erosion during construction.

2. Air [\[help\]](#)

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Exhaust emissions from vehicles and heavy equipment (e.g., trucks, drill rig) will occur during construction of the base remedy. Temporary airborne dust may be generated during Site preparation and construction work. Emissions and dust will be minimized during construction by implementing the BMPs presented in Section 2.c below. Construction-related emissions would only occur intermittently (not to exceed 8 hours per day, during daylight hours) and on a temporary basis (not to exceed six consecutive months during construction and startup of the bioventing/biosparging system).

No new air emission sources would be installed as part of the bioventing/biosparging system for the base remedy. The bioventing/biosparging system will be designed to allow bioremediation of contaminated vapors before they migrate to the ground surface. As such, no extraction of vapors and no emissions are anticipated from the base remedy.

A new air emission source would be temporarily installed for the steam propagation test and the SEE pilot test (if required). For both tests, the temporary air emission source would be natural gas-fired boiler capable of producing approximately 3.6 million British thermal units (MMbtu) per hour. Operation of the temporary emission source would be 24 hours per day for approximately 8 weeks for the steam propagation test and 24 hours per day for approximately 6 months for the SEE pilot test. The maximum annual emissions associated with the operation of the temporary boiler for the steam propagation test and SEE pilot study are expected to be less than the emissions presented in Table 1. Predicted ambient air impacts from the boiler are expected to comply with applicable local, state, and federal air quality standards.

If the contingent remedy is required, additional emissions will occur during construction and operation. Exhaust emissions from vehicles and heavy equipment (e.g., trucks, drill rig) will occur during construction of the SEE system. Temporary airborne dust may be generated during Site preparation and construction work. Emissions and dust will be minimized during

construction by implementing the BMPs presented in Section 2.c below. Construction-related emissions would only occur intermittently (not to exceed 8 hours per day, during daylight hours) and on a temporary basis (not to exceed 6 consecutive months during construction and startup of the SEE system, including installation of a new natural gas line to service the boiler).

If the full-scale contingent remedy is required, a new air emission source consisting of a natural gas-fired boiler capable of producing approximately 11.94 MMbtu per hour will be installed and operated. A low NO_x (nitrogen oxides) burner will be installed to control and reduce NO_x emissions from the boiler. The boiler is expected to operate at 100% capacity the first 6 months and 50% capacity the remaining 30 months. Table 1 lists the maximum annual emissions and 3-year total emissions for the full-scale boiler. Extraction and treatment of air recovered from the subsurface is unlikely to be necessary for the contingent remedy given the very low vapor pressure of the weathered oil. Further, the steam injection is sufficiently deep that the steam will condense before reaching the surface. Predicted ambient air impacts from the boiler are expected to comply with applicable local, state, and federal air quality standards. Natural gas to supply the boilers is discussed in Sections 6 and 16 below.

Table 1 – Full-Scale Contingent Remedy Boiler Emissions

Boiler Emissions - Maximum Annual Emissions ¹								
Source	Emissions (tons per year)				Emissions (metric tonnes/yr) ²			
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	CO ₂	N ₂ O	CH ₄	CO ₂ e
Boiler with Low NO _x Burner	4.31	2.56	0.39	0.03	5,581.56	0.03	0.11	5,593.46
Boiler Emissions - Total Operational Emissions								
Source	Emissions (tpy)				Emissions (metric tonnes/yr) ¹			
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	CO ₂	N ₂ O	CH ₄	CO ₂ e
Boiler with Low NO _x Burner	8.61	5.13	0.78	0.06	11,163.12	0.06	0.21	11,186.93

Notes:

¹Emissions calculated based on AP-42 Tables 1.4-1 and 1.4-2

² N₂O has a global warming potential (GWP) of 310 and CH₄ has a GWP of 25.

BNSF and HOOL would submit a Notice of Construction to the Spokane Clean Air Authority for the boiler. The Notice of Construction will demonstrate that operation of the boiler will be in compliance with applicable local and state air quality standards.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The proposed project will not be affected by off-Site sources of emissions or odors.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Contractors will implement BMPs to control vehicle emissions and dust. Construction vehicles and equipment will be maintained per applicable air emission standards. The proposed project will use existing electrical infrastructure to run an electric blower, electric air compressor, and data collection devices during the bioventing/biosparging operations for the base remedy. The boiler, if required during the contingent remedy, will also be connected to existing power.

3. Water [\[help\]](#)

a. Surface Water: [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There are no surface water bodies on or in the immediate vicinity of the Site. The nearest surface water is the Spokane River located approximately 1.5 miles south of the Site.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No. Not applicable.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No. Not applicable.

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No. The FEMA Flood Insurance Rate Map for the project area does not identify the Site as being located within a 100-year floodplain.

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No. Not applicable.

b. Ground Water: [\[help\]](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

The pre-engineering testing and the base remedy do not include withdrawing groundwater or discharges to groundwater.

Performance of the SEE pilot study, if necessary, and operation of the contingent remedy (SEE), would include withdrawing groundwater and LNAPL via the SEE extraction wells. The predicted total extraction rate for the full-scale SEE system is approximately 36 gallons per minute. Extracted water will not be discharged to the ground as part of the contingent remedy. Instead, the extracted water will be pretreated, as necessary, and discharged to the municipal sewer under a City of Spokane wastewater discharge permit. The pretreatment system may consist of oil/water separation coupled with dissolved air flotation to remove emulsified oil. The recovered oil would be temporarily stored in an approved container until it is transported off-Site for recycling.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not applicable. Waste material will not be discharged to the ground or groundwater.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater at the Site generally stays within the Site boundaries and rapidly infiltrates the highly permeable surface soils or evaporates. Neither the construction activity nor the completed project are expected to alter stormwater runoff at the Site.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials cannot enter surface waters because there are no surface waters on or in the vicinity of the proposed project.

Groundwater is located approximately 158 to 179 feet bgs at the Site and has been impacted by historical releases of petroleum hydrocarbons at the Site. The purpose of the deep contamination cleanup actions are to reduce the mass of contamination (LNAPL and dissolved phase) in vadose- and smear-zone soil and groundwater at the Site. The uppermost groundwater beneath the Site is part of the Spokane Valley Rathdrum Prairie aquifer, which is a sole-source drinking water aquifer, supplying more than 500,000 residents in the region. However, the contaminated groundwater is limited to the Site where there are no drinking water wells. Further, the contaminated groundwater is beyond the capture zone of any known drinking water wells.

Liquid waste materials (well development and decontamination water) generated during construction of the base remedy and contingent remedy (if necessary) will be placed in appropriate storage containers (tankage or drums) and temporarily stored on-Site, pending off-Site transportation for disposal. Similarly, liquid waste materials (extracted LNAPL and groundwater) generated during operation of the contingent remedy (if necessary) will be treated and managed in accordance with BMPs prior to transport off-Site for disposal or recycling. BMPs will include:

- Specification, construction and maintenance of transmission, and storage and treatment systems compatible with the liquid waste materials;
- Secondary containment as required to comply with state and federal regulations;
- Routine inspections of structures containing liquid waste materials, and
- Development of a spill response plan and procurement of spill response equipment.

Following these BMPs for management of the liquid wastes generated at the Site will make the risk of these wastes being released to the ground surface and migrating to the groundwater remote.

As previously indicated, performance monitoring will be conducted to track whether remedial actions are mobilizing contamination so that actions can be taken if contaminant mobilization occurs to an extent deemed unacceptable. Careful remedial monitoring and operation will be required to minimize the potential for any part of the selected remedy to mobilize contamination. If at any point in the cleanup process, monitoring indicates the on-Site dissolved-phase plume poses a material risk of (1) significantly increasing in off-Site size and/or magnitude, or (2) not achieving the dissolved phase groundwater cleanup standards within the 20-year RTF, the bioventing/biosparging technologies capable of treating the dissolved-phase groundwater plume may be expanded to other areas of the Site as needed to address these issues.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

Neither the construction activity nor the completed project are expected to alter drainage patterns at the Site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

A temporary erosion and sediment control plan and associated BMPs will be implemented to minimize and control potential impacts to surface, ground, and runoff water during construction. Applicable BMPs will be maintained throughout the life of the proposed project to minimize and control potential impacts to surface, ground, and runoff water.

4. **Plants** [\[help\]](#)

- a. Check the types of vegetation found on the site:

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

pasture

crop or grain

Orchards, vineyards or other permanent crops.

wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

water plants: water lily, eelgrass, milfoil, other

other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

Approximately 1,500 square feet of shrubs and grasses may be removed to construct level pads for housing operating equipment.

- c. List threatened and endangered species known to be on or near the site.

There are no known threatened or endangered plant species on or near the Site.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

No landscaping or revegetation is proposed.

- e. List all noxious weeds and invasive species known to be on or near the site.

There are no noxious or invasive plant species that are known to be on or near the Site.

5. **Animals** [\[help\]](#)

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Because the Site has been significantly altered, it is not anticipated to provide habitat other than for transient wildlife (e.g., hawks, eagles, owls, winter waterfowl, and deer); however, marmots have been observed as permanent residents on the Site.

The Beacon Hill Biodiversity Region is located about 1.5 miles east of the Site and includes habitat for white-tailed deer, moose, elk, red-tailed hawk, Cooper's hawk, great horned owl, saw-whet owl, and pygmy owls. The Spokane River corridor, located about 1.5 miles south of the Site, provides riparian habitat for winter waterfowl, nesting red-tailed hawk, and some occurrences of nesting osprey and wintering bald eagles.

The Site is located along the northern edge of an area identified as Big brown bat (*Eptesicus focus*) breeding area. The bat is common throughout its range from Canada to northern South America and the Caribbean, including throughout Washington.

- b. List any threatened and endangered species known to be on or near the site.

There are no threatened or endangered species known to be on or in the immediate vicinity of the Site.

- c. Is the site part of a migration route? If so, explain.

Because the Site has been significantly altered, it is not anticipated to provide habitat for migratory species. The proposed project is not anticipated to impact migratory birds routing through the area.

- d. Proposed measures to preserve or enhance wildlife, if any:

None.

- e. List any invasive animal species known to be on or near the site.

None.

6. **Energy and Natural Resources** [\[help\]](#)

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric power in the form of a standard 110 volt line will be required to operate data collection,

temperature sensors, and monitoring units throughout the proposed project.

Electric power (480V 3 phase industrial power) will be required to operate an electric blower and electric air compressor for the bioventing/biosparging phase of the base remedy.

Electric power and natural gas will be required to operate the boiler for the SEE system as part of the contingent remedy. The new boiler will use natural gas fuel to provide energy in the form of steam for the SEE system.

- b. Would your project affect the potential use of solar energy by adjacent properties?
If so, generally describe.

No.

- c. What kinds of energy conservation features are included in the plans of this proposal?
List other proposed measures to reduce or control energy impacts, if any:

The new boiler(s) will be a low NOx, high-efficiency boiler designed to minimize fuel consumption and emissions.

7. Environmental Health [\[help\]](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal?
If so, describe.

Potential environmental health hazards that may be present during construction of the base and contingent remedy could include possible exposures associated with vehicles and heavy equipment, leaks and spills, contact with petroleum compounds, and/or release of contaminated groundwater. Proper precautions will be implemented to minimize potential risk to human health and the environment.

Potential environmental health hazards associated with operation of the base and contingent remedies include exposure to potentially contaminated groundwater during routine groundwater monitoring events and the potential for mobilizing dissolved-phase contamination. Additional environmental health hazards that may be present during operation of the contingent remedy, if implemented, include potential exposure to steam and extracted liquid wastes prior to pretreatment. Section 7.1.c below describes the proposed measures that will be implemented to minimize potential risk to human health and the environment during operation and monitoring of the base and contingent remedies.

It is not anticipated that the completed project will result in environmental health hazards. The purpose of the proposed project is to reduce risk to human health and the environment by cleaning up deep soil and groundwater to achieve the cleanup levels specified in the Cleanup Action Plan.

- 1) Describe any known or possible contamination at the site from present or past uses.

The Site was historically used for railroad transport and locomotive fueling and maintenance operations and an asphalt storage and transfer system. Historical releases from these systems have resulted in surface soils (≤ 15 feet bgs) contaminated with petroleum hydrocarbons, naphthalenes, and carcinogenic polycyclic aromatic hydrocarbons at concentrations exceeding Washington State Model Toxics Control Act Method A soil cleanup

criteria for unrestricted land use. Analytical testing shows the petroleum contamination is a mix of Bunker C, asphaltic oils, and diesel. Most areas of surface soil contamination have already been cleaned up and the remaining areas of surface soil contamination will be cleaned up prior to initiating the proposed project.

Historical petroleum product releases in the vicinity of the Black Tank Sump and the Blank Tank and Chemical Solution Pipelines and Dispensers migrated in narrow vertical columns from the surface soil to the groundwater table at approximately 175 feet bgs. The releases resulted in petroleum contamination in intermediate soils (≥ 15 feet bgs to 156 feet bgs), smear zone soil (≥ 156 feet bgs), LNAPL, and groundwater.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

The following hazardous chemicals/conditions are in the vicinity of the project area and will dictate the proposed cleanup design.

- Petroleum-contaminated surface soils to the extent not already completed under Amendment No. 1 to Agreed Order No. 9188 as described in Section 7.a.1 of this document. Most areas of surface soil contamination at the Site already have been cleaned up, and the remaining areas of surface soil contamination likely will be cleaned up prior to initiating the proposed project.
 - Remaining underground piping and infrastructure associated with former fueling operations that may contain residual petroleum products to the extent not already completed under Amendment No. 1 to Agreed Order No. 9188. Most underground piping and infrastructure associated with former fueling operations that may contain residual petroleum products have already been removed from the Site, and the remaining underground piping and infrastructure likely will be removed prior to initiating the proposed project.
 - Active rail lines in the vicinity of the proposed operational areas.
- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During construction, excavated soils and wastewater from well installations may be temporarily kept on-Site in 55-gallon drums, containment bins, or other containment measure(s). Temporary storage of contaminated soils and groundwater, if needed, would be short term prior to export to an approved landfill or treatment facility.

The base remedy will not store, use, or produce toxic or hazardous chemicals.

Operation of the contingent remedy will generate wastewater that consists of LNAPL and petroleum-contaminated water. The wastewater would be pretreated, as necessary, and discharged to the municipal sewer under a City of Spokane wastewater discharge permit. The recovered oil would be temporarily stored in an approved container until it is transported off-Site to be recycled.

- 4) Describe special emergency services that might be required.

It is not anticipated that special emergency services will be required.

5) Proposed measures to reduce or control environmental health hazards, if any:

Proposed measures to reduce or control environmental health hazards include:

- Pre-construction meetings to inform personnel of the various health and safety risks associated with the proposed project. All contractors and personnel associated with project construction will follow health and safety protocols.
- Workers conducting construction activities will be instructed on precautionary actions to avoid direct contact with potentially contaminated groundwater, appropriate methods for handling such materials, and personal protective equipment.
- Methods and protocols will be implemented in accordance with facility, local, state, and federal standards to avoid potential release of hazardous materials during construction.
- BNSF Track Safety will complete a Site walk to identify the necessary track safety controls. If necessary, BNSF flaggers will manage rail traffic during construction activities to mitigate risks associated with work near active rail lines.
- A spill response plan will be included as part of the health and safety plan and spill response materials will be readily available for use during construction, operation, and monitoring of the remedies.
- A temporary erosion and sediment control plan and associated BMPs will be implemented during construction of the remedies, including dust control measures, as applicable.
- Performance monitoring will be conducted to track whether remedial actions are mobilizing groundwater contamination so that actions can be taken if contaminant mobilization occurs to an extent deemed unacceptable.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Noise in the Site vicinity comes from personal vehicles, freight trucks, rail cars, heavy machinery, and other industrial processes. However, none of these will adversely affect the base or contingent remedy.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short-term noise will be generated during the proposed project construction. Project-related construction noise is expected to be typical of industrial construction projects and will likely include, but is not limited to, noise from vehicles, heavy equipment, well drilling, and grading activities. Construction equipment may include drill rigs, dump trucks, and loaders (for grading). The proposed activities and associated noise levels will generally occur during daylight hours, but some evening work may also be required to achieve the project schedule. Noise generated

by project development is expected to be within the range of normal activities in the area and is not expected to be disruptive.

The proposed project would generate some noise during operation of the base and contingent remedy. Electric blowers, electric air compressors, and ancillary equipment used for the bioventing and biosparging systems will generate noise, but the noise will be within the range of normal activities in the area and is not expected to be disruptive. The steam boiler and associated SEE system equipment used for the contingent remedy, if implemented, will generate noise, but again the noise is expected to be within the range of normal activities in the area and is not expected to be disruptive.

3) Proposed measures to reduce or control noise impacts, if any:

No measures are proposed other than continued compliance with applicable noise regulations. The completed project will not result in a net increase in noise. Temporary construction noise and operational noise during the primary and contingent remedy is expected to be compatible with existing industrial activities on the Site and the surrounding industrial area.

8. Land and Shoreline Use [\[help\]](#)

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The current land use of the Site and adjacent properties is industrial and includes a transportation corridor having an active main BNSF rail line and an active truck route to the neighboring Western States Asphalt facility. Other areas of the Site are inactive. The proposed project will not affect the current land uses on the Site or surrounding properties.

The Site is not located within or near a shoreline.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No farm or forest operations are or have been on or in the vicinity of the Site.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not applicable.

c. Describe any structures on the site.

No buildings are currently on the Site; however, remnants of a building foundation is present, as well as an active railway.

d. Will any structures be demolished? If so, what?

No structures will be demolished as part of the proposed project.

e. What is the current zoning classification of the site?

The Site is currently zoned for Light Industrial use by the City of Spokane.

f. What is the current comprehensive plan designation of the site?

Light Industrial.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable. The Site is located over 1 mile from the nearest shoreline.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No designated critical areas are located on the property.

i. Approximately how many people would reside or work in the completed project?

None. The completed project does not include housing units and it will not increase the number of employees working on-Site. One field technician would complete periodic groundwater monitoring events and routinely check on the remediation system for the duration of the proposed project. More frequent Site visits will be required if the contingent remedy is implemented. Additional Site visits will be needed for more frequent performance monitoring and to manage wastewater and recovered oil from the SEE system.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Ecology reviews and approves the proposed cleanup action for the Site to ensure that it is protective of current and future land uses.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Not applicable. There are no designated agricultural or forest lands of long-term commercial significance in the vicinity.

9. **Housing** [\[help\]](#)

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. *Aesthetics* [\[help\]](#)

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The boiler for the contingent remedy would be housed in a portable container approximately 14 to 15 feet tall.

b. What views in the immediate vicinity would be altered or obstructed?

No views will be altered or obstructed as a result of the proposed project.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable.

11. *Light and Glare* [\[help\]](#)

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Temporary light and glare may be generated during potential evening construction activities. The proposed project will include outdoor security lighting around the structures containing the remediation equipment. The structures for the base remedy are small and the lighting is expected to be limited. The structures for the contingent remedy will be larger and the need for outdoor security lighting will be greater. The security lighting would occur in the evening and nights throughout the operation of the remediation equipment. The proposed project is not expected to produce glare.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

There is already lighting from the existing industrial activity and traffic in the area. The limited nighttime lighting during operation of the completed project would not significantly add to or be out of character with existing lighting at other industrial operations in the surrounding area.

c. What existing off-site sources of light or glare may affect your proposal?

There are no known off-Site sources of light or glare that will affect the proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

Outdoor lighting and security lighting around the equipment pads will use new efficient lighting technologies and directional lighting techniques to minimize casting light onto neighboring properties and roadways.

12. Recreation [\[help\]](#)

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are no designated or informal recreational opportunities in the immediate vicinity of the Site. The nearest recreational opportunities include the Esmeralda Golf Course, Shaw Middle School, Hays Park, Wildhorse Park, Kehoe Park, and Loren Kondo Park, which are between 0.25 and 0.9 miles from the Site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The proposed project will not impact recreational opportunities in the area. Temporary construction and operational monitoring vehicle access to and from the Site is not expected to adversely affect the public's ability to access recreational opportunities. Temporary traffic control measures will be implemented during construction as needed.

13. Historic and cultural preservation [\[help\]](#)

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

There are no known structures or sites located on or in the immediate vicinity of the Site that are listed or eligible for listing on national, state, or local preservation registers. Based on Washington State's Department of Archaeology and Historic Preservation Washington Information System for Architectural and Archaeological Records Data database, the closest known structures that may be eligible for listing on the National Register and/or Washington Heritage Register is Hillyard Historic Business District and Hillyard High School. However, the business district is located approximately 1,600-feet northwest of the Site, and the high school is located approximately 3,000-feet northwest of the Site. Neither property will be affected by the proposed work.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no known landmarks, features, or other evidence of cultural or historic use on the Site. Based on review of the Department of Archaeology and Historic Preservation Washington Information System for Architectural and Archaeological Records Data database, there are no previously recorded sites located within the project area of potential effect.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Research included review of publicly available online resources, including HistoryLink.org and the Department of Archaeology and Historic Preservation Washington Information System for Architectural and Archaeological Records Data database, which includes maps and site forms.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

No measures are proposed because there are no known historic or cultural resources within the Site.

14. **Transportation** [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Roads providing access to the proposed project include East Wellesley Avenue and North Thor Street. Existing accesses to East Wellesley Avenue and North Thor Street will be retained. During construction and operation of the treatment systems, vehicular transport of equipment, materials, and contractors will enter and exit the Site via existing road accesses.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No. The proposed project is located on private property that is not served by public transportation. The nearest transit stop is Route 33 located approximately 500 feet west of the proposed project on North Market Street.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

None. No new parking spaces will be created or eliminated.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No. The proposed project will not require new roads, streets, or improvements to existing transportation infrastructure.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Project work will not use, or occur in the immediate vicinity of, water transportation or air transportation facilities; however, some of the proposed work will occur adjacent to an active rail line and a rail spur that serves the adjacent Western States Asphalt facility. WSDOT is performing a separate project that involves relocation of certain rail lines. The proposed project is being coordinated with the WSDOT project to minimize disruption to rail service.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

After completion, the proposed project will require periodic (one or two weekly) vehicular trips to perform monitoring and operation and maintenance activities. The number of vehicular trips is not anticipated to exceed what is typical for the area.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

Potential mitigation measures for construction traffic may include one or a combination of the following as applicable:

- Provide construction flaggers during periods of peak construction traffic, as needed.
- Identify construction haul route(s) that minimize or avoid use of heavily traveled roadways, where practicable.
- Work may be conducted on weekends and may include evening hours to avoid temporary increases in peak traffic volumes during the work week.

15. Public Services [\[help\]](#)

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No. The proposed project will not generate additional need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable. No measures are proposed.

16. Utilities [\[help\]](#)

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

d. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.

Electric power in the form of a standard 110 volt line would be required to operate data collection, temperature sensors, and monitoring units throughout the proposed project.

Electric power (480V 3 phase industrial power) would be required to operate an electric blower and electric air compressor for the bioventing/biosparging phase of the base remedy.

Electric power and natural gas would be required to operate the boiler for the SEE system during the contingent remedy. In addition, connection to the sanitary sewer would be required to discharge the wastewater generated during operation of the SEE system. The Site is currently

provided with the following utilities:

- Garbage/solid waste services from Spokane Solid Waste Management;
- Water service, from City of Spokane Water Department; and
- Sewer service, from City of Spokane Wastewater Department.

Avista services the area for natural gas and power; however, the Site is not currently provided with either.

The City of Spokane Wastewater Department provides sewer service to the Site via a city main located east of N. Market Street and E. Heroy Ave and there is a private line located along the railroad tracks. However, the Site is not currently connected to the sewer system.

Connection to power, natural gas, and sanitary sewer, as necessary, would be made during the relevant construction phases of the proposed project.

C. Signature [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.



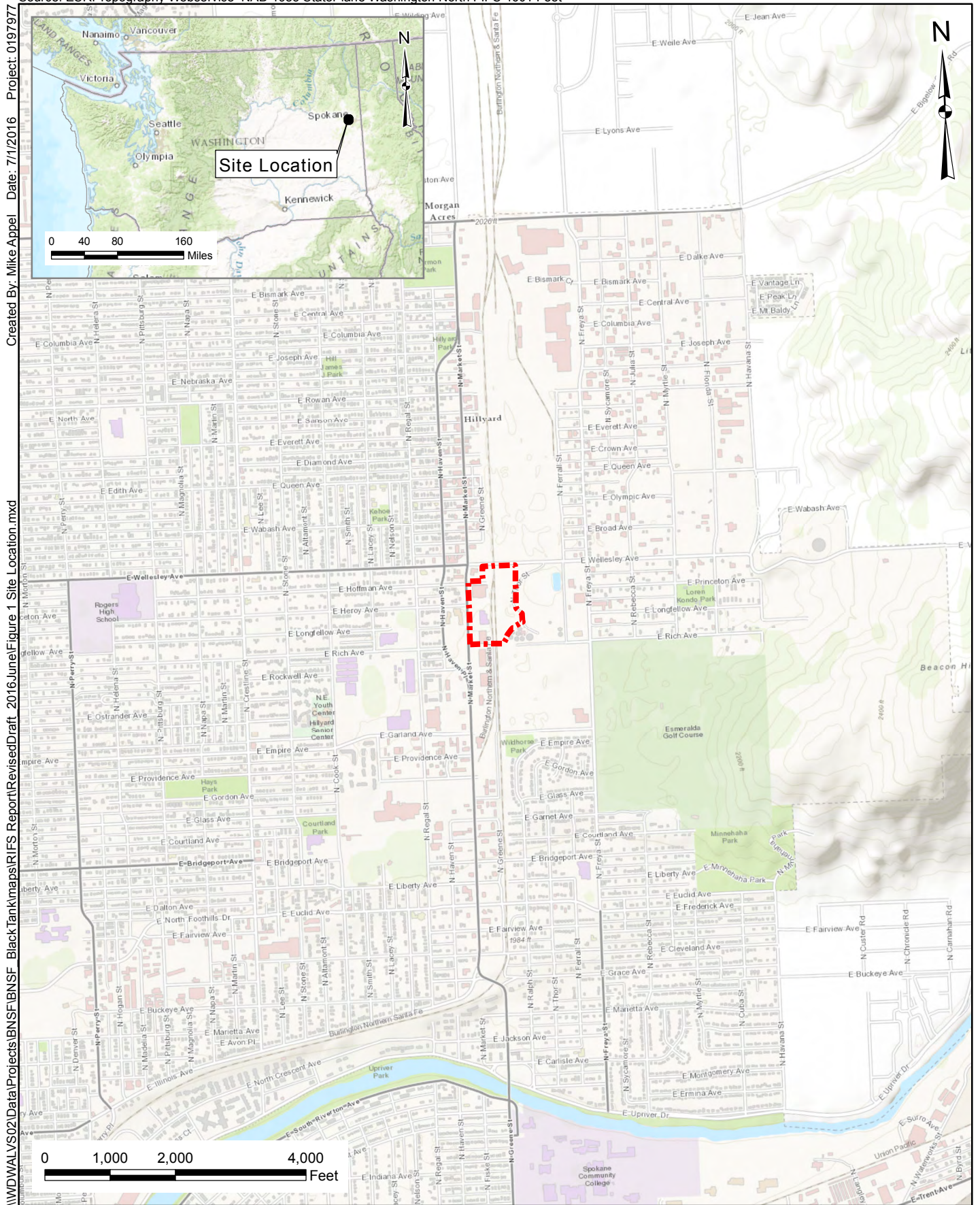
Signature: _____

Name of signee David P. Edwards

Position and Agency/Organization Partner/ERM-West, Inc.

Date Submitted: 16 April 2019

Figures



Created By: Mike Appel Date: 7/1/2016 Project: 0197977
I:\D\WALYS02\Data\Projects\BNSF\BNSF - Black Tank\maps\RIFS Report\RevisedDraft_2016.June\Figure 1 Site Location.mxd

Legend

 Proposed BNSF Black Tank Site Boundary


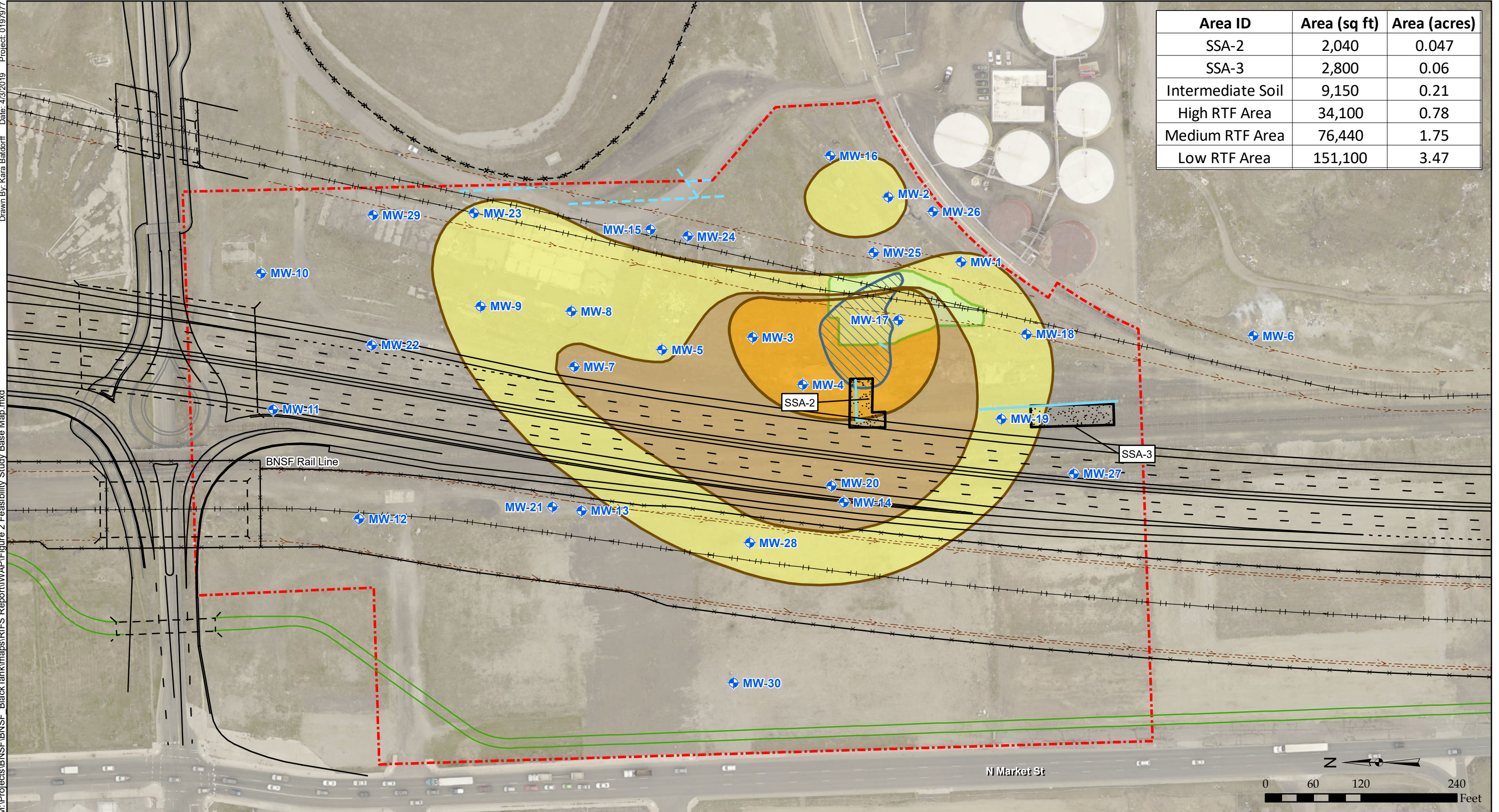
 Environmental Resources Management
www.erm.com

Figure 1
Site Location
BNSF Black Tank
Spokane, Washington

Area ID	Area (sq ft)	Area (acres)
SSA-2	2,040	0.047
SSA-3	2,800	0.06
Intermediate Soil	9,150	0.21
High RTF Area	34,100	0.78
Medium RTF Area	76,440	1.75
Low RTF Area	151,100	3.47



- Legend**
- Monitoring Well - Black Tank Site
 - BNSF Black Tank Site Boundary
 - TPH-D/HO in Intermediate Soil Exceeding the CUL
 - Existing Piping, Dec. 2018
 - Piping Abandoned in Place
 - Former Black Tank Excavation
 - Approximate Lateral Limits of Surface Soil Cleanup Areas

- WSDOT Proposed Highway Alignment (2018 Version)¹
- Proposed Railroad Alignment
- Centerline
- Bridge
- Fence
- Pedestrian Pathway
- Ditch
- Curb/Sidewalk

- High RTF Area
- Medium RTF Area
- Low RTF Area

Notes:
¹ Alignment subject to change
 CUL = Cleanup Level
 LNAPL = Light Non-Aqueous Phase Liquid
 RTF: Restoration Timeframe
 TPH-D/HO = Combined Diesel and Heavy Oil-Range Petroleum Hydrocarbons
 CUL = 5,360 milligrams per kilogram
 Aerial Photo: Spokane Image Consortium, 2018.

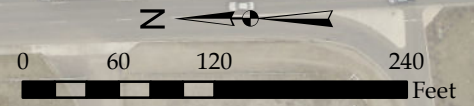
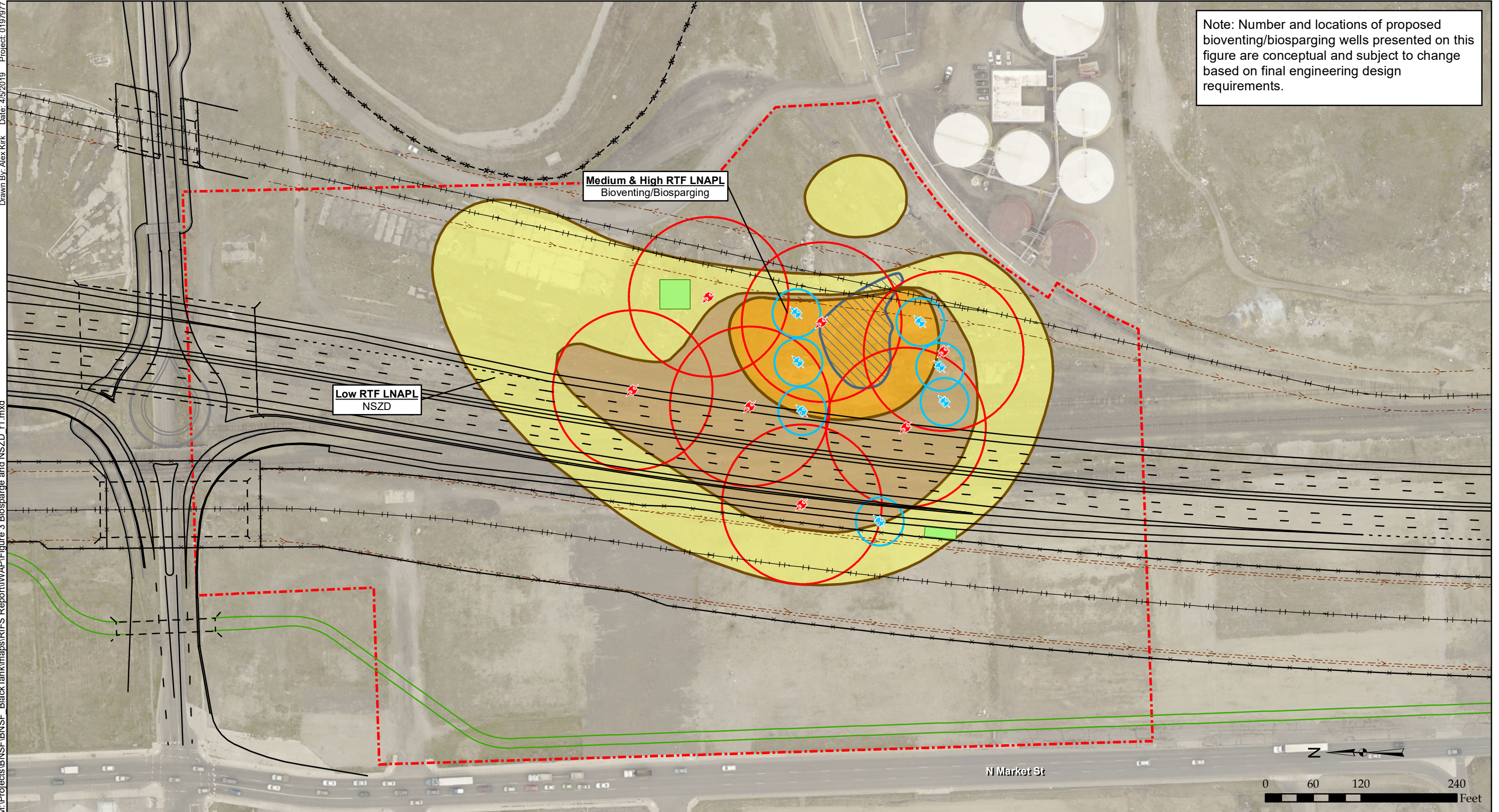


Figure 2
 Cleanup Action Areas
 BNSF Black Tank
 Spokane, Washington

Drawn By: Alex Kirk Date: 4/5/2019 Project: 0197977

M:\Projects\BNSF\BNSF_BlackTank\maps\RIFS_Report\WAP\Figure 3 Biosparge and NSZD_r1.mxd

Note: Number and locations of proposed bioventing/biosparging wells presented on this figure are conceptual and subject to change based on final engineering design requirements.



Legend

- Proposed Biosparge Well
- Proposed Bioventing Injection Well
- Proposed Biosparge Well 30 ft ROI
- Proposed Bioventing Injection Well 100 ft ROI
- Proposed Mechanical Equipment Facility
- TPH-D/HO in Soil Deeper than 15 feet bgs Exceeding the Preliminary CUL
- High RTF Area
- Medium RTF Area
- Low RTF Area
- Proposed BNSF Black Tank Site Boundary
- WSDOT Proposed Highway Alignment (2018 Version)¹
- Proposed Railroad Alignment
- Centerline
- Bridge
- Fence
- Pedestrian Pathway
- Ditch
- Curb/Sidewalk

Notes:
¹ Alignment subject to change
 bgs = below ground surface
 CUL = Cleanup Level
 DOT = Washington State Department of Transportation
 LNAPL = Light Non-Aqueous Phase Liquid
 NSZD = Natural Source Zone Depletion
 ROI = Radius of Influence
 RTF = Restoration Timeframe
 TPH-D/HO = Combined Diesel and Heavy Oil-Range Petroleum Hydrocarbons
 Preliminary CUL = 13,600 milligrams per kilogram
 Aerial Photo: Spokane Image Consortium 2018.

Figure 3
 Conceptual Representation of Base Remedy
 (NSZD and Biosparging/Bioventing)
 BNSF Black Tank
 Spokane, Washington

Note: System shown is not specific to Black Tank Site.

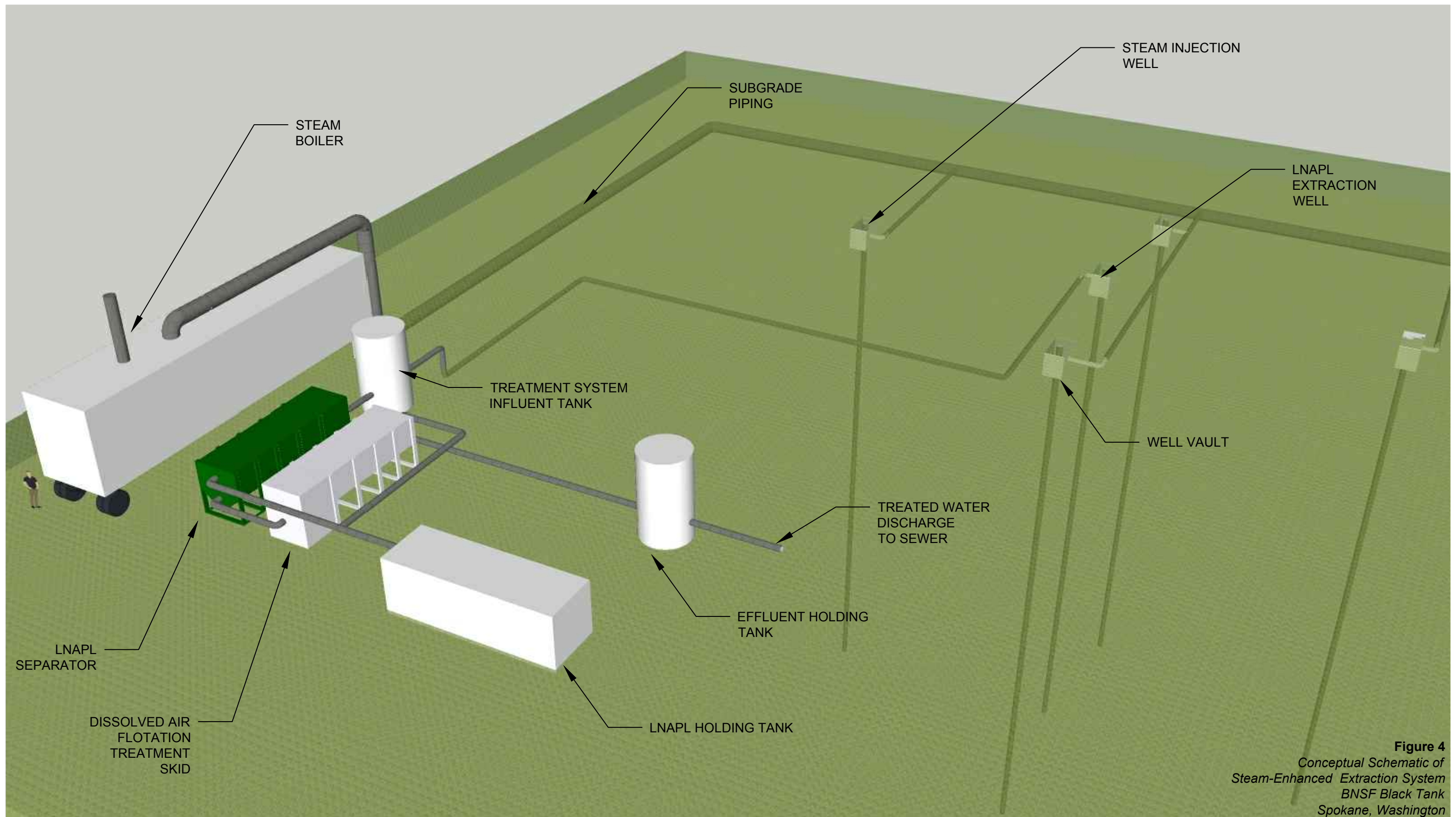


Figure 4
Conceptual Schematic of
Steam-Enhanced Extraction System
BNSF Black Tank
Spokane, Washington

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G.Mackey