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Final
Soil Cleanup Action
Report
Parkwater Rail Yard Site
Facility Site #676
5302 East Trent Avenue
Spokane, Washington

6 February 2017

Prepared for

BNSF Railway Company
2454 Occidental Avenue South, Suite 1A
Seattle, Washington 98134

K/J Project No. 1696110.00

FINAL

SOIL CLEANUP ACTION REPORT

Parkwater Rail Yard Site
Facility Site #676
5302 East Trent Avenue
Spokane, Washington

Prepared by:

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February 2017

K/J 1696110.00

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Section 1: Introduction

On behalf of BNSF Railway Company (BNSF), Kennedy/Jenks Consultants has prepared the following Draft Soil Cleanup Action Report for the Parkwater Rail Yard Site (Site), also known as the Yardley Yard, located at 5302 East Trent Avenue in Spokane, Washington. The Site is in the cleanup process under the Model Toxics Control Act (MTCA) through the Washington State Department of Ecology (Ecology).

The cleanup is being implemented by BNSF under Consent Decree No. 12202548-1 with Ecology, dated July 19, 2012. The Site is listed on the Ecology Site Database as Ecology Identifier 676. BNSF previously prepared a Remedial Investigation (RI) Report (GeoEngineers 2010a), a Feasibility Study Report (GeoEngineers 2010b), and an Engineering Design Report (EDR) (GeoEngineers 2013) and Ecology prepared a Cleanup Action Plan (CAP) (Ecology 2011).

The EDR identified cleanup standards and summarized proposed cleanup actions, including soil removal, offsite disposal, capping, and *in situ* groundwater remediation. The purpose of this report is to provide details regarding work completed under the CAP and EDR as required under the Consent Decree. This report provides a summary of construction activities, including soil excavation, soil disposal/management, waste characterization sampling, verification sampling, site restoration, and capping. The report appendices include verification sampling results, waste characterization results, waste disposal documentation (profiles and soil disposal receipts), photographs, and record drawings. Continuing *in situ* groundwater remediation will be addressed in a separate submittal.

1.1 Purpose and Objectives

The objective of the Cleanup Action was to eliminate, reduce, or otherwise control to the extent feasible and practicable, unacceptable risks to human health and the environment posed by contaminants of concern (COCs) in soil and groundwater at the Site in accordance with the Consent Decree. The Cleanup Action at the Site complied with the requirements of the design documents unless otherwise noted.

The Cleanup Action included the following:

- Excavating shallow [depths up to 4 to 9 feet below ground surface (bgs)] contaminated soil containing COCs at concentrations greater than Site-specific cleanup levels (SSCLs) in five areas at the Site.
- Stockpiling contaminated soils at an on-Site capped area.
- Transporting excavated contaminated soils for disposal to an off-Site, permitted facility (Regional Disposal Roosevelt Landfill).
- Grading and capping three areas using paving (concrete and/or asphalt) and/or gravel.

- Obtaining verification soil samples from the base and sidewalls of the excavations for chemical analysis.
- Backfilling the excavations with clean, imported structural fill.
- Final grading of all work areas at the Site.

1.2 Relevant Design Documents

The following documents provide the basis for design and construction of the Site Cleanup Action. Remedial activities were conducted at the Site in accordance with the following documents unless otherwise noted:

- *Final Cleanup Action Plan (FCAP)* dated November 2011 prepared by Ecology.
- *Engineering Design Report (EDR) including the Compliance Monitoring Plan* dated March 6, 2013, prepared for BNSF by GeoEngineers, Inc.
- *Project Manual for Parkwater Rail Yard Site Cleanup Action Plan 2013, Bid Issue,* dated May 13, 2013 *with Addendums 1-5,* prepared for BNSF by Kennedy/Jenks Consultants.
- *Quality Assurance Project Plan (QAPP)* dated August 2013, prepared for BNSF by Kennedy/Jenks Consultants.
- *Sampling and Analysis Plan Addendum No. 1* dated August 6, 2013, prepared for Ecology on behalf of BNSF by Kennedy/Jenks Consultants.

Section 2: Background

The Site has been owned and operated by BNSF and its predecessors since the early 1900s. The approximately 130-acre Site is located in Spokane, Washington along an active BNSF east-west mainline and is the principal BNSF rail yard in the area. Typical railroad operations have included locomotive and rail car maintenance and repair, rail commodities transfer and storage, and locomotive refueling. The Site was initially constructed as the main roundhouse and terminal facility for the Northern Pacific Railroad.

Three underground storage tanks (USTs) ranging in size from 17,000 to 25,000 gallons were used for refueling activities, and were removed from the Site in 1990. The Site served as the central operations, maintenance, and switching facility in the Spokane Area for the Northern Pacific Railroad until 1959, when the roundhouse was demolished.

Multiple lessees have occupied portions of the Site. The lessees used the Site for general storage of railcars, miscellaneous equipment including smaller aboveground storage tanks (ASTs), generators and oil/water separators, and operated at least 13 ASTs at the Site that stored asphalt, fuel oil, and bunker oil. The ASTs were dismantled in 1988 (GeoEngineers 2010a).

The general Site layout has remained relatively unchanged over the years (GeoEngineers 2010a). The Site is active and still supports light refueling, maintenance, and switching operations. There are no plans to change the Site use in the future. Based on the City of Spokane current Zoning Map, the Site is zoned Heavy Industrial (HI). A Site Vicinity Map is provided on Figure 2.1.

2.1 Site Setting

The Site is bounded on the east by North Fancher Road, on the north by East Trent Avenue, on the west by North Havana Street, and on the south by the BNSF mainline tracks as shown on Figure 2.1. The Site is generally level and has been improved with crushed rock on the surface. Some high use areas are covered with concrete or asphalt. Properties to the east, west, and south of the Site are also zoned HI. The frontage property along Trent Avenue north of the Site is zoned general commercial.

Site soils consist of multiple layers of fill to a maximum depth of approximately 20 feet bgs, overlying native sand and gravel. Surficial fill is predominantly composed of gravel and sand, including railroad ballast with occasional wood debris. Gravel deposits with variable silt and sand content underlay the fill and extend to depths of approximately 80 feet bgs (the maximum depth explored at the Site). The gravel includes interbedded sand lenses, silty sand, and occasional silt lenses.

The Site is located in a historical industrial area approximately ½ mile south of the Spokane River. The Site overlies the Spokane Valley – Rathdrum Prairie (SVRP) Aquifer. Deep, unconfined groundwater occurs at depths of approximately 60 to 70 feet bgs but varies by 10 to 15 feet seasonally. The approximate groundwater flow direction is toward the west and northwest.

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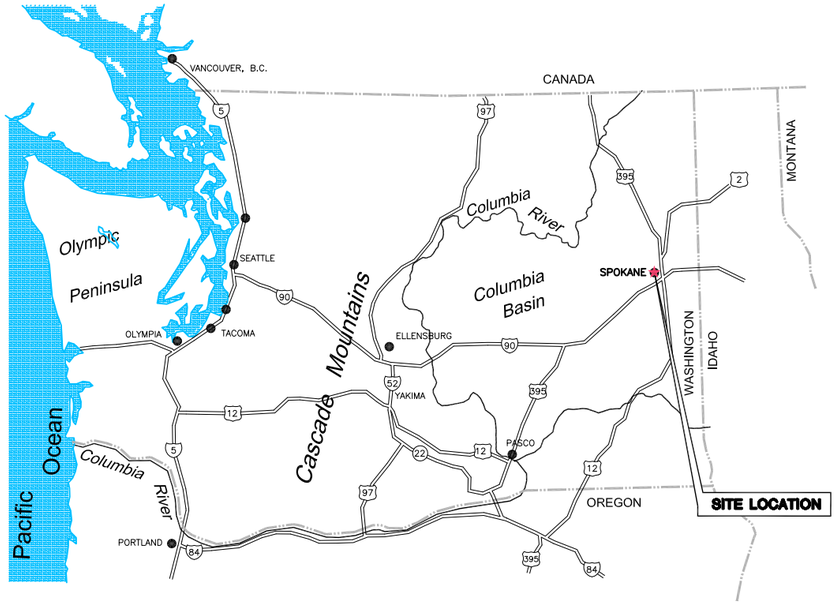
PARKWATER RAIL YARD SITE - SPOKANE, WASHINGTON
CLEANUP ACTION REPORT 2015

REGIONAL MAP



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4.3	DISMANTLING SPUR
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4.5	RALSTON LEAD TRACK
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4.7	EAST AND WEST DEBRIS AND SOIL DEPOSIT AREAS
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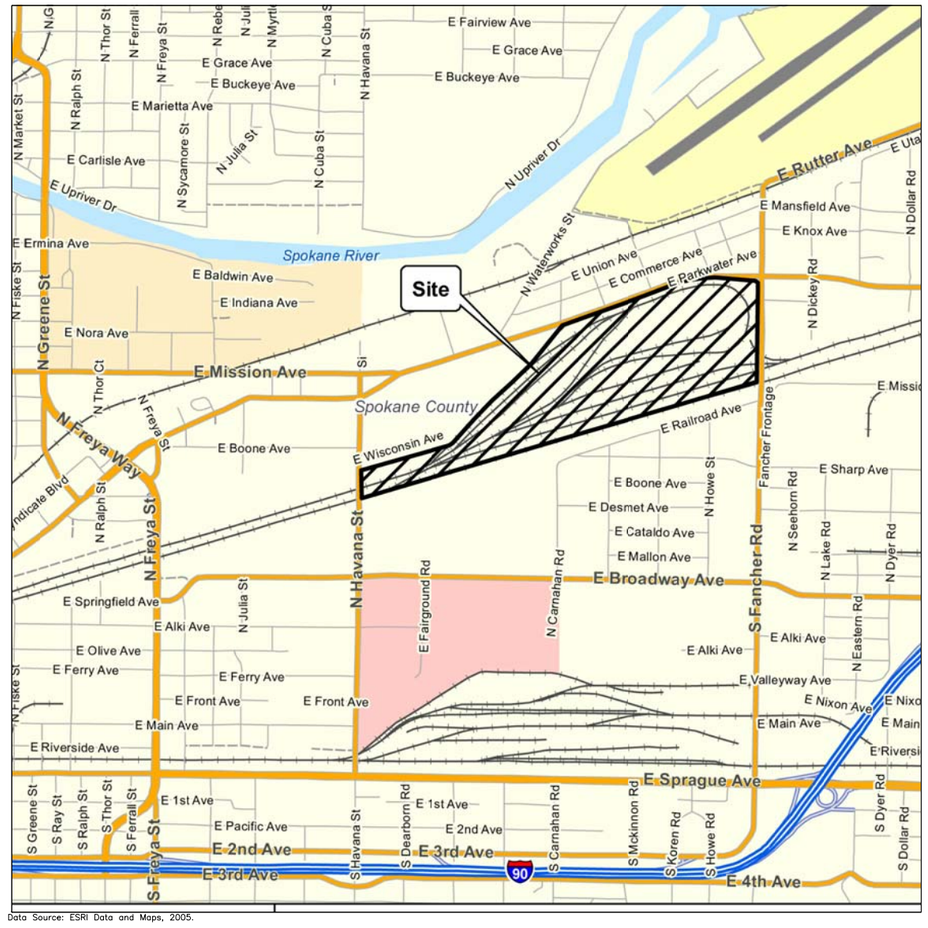
LOCATION MAP



Data Source: ESRI Data and Maps, 2005.

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CLEANUP ACTION PLAN 2015
SPOKANE, WASHINGTON

COVER SHEET
SITE VICINITY MAP

1596110/Figure 2.1

FIGURE 2.1

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2.2 Previous Environmental Investigations

Since 1989, several environmental investigations have been performed by multiple consultants including SCS Engineers (1989 and 1990), Olympus Environmental Services (1999), Thermoretec (1999), RETEC (2001), Remediation Technologies, Inc. (2003), Foss Environmental Services (2003), and the RI and FS performed by GeoEngineers in 2010.

Based on historical information during development of the RI/FS Work Plan and further refined by investigation data collected during the RI, nine distinct areas at the Site were identified as requiring cleanup. Descriptions of these areas are detailed in the RI/FS Work Plan (GeoEngineers 2009), and FCAP (Ecology 2011). These areas include:

- Materials Storage Building (MSB)
- Western Fruit Express Maintenance Facility (WFE)
- Dismantling Spur (DSPUR)
- Yardley Office (Main Line No. 1) (YO)
- Ralston Lead Track (RLT)
- Former Koch Asphalt Lease Area (Koch)
- East and West Debris/Soil Disposal Area (EWD)
- Diesel Shop Area (DSHOP)
- Fueling Area.

The approximate locations of these nine areas are shown on Figure 2.2.

2.3 Nature and Extent of Contamination

2.3.1 Soil Conditions

COCs detected in soil at concentrations exceeding the SSCLs include diesel- and oil-range petroleum hydrocarbons and metals (arsenic, barium, cadmium, chromium, and lead). Analytical results indicate most of the contamination detected at concentrations greater than the SSCLs occurred within the upper 6 to 9 feet of the soil column, with the exception of the Fueling Area where contamination was observed at depths between approximately 12 and 65 feet.

2.3.2 Groundwater Conditions

Diesel-range petroleum hydrocarbons (DRPH) have not been detected at concentrations greater than the SSCL since January 2010. Arsenic was added as a groundwater COC in third quarter 2013, and has been detected at concentrations greater than the SSCL in all sampling events since that time, with the exception of the second quarter 2014 event. Historically, non-aqueous phase liquids had been present on the groundwater surface near the Fueling

LEGEND

- SITE BOUNDARY
- PROPOSED REMEDIAL EXCAVATION AREA (NON-DANGEROUS WASTE)
- PROPOSED REMEDIAL EXCAVATION AREA (WASTE CHARACTERIZATION REQUIRED FOR DISPOSAL)
- PROPOSED GRAVEL CAP AREA
- PROPOSED ASPHALT CAP AREA

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SPOKANE, WASHINGTON

SITE PLAN

1596110/Figure 2.2

FIGURE 2.2

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Area. An air sparge/soil vapor extraction (AS/SVE) remediation system has been operating at the Site since 2009 to address the releases from the former fueling system.

2.4 Cleanup Requirements

In accordance with the FCAP, arsenic, barium, cadmium, chromium, lead, and petroleum diesel- and oil-range hydrocarbons are the indicator hazardous substance for remedial actions addressing Site soils. DRPH and arsenic are the indicator hazardous substances for groundwater. The construction remedial activities were focused on soil remediation and as such, this report is focused on soil cleanup requirements for the eight areas described in Section 2.2. The Fueling Area will not be further addressed in this report.

2.4.1 Cleanup Levels

Soil and groundwater SSCLs for the Site are presented in Table 2.5. Arsenic, barium, cadmium, chromium, lead, and diesel- and oil-range petroleum hydrocarbons are the indicator hazardous substances for remedial actions addressing Site soils. In accordance with the FCAP, SSCLs (Table 2.5) are based on protection of groundwater and the point of compliance is in soil from the ground surface to 15 feet bgs.

TABLE 2.5

SITE-SPECIFIC CLEANUP LEVELS FOR SOIL AND GROUNDWATER[(a)] BNSF Parkwater Rail Yard, Spokane, Washington

Constituent	Site-Specific Cleanup Level and Media		Basis
	Soil (milligrams/kilogram)	Groundwater (micrograms/liter)	
Metals			
Arsenic	9	5	Background
Barium	1,648	Not a Groundwater COC	Protection of groundwater
Cadmium	1	Not a Groundwater COC	Background
Chromium	18	Not a Groundwater COC	Background
Lead	1,000	Not a Groundwater COC	Method A
Total Petroleum Hydrocarbons			
Diesel-Range	2,000	500	Method A
Oil-Range	2,000	Not a Groundwater COC	Method A
Point of Compliance based on MTCA	Upper 15 feet bgs	Uppermost level of the saturated zone extending vertically to the lowermost depth to groundwater	Not applicable

Notes:
(a) Derived from Final Cleanup Action Plan Tables 4 and 5 (Ecology 2011).
COC = Contaminant of concern
MTCA = Model Toxics Control Act

Section 3: Characterization

3.1 Imported Backfill Selection

Kennedy/Jenks Consultants evaluated two borrow sources for excavation backfill material in accordance with the backfill specifications. The two sources included the Spokane Rock Products Airway Pit (Airway Pit) and the Central PreMix Perry Quarry Pit and Mine (Perry Pit).

The evaluation included:

- Reviewing gradation data for select fill and crushed surfacing top course (CSTC) material and comparing to requirements in the technical specifications.
- Collecting representative soil samples from each source and analyzing the samples for total petroleum hydrocarbons and metals. The results were compared to SSCLs.

Gradational data provided by supplier were reviewed to determine whether the select fill and CSTC material meets the requirements in the specifications for grain size distribution and fines content. Backfill specifications including sieve analysis and compaction have been included in the Appendix A. Material from both sources met the specifications.

3.1.1 August 2013 Backfill Sampling

On August 13, 2013, samples were collected from the proposed backfill material from the Perry and Airway borrow pits and submitted for laboratory analysis of:

- Motor oil, diesel, and gasoline total petroleum hydrocarbons (TPH)
- Resource Conservation and Recovery Act (RCRA) 8 metals including arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury
- Polycyclic aromatic hydrocarbons (PAHs)
- Volatile organic compounds (VOCs).

TPH, PAHs, and VOCs were non-detected at or above laboratory reporting limits in the backfill samples. Arsenic, barium, chromium, lead, and silver were detected at concentrations greater than the laboratory reporting limits but less than the SSCLs except for arsenic in the Airway sample. Documentation related to the imported backfill characterization samples has been included in Appendix B.

Based on the arsenic concentration greater than the SSCL in the sample collected from the Airway Pit, the Perry Pit was selected as the most suitable borrow source.

3.1.2 November 2014 Backfill Sampling

On November 19, 2014, a sample was collected from the proposed backfill material from the Perry Pit and submitted for laboratory analysis of motor oil, diesel, and gasoline TPH and

RCRA 8 metals. TPH was not detected at or above laboratory reporting limits in the backfill sample. Arsenic, barium, chromium, and lead were detected at concentrations greater than the laboratory reporting limits but less than the SSCLs. Documentation related to the imported backfill characterization samples is included in Appendix B. The Perry Pit was again selected as the most suitable borrow source.

3.2 Waste Characterization for Disposal

Soil characterization activities were conducted to determine whether the soil, once excavated, would designate as a "characteristic" dangerous waste (WAC 173-303-090). A contaminant has the potential to designate as a dangerous waste if its concentration in soil is greater than 20 times the associated toxicity characteristic threshold listed in WAC 173-303-090(8).

Based on previous sampling, soil excavated from WFE and the DSPUR could potentially fail Washington State dangerous waste criteria. Waste characterization soil samples were collected and submitted for analysis from:

- WFE
  - Six composite soil samples were collected on September 20, 2013 from the WFE stockpiles for laboratory analysis of Toxicity Characteristic Leaching Procedure (TCLP) metals, semi-volatile organic compounds (SVOCs), VOCs, and polychlorinated biphenyls (PCBs).
- DSPUR
  - Two soil samples (one composite and one grab) were collected on September 20, 2013 from the DSPUR stockpiles for laboratory analysis of TCLP metals, SVOCs, VOCs, and PCBs.
- RLT
  - Two soil samples (one composite and one grab) were collected on September 20, 2013 from the RLT stockpiles for laboratory analysis of TCLP metals, SVOCs, VOCs, and PCBs.
- EWD
  - On September 20, 2013, the EWD was subdivided into five subareas for collection of waste characterization samples. Twenty-five test pits were excavated and backfilled in subareas A7A through A7E.
  - Five 5-point composite soil samples were collected from the test pits for laboratory analysis of TCLP metals, SVOCs, VOCs, and PCBs.
  - Five soil grab samples were collected from the test pits for laboratory analysis of VOCs.

- Koch
  - Two soil samples (one composite and one grab) were collected on September 24, 2013 from the Koch stockpiles for laboratory analysis of TCLP metals, SVOCs, VOCs, and PCBs.

Kennedy/Jenks Consultants and BNSF provided waste profiles and analytical reports to Republic Services dba Regional Disposal Company (Republic). Laboratory analytical results permitted characterization of all the stockpiled material as non-hazardous waste. Republic approved non-hazardous waste disposal with profile #41781317273. Documentation related to the waste characterization samples has been included in Appendix C including waste profiles and waste characterization laboratory reports.

Section 4: Cleanup Action

The Cleanup Action occurred from September 2013 to February 2015.

Strider Construction Co., Inc./Sandry Construction Company, Inc. and Kennedy/Jenks Consultants safety personnel conducted daily safety meetings at the beginning of each workday. Most work was performed between 7:00 a.m. and 6:30 p.m., Monday through Friday. Completion of the work required the use of a variety of heavy earthmoving equipment to perform excavation, soil removal, and cap/backfill installation. Best management practices (BMPs) were used throughout the construction area including site protection measures, security measures, and dust control.

The following consultants and contractors performed the construction and oversight:

Consultant/Contractor	Work Performed
Kennedy/Jenks Consultants	Resident Engineer, Construction Observation
Strider Construction Co., Inc. (Strider)	General Contractor – September 2013 to December 2013
Sandry Construction Company, Inc. (Sandry)	General Contractor – November 2014 to February 2015
Allwest Testing and Engineering	Compaction Testing for Strider
GeoEngineers	Compaction Testing for Sandry
Tate Engineering	Surveying

The cleanup action at the Site consisted of performing soil excavation and off-Site disposal and or on-Site storage and capping. The following sections describe the remedial activities for the distinct remediation areas at the Site.

Appendices related to the remedial activities have also been included:

- Appendix D Photographic Logs
- Appendix E Soil Compaction and Materials Testing Reports
- Appendix F Verification Samples Laboratory Analytical Reports
- Appendix G Laboratory Data Validation
- Appendix H Backfill Tickets.

4.1 Materials Storage Building (MSB)

Three petroleum ASTs that were reportedly emptied and sealed were located in the basement the MSB. Approximately 280 cubic yards (cy) of petroleum-impacted soils were excavated from the rail bed south of the MSB in 1999. According to the FCAP, the presence of visually stained soils and reports of fuel drips required additional investigation in this area (Ecology 2011).

4.1.1 Proposed Cleanup Action

Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Temporary shut-down and removal/restoration of track required
- Hydrocarbon-impacted soil excavated to a depth between approximately 4 to 6 feet.
  - Soil excavated between ground surface and a depth of 2 feet bgs transported and disposed of off the Site as non-hazardous.
  - Soil excavated deeper than 2 feet bgs disposed of and capped on Site at the East and West Debris Areas (EWD).
- Approximate impacted soil depth – 0 to 6 feet
- Impacted media estimate – 1,234 cy / 6,093 square feet (sf)
  - Subtitle D landfill – approximately 450 cy
  - Dispose and cap on Site at EWD - approximately 785 cy.

4.1.2 Actual Cleanup Action

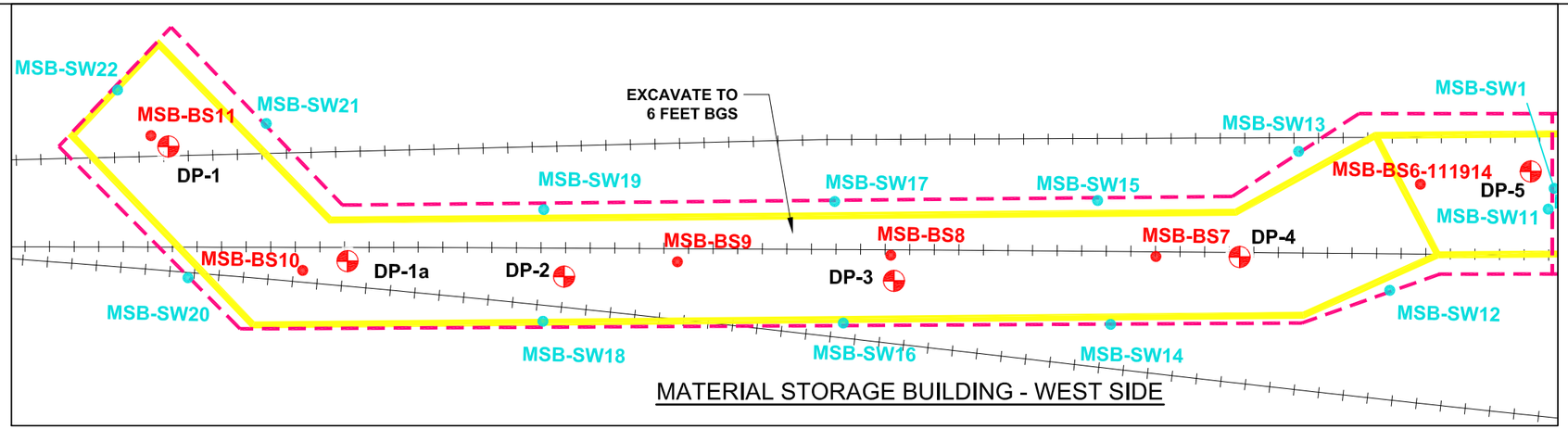
In October 2013, tracks and impacted soil were removed between RI boring DP-5 and the east of the proposed excavation (Figure 4.1), backfill was placed, compacted, and the tracks were replaced. Due to BNSF engineering considerations regarding the track switches and freezing weather, the tracks and impacted soil west of RI boring DP-5 were not removed until 2014. Pre-construction topographic surveys were completed prior to remedial activities.

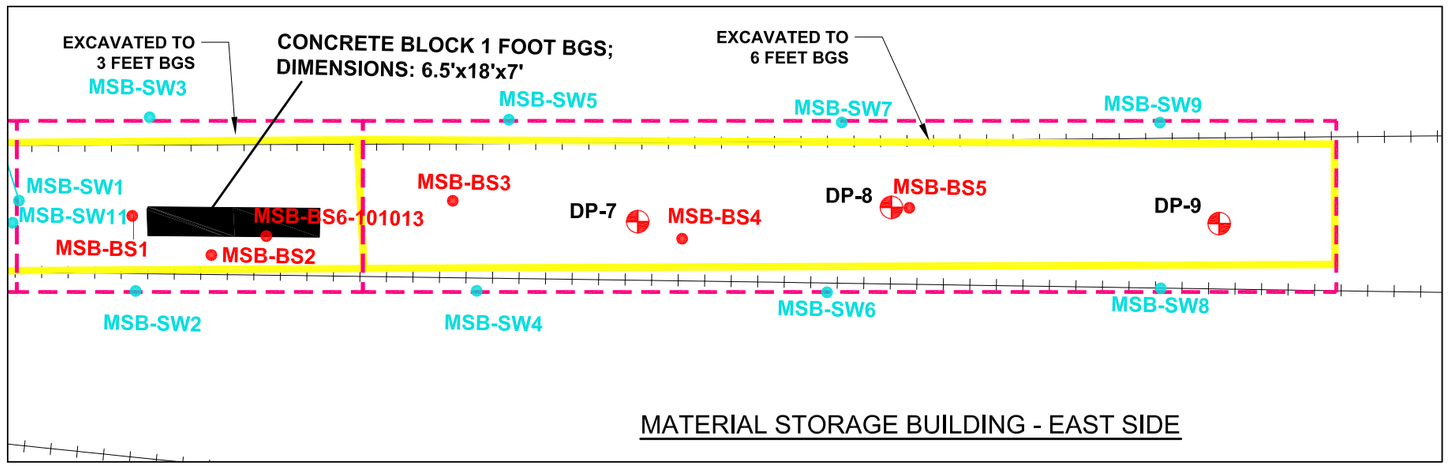
The verification sampling locations and approximate extent of the remedial excavations are shown on Figure 4.1. Verification samples were submitted for analysis of motor oil- and diesel-range TPH, arsenic, barium, cadmium, and chromium. The analytical data from verification samples are summarized in Table 4.1.

4.1.2.1 East Excavation 2013

The tracks were removed between RI boring DP-5 and the eastern end of the proposed excavation on October 1, 2013. The upper 2 feet of soil was excavated on October 3, 2013 and temporarily stockpiled at Koch for off-Site disposal at a subtitle D landfill. Soil was excavated from 2 to 6 feet bgs on October 7, 2013 and stockpiled at the EWD.

Verification soil samples from the excavation sidewalls and base were collected by Kennedy/Jenks Consultants from October 7 through 10, 2013. Ten sidewall samples





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LEGEND

- EXCAVATION AREA
- PROPOSED REMEDIAL EXCAVATION AREA
- DP-15 — APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COC'S
- MSB-BS7 — BASE SAMPLE LOCATION
- MSB-SW3 — SIDEWALL SAMPLE LOCATION

NOTES:

1. INITIAL REMEDIATION AND EXCAVATION WAS COMPLETED ON THE EAST SIDE DURING THE OCTOBER 7 AND 8, 2013 EVENT.
2. FINAL REMEDIATION AND EXCAVATION WAS COMPLETED ON THE WEST SIDE DURING THE NOVEMBER 19 AND 20, 2014 EVENT.

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MATERIALS STORAGE BUILDING REMEDIAL EXCAVATION AND VERIFICATION SAMPLES

1596110/Figure 4.1

FIGURE 4.1

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TABLE 4.1

MATERIALS STORAGE BUILDING
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Total Petroleum Hydrocarbons (milligram/kilogram)		Metals (milligram/kilogram)			
			Motor Oil Range	Diesel Range	Arsenic	Barium	Cadmium	Chromium
East Excavation								
MSB-SW1-100713	1.5	10/7/2013	57 U	29 U	8.2	130	0.16 U	18
MSB-SW2-100713	1.5	10/7/2013	56 U	28 U	6.7	140	0.16 U	**31**
MSB-SW3-100713	1.5	10/7/2013	52	26 U	7.0	65	0.16 U	13
MSB-SW4-100713	3.0	10/7/2013	52 U	26 U	7.5	87	0.18 U	17
MSB-SW5-100713	3.0	10/7/2013	47 U	24 U	1.5	64	0.15 U	9.6
MSB-SW6-100713	3.0	10/7/2013	**9500**	**2400**	9.0	110	0.20 U	16
MSB-SW7-100713	4.0	10/7/2013	75	24 U	3.9	48	0.16 U	9.9
MSB-SW8-100813	3.0	10/8/2013	480	43	6.7	68	0.18 U	17
MSB-SW9-100813	3.0	10/8/2013	280	31	2.7	86	0.15 U	9.6
MSB-SW10-100813	3.0	10/8/2013	300	31	7.1	120	0.15 U	18
MSB-BS1-100713	3.0	10/7/2013	370	180	6.6	120	0.15 U	15
MSB-BS2-100713	3.0	10/7/2013	**23000**	**3700**	7.2	110	0.17 U	17
MSB-BS3-100713	6.0	10/7/2013	1100	81	5.4	27	0.13 U	5.2
MSB-BS4-100713	6.0	10/7/2013	410	49	8.3	50	0.16 U	7.6
MSB-BS5-100813	6.0	10/8/2013	51 U	26 U	6.1	27	0.16 U	4.8
MSB-BS6-101013	8.0	10/10/2013	380	69	9.2	62	0.24 U	12
West Excavation								
MSB-SW-11-111914	3.0	11/19/2014	300 Y	68 Y	5.7	64	0.18 U	15
MSB-SW-12-111914	3.0	11/19/2014	120 Y	93 Y	7.5	130	0.2 U	17
MSB-SW-13-111914	3.0	11/19/2014	55 U	27 U	8	110	0.17 U	17
MSB-SW-14-111914	3.0	11/19/2014	53 U	67 Y	7.7	110	0.18 U	16
MSB-SW-15-111914	3.0	11/19/2014	1700 Y	730 Y	8.8	270	0.39	17
MSB-SW-16-112014	3.0	11/20/2014	54 U	86 Y	9.6	68	0.16 U	15
MSB-SW-17-112014	3.0	11/20/2014	55 U	28 U	7.3	120	0.19	16
MSB-SW-18-112014	3.0	11/20/2014	79 Y	36 Y	7.4	71	0.17 U	18
MSB-SW-19-112014	3.0	11/20/2014	61 Y	27 U	7	78	0.16 U	16
MSB-SW-20-112014	3.0	11/20/2014	150 Y	26 U	8.5	63	0.19 U	13
MSB-SW-21-112014	3.0	11/20/2014	56 U	28 U	6.7	70	0.15 U	15
MSB-SW-22-112014	3.0	11/20/2014	53 U	27 U	6.3	74	0.17 U	15
MSB-BS-6-111914	6.0	11/19/2014	54 U	27 U	6.2	57	0.17 U	16
MSB-BS-7-111914	6.0	11/19/2014	58 Y	53 Y	5.4	80	0.16 U	16
MSB-BS-8-111914	6.0	11/19/2014	52 U	26 U	5.3	36	0.17 U	8.5
MSB-BS-9-112014	6.0	11/20/2014	51 U	25 U	6.2	46	0.17 U	11
MSB-BS-10-112014	6.0	11/20/2014	51 U	25 U	7.2	59	0.17 U	16
MSB-BS-11-112014	6.0	11/20/2014	82 Y	25 U	4.5	29	0.16 U	6.8
Soil Site-Specific Cleanup Levels			2,000	2,000	9.0	1,648	1.0	18
Rinsate Blank Samples (milligram/liter)								
MSB-RB1-100713	--	10/7/2013	0.24 U	0.12 U	0.005 U	0.006 U	0.002 U	0.002 U
MSB-RB1-100813	--	10/8/2013	0.24 U	0.12 U	0.0050 U	0.0060 U	0.0020 U	0.0020 U

Notes:

Samples exceeding site-specific cleanup levels are in bold.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

"U" indicates analyte was analyzed for, but not detected.

"Y" indicates the analytical chromatographic response resembles a typical fuel pattern.

ft bgs = feet below ground surface

(MSB-SW1 through MSB-SW10) and six base samples (MSB-BS1 through MSB-BS6) were collected and submitted for analysis.

Motor oil- and diesel-range TPH were detected at concentrations greater than the SSCL in sidewall sample MSB-SW6 and base sample MSB-BS2. Arsenic was detected at a concentration greater than the SSCL in base sample MSB-BS6. COCs were not detected in the remaining samples at concentrations greater than the SSCLs.

Over-excavation was not conducted. The excavation was backfilled and compaction testing was completed on October 14, 2013. BNSF replaced track ballast and the railroad tracks in November 2014. The compacted backfill, ballast, and replacement tracks prevent direct contact with remaining soils.

Based on post excavation surveys, 761 cy were excavated from the eastern excavation. The upper 2 feet of excavated material (approximately 276 cy) was stockpiled at Koch until it was disposed of off Site. The remaining excavated material was disposed of and capped at the EWD.

4.1.2.2 West Excavation 2014

In November 2014, tracks were removed between boring DP-5 and the western end of the proposed excavation. Soil was excavated from 0 to 6 feet bgs from November 19 through 21, 2014.

Verification soil samples from the excavation sidewalls and base were collected by Kennedy/Jenks Consultants on November 19 through 21, 2014. Twelve sidewall samples (MSB-SW11 through MSB-SW22) and five base samples (MSB-BS7 through MSB-BS11) were submitted for analysis. None of the western excavation sample COC concentrations exceeded the SSCL.

The excavation was backfilled and compaction testing was conducted from December 11 through 12, 2014. Sandry replaced BNSF supplied track ballast and BNSF replaced the railroad tracks.

Based on post excavation surveys, 593 cy of soil were excavated from the western excavation. All excavated soils were temporarily stockpiled at Koch and transported off Site for disposal at a Subtitle D landfill.

4.2 Western Fruit Express Maintenance Facility (WFE)

The WFE was historically used for storage of generators, used oil tanks, and a small fueling area and PCBs, petroleum, and metals have previously been detected. Approximately 4,000 tons of PCB-impacted soil were excavated and disposed of off the Site in 2002 (Ecology 2011). An estimated 1,470 tons of metals-impacted soil are present with concentrations of lead up to three times the SSCL of 1,000 milligrams per kilogram (mg/kg).

4.2.1 Proposed Cleanup Action

Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Metals-impacted soil excavated to a depth of 2 feet.
  - Soil excavated, transported and disposed of off the Site as non-hazardous.
- Approximate impacted soil depth – 0 to 2 feet
- Impacted media estimate – 807 cy / 10,900 sf
  - Subtitle C or D landfill – approximately 807 cy.

4.2.2 Actual Cleanup Action

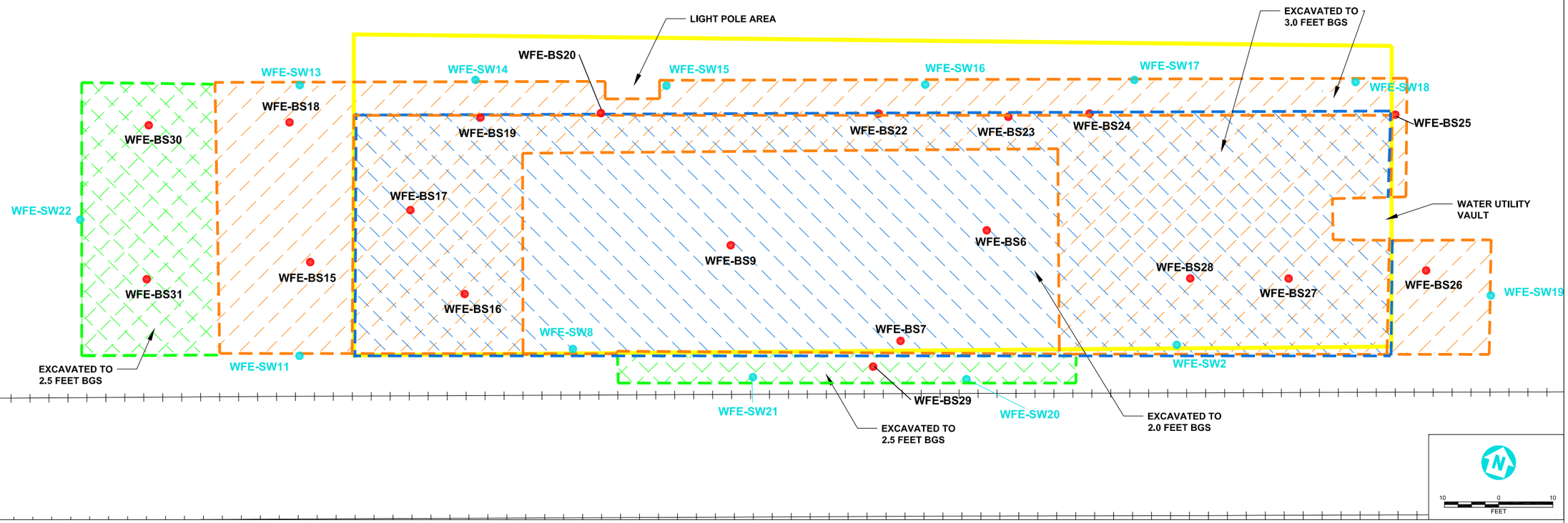
A pre-construction topographic survey was completed prior to remedial activities. Excavation activities were conducted between September 19 and October 3, 2013. Verification soil samples from the excavation sidewalls and base were collected by Kennedy/Jenks Consultants on September 19, September 25, September 26, and October 3, 2013. Multiple over-excavations were conducted and were driven by lead concentrations greater than the SSCLs. A total of 35 base samples (WFE-BS1 through WFE-BS31, with duplicate samples WFE-BS105, WFE-BS-112, WFE-BS121, and WFE-BS126) and 24 sidewall samples (WFE-SW1 through WFW-SW22, with duplicate samples WFE-SW115 and WFE-SW121) were collected and analyzed for arsenic, barium, cadmium, chromium, and lead. The final verification sampling locations and approximate extent of the remedial excavation phases are shown on Figure 4.2.1. The analytical data from verification samples are summarized in Table 4.2.

September 19, 2013 – Initial Excavation

The initial excavation was excavated to a depth of 2 feet bgs on September 19, 2013. Initial verification soil samples from the excavation sidewalls (WFE-SW1 through WFE-SW10) and base (WFE-BS1 through WFE-BS14) were collected by Kennedy/Jenks Consultants on September 19, 2013. Eleven excavation base samples (WFE-BS1 through WFE-BS5, WFE-BS8, WFE-BS10 through WFE-BS14) and eight sidewall samples (WFE-SW1, WFE-SW3 through WFE-SW7, WFE-SW9, and WFE-SW10) contained concentrations of one or more COCs greater than the SSCLs. The September 19, 2013 verification sampling locations are shown on Figure 4.2.2.

September 25 and 26, 2013 – Over-Excavation

Following receipt of the verification sample results, over-excavation was conducted on September 25, and 26, 2013 in areas where verification sample analytical results identified one or more COCs at concentrations greater than the SSCLs. Over-excavation was completed to a total depth of up to 3 feet bgs. The area was over-excavated to the north within 3 feet of the edge of the road, approximately 10 additional feet to the east, and 25 feet to the west. Further expansion of the excavation to the north and the south was limited due to the presence of the paved road and the active railroad track.



LEGEND

- PROPOSED REMEDIAL EXCAVATION AREA
- SEPTEMBER 19, 2013 INITIAL EXCAVATION AREA; EXCAVATED TO 2.0 FEET
- SEPTEMBER 25-26, 2013 EXCAVATION AREA; EXCAVATED TO 3.0 FEET
  THE AREA WAS OVER-EXCAVATED TO THE NORTH WITHIN 3 FEET OF THE EDGE OF THE ROAD, APPROXIMATELY 10 ADDITIONAL FEET TO THE EAST, AND 25 FEET TO THE WEST.
- SEPTEMBER 25-26, 2013 OVER-EXCAVATION OF INITIAL EXCAVATION; EXCAVATION TO 3.0 FEET
- OCTOBER 3, 2013 EXCAVATION AREA; EXCAVATION TO 2.5 FEET
  ADDITIONAL EXCAVATION WEST OF SIDEWALL SAMPLE LOCATION WFE-SW12 AND ADDITIONAL LIMITED EXCAVATION TO THE SOUTH AROUND VERIFICATION SIDEWALL SAMPLE LOCATIONS WFE-SW4 AND WFE-SW6, WHERE THE HIGHEST CONCENTRATIONS OF LEAD HAD BEEN DETECTED.
- **WFE-BS7** BASE SAMPLE LOCATION
- **WFE-SW3** SIDEWALL SAMPLE LOCATION

NOTES:

1. UNABLE TO EXCAVATE AROUND THE WATER UTILITY VAULT OR THE LIGHT POLE AREA NOTED ON FIGURE.

Kennedy/Jenks Consultants

BNSF RAILWAY PARKWATER RAILYARD
CLEANUP ACTION REPORT 2015
SPOKANE, WASHINGTON

WESTERN FRUIT EXPRESS
REMEDIAL EXCAVATION AND
FINAL VERIFICATION SAMPLES

1596110/Figure 4.2.1

FIGURE 4.2.1

P:\CAD\13\1396110_BNSF_Spokane\AML Edits\Finalized Drafts for Review\Figure 4-1.dwg

TABLE 4.2

WESTERN FRUIT EXPRESS
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Metals (milligram/kilogram)				
			Arsenic	Barium	Cadmium	Chromium	Lead
WFE-BS1-091913	2.0	9/19/2013	**10**	250	**1.7**	14	560
WFE-BS2-091913	2.0	9/19/2013	**11**	230	**1.6**	15	**3700**
WFE-BS3-091913	2.0	9/19/2013	**9.1**	220	0.71	18	360
WFE-BS4-091913	2.5	9/19/2013	**28**	860	**5.3**	19	**2000**
WFE-BS5-091913	2.0	9/19/2013	**12**	460	**1.3**	12	**1600**
WFE-BS105-091913	2.0	9/19/2013	**13**	210	0.32	12	340
WFE-BS6-091913	2.5	9/19/2013	7.6	220	0.34	15	280
WFE-BS7-091913	2.0	9/19/2013	8.6	170	0.35	14	96
WFE-BS8-091913	2.0	9/19/2013	**12**	270	**1.4**	16	**1300**
WFE-BS9-091913	2.0	9/19/2013	7.9	170	0.20 U	18	25
WFE-BS10-091913	2.0	9/19/2013	**9.7**	160	0.20	15	67
WFE-BS11-091913	1.0	9/19/2013	6.7	150	0.17 U	14	13
WFE-BS12-091913	2.0	9/19/2013	**32**	930	**7.1**	**32**	**5900**
WFE-BS112-091913	2.0	9/19/2013	**44**	800	**5.2**	**33**	**6200**
WFE-BS13-091913	2.0	9/19/2013	**52**	500	**11**	**140**	**3100**
WFE-BS14-091913	2.0	9/19/2013	**16**	320	**3.1**	19	**1100**
WFE-SW1-091913	1.5	9/19/2013	**14**	270	**2.7**	14	630
WFE-SW2-091913	1.5	9/19/2013	**17**	570	**1.4**	**20**	380
WFE-SW3-091913	1.0	9/19/2013	**43**	1000	**8.2**	**35**	**12000**
WFE-SW4-091913	1.0	9/19/2013	**13**	610	**69**	**21**	**3600**
WFE-SW5-091913	1.0	9/19/2013	**29**	370	**1.9**	**20**	**4800**
WFE-SW6-091913	1.5	9/19/2013	**250**	830	**17**	**21**	**33000**
WFE-SW7-091913	1.0	9/19/2013	**20**	430	**1.8**	**28**	**2600**
WFE-SW8-091913	1.0	9/19/2013	**14**	440	**28**	**85**	**1400**
WFE-SW9-091913	1.0	9/19/2013	**52**	940	**17**	**36**	**11000**
WFE-SW10-091913	1.0	9/19/2013	**37**	850	**7.6**	**33**	**6000**
WFE-BS15-092513	3.0	9/25/2013	8.0	88	0.19 U	**20**	21
WFE-BS16-092513	3.0	9/25/2013	6.3	52	0.18 U	13	11
WFE-BS17-092513	3.0	9/25/2013	5.4	84	0.14 U	15	12
WFE-BS18-092513	2.5	9/25/2013	6.5	110	0.16 U	14	12
WFE-BS19-092513	2.5	9/25/2013	9.0	130	0.21 U	18	13
WFE-BS20-092513	2.5	9/25/2013	7.1	110	0.16 U	14	11
WFE-BS21-092513	3.0	9/25/2013	**12**	220	**1.3**	17	**1100**
WFE-BS121-092513	3.0	9/25/2013	**14**	300	**1.5**	**20**	**1400**
WFE-SW11-092513	1.5	9/25/2013	6.8	130	1.4	13	130
WFE-SW12-092513	1.5	9/25/2013	**34**	740	**24**	**20**	**36000**
WFE-SW13-092513	2.0	9/25/2013	7.3	320	0.22 U	18	17
WFE-SW14-092513	1.5	9/25/2013	**34**	380	**8.3**	**44**	**2500**
WFE-SW15-092513	1.5	9/25/2013	**24**	390	**9.0**	**27**	**2900**
WFE-SW115-092513	1.5	9/25/2013	**22**	390	**3.4**	**19**	**1800**
WFE-SW16-092513	1.5	9/25/2013	**63**	510	**10**	**35**	**7500**
WFE-SW17-092613	1.5	9/25/2013	**52**	570	**1.6**	17	1000
WFE-SW18-092613	1.5	9/25/2013	**48**	470	**7.7**	**33**	**8300**
WFE-SW19-092613	1.5	9/25/2013	**10**	150	**3.5**	**19**	210
WFE-SW119-092613	1.5	9/25/2013	8.2	140	**2.6**	17	150
WFE-BS22-092613	3.0	9/26/2013	**15**	110	0.96	9.4	440
WFE-BS23-092613	3.0	9/26/2013	6.0	190	0.55	11	490
WFE-BS24-092613	3.0	9/26/2013	**9.3**	220	0.37	17	240
WFE-BS25-092613	3.0	9/26/2013	7.1	120	0.15 U	15	18
WFE-BS26-092613	3.0	9/26/2013	8.0	120	0.14 U	18	14
WFE-BS126-092613	3.0	9/26/2013	6.7	100	0.19 U	15	12
WFE-BS27-092613	3.0	9/26/2013	6.6	130	0.17 U	16	52
WFE-BS28-092613	3.0	9/26/2013	6.9	130	**1.4**	17	180
WFE-BS29-100313	2.5	10/3/2013	7.3	160	0.16	15	32
WFE-BS30-100313	2.5	10/3/2013	7.1	140	**1.1**	14	13
WFE-BS31-100313	2.5	10/3/2013	5.4	110	0.16 U	11	11
WFE-SW20-100313	1.5	10/3/2013	6.0	210	**8.2**	11	43
WFE-SW21-100313	1.5	10/3/2013	**12**	220	**1.9**	15	290
WFE-SW121-100313	1.5	10/3/2013	**9.9**	220	**1.7**	11	160
WFE-SW22-100313	1.5	10/3/2013	6.4	120	0.42	12	76
Soil Site-Specific Cleanup Levels			9.0	1,648	1.0	18	1,000
Rinsate Blank Samples (milligram/liter)							
WFE-RB1-091913	--	9/19/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U
WFE-RB1-092513	--	9/25/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U
WFE-RB1-092613	--	9/26/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U

Notes:

Samples exceeding site-specific cleanup levels are in bold.

Shaded cells indicate samples that have been removed by subsequent excavation.

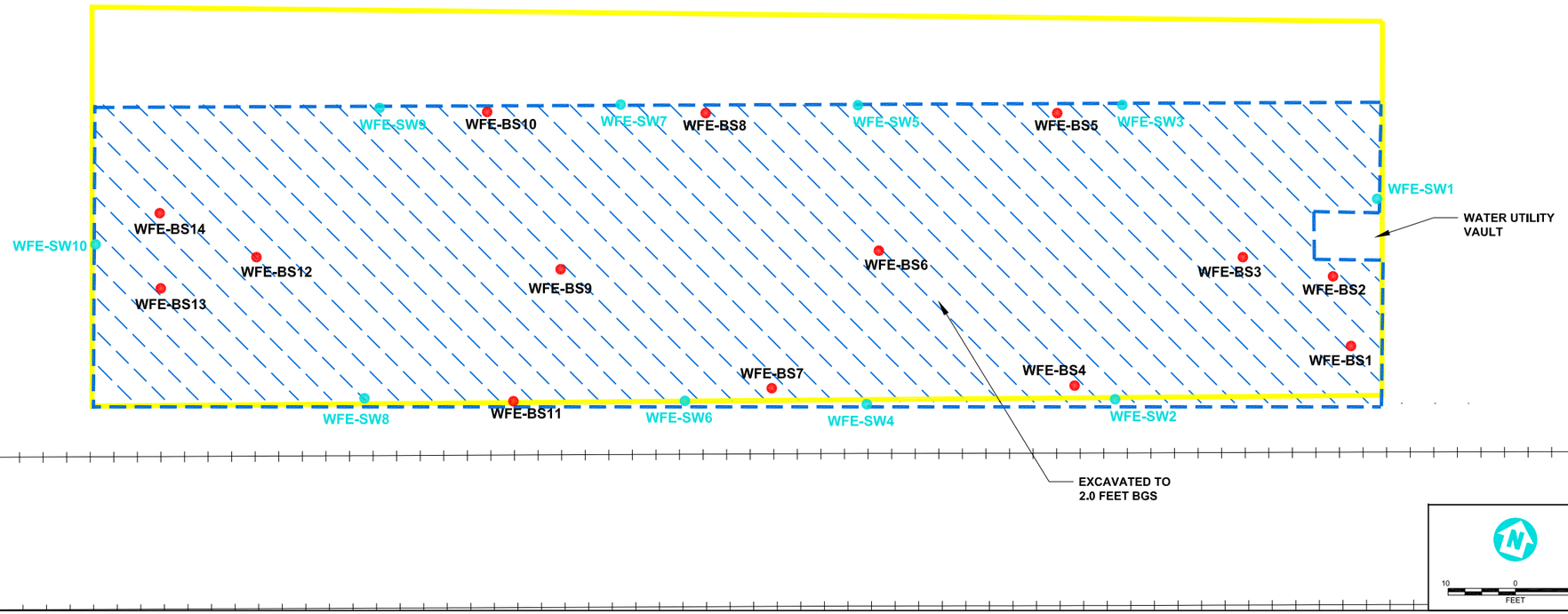
Duplicate samples are indicated by 100 added to the primary sample ID. For example, WFE-SW121-100313 is a duplicate sample of WFE-SW21-100313.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

"U" indicates analyte was analyzed for, but not detected.

ft bgs = feet below ground surface



LEGEND

- PROPOSED REMEDIAL EXCAVATION AREA
- SEPTEMBER 19, 2013 INITIAL EXCAVATION AREA; EXCAVATED TO 2.0 FEET
- **WFE-BS7** BASE SAMPLE LOCATION
- **WFE-SW3** SIDEWALL SAMPLE LOCATION

NOTES:

1. UNABLE TO EXCAVATE AROUND THE WATER UTILITY VAULT NOTED ON FIGURE.

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SPOKANE, WASHINGTON

WESTERN FRUIT EXPRESS
INITIAL REMEDIAL EXCAVATION AND VERIFICATION SAMPLES

1596110/Figure 4.2.2

FIGURE 4.2.2

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Following the September 25 and 26, 2013 over-excavation, verification soil samples from the excavation sidewalls (WFE-SW11 through WFE-SW19) and base (WFE-BS15 through BS28) were collected by Kennedy/Jenks Consultants on September 25 and 26, 2013. One excavation base sample (WFE-BS21) and one sidewall sample (WFE-SW12) contained of one or more COCs greater than the SSCLs. The September 25 and 26, 2013 verification sampling locations are shown on Figure 4.2.3.

October 3, 2013 – Over-Excavation

During the October 2, 2013 site walk with Ecology, a decision was made to perform additional excavation west of sidewall sample location WFE-SW12 and additional limited excavation to the south around verification sidewall sample locations WFE-SW4 and WFE-SW6, where the highest concentrations of lead had been detected. This additional over excavation was performed on October 3, 2013 and verification sidewall samples collected from the final excavation sidewall (WFE-SW20 through WFE-SW22) had lead concentrations less than the SSCL. The October 3, 2013 verification sampling locations are shown on Figure 4.2.4.

The excavation was backfilled and compaction testing was performed between October 3 and October 8, 2013. On October 8 and October 9, 2013, the geotextile liner and CSTC cap were installed.

Excavation Summary

Based on post excavation surveys, approximately 1,050 cy of material were excavated. The excavation material was temporarily stockpiled at Koch until it was disposed of off the Site. As discussed in Section 3.2, WFE stockpiles were sampled for waste characterization. Laboratory analytical results permitted characterization of all the stockpiled material as non-hazardous waste.

The geotextile liner and the CSTC cap prevent direct contact and remove exposure pathways for remaining soils. For the inaccessible areas that had metal concentrations exceeding SSCLs (i.e., under the road or railroad tracks), Ecology agreed in an email dated October 1, 2013 that soil could be left in place provided BNSF establish internal institutional controls to prevent future worker exposure to the soil.

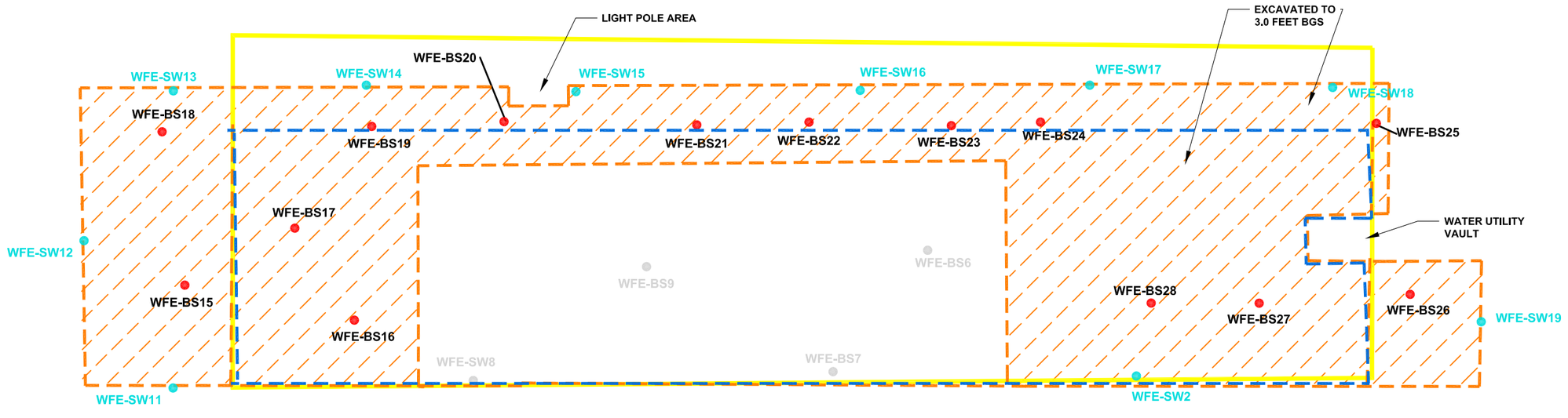
4.3 Dismantling Spur (DSPUR)

An area north of the DSPUR was used to store soil contaminated with PCBs, excavated from an area southeast of the WFE, prior to removal from the Site. The RI reported the presence of lead at concentrations that may necessitate disposal as a dangerous waste.

4.3.1 Proposed Cleanup Action

Below is a brief summary of the cleanup activities proposed in the approved EDR for this area:

- Small area surrounding RI boring SB-5 will be excavated to remove lead-contaminated soil.
  - Soil excavated between ground surface and a depth of 4 feet bgs transported and disposed of off the Site as non-hazardous.



LEGEND

- PROPOSED REMEDIAL EXCAVATION AREA
- SEPTEMBER 25-26, 2013 EXCAVATION AREA; EXCAVATED TO 3.0 FEET
- INITIAL EXCAVATION AREA; SEPTEMBER 19, 2013
- **WFE-BS7** BASE SAMPLE LOCATION
- **WFE-SW3** SIDEWALL SAMPLE LOCATION
- **WFE-BS9** SAMPLES FROM PREVIOUS EXCAVATION THAT DID NOT REQUIRE OVER-EXCAVATION

NOTES:

1. UNABLE TO EXCAVATE AROUND THE WATER UTILITY VAULT OR THE LIGHT POLE AREA NOTED ON FIGURE.

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WESTERN FRUIT EXPRESS
SEPTEMBER 25-26 REMEDIAL EXCAVATION AND VERIFICATION SAMPLES

1596110/Figure 4.2.3

FIGURE 4.2.3

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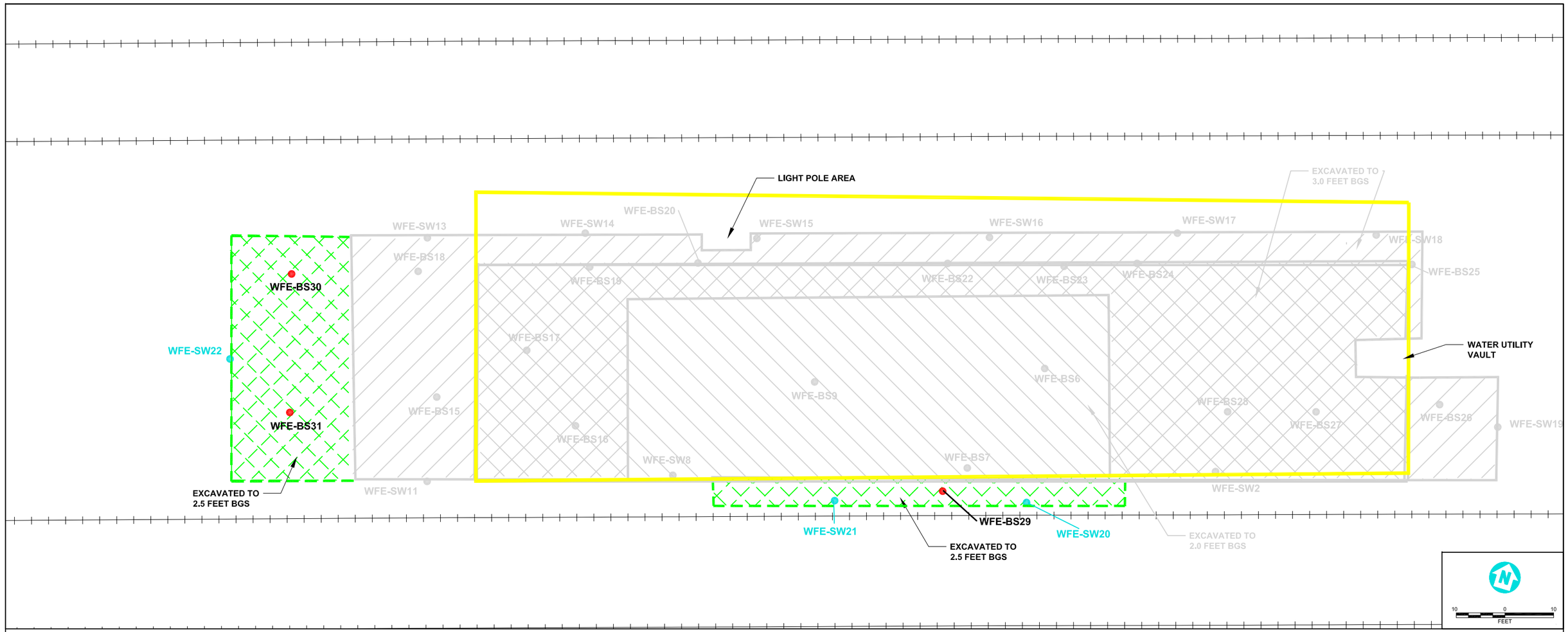

LEGEND

- PROPOSED REMEDIAL EXCAVATION AREA
- SEPTEMBER 19, 2013 INITIAL EXCAVATION AREA; EXCAVATED TO 2.0 FEET
- SEPTEMBER 25-26, 2013 EXCAVATION AREA; EXCAVATED TO 3.0 FEET
- SEPTEMBER 25-26, 2013 OVER-EXCAVATION OF INITIAL EXCAVATION; EXCAVATION TO 3.0 FEET
- OCTOBER 3, 2013 EXCAVATION AREA; EXCAVATION TO 2.5 FEET
- **WFE-BS7** BASE SAMPLE LOCATION
- **WFE-SW3** SIDEWALL SAMPLE LOCATION

NOTES:

1. UNABLE TO EXCAVATE AROUND THE WATER UTILITY VAULT OR THE LIGHT POLE AREA NOTED ON FIGURE.

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WESTERN FRUIT EXPRESS
OCTOBER 3 REMEDIAL EXCAVATION AND VERIFICATION SAMPLES

1596110/Figure 4.2.4

FIGURE 4.2.4

P:\CAD\13\1396110_BNSF_Spokane\AML Edits\Finalized Drafts for Review\Figure 4-4.dwg

- Approximate impacted soil depth – 0 to 4 feet
- Impacted media estimate – 15 cy / 100 sf
  - Subtitle C or D landfill – approximately 15 cy.

4.3.2 Cleanup Action

A pre-construction topographic survey was completed prior to remedial activities. Excavation sidewalls were sloped at 1:1.5 ratio starting 8 feet from the track centerlines.

The initial excavation was completed to a depth of 4 feet bgs on September 18, 2013. Verification soil samples from the excavation sidewalls and base were collected by Kennedy/Jenks Consultants on September 18, 2013. Four sidewall samples (DS-SW1 through DS-SW4) and two base samples (DS-BS1 and duplicate DS-BS101) were collected and submitted for analysis. Verification samples were submitted for analysis of arsenic, barium, cadmium, and chromium. The locations and approximate extent of the remedial excavations are shown on Figure 4.3. The analytical data from verification samples are summarized in Table 4.3.

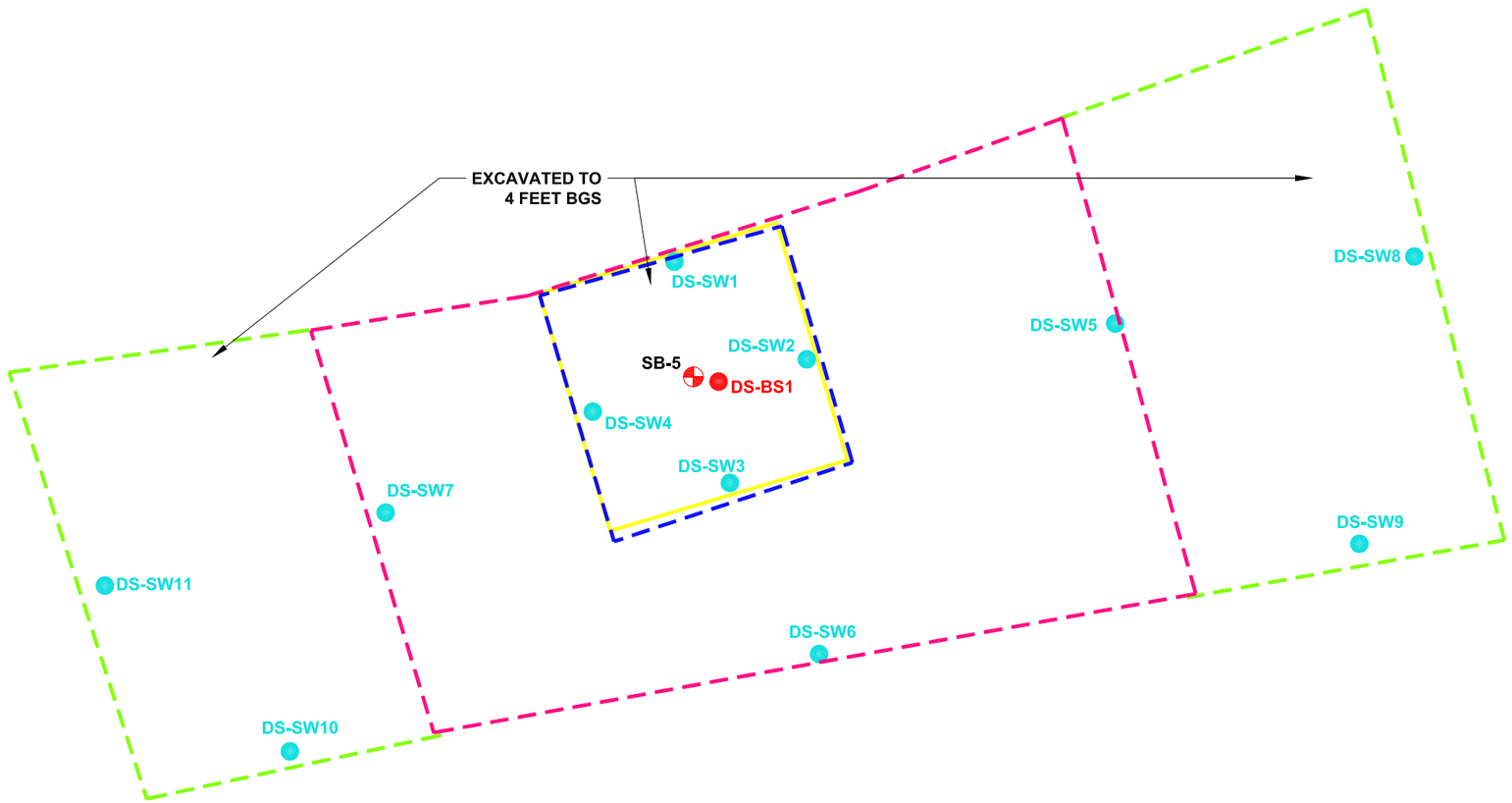
Arsenic was detected at concentrations greater than the SSCL in three sidewall samples (DS-SW2 through DS-SW4). Over-excavation was conducted on September 24, 2013 and these sidewall sample locations were excavated. The area was over-excavated approximately 10 feet to the east, west, and south.

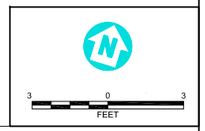
Verification soil samples from the over-excavated sidewalls were collected on September 24, 2013. Four sidewall samples (DS-SW5 through DS-SW7 and duplicate sample DS-SW106) and two base samples (DS-BS1 and duplicate DS-BS101) were collected and submitted for analysis. Arsenic was detected at concentrations greater than the SSCL in all the sidewall samples. Lead, cadmium, and chromium were detected at concentrations greater than the SSCL in two sidewall samples (DS-SW5 through DS-SW6).

Following receipt of the verification sample results from September 24, 2013, over-excavation was conducted on October 1, 2013. The area was over-excavated approximately 10 feet to the east and west and as far south as possible without jeopardizing the stability of the nearby railroad tracks. Sidewall sample locations DS-SW5 and DS-SW7 were excavated. Sidewall sample location DS-SW6 was not excavated due to close proximity to the track.

Verification soil samples from the over-excavated sidewalls were collected on October 1, 2013. Four sidewall samples (DS-SW8 through DS-SW11 and duplicate sample DS-SW109) were collected and submitted for analysis. Arsenic was detected at concentrations greater than the SSCL in all the sidewall samples. Cadmium was detected at a concentration greater than the SSCL in sidewall sample DS-SW8. Chromium was detected at a concentration greater than the SSCL in sidewall sample DS-SW9. Lead was not detected at concentrations greater than the SSCL. No additional over-excavation was conducted.

The excavation was backfilled and compaction testing was performed on October 7, 2013. The backfill and the CSTC cap prevent direct contact with remaining soils.





LEGEND

- PROPOSED REMEDIAL EXCAVATION AREA
- SEPTEMBER 18, 2013 INITIAL EXCAVATION AREA
- SEPTEMBER 24, 2013 OVER-EXCAVATION AREA
- OCTOBER 1, 2013 OVER-EXCAVATION AREA
- **SB-5** APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COC'S
- **DS-BS1** BASE SAMPLE LOCATION
- **DS-SW3** SIDEWALL SAMPLE LOCATION

Kennedy/Jenks Consultants

BNSF RAILWAY PARKWATER RAILYARD
CLEANUP ACTION PLAN 2015
SPOKANE, WASHINGTON

**DISMANTLING SPUR
REMEDIAL EXCAVATION AND
VERIFICATION SAMPLES**

1596110/Figure 4.3

FIGURE 4.3

P:\CAD\13\1396110_BNSF_Spokane\AML Edits\Finalized Drafts for Review\Figure 5 (Dismantling Spur).dwg

TABLE 4.3

DISMANTLING SPUR
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Metals (milligram/kilogram)				
			Arsenic	Barium	Cadmium	Chromium	Lead
DS-SW1-091813	2.0	9/18/2013	8.2	110	0.17 U	14	17
DS-SW2-091813	2.0	9/18/2013	**13**	180	0.36	16	110
DS-SW3-091813	2.0	9/18/2013	**11**	150	0.20 U	12	33
DS-SW4-091813	2.0	9/18/2013	**10**	67	0.17 U	9.5	9.5
DS-BS1-091813	4.0	9/18/2013	7.0	97	0.19 U	11	26
DS-BS101-091813	4.0	9/18/2013	6.3	100	0.21 U	14	14
DS-SW5-092413	2.0	9/24/2013	**40**	430	**6.5**	**38**	**1500**
DS-SW6-092413	2.0	9/24/2013	**22**	520	0.74	**36**	**2000**
DS-SW106-092413	2.0	9/24/2013	**24**	440	0.61	**38**	1000
DS-SW7-092413	2.0	9/24/2013	**12**	62	0.12 U	10	15
DS-SW8-100113	2.0	10/1/2013	**11**	140	**14**	11	180
DS-SW9-100113	2.0	10/1/2013	**11**	350	0.65	**29**	78
DS-SW109-100113	2.0	10/1/2013	**9.2**	300	0.23 U	18	22
DS-SW10-100113	2.0	10/1/2013	**12**	260	0.75	16	460
DS-SW11-100113	2.0	10/1/2013	**13**	140	0.16 U	17	14
Soil Site-Specific Cleanup Levels			9.0	1,648	1.0	18	1,000
Rinsate Blank Samples (milligram/liter)							
DS-RB1-091813	--	9/18/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U
DS-RB1-092413	--	9/24/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U
DS-RB1-100113	--	9/24/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U

Notes:

Shaded cells indicate samples that have been removed by subsequent excavation.

Samples exceeding site-specific cleanup levels are in bold.

Duplicate samples are indicated by 100 added to the primary sample ID. For example, DS-BS101-091813 is a duplicate sample of DS-BS1-091813.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

"U" indicates analyte was analyzed for, but not detected.

ft bgs = feet below ground surface

Based on post excavation surveys, 55 cy of material were excavated. All excavated material was temporarily stockpiled at Koch until it was disposed of off Site. As discussed in Section 3.2, DSPUR stockpiles were sampled for waste characterization. Laboratory analytical results permitted characterization of all the stockpiled material as non-hazardous waste.

4.4 Yardley Office (Main Line No. 1) (YO)

Diesel was released on November 27, 2000 from a locomotive on Main Line No. 1 near the YO. The release reportedly was caused by broken fuel injection line. The volume of the release is unknown (GeoEngineers 2009).

4.4.1 Proposed Cleanup Action

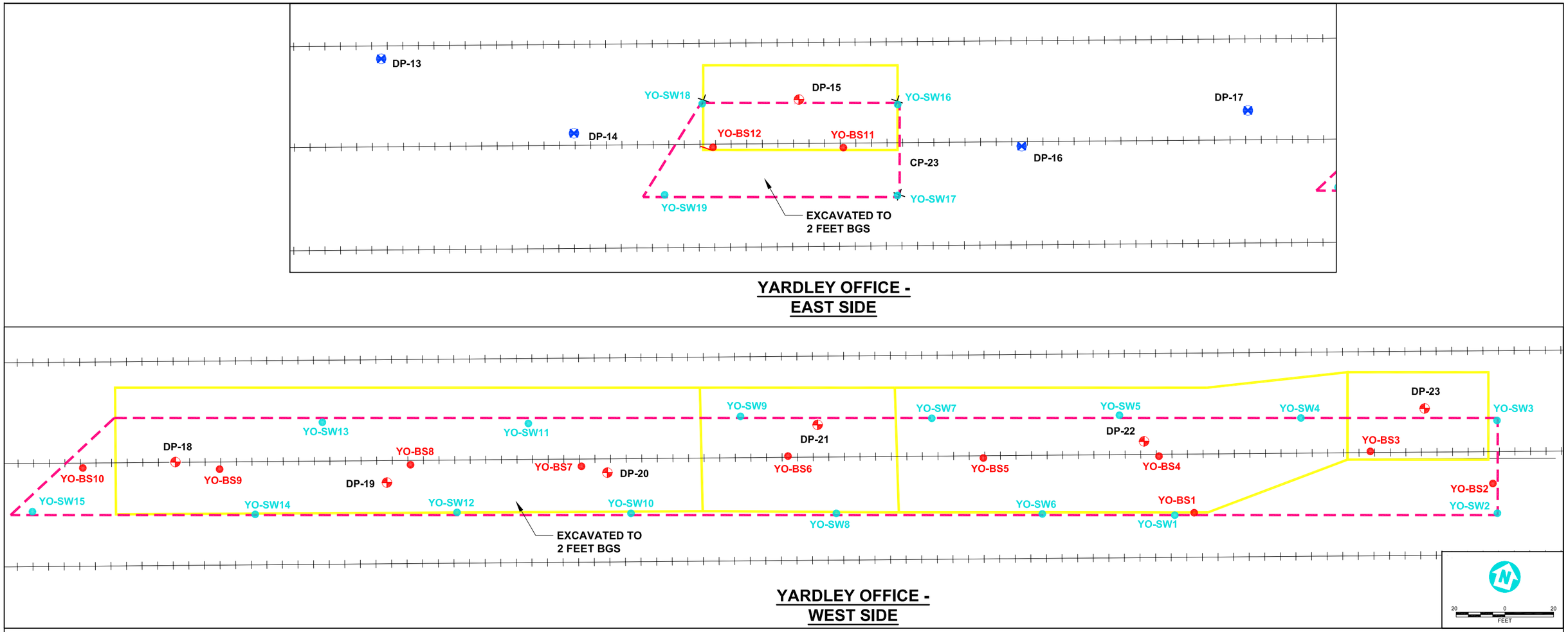
Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Two areas with metals-impacted soil excavated using an undercutter machine to a depth of 7 feet bgs
  - Temporary shut-down on Main Line required.
  - Soil excavated between ground surface and a depth of 2 feet bgs transported and disposed of off the Site as non-hazardous.
  - Soil excavated deeper than 2 feet bgs capped on Site at the EWD.
- Approximate impacted soil depth – 0 to 7 feet
- Impacted media estimate – 703 cy / 6,649 sf
  - Subtitle D landfill – approximately 500 cy
  - Disposed and capped on Site - approximately 225 cy.

4.4.2 Actual Cleanup Action

Excavation was conducted using an undercutter operated by BNSF from October 7, through 9, 2013. The undercutter uses a cutter bar that runs beneath the bottom of the ties, excavating all of the ballast under the ties. A conveyor then moves the ballast into a trailing rail car, followed by a third car that dumps fresh ballast. The undercutter removed ballast and soil 6 feet to the southern side and 4 feet to the northern side of track and reached a depth of approximately 2 to 3 feet bgs.

Verification soil samples from the excavation sidewalls and base were collected by Kennedy/Jenks Consultants on October 7, through 9, 2013. Twenty sidewall samples (YO-SW1 through YO-SW19 and duplicate sample YO-SW105) and 14 base samples (YO-BS1 through YO-BS12 and duplicate samples YO-BS104 and YO-BS108) were collected and analyzed for arsenic, barium, cadmium, and chromium. The locations and approximate extent of the remedial excavations are shown on Figure 4.4. The analytical data from verification samples are summarized in Table 4.4.



YARDLEY OFFICE - EAST SIDE

YARDLEY OFFICE - WEST SIDE

LEGEND

- EXCAVATION AREA
- PROPOSED REMEDIAL EXCAVATION AREA
- **DP-18** APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COC'S
- **DP-13** APPROXIMATE LOCATION OF SAMPLE WITH NO EXCEEDANCES OF SITE COC'S
- **YO-BS7** BASE SAMPLE LOCATION
- **YO-SW3** SIDEWALL SAMPLE LOCATION

NOTES:

1. EXCAVATION WAS CONDUCTED USING AN UNDERCUTTER.

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YARDLEY OFFICE
REMEDIAL EXCAVATION AND
VERIFICATION SAMPLES

1596110/Figure 4.4

FIGURE 4.4

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TABLE 4.4

YARDLEY OFFICE
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Metals (milligram/kilogram)			
			Arsenic	Barium	Cadmium	Chromium
YO-BS1-100713	2.5	10/7/2013	9.0	170	0.23 U	14
YO-BS2-100713	2.0	10/7/2013	6.9	84	0.21	16
YO-BS3-100713	2.0	10/7/2013	8.8	100	0.29	18
YO-BS4-100713	2.0	10/7/2013	**10**	110	0.29	17
YO-BS104-100713	2.0	10/7/2013	**13**	93	0.23	15
YO-SW1-100713	1.0	10/7/2013	3.8	95	0.17 U	6.6
YO-SW2-100713	1.0	10/7/2013	2.9	76	0.22	4.7
YO-SW3-100713	1.0	10/7/2013	**14**	95	0.36	6.5
YO-SW4-100713	1.0	10/7/2013	**19**	390	0.38	16
YO-BS5-100813	2.0	10/8/2013	5.0	120	0.15 U	**22**
YO-BS6-100813	2.0	10/8/2013	8.2	210	0.19	**24**
YO-SW5-100813	1.0	10/8/2013	**31**	150	0.70	**23**
YO-SW105-100813	1.0	10/8/2013	**19**	230	0.38	**19**
YO-SW6-100813	1.0	10/8/2013	2.4	84	0.17 U	6.5
YO-SW7-100813	1.0	10/8/2013	**19**	100	0.61	14
YO-SW8-100813	1.0	10/8/2013	**28**	460	0.53	**19**
YO-SW9-100813	1.0	10/8/2013	**14**	100	0.59	14
YO-BS7-100913	2.0	10/9/2013	7.0	120	0.21 U	12
YO-BS8-100913	2.0	10/9/2013	7.1	190	0.20	**22**
YO-BS108-100913	2.0	10/9/2013	8.0	170	0.20 U	**20**
YO-BS9-100913	2.0	10/9/2013	7.5	180	0.22 U	17
YO-BS10-100913	2.0	10/9/2013	8.0	130	0.17 U	18
YO-BS11-100913	2.0	10/9/2013	**11**	230	0.34	**29**
YO-BS12-100913	2.0	10/9/2013	**15**	180	0.50	**30**
YO-SW10-100913	1.0	10/9/2013	6.1	100	0.23	13
YO-SW11-100913	1.0	10/9/2013	3.2	64	0.27	**26**
YO-SW12-100913	1.0	10/9/2013	7.6	160	0.18	17
YO-SW13-100913	1.0	10/9/2013	7.4	92	0.53	**3100**
YO-SW14-100913	1.0	10/9/2013	6.5	140	0.21 U	15
YO-SW15-100913	1.0	10/9/2013	1.7	120	0.15 U	4.6
YO-SW16-100913	1.0	10/9/2013	**19**	240	0.81	**38**
YO-SW17-100913	1.0	10/9/2013	2.4	88	0.20 U	4.4
YO-SW18-100913	1.0	10/9/2013	**11**	180	0.15 U	12
YO-SW19-100913	1.0	10/9/2013	0.98	62	0.14 U	3.2
Soil Site-Specific Cleanup Levels			9.0	1,648	1.0	18
Rinsate Blank Samples (milligram/liter)						
YO-RB1-100713	--	10/7/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U
YO-RB1-100813	--	10/8/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U
YO-RB1-100913	--	10/9/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U

Notes:

Samples exceeding site-specific cleanup levels are in bold.

Duplicate samples are indicated by 100 added to the primary sample ID. For example, RLT-BS102-091713 is a duplicate sample of RLT-BS2-091713.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

"U" indicates analyte was analyzed for, but not detected.

ft bgs = feet below ground surface

Arsenic was detected at concentrations greater than the SSCL in three base samples and eight sidewall samples. Chromium was detected at concentrations greater than the SSCL in five base samples and five sidewall samples.

Over-excavation was not conducted. Following excavation and collection of verification samples, the excavation was immediately backfilled and compacted as excavation required temporary closure of the Main Line. Based on the immediate backfilling, a survey was not conducted. Twenty-eight truckloads of material for a total of approximately 280 cy were excavated and temporarily stockpiled at Koch until it was disposed of off Site.

4.5 Ralston Lead Track Area (RLT)

During excavation of a motor oil spill, petroleum contaminated soil was discovered in native soil below RLT (GeoEngineers 2009).

4.5.1 Proposed Cleanup Action

Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Two areas within working tracks with metals-impacted soil excavated to a depth between approximately 4 to 9 feet.
  - The first excavation area was proposed to a depth of 4 feet and encompassed RI borings DP-43 and DP-44. The second excavation area was proposed to a depth of 9 feet and encompassed RI boring DP-44a.
  - Soil excavated between ground surface and a depth of 2 feet bgs transported and disposed of off the Site as non-hazardous.
  - Soil excavated deeper than 2 feet bgs transported to and capped at the EWD.
  - Temporary shut-down and removal/restoration of track required.
- Approximate impacted soil depth – 0 to 9 feet
- Impacted media estimate – 246 cy / 1,193 sf
  - Subtitle D landfill – approximately 100 cy
  - Disposed and capped on Site - approximately 150 cy.

4.5.2 Actual Cleanup Action

The first excavation area (western excavation) was proposed to a depth of 4 feet and encompassed RI borings DP-43 and DP-44. This excavation was sloped at a 1:1 ratio on the southern track side to a total depth of 4 feet bgs. The second excavation area (east excavation) was proposed to a depth of 9 feet and encompassed RI boring DP-44a. This excavation was sloped at a 1:1 ratio on the southern track side to a maximum depth of 6 feet bgs. The full proposed excavation depth (9 feet) could not be reached due to concerns of undermining the tracks. Both excavations were completed with near vertical cuts on the northern, eastern, and western sidewalls. A pre-construction topographic survey was completed prior to remedial activities.

The RLT excavations were completed on September 17, 2013. Verification soil samples from the excavation sidewalls and base were collected on September 17, 2013. Ten sidewall samples (RLT-SW1 through RLT-SW10) and four base samples (RLT-BS1 through RLT-BS3 and duplicate RLT-BS102) were collected and analyzed for arsenic, barium, cadmium, and chromium. The locations and approximate extent of the remedial excavations are shown on Figure 4.5. The analytical data from verification samples are summarized in Table 4.5.

Arsenic was detected at concentrations greater than the SSCL in two base samples (RLT-BS1 and RLT-BS3). Chromium was detected at concentrations greater than the SSCL in excavation sidewall sample RLT-SW3. Over-excavation was not conducted. The excavation was backfilled and compaction testing was performed on September 18, 2013. On September 24, 2013, the geotextile liner and CSTC cap was placed. The geotextile liner and the CSTC cap prevent direct contact with remaining soils.

Based on post excavation surveys, 115 cy and 49 cy were excavated from the western and eastern excavations, respectively. The upper 2 feet of excavated material (approximately 85 cy) was temporarily stockpiled at Koch until it was disposed of off Site. The remaining excavated material was disposed and capped at the EWD.

4.6 Former Koch Materials Asphalt (Koch)

The northeastern portion of Parkwater, east of the existing BNSF Maintenance Building, was formerly leased by several entities including Koch, Service Asphalt, Tri-State Oil, Blackline, and Continental Coal Company. According to the RI, at least 13 ASTs were located in this approximate 3-acre area based on review of historical photographs. These former ASTs contained asphalt, fuel oil, and bunker oil. These ASTs were dismantled in 1988. Soil sampling conducted indicated petroleum contamination (GeoEngineers 2009).

4.6.1 Proposed Cleanup Action

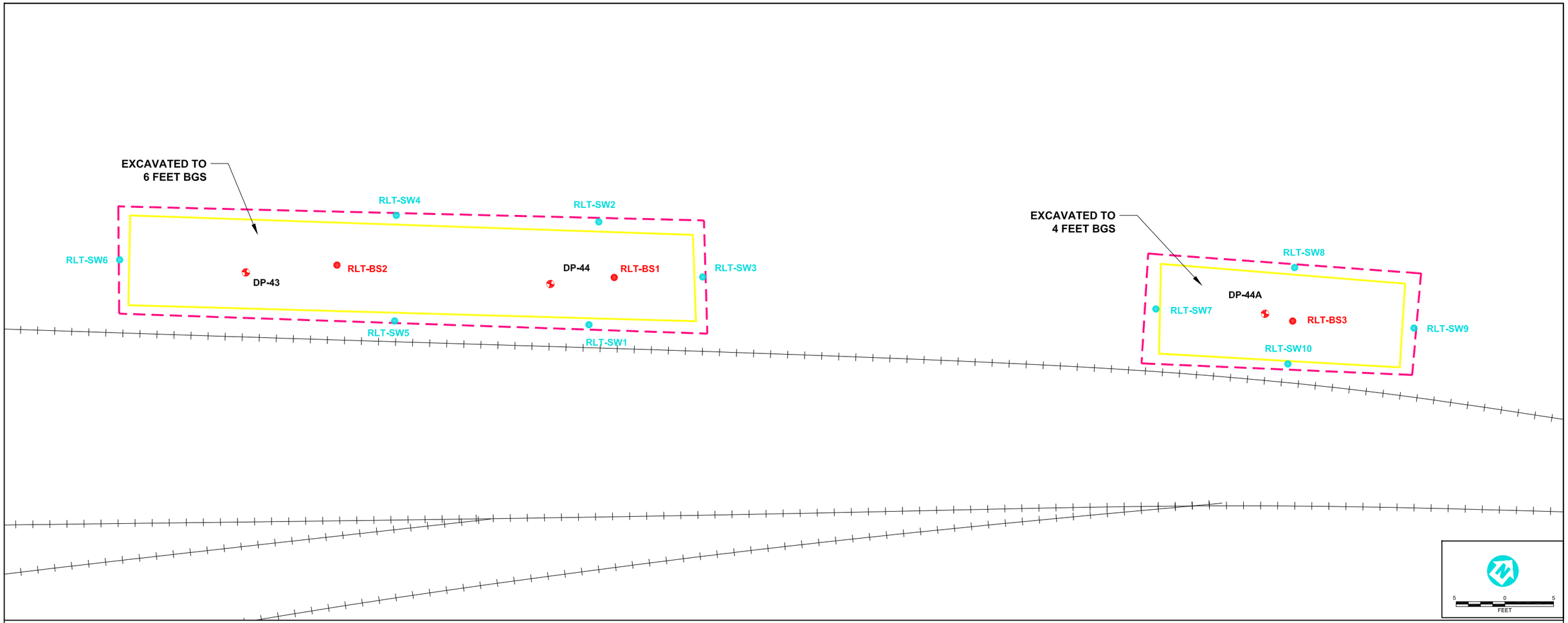
Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Hydrocarbon-impacted soil capped with a geotextile liner beneath a 6-inch-thick crushed rock cap, encompassing an area that includes RI borings GTP-46 through GTP-53
- Approximate impacted soil depth – 0 to 2 feet
- Impacted media estimate – 66,300 sf.

4.6.2 Actual Cleanup Action

4.6.2.1 "Hotspot" Excavation

During a site walk on September 6, 2013, Ecology, BNSF Environmental, and Kennedy/Jenks Consultants discussed modifications to capping or excavation at various areas. It was decided soil not meeting SSCLs in Koch would be excavated rather than capped in place as specified in the EDR (Progress Report 11).



LEGEND

- REMEDIAL EXCAVATION AREA
- PROPOSED REMEDIAL EXCAVATION AREA
- DP-43 — APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COCs
- RLT-BS1 — BASE SAMPLE LOCATION
- RLT-SW3 — SIDEWALL SAMPLE LOCATION

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**RALSTON LEAD TRACK
REMEDIAL EXCAVATION AND
VERIFICATION SAMPLES**

1596110/Figure 4.5

FIGURE 4.5

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TABLE 4.5

RALSTON LEAD TRACK
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Metals (milligram/kilogram)				
			Arsenic	Barium	Cadmium	Chromium	Lead
RLT-BS1-091713	4.5	9/17/2013	**9.8**	56	0.20 U	14	--
RLT-BS2-091713	4.0	9/17/2013	6.6	56	0.20 U	15	--
RLT-BS102-091713	2.5	9/17/2013	6.4	51	0.16 U	9.1	--
RLT-BS3-091713	6.0	9/17/2013	**11**	43	0.19 U	9.7	--
RLT-SW1-091713	2.5	9/17/2013	5.9	95	0.22 U	14	--
RLT-SW2-091713	2.5	9/17/2013	6.1	84	0.19 U	15	--
RLT-SW3-091713	2.0	9/17/2013	8.2	120	0.19 U	**19**	--
RLT-SW4-091713	2.5	9/17/2013	8.2	110	0.19 U	17	--
RLT-SW5-091713	2.5	9/17/2013	8.7	100	0.20 U	16	--
RLT-SW6-091713	2.5*	9/17/2013	7.7	120	0.20 U	17	--
RLT-SW7-091713	3.0	9/17/2013	7.8	110	0.19 U	16	--
RLT-SW8-091713	3.0	9/17/2013	5.9	46	0.16 U	9.4	--
RLT-SW9-091713	3.0	9/17/2013	4.2	34	0.19 U	8.4	--
RLT-SW10 -091713	2.5	9/17/2013	8.4	150	0.20 U	17	--
Soil Site-Specific Cleanup Levels			9.0	1,648	1.0	18	1,000
Rinsate Blank Sample (milligram/liter)							
RLT-RB1-091713	--	9/17/2013	0.0050 U	0.0060 U	0.0020 U	0.0020 U	0.0020 U

Notes:

Samples exceeding site-specific cleanup levels are in bold.

Duplicate samples are indicated by 100 added to the primary sample ID. For example, RLT-BS102-091713 is a duplicate sample of RLT-BS2-091713.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

* indicates the field notes do not identify a sampling depth for this sample. Based on the other sampling depths, it is assumed the sample was collected at 2.5 ft bgs.

"--" Indicates chemical analysis not performed.

"U" indicates analyte was analyzed for, but not detected.

ft bgs = feet below ground surface

A pre-construction topographic survey was completed prior to remedial activities. Between September 20 and September 23, 2013, Strider excavated 30 feet by 30 feet by 2 feet deep hotspots around RI borings GTP-46 through GTP-53 (eight excavations). Based on post excavation surveys, the following volumes totaling 703 cy were excavated at Koch:

- GTP-46 – 77 cy
- GTP-47 – 68 cy
- GTP-48 & 50 – 295 cy
- GTP-49 – 67 cy
- GTP-51 – 66 cy
- GTP-52 – 61 cy
- GTP-53 – 69 cy.

Based on visual observations of asphalt-like material in the upper 2 feet of soil extending over a large portion of Koch, a decision was made to revert to the capping approach, as presented in the EDR (Progress Report 12). One 5-point composite soil sample and one grab soil-sample was collected from the excavated material for waste profiling on September 24, 2013. The excavations were backfilled and compacted from September 25 through October 1, 2013, following waste characterization as non-hazardous.

No verification samples were collected from Koch "hotspot" excavations. A plan showing the "hotspot" excavations is included on Figure 4.6.

4.6.2.2 Stockpiling of Soils for Offsite Disposal

Koch was used as a stockpile management area for excavated material removed from the eight remedial areas at the Site. Soil stockpiled at Koch was loaded into railcars for transportation and disposed of off Site between December 2014 and February 2015. The approximate volume of material temporarily stockpiled in Koch prior to off-Site disposal is summarized below:

- MSB (East excavation)
  - 276 cy (estimated top 2 feet from surveyed volume)
- WFE
  - 1050 cy (survey)
- DSPUR
  - 55 cy (survey)
- YO
  - 280 cy (estimated)

LEGEND

- SITE BOUNDARY
- CAPPING AREA
- PROPOSED REMEDIAL CAPPING AREA
- GTP-49 APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COCs

NOTES:

1. THE GEOTEXTILE LINER WAS INSTALLED BELOW A 6-INCH-THICK CAP OF $\frac{5}{8}$ INCH CRUSHED SURFACING TOP COURSE (CTSC) GRAVEL BETWEEN FEBRUARY 11-13, 2015.
2. HOTSPOTS AROUND RI BORINGS GTP-46 THROUGH GTP-53 WERE EXCAVATED AT DIMENSIONS 30 FEET x 30 FEET x 2 FEET DEEP.

REFERENCE: BASE AERIAL FROM MICROSOFT BING SERVER, 2011.
SURVEY PROVIDED BY THOMAS, DEAN, HOSKINS, INC. DATED 5/30/2012.

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KOCH AREA AS-BUILT

1596110/Figure 4.6

FIGURE 4.6

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- RLT
  - 85 cy (estimated top 2 feet from surveyed volume)
- Koch
  - 703 cy (survey)
- EWD
  - 42 cy (survey)
- DSHOP
  - No material stockpiled

Off-site disposal totals and documentation are discussed in Section 5.

4.6.2.3 Capping Activities

Following removal of the stockpiled soils, a pre-construction topographic survey was completed prior to remedial activities. The geotextile liner was installed below a 6-inch-thick cap of graded 5/8-inch CSTC between February 11 and February 12, 2015. Compaction testing was completed on February 13, 2015.

The geotextile liner and CSTC cap prevent direct contact with remaining soils and remove the exposure pathway to impacted material.

4.7 East and West Debris/Soil Disposal (EWD)

The west-central portion of Parkwater contains two debris piles which are slightly elevated above the surrounding ground surface. The larger eastern debris-pile measures approximately 130,000 sf; the smaller western debris-pile measures approximately 10,000 sf. The debris piles reportedly were constructed in 1971 (GeoEngineers 2009).

4.7.1 Proposed Cleanup Action

Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Metals-impacted soil from the EWD capped with a permeable geotextile liner designed for soil separation installed below a surface layer of clean crushed rock designed for heavy equipment traffic. Soil excavated at depths greater than 2 feet bgs from the MSB, YO, and RLT would also be spread, capped, and graded in EWD. Capping activities would occur after the non-hazardous impacted soil from other areas was consolidated with the existing debris piles.
- Approximate impacted soil depth – 0 to 8 feet
- Impacted media estimate – 81,800 sf.

4.7.2 Actual Cleanup Action

4.7.2.1 Excavation of "Hotspots"

A pre-construction topographic survey was completed prior to remedial activities. On October 17, 2013, two areas centered on previous sample locations GTP-36 and GTP-36B were excavated. Each excavation area was approximately 10 feet by 10 feet and 5 feet deep.

Ten verification soil samples were collected from the excavation sidewalls and base by Kennedy/Jenks Consultants on October 17, 2013. Samples were collected following two excavations centered on former sample locations GTP-36 and GTP-36B, located at the western end of EWD. Soil samples were analyzed for arsenic, barium, cadmium, and chromium and additionally analyzed for total petroleum hydrocarbons. Arsenic was detected at concentrations greater than the SSCL in sidewall samples GTP36-NSW and GTP36B-SSW.

Based on verification sample results, an additional 5 feet by 3 feet and 5 feet deep area of impacted soil was excavated from each area. Two additional sidewall samples were collected on October 23, 2013 following over-excavation of locations GTP36-NSW and GTP36B-SSW. None of the over-excavation sample COC concentrations exceed the SSCLs. A summary of verification soil sample analytical results is included in Table 4.7 and a plan showing the excavation extent and sample locations is included on Figure 4.7.

Based on post excavation surveys, 19 cy and 23 cy were excavated from these excavations. The excavated soil was disposed of and capped at EWD.

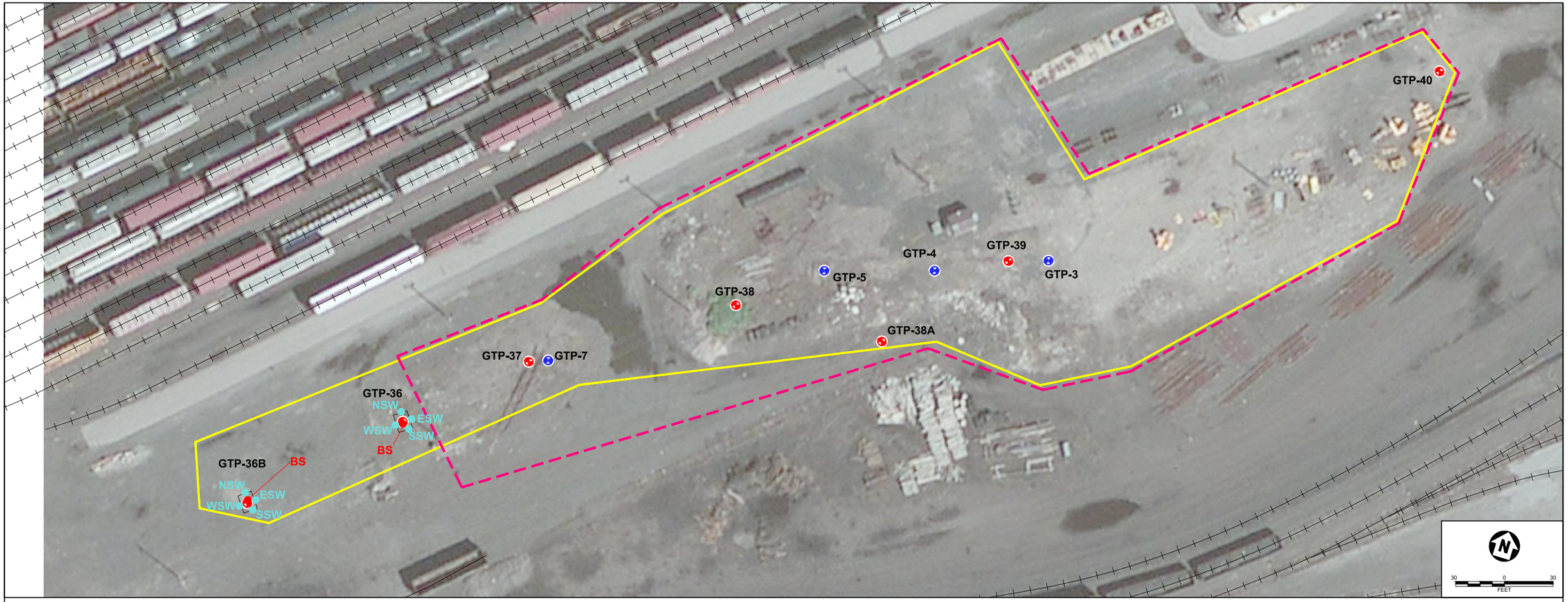
4.7.2.2 On-Site Disposal and Capping

Between October 7 and October 17 2013, metals-impacted soil from MSB and RLT was transported to EWD for grading prior to installation of the geotextile liner. The approximate volume of material disposed of and capped at EWD is as follows:

- MSB (East excavation)
  - 485 cy (estimated from surveyed volume).
- RLT
  - 79 cy (estimated from surveyed volume).

The geotextile liner was installed below a 6-inch-thick cap of CSTC between October 21 and October 23, 2013. A fence was installed along the perimeter of Area 7 following remedial activities.

The geotextile liner and CSTC cap prevent direct contact with remaining soils and remove the exposure pathway to impacted material.



LEGEND

- COMPLETED GRAVEL CAP AREA WITH POST FENCE SURROUNDING PERIMETER
- PROPOSED REMEDIAL GRAVEL CAPPING AREA
- **GTP-36B** — APPROXIMATE LOCATION OF SAMPLES WITH EXCEEDANCES OF SITE COC'S
- **GTP-7** — APPROXIMATE LOCATION OF SAMPLE WITH NO EXCEEDANCES OF SITE COC'S
- **BS** — BASE SAMPLE LOCATION
- **ESW** — SIDEWALL SAMPLE LOCATION

NOTES:

1. THE GEOTEXTILE LINER WAS INSTALLED BELOW A 6-INCH-THICK CAP OF ¾" CRUSHED SURFACING TOP COURSE (CTSC) GRAVEL BETWEEN OCTOBER 21 AND OCTOBER 21, 2013. A POST FENCE WAS INSTALLED ALONG THE PERIMETER OF THE AREA FOLLOWING REMEDIATION ACTIVITIES.
2. GTP-26 AND GTP-36B WERE EACH EXCAVATED APPROXIMATELY 10 FEET X 10 FEET TO A DEPTH OF 5 FEET. FOUR SIDEWALL SAMPLES AND A BASE SAMPLE WERE COLLECTED. BASED ON VERIFICATION SAMPLE RESULTS, AN ADDITIONAL 5 FEET BY 3 FEET AND 5 FEET DEEP OF IMPACTED SOIL WAS EXCAVATED FROM EACH AREA.

Reference: Base aerial from Microsoft Bing Server, 2011.
Survey provided by Thomas, dean, Hoskins, Inc. dated 5/30/2012.

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EAST AND WEST DEBRIS AND SOIL DEPOSIT AREAS AS-BUILT

1596110/Figure 4.7

FIGURE 4.7

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TABLE 4.7

EAST AND WEST DEBRIS
SUMMARY OF SOIL ANALYTICAL RESULTS
BNSF Parkwater Rail Yard, Spokane, Washington

Sample ID	Sample Depth (ft bgs)	Date Sampled	Total Petroleum Hydrocarbons (milligram/kilogram)		Metals (mililgram/kilogram)				
			Motor Oil Range	Diesel Range	Arsenic	Barium	Cadmium	Chromium	Lead
GTP36-NSW-101713	3.0	10/17/2013	54 U	27 U	**9.3**	130	0.19 U	17	15
GTP36-ESW-101713	3.0	10/17/2013	51 U	25 U	8.9	130	0.17 U	16	13
GTP36-SSW-101713	3.0	10/17/2013	51 U	26 U	6.6	120	0.20 U	13	10
GTP36-WSW-101713	3.0	10/17/2013	54 U	27 U	7.9	92	0.18 U	14	13
GTP36-BS-101713	5.0	10/17/2013	50 U	25 U	7.3	41	0.17 U	11	8.3
GTP36B-NSW-101713	3.0	10/17/2013	53 U	27 U	8.0	76	0.20 U	13	10
GTP36B-ESW-101713	3.0	10/17/2013	620 Y	250 Y	8.2	110	0.78	13	96
GTP36B-SSW-101713	3.0	10/17/2013	73 Y	27 U	**9.9**	90	0.22	16	32
GTP36B-WSW-101713	3.0	10/17/2013	52 U	26 U	7.1	67	0.14 U	11	8.5
GTP36B-BS-101713	5.0	10/17/2013	50 U	25 U	6.5	53	0.15 U	13	6.8
GTP36-NSW-102313	4.0	10/23/2013	--	--	7.6	50	0.20 U	12	20
GTP36B-SSW-102313	4.0	10/23/2013	--	--	4.7	36	0.14 U	7.1	6.3
Soil Site-Specific Cleanup Levels			2,000	2,000	9.0	1,648	1.0	18	1,000

Notes:

Samples exceeding site-specific cleanup levels are in bold.

Excavation sidewall samples indicated by SW in the sample ID.

Excavation base samples indicated by BS in the sample ID.

"--" indicates chemical analysis not performed.

"U" indicates analyte was analyzed for, but not detected.

"Y" indicates the analytical chromatographic response resembles a typical fuel pattern.

Shaded cells indicate samples that have been removed by subsequent excavation.

ft bgs = feet below ground surface

4.8 Diesel Shop Area (DSHOP)

4.8.1 Proposed Cleanup Action

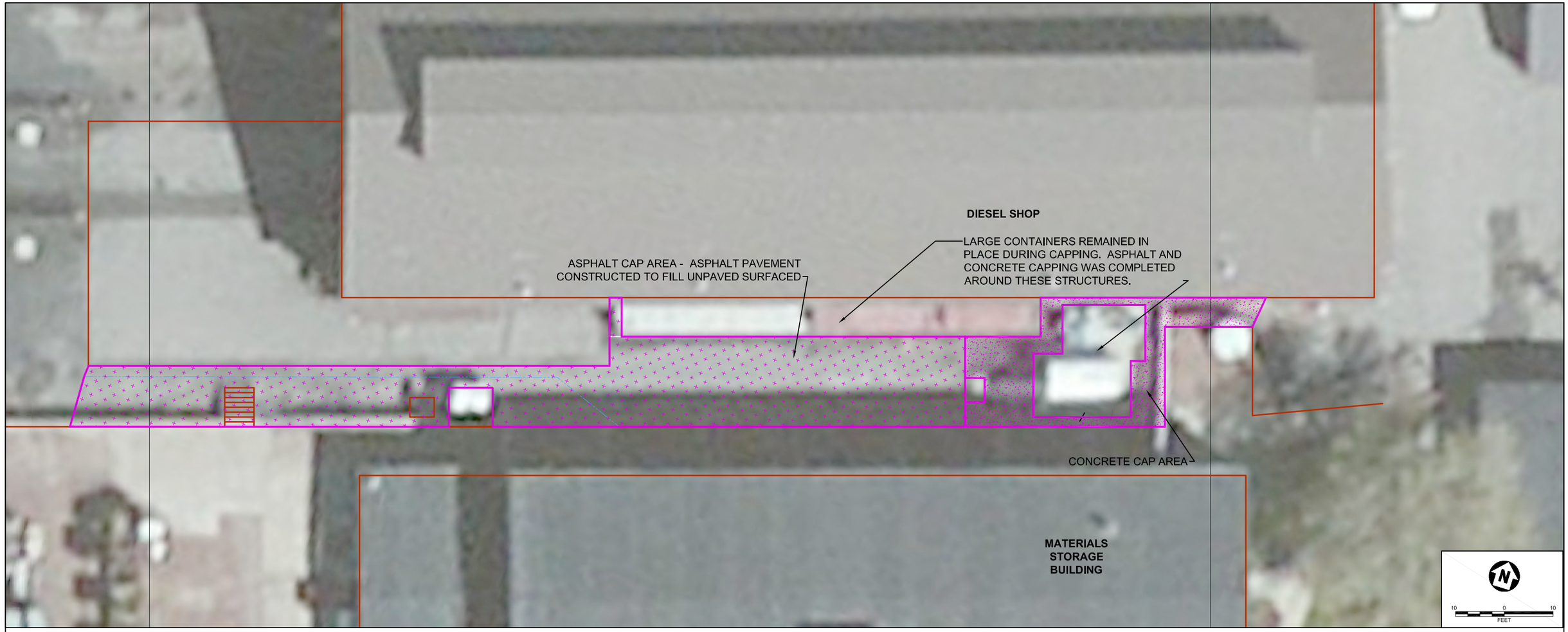
Below is a brief summary of the cleanup activities proposed in the EDR for this area:

- Hydrocarbon-impacted soil will be capped with a 3- or 4-inch thick hot mix asphalt paving and/or concrete to match surrounding surfaces.
- Approximate impacted soil depth – 0 to 4 feet
- Impacted media estimate – 2,900 sf.

4.8.2 Actual Cleanup Action

Subgrade excavation began on September 24, 2013. Excavation, placement, and compaction of CSTC in the concrete cap area proceeded on September 27, 2013. Placement of the hot-asphalt cap began on October 14, 2013, and concrete placement began on October 22, 2013. A plan showing the capping locations is included on Figure 4.8.

The asphalt and concrete caps prevent direct contact with remaining soils and incompletes the exposure pathway for impacted material.



LEGEND

ASPHALT CAP AREA

CONCRETE CAP AREA

ASPHALT/CONCRETE CAP AREA NOTES

1. ASPHALT/CONCRETE PAVEMENT CAP PLACED ON ALL FORMERLY PERVIOUS SURFACES WITHIN CAP AREA SHOWN. SEE PHOTO LOG FOR DETAILED VIEW OF SPECIFIC LOCATIONS FOR PLACEMENT OF PAVEMENT FOR CAPPING.
2. MINIMAL MATERIAL WAS EXCAVATED TO LAY ASPHALT AND CONCRETE. EXCAVATED MATERIAL WAS PLACED IN THE DEBRIS PILE AREAS.

REFERENCE: BASE AERIAL FROM MICROSOFT BING SERVER, 2011.
SURVEY PROVIDED BY THOMAS, DEAN, HOSKINS, INC. DATED 5/30/2012.

Kennedy/Jenks Consultants

BNSF RAILWAY PARKWATER RAILYARD
CLEANUP ACTION PLAN 2015
SPOKANE, WASHINGTON

DIESEL SHOP AREA AS-BUILT

1596110/Figure 4.8

FIGURE 4.8

P:\CAD\13\1396110_BNSF_Spokane\AML Edits\Finallized Drafts for Review\Figure 10 (Diesel Shop).dwg

Section 5: Off-Site Disposal

As previously discussed, Koch was used as a stockpile management area for excavated material removed from the seven remedial areas at the Site. Soil stockpiled at Koch was loaded into railcars for transportation and disposed of off Site between December 2014 and February 2015. The approximate volume of material temporarily stockpiled in Koch prior to off-Site disposal is summarized below:

- MSB (East excavation)
  - 276 cy (estimated top 2 feet from surveyed volume)
- WFE
  - 1,050 cy (survey)
- DSPUR
  - 55 cy (survey)
- YO
  - 280 cy (estimated)
- RLT
  - 85 cy (estimated top 2 feet from surveyed volume)
- Koch
  - 703 cy (survey)
- EWD
  - 42 cy (survey)
- **Total**
  - **2,491 cy (estimated).**

Soil was disposed of as nonhazardous waste at the Republic Services Roosevelt Regional Landfill located at 500 Roosevelt Grade Rd, Roosevelt, Washington 99356. The following quantities were disposed of based on disposal tickets from Regional Disposal Company (see Appendix I):

- December 2014 – 1,145.31 tons
- January 2015 – 3,049.66 tons
- February 2015 – 489.62 tons
- **Total – 4,684.59 tons.**

Section 6: Environmental Covenant

On May 16, 2016, BNSF submitted to Ecology a letter titled “Re: Parkwater Railyard - Status of Engineering Controls”. The submittal included draft groundwater and soil environmental covenants. The soil environmental covenant is being placed on all areas containing contaminated soil and debris under a cap consisting of either a minimum 6-inch thick gravel cap, concrete, or asphalt. The soil restricted areas include:

- Former Koch Asphalt Lease Area – gravel capped (shown on Figure 4.6)
- East and West Debris/Soil Disposal Area – gravel capped (shown on Figure 4.7)
- Diesel Shop Area – asphalt and concrete capped (shown on Figure 4.8).

Ecology approved the soil and groundwater environmental covenants presented in the May 16, 2016 submittal and they were recorded on December 12, 2016.

Section 7: Summary

On behalf of BNSF, Kennedy/Jenks Consultants has conducted cleanup activities in accordance with the approved EDR for the Parkwater Rail Yard Site. The cleanup process is being implemented by BNSF under Consent Decree No. 12202548-1 with Ecology, dated July 19, 2012. The cleanup activities included soil excavation, soil disposal/management, waste characterization sampling, verification sampling, site restoration, and capping. Continuing *in situ* groundwater remediation will be addressed in a separate submittal.

The cleanup activities included the following:

- Stockpiling contaminated soils at an on-Site capped area.
- Transporting excavated contaminated soils for disposal to an off-Site, permitted facility (Republic Services Roosevelt Regional Landfill).
- Grading and capping three areas using paving (concrete and/or asphalt) and/or gravel.
- Obtaining verification soil samples from the base and sidewalls of the excavations for chemical analysis.
- Backfilling the excavations with clean, imported structural fill.
- Final grading of all work areas at the Site.

The cleanup activities per area included the following:

- Materials Storage Building
  - Excavation of 1,354 cy of the EDR estimated 1,234 cy
  - Soil excavated to a depth of 6 feet
- Western Fruit Express Maintenance Facility
  - Excavation of 1,050 cy of the EDR estimated 807 cy
  - Soil excavated to a depth of 3 feet
- Dismantling Spur
  - Excavation of 55 cy of the EDR estimated 15 cy
  - Soil excavated to a depth of 4 feet
- Yardley Office (Main Line No. 1)
  - Excavation of 280 cy of the EDR estimated 703 cy
  - Soil excavated to a depth of 3 feet

- Ralston Lead Track
  - Excavation of 164 cy of the EDR estimated 246 cy
  - Soil excavated to a depth of 6 feet
- Former Koch Asphalt Lease Area
  - Excavation of 702 cy of the EDR estimated 0 cy
  - Soil excavated to a depth of 2 feet
  - Geotextile liner was installed below a 6-inch-thick cap of graded 5/8-inch CSTC
- East and West Debris/Soil Disposal Area
  - Excavation of 41 cy of the EDR estimated 0 cy
  - Soil excavated to a depth of 5 feet
  - Soil excavated from MSB approximately 485 cy and from RLT 79 cy were consolidated in EWD
  - Geotextile liner was installed below a 6-inch-thick cap of graded 5/8 inch CSTC
- Diesel Shop Area
  - Placement of the hot-asphalt cap and concrete.

Based on estimated survey volumes, a total of 2,491 cy was temporarily stockpiled at Koch. Soil stockpiled at Koch was loaded into railcars for transportation and disposed of off Site as nonhazardous material. A total of 4,685 tons of soil was disposed of as nonhazardous waste at the Republic Services Roosevelt Regional Landfill.

Section 8: References

City of Spokane. 2012. Current Zoning Map, January 2012. http://www.spokanecity.org/download/gistransfer/pubmaps/ZoningESize.pdf. Accessed 25 March 2015.

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