## **Remediation Documentation Report**

Wishram, Washington

## **BNSF Railway Company**

K/J 036026.02 March 2007

Kennedy/Jenks Consultants

## REMEDIATION DOCUMENTATION REPORT WISHRAM, WASHINGTON

## Prepared for

## **BNSF RAILWAY COMPANY**

KENNEDY/JENKS CONSULTANTS ENGINEERS AND SCIENTISTS 32001 32<sup>nd</sup> Avenue South, Suite 100 Federal Way, Washington 98001 253-874-0555

K/J 036026.02

March 2007

## **TABLE OF CONTENTS**

			Page <u>Number</u>
LIST	OF TAE	3LES	iii
LIST	OF FIG	URES	iii
LIST	OF API	PENDICES	iii
1.0	INTR	ODUCTION	1-1
2.0	BAC	KGROUND	2-1
	2.1	SITE LOCATION AND DESCRIPTION	2-1
3.0	PRO	JECT ACTIVITIES	3-1
	3.1	PERMITTING	3-1
	3.2	EXCAVATION AND DISPOSAL  3.2.1 Pump House Foundation at Maintenance Building  3.2.2 Former Fueling Island and Lubricating Oil UST	3-2 3-3
	3.3	CONFIRMATION SAMPLING AND ANALYSIS	3-7 3-8
	3.4	GROUNDWATER MONITORING	3-10
<b>4</b> ∩	SUM	MARY AND RECOMMENDATIONS	4-1

## **TABLE OF CONTENTS**

## LIST OF TABLES

TABLE 1 CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS FOR DETECTED COMPOUNDS

TABLE 2 GROUNDWATER ANALYTICAL RESULTS

## **LIST OF FIGURES**

FIGURE 1 SITE LOCATION MAP

FIGURE 2 REMEDIATION AREA

## LIST OF APPENDICES

APPENDIX A LABORATORY ANALYTICAL RESULTS

## 1.0 INTRODUCTION

Kennedy/Jenks Consultants prepared this report on behalf of BNSF Railway Company (BNSF) to describe remediation activities conducted in 2005 at the Wishram Railyard (site) located in Wishram, Washington (project). The project included excavating and disposing of petroleum-containing soil, an underground storage tank (UST), and abandoned piping. NRC Environmental Services (NRC) of Portland, Oregon, completed the project between 24 October and 11 November 2005 in conformance with Remediation Work Plan, Wishram Washington (Work Plan) prepared by Kennedy/Jenks Consultants and dated June 2005. The Work Plan was provided to the Washington State Department of Ecology (Ecology) and the Klickitat County Health Department prior to conducting the remediation project.

This report also summarizes analytical data for groundwater monitoring conducted prior to remediation in 2003 and 2004 and approximately one year after excavation in November 2006.

## 2.0 BACKGROUND

## 2.1 SITE LOCATION AND DESCRIPTION

The town of Wishram is located in Klickitat County, Washington, approximately 13 miles northeast of The Dalles, Oregon, and 0.75 mile south of Washington State Route 14 (see Figure 1). The site extends for approximately 1 mile along the southern boundary of Wishram, along the northern shoreline of the Columbia River. The site, near the western end of the railyard, lies primarily within the southwestern quarter of the southwestern quarter of Section 17, Township 2 North, Range 15, east of the Willamette Meridian (W.M.), extending between 40 and 100 feet into the southeastern quarter of Section 18, Township 2 North, Range 15, east of the W.M.

The site is slightly less than 3 acres and is bounded by Wishram to the north, railyard right-of-way to the east and west, and the Columbia River to the south and southwest (see Figure 2). Apart from a berm along the river shoreline, the ground surface is relatively flat and lies at an elevation of approximately 175 feet above mean sea level (msl). Surface water bodies near the site include the adjacent Columbia River and a stormwater drainage ditch located approximately 1,000 feet to the west.

Soil at the site is composed of 15 to 40 feet of dune deposits and loose sandy fill overlying basalt bedrock, the upper surface of which descends toward the Columbia River at depths ranging from approximately 15 to 40 feet below ground surface (bgs). In the northern half of the site, where bedrock has been encountered at approximately 15 feet bgs, groundwater occurs seasonally in localized perched zones between 10 and 15 feet bgs. Nearer to the river, groundwater has been encountered year round at approximately 10 to 15 feet bgs and appears to flow south-southwest with a gradient of approximately 0.006 feet per foot (ft/ft).

## 3.0 PROJECT ACTIVITIES

## 3.1 PERMITTING

Permitting for the remediation project was required because of the volume of soil proposed for removal and because of the project area's close proximity to the Columbia River. A Joint Aquatic Resources Permit Application (JARPA), a State Environmental Policy Act (SEPA) checklist, a work plan, and an application fee were submitted to the Klickitat County Planning Department on 5 July 2005. Klickitat County and Ecology approved the project permit on 17 October 2005.

## 3.2 EXCAVATION AND DISPOSAL

Areas excavated in 2005 are shown on Figure 2. These included the location of a former pump house, the area around a former fueling island and lubricating oil UST, and the former location of a boiler house.

A total of 3,656 tons of petroleum-containing soil, other petroleum-containing debris, and concrete were removed and transported via truck to the Regional Disposal Company Landfill in Roosevelt, Washington (Roosevelt Landfill). Approximately 10 tons of clean, abandoned piping and other metals encountered during excavation were transported for recycling to Schnitzer Steel Industries (Schnitzer) in Portland, Oregon. Approximately 1,800 gallons of fuel and oils removed from abandoned piping and an UST were transported by NRC to Oil Re-refining Company (ORRCO), a recycling facility in Portland, Oregon. Approximately 500 to 1,000 cubic yards of clean overburden removed from excavation areas were replaced as backfill.

Excavated areas were backfilled as soon as possible after confirmation sampling to minimize the potential for collapse of the surrounding sandy soil. NRC obtained clean pit-run for backfilling the excavations and basalt gravel for top course from Pacific

Northwest Aggregates (PNA) located approximately 1 mile west of Wishram on State Route 14. Soil was placed into excavations in 1 foot thick lifts and compacted using the excavator bucket and/or a large front-end loader. Density testing performed by Tenneson Engineers of The Dalles, Oregon, indicated 90 percent compaction or better in all test locations. After compaction and testing, the ground surface was graded to approximate surrounding conditions, and a 3-inch-thick layer of top course gravel was spread over all backfilled areas.

## 3.2.1 Pump House Foundation at Maintenance Building

Site characterization data gathered in 2003 and 2004 indicated the presence of dieseland gasoline-range hydrocarbons in soil and groundwater southeast of the former pump
house foundation and west of the maintenance building (see Figure 2). Remediation in
2005 included removing the pump house foundation and approximately 50 feet of
associated piping, then excavating soil exhibiting odors or stains, to the extent
practicable, within the area bounded by the roadway to the north, the maintenance
building to the east, and the mainline railroad track to the south. An approximately
15,000-gallon, sand-filled, abandoned septic tank located a few feet west of the
maintenance building also limited the extent of excavation. A total of approximately
900 tons of soil was excavated from the area, to depths ranging from 5 to 15 feet bgs,
and disposed of at the Roosevelt Landfill.

During excavation, a 12-inch-diameter east/west trending sewer pipe was encountered, extending from the maintenance building to a point near boring location WSB-04-6 (Figure 2). The western terminus of the pipe was open and, when tested, discharged drain water from the maintenance building bathroom. BNSF personnel indicated that it was an abandoned branch of a sewer pipe that should be capped. NRC capped the pipe with a rubber boot and ring clamp.

After collection of confirmation soil samples (described in Section 3.2), NRC tilled 200 pounds of oxygen release compound (ORC) into saturated soil exposed in the bottom of the excavation. The area was then backfilled, graded, and covered with

gravel. Analytical results for confirmation samples collected from the bottom of the excavation, from areas where ORC was applied, contained gasoline-range hydrocarbons at concentrations ranging from 225 to 233 milligrams per kilogram (mg/kg) and diesel-range hydrocarbon concentrations ranging from 89.9 to 2,690 mg/kg. Only trace concentrations of ethylbenzene and xylenes were detected in the samples, suggesting that residual petroleum hydrocarbons in the vadose and saturated zones are relatively weathered.

## 3.2.2 Former Fueling Island and Lubricating Oil UST

## 3.2.2.1 Fueling Island

Soil removal near the center of the site was initiated by removing the 300 cubic yard concrete fueling island pad and excavating soil beneath the pad to approximately 8 feet bgs. Although 2004 site characterization results suggested the presence of petroleum-containing soil between 5 and 10 feet bgs at boring location WSB-04-9, no staining or odors were encountered during excavation (Figure 2). Based on the earlier site characterization results, approximately 10 cubic yards of soil from the location of boring WSB-04-9 were stockpiled for disposal. The remaining soil from beneath the pad and approximately 100 cubic yards of broken concrete were stockpiled separately for use as backfill. Approximately 200 cubic yards of the concrete were disposed of at the Roosevelt landfill. Rebar removed from the pad was transported, along with other metals, to Schnitzer.

Two confirmation samples were collected from the fueling island excavation in the locations of pipes that protruded from the island surface. One of the samples, FI-EAST-6, contained diesel-range hydrocarbons at a concentration of 152 mg/kg, which is below the MTCA Method A cleanup level of 2,000 mg/kg. This was the only detection in the two fueling island confirmation samples.

## 3.2.2.2 Lube Oil UST Area

Approximately 5 feet west of the fueling island, stained soil was encountered at 3 feet bgs around a buried valve and joint in a 6-inch diameter, abandoned fuel pipe. Soil was removed southward and westward from the pipe joint to depths ranging between 8 and 15 feet bgs. Where practicable, soil was removed until field observations and/or photoionization detector (PID) measurements indicated the presence of "clean" soil in the excavation sidewall or bottom. The northern boundary of the excavation was limited to an alignment approximately 20 feet south of and parallel to the mainline tracks to minimize the potential for undermining the tracks. Approximately 1,500 tons of petroleum-containing soil were removed from the area and transported to the Roosevelt Landfill.

The fuel pipe encountered west of the fueling island appeared to extend from the northeast from the former pump house and under the mainline tracks. The valve at the joint was removed, and approximately 300 gallons of diesel fuel and water were vacuumed from the pipeline for offsite disposal. After cleaning, the pipe section extending from the north, under the tracks, was capped with a rubber boot and ring clamp. Other pipes encountered in the excavation included two 6-inch diameter cast-iron fuel pipes, a 3-inch diameter steel pipe (empty), and a steam line that, together, formed a large oval originating and ending at pipe stubs in the former location of the boiler house (described below). Residual bunker C oil in the piping was either pumped out using a vacuum truck or, if spilled while removing the pipe, scraped up along with surrounding soils and stockpiled for disposal. Approximately 200 gallons of bunker C oil were recovered from the pipe and transported to ORRCO in Portland, Oregon. The 6-inch oil pipe was disposed of along with other debris and petroleum-containing soil at the Roosevelt landfill.

Several pieces of insulation-wrapped pipe (a total of 30 feet) were encountered at 10 feet bgs near the western end of the excavation. The pipes and insulation were sprayed with water, wrapped in asbestos containment bags, and disposed of at the Roosevelt Landfill as potential asbestos-containing materials.

A 5,000-gallon, single-walled steel UST was encountered at 6 feet bgs approximately 40 feet southwest of the western end of the former fueling island. The UST contained approximately 1,500 gallons of unused lubricating oil, which was vacuumed out and transported to ORRCO in Portland, Oregon. NRC staff, registered to decommission USTs, inerted the tank using 100 pounds of dry ice, pressure washed the interior, and then lifted the tank to the ground surface. The cleaned tank was cut into pieces and stockpiled with other metal for recycling. Kennedy/Jenks Consultants personnel notified Ecology of the UST removal via telephone. However, Ecology staff indicated that the UST was not registered and, therefore, could be removed without filing a formal notification.

In portions of the excavated area where groundwater or moist soil was encountered (>10 feet bgs), ORC was tilled into the excavation bottom prior to backfilling (a total of 150 pounds). One confirmation sample collected from saturated soil at 12 feet bgs contained gasoline-range hydrocarbons at a concentration of 10.4 mg/kg, diesel-range hydrocarbons at a concentration of 908 mg/kg, and oil-range hydrocarbons at a concentration of 1,920 mg/kg. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) compounds were not detected in the sample at concentrations greater than laboratory reporting limits. ORC was tilled into the saturated soil to increase oxygen levels, thus, potentially enhancing biodegredation of the weathered petroleum compounds.

## 3.2.3 Former Boiler House

In 2004, analytical results for samples collected from soil boring WSB-5 and monitoring well MW-2 (see Figure 2) suggested the presence of petroleum in soil and groundwater beneath the remnants of the former boiler house foundation. Field observations during excavation indicated that a large part of what was originally thought to be a foundation was a concrete lid on top of a subterranean, soil-filled, concrete bunker measuring 40 feet long by 12 feet wide by 15 feet deep. After removing approximately 250 tons of petroleum-containing soil from the bunker, the interior walls were pressure washed and the concrete-lined void was backfilled with clean soil.

Additional excavation around the outside of the bunker revealed that monitoring well MW-2 and soil boring WSB-5 had been advanced within a few inches of the outside of the concrete walls and that a portion of the well screen of well MW-2 was positioned within a small mass of oily timbers near the bunker's base (15 feet bgs). In addition to the timbers, relatively localized petroleum-containing soil was encountered, extending from approximately 12 to 18 feet bgs. The MW-2 well casing and as much of the affected soil as possible was removed within the boundaries shown on Figure 2, but collapse of the sidewalls during excavation made it necessary to leave some of the petroleum-containing soil in place. The collapse also precluded collection of confirmation samples other than PH-1-10 and PH-2-17 (described below).

A total of approximately 700 tons of soil was removed from this area and disposed of at the Roosevelt Landfill. Sixty pounds of ORC were mixed into the base of the excavation (including both stained soil and soil that collapsed from the sidewalls), and the excavated area was backfilled and compacted. Confirmation samples collected from the excavation, prior to its collapse, did not contain petroleum hydrocarbons or BTEX. However, visual observation of the excavation indicated slight to moderate staining of some soil left in place. ORC tilled into the excavation appears to have been placed in contact with the localized, stained soil.

## 3.3 CONFIRMATION SAMPLING AND ANALYSIS

Confirmation soil samples were collected from sidewalls and bottoms of excavations (see Figure 2) by scraping a small quantity of soil onto the teeth of the excavator bucket and transferring the soil into laboratory provided containers. Samples were submitted under chain-of-custody to North Creek Analytical Laboratory (NCA) in Bothell, Washington, for one or more of the following analyses:

- Diesel-range hydrocarbons using the NWTPH-Dx Method with silica gel cleanup
- Gasoline-range hydrocarbons using the NWTPH-G Method

- BTEX using EPA Method 8021B
- Volatile organic compounds (VOCs) using EPA Method 8260B (collected using EPA Method 5035)
- Total lead using EPA 6000/7000 Series Methods
- Polychlorinated biphenyls (PCBs) using EPA Method 8082.

Analytical results for compounds detected in confirmation samples are summarized in Table 1 and discussed below. Laboratory reports are provided in Appendix A.

## 3.3.1 Former Pump House Confirmation Sample Results

Thirteen confirmation soil samples were collected from the sidewalls and bottom of the excavation advanced near the former pump house. Analytical results for the samples, identified with the prefix "M," are summarized in Table 1.

Gasoline-range hydrocarbons were detected in two samples collected from saturated soil at approximately 14 feet bgs (M-9-14 and M-10-14), at concentrations of 225 and 233 mg/kg. These concentrations exceed the Ecology Model Toxics Control Act Method A cleanup level for Industrial Properties (MTCA Method A cleanup level) of 100 mg/kg. The same samples contained trace concentrations of ethylbenzene and xylenes below MTCA Method A cleanup levels. Benzene and toluene were not detected.

In nine of the 13 samples from the former pump house excavation, diesel-range hydrocarbons were detected at concentrations ranging from 53.4 to 324 mg/kg, below the MTCA Method A cleanup level of 2,000 mg/kg. Sample M-9-14, from saturated soil at 14 feet bgs, contained a diesel-range hydrocarbon concentration of 2,690 mg/kg.

Results of confirmation sampling in the former pump house area indicate elevated diesel- and gasoline-range hydrocarbon concentrations remain in the saturated zone

3-7

approximately 30 feet northwest of monitoring well MW-7 (see Figure 2). Other samples from the same depth (M-1-14, M-2-14, and M-7-14) contained diesel-range hydrocarbons at concentrations below MTCA Method A cleanup levels suggesting that the elevated concentrations are relatively localized. Based on previous site investigation results, the saturated zone in this area is perched on bedrock and appears to be less than approximately 5 feet thick.

## 3.3.2 Fueling Island/UST Area Confirmation Sample Results

As described above, no stains or odors were observed in soil directly beneath the former fueling island, including a location for which previous site investigation results suggested the presence of diesel-range hydrocarbons. Two confirmation samples collected from locations directly beneath the former fueling island (FI-MID-10 and FI-EAST-6) were analyzed for diesel- and oil-range hydrocarbons. Diesel-range hydrocarbons were detected in sample FI-EAST-6, from 6 feet bgs, at a concentration of 152 mg/kg. Petroleum compounds were not detected in sample FI-MID-10 collected from 10 feet bgs.

Nine confirmation samples collected from the excavation, advanced west and southwest of the former fueling island, are identified in Table 1 and on Figure 1 with the prefix "FIEXC." Petroleum hydrocarbon compounds were not detected at concentrations greater than laboratory reporting limits in six of the samples. One sample (FIEXC-E-8) contained diesel-range hydrocarbons at a concentration of 56.1 mg/kg and oil-range hydrocarbons at a concentration of 37.2 mg/kg, both below MTCA Method A cleanup levels.

Two of the samples (FIEX-B-1-12 and FIEX-N-8E) were collected from locations where olfactory observations indicated petroleum soil was still present in the excavation sidewall. At these two locations, the excavation had to be terminated because of adjacent structures. FIEXC-N-8, collected west of the fueling island and a short distance south of a mainline track, contained a diesel-range hydrocarbon concentration of 853 mg/kg and an oil-range hydrocarbon concentration of 3,390 mg/kg. Although the

oil-range concentration exceeded the MTCA Method A cleanup level of 2,000 mg/kg, soil was not excavated north of this sample location to minimize the potential for undermining the nearby mainline track. FIEXC-B-1-12 was collected from a localized mass of soil left in place around the base of a large concrete vault that extends to a depth of approximately 15 feet bgs (see Figure 2). Detections in this sample included diesel-range hydrocarbons at a concentration of 908 mg/kg, oil-range hydrocarbons at a concentration of 1,920 mg/kg, and gasoline-range hydrocarbons at a concentration of 10.4 mg/kg. Detected concentrations in FIEXC-B-1-12 were below MTCA Method A cleanup levels.

## 3.3.3 Former Boiler House Confirmation Sample Results

Only two confirmation samples were collected from the former boiler house excavation because: 1) the majority of petroleum-containing soil encountered in this location was within a sub-grade concrete vault, and 2) the walls of the excavation outside of the vault collapsed continually during removal, thus precluding "safe" collection of additional samples. Analytical results for the two samples that were collected (PH-1-10 and PH-2-17) do not indicate detections of gasoline-, diesel-, or oil-range hydrocarbons. Lead was detected in sample PH-1-10 at a concentration of 10 mg/kg.

As described above, visual observations during excavation indicated that a localized mass of stained soil was left in place around the base of the sub-grade concrete vault at a depth of approximately 18 feet bgs. Sample PH-2-17, collected from 17 feet bgs approximately 10 feet west of the stained soil mass, did not contain petroleum hydrocarbons at concentrations greater than laboratory reporting limits. Sample PH-1-10 was collected from a depth of 10 feet bgs, approximately 25 feet south of the stained soil, between the concrete vault and the river (Figure 2).

### 3.4 GROUNDWATER MONITORING

Monitoring wells were installed at the site in 2003 and 2004, prior to soil excavation. Analytical results for samples collected from the wells before and after excavation are summarized in Table 2 and discussed below.

In 2003, monitoring wells MW-1 and MW-4 were constructed along and as close as practicable to the river shoreline, downgradient of former fueling areas. With the exception of a slightly elevated diesel-range hydrocarbon concentration detected in a September 2003 sample from monitoring well MW-1, pre-excavation samples collected from these downgradient wells did not contain petroleum-hydrocarbons at concentrations exceeding MTCA Method A cleanup levels for groundwater (MTCA Method A cleanup levels). The most recent groundwater sample collected from well MW-1, in November 2006, did not contain petroleum hydrocarbon or BTEX compounds at concentrations greater than laboratory reporting limits. Observations during the November 2006 monitoring round indicate well MW-4 was recently destroyed during railyard grading operations.

Well MW-2 was installed in the former location of the boiler house but was removed because, as discovered during excavation, its screen had been constructed within a mass of oily timbers. Diesel- and oil-range hydrocarbons and benzene were detected in samples collected from this well prior to excavation at concentrations exceeding MTCA Method A cleanup levels. However, the analytical results were biased by the surrounding timbers and not representative of groundwater conditions in this area.

Well MW-3 was installed downgradient of the former fueling island, approximately midway between the island and monitoring well MW-1. A groundwater sample collected from this well in September 2003 contained diesel-range hydrocarbons at a concentration of 253 micrograms per liter ( $\mu$ g/L). In November 2006, diesel-range hydrocarbons were detected at a concentration of 659  $\mu$ g/L, which exceeds the MTCA Method A cleanup level of 500  $\mu$ g/L. Gasoline-range hydrocarbons were also detected in November 2006, but at a concentration below MTCA Method A cleanup levels.

Monitoring well MW-5 was installed approximately 200 feet east of the former fueling island in 2004 to aid in monitoring the groundwater flow direction and to evaluate the potential for easterly migration of petroleum hydrocarbons in the event of fluctuations in the groundwater flow direction. Petroleum hydrocarbons and BTEX compounds have not been detected in samples collected from well MW-5.

Well MW-6 was installed in 2004 to monitor groundwater downgradient of the fueling island (the UST location was unknown in 2004). A groundwater sample collected from well MW-6 in 2004 did not contain petroleum hydrocarbons or BTEX at concentrations exceeding MTCA Method A cleanup levels. This well had to be removed during excavation to access and remove the lubricating oil UST.

Well MW-7 was installed west of the maintenance building to evaluate groundwater conditions downgradient of the former pump house. Prior to excavation (in 2004), a groundwater sample collected from well MW-7 contained gasoline- and diesel-range hydrocarbons at concentrations greater than MTCA Method A cleanup levels (see Table 2). During monitoring in November 2006, one year after excavation, approximately 0.1 foot of light non-aqueous phase liquid (LNAPL) was encountered in the well. The LNAPL was removed using a disposable bailer, and no sample was collected for analysis. The well was observed again and additional LNAPL was removed in December 2006 and March 2007.

## 4.0 SUMMARY AND RECOMMENDATIONS

Remediation activities conducted at the site in 2005 resulted in the removal and offsite disposal of approximately 3,600 tons of petroleum-containing soil and debris, removal and recycling of approximately 1,800 gallons of petroleum from an UST and piping, and removal and recycling of 10 tons of metals. Results of confirmation soil sampling suggest that the majority of the petroleum hydrocarbon mass in soil at the site was removed. With the exception of detections in two confirmation samples collected from the former pump house area (M-9-14 and M-10-14) and one sample collected west of the former fueling island (FIEXC-N-8), no compounds were detected at concentrations exceeding Ecology Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Industrial Properties.

Post-excavation groundwater monitoring results from November 2006 suggest the presence of localized, elevated petroleum hydrocarbon concentrations in groundwater near well locations MW-7 and MW-3. A small amount of LNAPL has also been encountered in well MW-7. However, based on observations of the excavation advanced around well MW-7 in 2005, this LNAPL appears to be limited to soil left in place around the well casing. Neither pre- nor post-excavation monitoring results for wells MW-1 and MW-4 indicate sustained concentrations of petroleum hydrocarbons greater than MTCA Method A cleanup levels downgradient of the former fueling area. Petroleum hydrocarbons and/or BTEX were not detected in a sample collected from well MW-1 in November 2006.

Because a significant mass of the subsurface soil source of petroleum hydrocarbons was removed by excavation, it is anticipated that localized residual concentrations in saturated zone soil will attenuate naturally over time. Additional remedial measures to enhance natural attenuation such as ORC or ozone injection could be implemented. However, because downgradient groundwater monitoring results do not indicate migration toward the Columbia River and because the land will remain a railyard for the foreseeable future, additional remedial measures would not further reduce an already low risk posed by the residual concentrations and would not be a cost-effective

alternative to natural attenuation. Semiannual groundwater monitoring is recommended for approximately 2 to 3 years to evaluate the progress of natural attenuation and the concentration of petroleum hydrocarbons in downgradient wells.

Tables

TABLE 1

# CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS FOR DETECTED COMPOUNDS **BNSF Wishram Railyard**

## Former Pump House

	M-1-14	M-2-8	M-2-14	M-3-8	M-4-10	M-5-8	M-6-10	M-7-8	M-7-14	M-8-6	M-8-14	M-8-14 M-9-14 M-10-14	M-10-14
TPH (mg/kg)												1	
Gasoline-range	NA <sup>(b)</sup>	¥	Ą	Ą	AN	NA	NA	NA	N	NA	NA	233	225
Diesel-range	121	89.9	182	183	164	53.4	107	<11.0 <sup>(c)</sup>	324	<11.2	9.87	2,690	Ą
Oil-range -	<27.8	<27.3	<27.7	<27.1	<27.5	<27.4	<27.4	<27.5	<27.9	<28.1	<27.3	<285	¥
BTEX (mg/kg)													
Ethylbenzene	NA	Ą	AN	NA NA	AN	N A	NA	W	W	NA	A.	0.125	0.124
Xylenes (total)	NA A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.209	0.222
Lead (mg/kg)	NA	NA AN	NA	NA	NA	NA	4.10	NA	NA	NA	NA	3.64	NA

## Former Fueling Island and Boiler House

Cilici i dennig island and Dones node	Stalla alla 20	2000											
Analyte	FIEXC-B-1-12	FIEXC-8-1-12 FIEXC-8-3-15 FIEXC-8-5-10 FIEXC-8-6-10 FIEXC-8-7-10 FIEXC-8-8 FIEXC-W-10 FIEXC-N-8 FIEXC-S-10 FI-EAST-6 FI-MID-10 PH-1-10 PH-2-17	FIEXC-B-5-10	FIEXC-B-6-10	FIEXC-B-7-10	FIEXC-E-8	FIEXC-W-10	FIEXC-N-8	FIEXC-S-10	FI-EAST-6	FI-MID-10	PH-1-10	PH-2-17
TPH (mg/kg)									=				
Gasoline-range	10.4	Ą	NA	NA NA	A A	NA	<6.77	<6.16	<6.13	NA	¥	<6.27	<7.29
Diesel-range	806	<10.9	<10.4	<11.1	<10.5	56.1	<10.5	853	52.5	152	<10.9	<10.4	<10.6
Oil-range	1,920	<27.2	<26.1	<27.7	<26.2	37.2	<26.3	3,390	493	<26.8	<27.4	<26.0	<26.5
BTEX (mg/kg)													
Ethylbenzene	<0.0670	A A	NA NA	¥	Ą	NA	<0.0677	<0.0616	<0.0613	NA	NA	<0.0627	<0.0729
Xylenes (total)	<0.134	NA A	NA	NA NA	NA	NA	<0.135	<0.123	<0.123	NA	¥	<0.125	<0.146
Lead (mg/kg)	4.37	NA	NA	NA	NA	NA	2.74	NA	WA	NA NA	Ą	10.0	NA

## Notes:

- (a) Analyses:
- Diesel- and oil-range hydrocarbons by the Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx) Method with
  - Gasoline-range hydrocarbons by the Northwest Total Petroleum Hydrocarbons Gasoline Extended Method (NWTPH-Gx).
    - BTEX analyzed by either EPA Method 8021B or EPA Method 8260B.
- Lead analyzed using EPA Method 6020.
- (b) "NA" indicates not analyzed.
- (c) "<" indicates analyte was not detected at a concentration greater than the specified laboratory reporting limit.

Only detected compounds are summarized in the table

Analytes detected at concentrations greater than the laboratory reporting limit are shown in bold.

## **TABLE 2**

## **GROUNDWATER ANALYTICAL RESULTS**

Wishram Railyard

Sample ID		WMW-1		7-MMM-5	W-2		WMW-3		WMW-4	N-4	WW	WMW-5	WWW-6	WMW-7	MTCA Method
Date	9/17/2003	4/15/2004	11/9/2006	9/18/2003	4/15/2004	9/17/2003	4/16/2004	11/9/2006	9/18/2003	4/15/2004	4/16/2004	11/9/2006	4/16/2004	4/16/2004	A <sup>(8)</sup>
Petroleum Hydrocarbons (µg/L) (b)															
Gasoline-Range Hydrocarbons	NA <sup>(c)</sup>	329	<250	¥.	750	¥	AN	209	NA	<80.0 <sup>(d)</sup>	<80.0	<50[<50.0]	212	1,790	800
Diesel-Range Hydrocarbons	593 [605] (*)	426	<236	4,170	844	253	<250	629	409	<250	<250 [<250]	<250	454	1,220	200
Oil-Range Hydrocarbons	<500 [<500]	<500	<472	2,450	<500	<500	<500	<500	<500	<500	<500 [<500]	<500	<500	<500	500
BTEX (μg/L) <sup>(f)</sup>											And an examination of the second of the seco				
Benzene	<0.500 [0.500]	<0.500	<2.50	5.71	17.4	<0.500	ΑΝ	<0.500	<0.500	<0.500	<0.500 [<0.500]	<0.500 [<0.500]	<0.500	<5.00 (9)	5
Toluene	<0.500 [0.500]	<0.500	<2.50	23.5	3.66	<0.500	¥	<0.500	<0.500	<0.500	<0.500 [<0.500]	<0.500 [<0.500]	<0.500	<5.00 (9)	1,000
Ethylbenzene	<0.500 [0.500]	<0.500	<2.50	5.84	17.4	<0.500	¥	<0.500	<0.500	<0.500	<0.500 [<0.500]	<0.500 [<0.500]	<0.500	<5.00 (9)	700
Total Xylenes	<1.00 [1.02]	2.33	<5.00	11.8	37.2	<1.00	ΨX	<1.00	<1.00	<1.50	<1.50 [<1.50]	<1.00 [<1.00]	<1.50	<15.0 (9)	1,000
VOCs (µg/L) <sup>(h)</sup>															
n-Propylbenzene	AN	1.63	A Z	¥	A N	¥	¥	¥	¥	AN	<1.00 (<1.00]	NA NA	Ą	<1.00	⊖_
1,2,4-Trimethylbenzene	AN	15.0	ΑZ	ΑN	4 Z	¥ X	ž	Y Y	¥ Z	Ϋ́	<1.00 [<1.00]	NA A	¥.	11.2	1
sec-Butylbenzene	Ϋ́	<1.00	AN	ΑΝ	Ϋ́	ĄZ	¥ Z	¥Z	¥ Z	Ą	<1.00 [<1.00]	AA	NA NA	3.47	1
PAHS/CPAHS (ua/L) (i)															
Acenaphthene	AZ AZ	¥Z	AN N	Ą	<10.0	Ą Z	Ą	¥ Z	¥ Z	Ą	<0.100 [<0.100]	AN AN	<0.400	1.65	ı
Fluorene	AN	¥	AN	ΑΧ	<10.0	¥	¥ Z	¥ X	¥	¥	<0.100 [<0.100]	AN AN	<0.400	0.839	-
Benzo(a)anthracene	<0.100 [<0.100]	¥Z	NA V	0.304	<10.0	<0.100	¥ Z	Ą	<0.100	¥	<0.100 [<0.100]	AN	<0.400	<0.400	
Benzo(a)pyrene	<0.100 [<0.100]	¥	¥Z	<0.200	<10.0	<0.100	¥	Š	<0.100	¥ ¥	<0.100 [<0.100]	AN	<0.400	<0.400	
Benzo(b)fluoranthene	<0.100 [<0.100]	¥ Z	¥Z	<0.200	<10.0	<0.100	A Z	¥	<0.100	٩N	<0.100 [<0.100]	ΑΝ	<0.400	<0.400	
Benzo(k)fluoranthene	<0.100 [<0.100]	¥Z	Ą	<0.200	<10.0	<0.100	Ą	¥	<0.100	Ą	<0.100 [<0.100]	ΑΝ	<0.400	<0.400	1(k)
Chrysene	<0.100 [<0.100]	₹ Z	¥	0.516	<10.0	<0.100	¥ X	¥	<0.100	<b>∀</b> Z	<0.100 [<0.100]	AN	<0.400	<0.400	<del>.</del>
Dibenz(a,h)anthracene	<0.200 [<0.200]	¥ Z	¥.	<0.400	<20.0	<0.200	NA	AN	<0.200	Ą	<0.200 [<0.200]	A A	<0.800	<0.800	
Indeno(1,2,3-cd)pyrene	<0.100 [<0.100]	ž	¥	<0.200	<10.0	<0.100	Ą	Ā	<0.100	Ą	<0.100 [<0.100]	¥ Y	<0.400	<0.400	
Total cPAHs (K)				0.25											
Metals (µg/L) <sup>(i)</sup>			-									And Administration of the second of the seco			
Arsenic	¥	¥	¥.	A A	18.4	N A	8.54	Ą	Y Y	ď Z	7.03 (7.05)	A A	4.30	¥ Z	9
Barium	¥	Ž	¥	ΨZ	16.4	Y.	55.9	Ą	A A	A A	58.0 [58.0]	Ϋ́	122	Υ Υ	•
Cadmium	Ϋ́	ď	¥ Z	A V	<1.0	NA	<1.0	ΑΝ	Ϋ́	¥ ¥	<1.0 [<1.0]	Ϋ́	<1.0	<b>₹</b>	ro.
Chromium (total)	¥	¥ Z	¥	ΑN	4.39	AN	<1.0	Ą	Y Y	¥ Z	<1.0 [<1.0]	Ϋ́	<1.0	¥	20
Lead	Ϋ́	Ą	Ą	AN	×1.0	¥	o.t>	<b>∢</b> Z	Ϋ́	Y.	<1.0 [<1.0]	ΑΝ	<1.0	₹ Z	15
Mercury	Ϋ́	¥ Z	¥ Z	Ą	<0.20	Ϋ́	<0.20	Ϋ́	¥	Ž	<0.20 [<0.20]	Ϋ́	<0.20	Ą.	2
Selenium	Ā	¥	ĄZ	ΨZ	4.28	Ϋ́	<1.0	ď	Y Y	NA NA	<1.0 [<1.0]	Ϋ́	1.51	¥Z	
Silver	Ą	A'N	¥	ΝΑ	<1.0	NA	<1.0	NA	NA	A A	<1.0 [<1.0]	NA V	<1.0	Ϋ́	1
Water Quality Parameters											or published the summer of the		vacance is to reduce deciminate designs of the distribution of the second section of the section o		
Groundwater Elevation (feet) (m)	78.47	83.89	84.75	NM(a)	84.15	78.5	84.55	84.67	78.51	83.92	84.32	83.44	84.46	85.52	1
Temperature (°C)	19.8	17.2	19.3	14.9	≥Z	20.0	17.4	18.8	18.3	15.9	15.9	17.3	17.5	16.4	•
pH (standard units)	8.9	7.4	7.1	7.5	ΣZ	7.4	7.5	7.2	7.5	7.7	7.7	7.95	7.1	7.2	
Specific Conductance (mS/cm)	1,561	1,375	1,078	3,018	Ž	086	1,106	1,100	696	920	416	547	1,009	1,397	1
Dissolved Oxygen (mg/L)	0.37	0.35	0.22	0.78	ΣŽ	0.56	0.62	0.12	0.42	0.36	0.79	0.08	0.97	1.41	-
Eh (millivolts)	330	117	-147	200	NN	310	222	-77	320	200	261	-82	211	236	1

Notes: (a) (b)

Values are from The Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A Cleanup Level for Groundwater (12 February 2001) unless otherwise stated.

- Diesel- and oil-range hydrocarbons by the Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx) Method with silica gel cleanup. - Gasoline-range hydrocarbons by the Northwest Total Petroleum Hydrocarbons Gasoline Extended Method (NWTPH-Gx).

"NA" indicates not analyzed."

"NA" indicates analyte was not detected at a concentration greater than the specified reporting limit.

"I indicates result for field blind duplicate analysis.

BTEX analyzed by EPA Method 8021B.

Reporting limit raised because of dilution necessary for analysis.

"OCs analyzed by EPA Method 8260B.

"-" indicates that a MTCA Method A cleanup level is not available for the analyte or field measured parameter.

Total cPAH value is equal to the sum of individual analyte concentrations multiplied by toxicity equivalency factors (TEFs) as described in WAC 173-340-708(8).

Where analytes were not detected, but there is potential for their presence based on PAH results, a concentration equal to 0.5 the reporting limit was multiplied by the TEF. The total value was compared to the MTCA Method B cleanup level for benzo(a)pyrene of 0.1 µg/L.

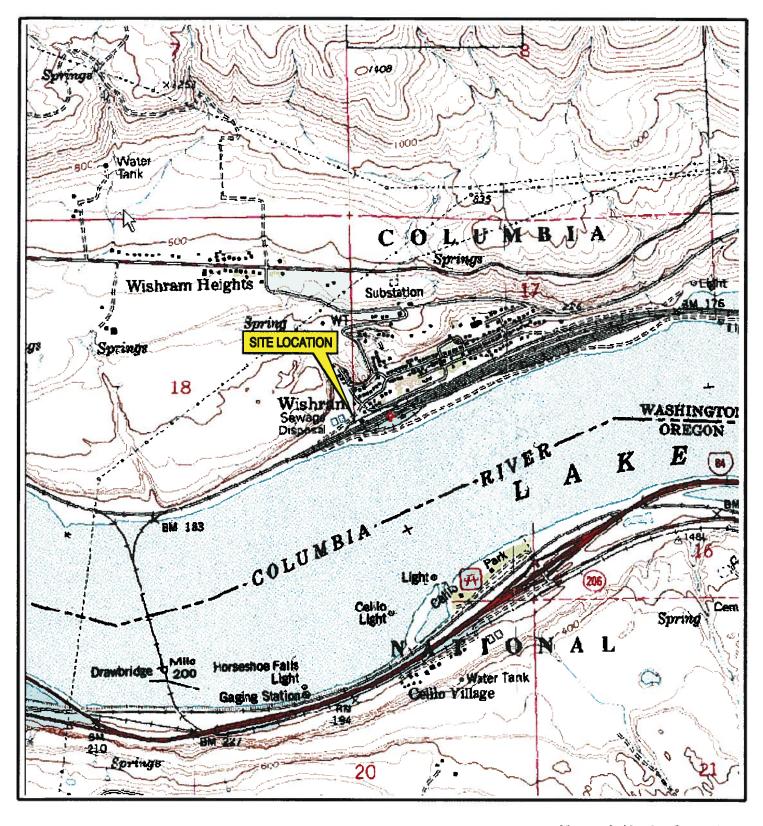
Metals analyzed by EPA 6000/7000 series methods.

Monitoring well casings were surveyed relative to a benchmark established at the railyard for the site assessment. The benchmark was assigned an arbitrary elevation of 10. PAHs and cPAHs analyzed by EPA Method 8270M-SIM. 

to a benchmark established at the railyard for the site assessment. The benchmark was assigned an arbitrary elevation of 100 feet.

(i) Metals analyzed by EPA 6000/7000 series methods.
 (m) Monitoring well casings were surveyed relative to a benchmark established
 (n) "NM" indicates not measured.
 Bold value exceeds the MTCA Method A groundwater cleanup level.
 Table includes only those analytes that were detected in one or more samples.

Figures



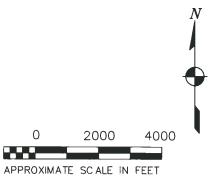
## Kennedy/Jenks Consultants

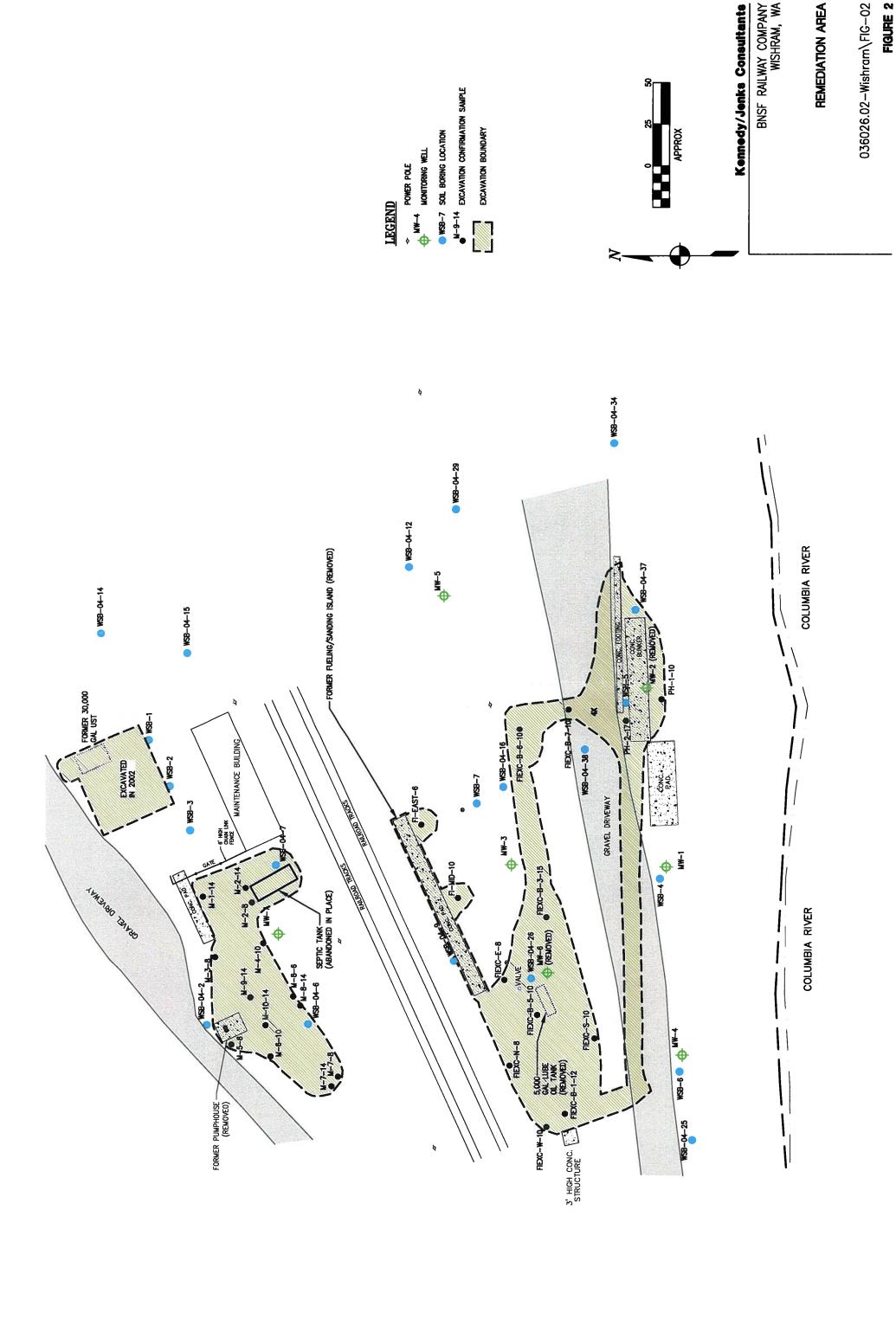
THE BURLINGTON NORTHERN AND SANTA FE RAILWAY CO. WISHRAM, WA

## SITE LOCATION MAP

036026.00/FIG\_1.CDR

FIGURE 1





## Appendix A

**Laboratory Analytical Results** 



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

## **CASE NARRATIVE for B5K0301**

Client: Kennedy/Jenks Consultants Project Manager: Galen Davis Project Name: BNSF - Wishram Project Number: 036026.02

## 1.0 DESCRIPTION OF CASE

Thirteen soil samples and one trip blank were submitted for analysis of:

- Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B
- Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up
- Total Metals by EPA 6000/7000 Series Methods

### 2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received November 11th, 2005 by North Creek Analytical Bothell. The temperature of the samples at the time of receipt was 4.7 degrees Celsius. For sample M10-14, one VOA vial with methanol and one unpreserved VOA vial were received for the sample. The sample aliquot for dry weight correction was taken from the unpreserved VOA vial per Galen Davis' approval.

## 3.0 PREPARATIONS AND ANALYSIS

Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

## Total Metals by EPA 6000/7000 Series Methods

Cato Dung

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

Kate Haney Project Manager

North Creek Analytical

RECEIVED

DEC -8 2005

**VJ Federal Way** 

North Creek Analytical, Inc. Environmental Laboratory Network
Page 1 of 1



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

05 December 2005

Galen Davis
Kennedy/Jenks Consultants
32001 32nd Ave S Ste 100
Federal Way, WA/USA 98001

RE: BNSF-Wishram, WA

Enclosed are the results of analyses for samples received by the laboratory on 11/11/05 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kate Haney

**Project Manager** 



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported: 12/05/05 18:17

## ANALYTICAL REPORT FOR SAMPLES

Sample ID					Laboratory ID	Matrix		Date Sampled	Date Received	
M-2-14	borrest .	0 = 2	- 4	ne propiniti	B5K0301-01	Soil		11/08/05 15:10	11/11/05 09:30	
M-4-10					B5K0301-02	Soil		11/09/05 13:10	11/11/05 09:30	
M-2-8					B5K0301-03	Soil		11/08/05 15:15	11/11/05 09:30	
M-6-10					B5K0301-04	Soil		11/10/05 08:00	11/11/05 09:30	
M-3-8					B5K0301-05	Soil		11/08/05 15:00	11/11/05 09:30	
M-10-14					B5K0301-06	Soil	10	11/10/05 10:00	11/11/05 09:30	b
M-9-14					B5K0301-07	Soil		11/10/05 09:00	11/11/05 09:30	
M-1-14					B5K0301-08	Soil		11/08/05 15:00	11/11/05 09:30	
M-5-8					B5K0301-09	Soil		11/09/05 13:00	11/11/05 09:30	
M-8-6					B5K0301-10	Soil		11/10/05 11:05	11/11/05 09:30	
M-7-8					B5K0301-11	Soil		11/10/05 12:00	11/11/05 09:30	
M-8-14					B5K0301-12	Soil		11/10/05 11:00	11/11/05 09:30	
M-7-14					B5K0301-13	Soil		11/10/05 12:05	11/11/05 09:30	
TRIP BLA	NK				B5K0301-14	Soil		11/10/05 12:05	11/11/05 09:30	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

## Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B North Creek Analytical - Bothell

Analyte	D N	Reporting					## E	- 10-2-	T RINCORD
Amage May :: First Atom Tourist	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
M-10-14 (B5K0301-06) Soil Sampled	: 11/10/05 10	:00 Receive	ed: 11/11/05 0	9:30					Tricher-V
Benzene	ND	0.0271	mg/kg dry	1	5K15033	11/15/05	11/16/05	NWTPH-Gx/8021B	
Toluene	ND	0.0678	(a) 1 10 20	н	11	н	#	m	
Ethylbenzene	0.124	0.0678		н	н	#	**	n	
Xylenes (total)	0.222	0.136	"	11	n	tt	**		497
Surrogate: 4-BFB (FID)	83.0 %	50-150	= infl care	(6)	"	,,	"	n	
Surrogate: 4-BFB (PID)	114 %	53-142			**	"	"	"	
M-10-14 (B5K0301-06RE1) Soil Sam	pled: 11/10/0	5 10:00 Re	ceived: 11/11/	05 09:30					
Gasoline Range Hydrocarbons	225	33.9	mg/kg dry	5	5K16028	11/16/05	11/16/05	NWTPH-Gx/8021B	G-0
Surrogate: 4-BFB (FID)	113 %	50-150			"	"	"	"	
M-9-14 (B5K0301-07) Soil Sampled: 1	11/10/05 09:0	0 Received	: 11/11/05 09:	30					
Benzene	ND	0.0328			57/15000	11/17/07			
Foluene	ND	0.0328	mg/kg dry	1 "	5K15033	11/15/05	11/16/05	NWTPH-Gx/8021B	
Ethylbenzene	0.125	0.0819	n 1911 3	,,	,,	"	. 11	n	
Xylenes (total)	0.209	0.164			"	"	"	rt Pt	
Surrogate: 4-BFB (PID)	123 %	53-142		*	"	"	"	"	
M-9-14 (B5K0301-07RE1) Soil Sample	ed: 11/10/05	09:00 Rece	ived: 11/11/05	00-30					
Gasoline Range Hydrocarbons	233	41.0	mg/kg dry		5K16028	11/16/05	11/16/05	NWTPH-Gx/8021B	G-01
Surrogate: 4-BFB (FID)	110 %	50-150			77	n	"	"	
TRIP BLANK (B5K0301-14) Soil Sam	pled: 11/10/	05 12:05 Re	eceived: 11/11	/05 09:30					
Gasoline Range Hydrocarbons	ND	5.00	mg/kg wet		5K15033	11/15/05	11/16/05	NWTPH-Gx/8021B	
Benzene	ND	0.0200	"	11	"	"	11/10/05	1 W 1 Pri-GX/8021B	
oluene	ND	0.0500	**	**	"		"		
Ethylbenzene	ND	0.0500	**	11	**	**	#1		
Zylenes (total)	ND	0.100		e <b>n</b>	**	11	**	n	
urrogate: 4-BFB (FID)	77.3 %	50-150			n	"	"	,,	
urrogate: 4-BFB (PID)	96.3 %	53-142			"	,,	"	<b>"</b> -	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 2 of 15



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:17

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte	Experior.	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M-2-14 (B5K0301-01) Soil	Sampled:	11/08/05 15:10	Received	l: 11/11/05 09	:30	14,23		T U-THENKS		
Diesel Range Hydrocarbons		182	11.1	mg/kg dry	1	5K19002	11/19/05	11/20/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons		ND	27.7	m m	11	**		Ħ	ROTAL HOLLAND	11 42 11
Surrogate: 2-FBP		93.3 %	50-150			n	, "	n	"	
Surrogate: Octacosane		96.7 %	50-150			n	n	H	" Estresian	
M-4-10 (B5K0301-02) Soil	Sampled:	11/09/05 13:10	Received	l: 11/11/05 09	:30	Benin ay	787 7			190 Mail -
Diesel Range Hydrocarbons		164	11.0	mg/kg dry	1	5K19002	11/19/05	11/20/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons		ND	27.5	11 11	<b>F</b> 1	n	91	11	n	
Surrogate: 2-FBP		99.0 %	50-150			- "	"	"	"	
Surrogate: Octacosane		103 %	50-150			n	**	"	"	
M-2-8 (B5K0301-03) Soil	Sampled: 1	1/08/05 15:15	Received:	11/11/05 09:	30	Number 1			1	
Diesel Range Hydrocarbons		89.9	10.9	mg/kg dry	1	5K19002	11/19/05	11/20/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons		ND	27.3	н	n	n	li li	11	н	
Surrogate: 2-FBP		101 %	50-150	0		"	" "	"	"	
Surrogate: Octacosane		98.5 %	50-150			n	"	n	"	
M-6-10 (B5K0301-04) Soil	Sampled:	11/10/05 08:00	Received	l: 11/11/05 09	:30	40.0			S IIII VIII V	
Diesel Range Hydrocarbons		107	11.0	mg/kg dry	1	5K19002	11/19/05	11/21/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons		ND	27.4	n e	"	2 H	n	"	*	
Surrogate: 2-FBP		97.9 %	50-150			**	"	"	"	
Surrogate: Octacosane		97.4 %	50-150		15	**	"	"	"	
M-3-8 (B5K0301-05) Soil	Sampled: 1	1/08/05 15:00	Received:	11/11/05 09:	30	meal.		ui naeri	rue (T) Wh	
Diesel Range Hydrocarbons		183	10.8	mg/kg dry	1	5K19002	11/19/05	11/21/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons		ND	27.1	11	**	"	11	"		
Surrogate: 2-FBP		92.9 %	50-150			91,0	"	"	n	
Surrogate: Octacosane		100 %	50-150			•	"	"		

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Dung



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte	i esta	Result	Reporting Limit		Dilution	Batch	Prepared	Analyzed	Method	Notes
M-9-14 (B5K0301-07) Soi	l Sampled:	11/10/05 09:0	0 Receive	d: 11/11/05 09	:30	Sasti A.	31 11 11		Endighes M	Year New Y
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons		<b>2690</b> ND	114 285	mg/kg dry	10	5K19002	11/19/05	11/21/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane		131 % 92.3 %	50-150 50-150				- n	"	"	
M-1-14 (B5K0301-08) Soi	Sampled:	11/08/05 15:0	) Receive	d: 11/11/05 09	:30					Later St.
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	. 141	121 ND	11.1	mg/kg dry	1 "	5K19002	11/19/05	11/21/05	NWTPH-Dx	D-06
Surrogate: 2-FBP Surrogate: Octacosane		89.4 % 91.3 %	50-150 50-150			" "	"	"	"	-
M-5-8 (B5K0301-09) Soil	Sampled: 1	1/09/05 13:00	Received:	11/11/05 09:3	80					
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	liar	<b>53.4</b> ND	11.0 27.4	mg/kg dry	1 "	5K19002	11/19/05	11/21/05	NWTPH-Dx	D-06
Surrogate: 2-FBP Surrogate: Octacosane		102 % 102 %	50-150 50-150			"	"	n	"	
M-8-6 (B5K0301-10) Soil	Sampled: 11	1/10/05 11:05	Received:	11/11/05 09:3	0					
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons		ND ND	11.2 28.1	mg/kg dry	1 "	5K19002	11/19/05	11/21/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane		105 % 104 %	50-150 50-150			"	"	"	"	11320501=
M-7-8 (B5K0301-11) Soil	Sampled: 11	/10/05 12:00	Received:	11/11/05 09:3	0.00				W > 110.74	
Diesel Range Hydrocarbons  Lube Oil Range Hydrocarbons		ND ND	11.0 27.5	mg/kg dry	1 "	5K19002	11/19/05	11/21/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane			50-150 50-150			s n =	" "	n n	"	8-4

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 4 of 15



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509,924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 Anchorage

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 18:17

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte	Less.	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M-8-14 (B5K0301-12) Soil	Sampled:	11/10/05 11:00	Received	l: 11/11/05 (	09:30	M 1 60	Mar I			
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	V, IIVEVII	78.6 ND	10.9 27.3	mg/kg dry	1	5K19002	11/19/05	11/21/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane	The same	89.8 % 96.0 %	50-150 50-150			"	n n	91 11	"	2000
M-7-14 (B5K0301-13) Soil	Sampled:	11/10/05 12:05	5 Received	l: 11/11/05 (	9:30					
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	9	<b>324</b> ND	11.1 27.9	mg/kg dry	1	5K19002	11/19/05	11/21/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane		89.1 % 95.8 %	50-150 50-150	-		"	n	n n	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported:

12/05/05 18:17

## Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

g = 1000 = 1000		Reporting				7,411			
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M-6-10 (B5K0301-04) Soil	Sampled: 11/10/05 08:00	Received	: 11/11/05 0	9:30	Paring full	an and said	Sherozen (9)	Berthille	112 12
Lead	4.10	0.544	mg/kg dry	1 8	5K16035	11/16/05	11/19/05	EPA 6020	SU CHOOSE STREET
M-9-14 (B5K0301-07) Soil	Sampled: 11/10/05 09:00	Received	: 11/11/05 0	9:30					
Lead	3.64	0.597	mg/kg dry	1	5K16035	11/16/05	11/19/05	EPA 6020	

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. **Environmental Laboratory Network**



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

## Physical Parameters by APHA/ASTM/EPA Methods North Creek Analytical - Bothell

				Reporting							100
Analyte	2) FICAL	Later	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M-2-14 (B5	K0301-01) Soil	Sampled: 11	/08/05 15:10	Received:	11/11/05	09:30		3.1	490		SHE'N
Dry Weight			90.4	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-4-10 (B5	K0301-02) Soil	Sampled: 11	/09/05 13:10	Received:	11/11/05	09:30	1000	301 1 102			WARE IN
Dry Weight	100		91.2	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-2-8 (B5K	(0301-03) Soil	Sampled: 11/	08/05 15:15	Received: 1	1/11/05 0	9:30	ami II				
Dry Weight			90.6	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-6-10 (B5)	K0301-04) Soil	Sampled: 11	/10/05 08:00	Received:	11/11/05	09:30	yezhoù kan			THE PART IN STA	
Dry Weight			91.0	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-3-8 (B5K	(0301-05) Soil	Sampled: 11/	08/05 15:00	Received: 1	1/11/05 0	9:30					
Dry Weight			90.9	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-10-14 (B	5K0301-06) Soi	l Sampled: 1	1/10/05 10:00	Received	l: 11/11/05	5 09:30				R	
Dry Weight			85.5	1.00	%	<sub>53</sub> 1	5K14052	11/14/05	11/15/05	BSOPSPL003R08	
M-9-14 (B5	K0301-07) Soil	Sampled: 11	/10/05 09:00	Received:	11/11/05	09:30					
Dry Weight			87.2	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-1-14 (B5)	K0301-08) Soil	Sampled: 11	/08/05 15:00	Received:	11/11/05	09:30					
Dry Weight		78	89.9	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-5-8 (B5K	(0301-09) Soil	Sampled: 11/	09/05 13:00	Received: 1	1/11/05 0	9:30					
Dry Weight			91.4	1.00	%	<b>1</b>	5K22039	11/22/05	11/23/05	BSOPSPL003R08	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported:

12/05/05 18:17

## Physical Parameters by APHA/ASTM/EPA Methods North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M-8-6 (B5K0301-10) Soil	Sampled: 11/10/05 11:05	Received:	: 11/11/05 09	0:30	social niis	32. F MIT 889.2 F	ا ا	a moreonalis va	
Dry Weight	90.6	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	užurije Vid
M-7-8 (B5K0301-11) Soil	Sampled: 11/10/05 12:00	Received:	11/11/05 09	:30					
Dry Weight	91.0	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	
M-8-14 (B5K0301-12) Soil	Sampled: 11/10/05 11:00	Received	l: 11/11/05 0	9:30		2			
Dry Weight	90.8	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	315 IV 15 0
M-7-14 (B5K0301-13) Soil	Sampled: 11/10/05 12:05	Received	l: 11/11/05 0	9:30					
Dry Weight	88.8	1.00	%	1	5K22039	11/22/05	11/23/05	BSOPSPL003R08	time of yo

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

#### North Creek Analytical - Bothell

Company of the Compan		75-17	Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K15033: Prepared	11/15/05	Using 1	EPA 5030E	В (МеОН)	A - 14 13				eka n	Anjewi em	u w sutsi
Blank (5K15033-BLK1)			MARIE		N. S.		LG-		- 101	on La	Vierning-L. Vi
Gasoline Range Hydrocarbons	W IS	ND	5.00	mg/kg	H I I		-9-4			11=5.00	III Ing
Benzene		ND	0.0200	11							
Toluene		ND	0.0500	14			.2				
Ethylbenzene		ND	0.0500	и 193							
Xylenes (total)		ND	0.100	#							
Surrogate: 4-BFB (FID)		2.41	200002	"	3.00		80.3	50-150	•**		
Surrogate: 4-BFB (PID)		2.70		"	3.00		90.0	53-142			
LCS (5K15033-BS1)											
Gasoline Range Hydrocarbons	Bar.	49.4	5.00	mg/kg	50.0		98.8	75-125	·· ·· ··	AVEL II	
Benzene		0.660	0.0200	н	0.565		117	75-125			
Toluene		4.09	0.0500	ir	4.22		96.9	75-125			
Ethylbenzene		0.888	0.0500	Ħ	0.845		105	75-125			
Xylenes (total)		4.84	0.100	н	4.92		98.4	75-125		330	
Surrogate: 4-BFB (FID)		2.17		"	3.00	Call Co	72.3	50-150			5/4
Surrogate: 4-BFB (PID)		2.70		"	3.00		90.0	53-142			
LCS Dup (5K15033-BSD1)											
Gasoline Range Hydrocarbons		52.1	5.00	mg/kg	50.0		104	75-125	5.32	25	_ =    = -
Benzene		0.531	0.0200	"	0.565		94.0	75-125	21.7	25	
Toluene		3.30	0.0500	n	4.22		78.2	75-125	21.4	25	
Ethylbenzene		0.713	0.0500	Ħ	0.845		84.4	75-125	21.9	25	
Xylenes (total)		3.89	0.100		4.92		79.1	75-125	21.8	25	
Surrogate: 4-BFB (FID)		2.93		"	3.00	2011.11	97.7	50-150	****		- A
Surrogate: 4-BFB (PID)	A DIGIT	2.75		" "	3.00		91.7	53-142			
Matrix Spike (5K15033-MS1)						Source: B	5K0310-0	01			
Gasoline Range Hydrocarbons		55.6	5.11	mg/kg dry	51.1	1.31	106	42-125			1 - 2 - ili
Benzene		0.595	0.0205	#	0.578	ND	103	45-125			
Toluene		3.64	0.0511	11	4.32	0.0149	83.9	55-125			
Ethylbenzene		0.788	0.0511	H	0.864	0.00736	90.4	53-123			
Kylenes (total)		4.28	0.102	n	5.03	0.0284	84.5	59-125			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Dung

North Creek Analytical, Inc. Environmental Laboratory Network



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Project: BNSF-Wishram, WA

Project Number: 036026.02

Reported: 12/05/05 18:17

Federal Way, WA/USA 98001

Project Manager: Galen Davis

#### Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

#### North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K15033:	Prepared 11/15/05	Using 1	EPA 5030B	(MeOH)							

Matrix Spike (5K15033-MS1)	- N		(11)	AM (6)	Source: B	5K0310	-01	light factor		water Garage
Surrogate: 4-BFB (FID)	2.79		mg/kg dry	3.07		90.9	50-150			23411
Surrogate: 4-BFB (PID)	2.77		n 1977	3.07		90.2	53-142			
Matrix Spike Dup (5K15033-MSD1)					Source: B	5 <b>K</b> 0310	-01			
Gasoline Range Hydrocarbons	61.8	5.11	mg/kg dry	51.1	1.31	118	42-125	10.6	40	
Benzene	0.590	0.0205	Ħ	0.578	ND	102	45-125	0.844	40	
Toluene	3.63	0.0511	H.	4.32	0.0149	83.7	55-125	0.275	40	
Ethylbenzene	0.795	0.0511	n	0.864	0.00736	91.2	53-132	0.884	40	
Xylenes (total)	4.31	0.102	tr	5.03	0.0284	85.1	59-125	0.698	40	
Surrogate: 4-BFB (FID)	3.04		n	3.07		99.0	50-150		L God la	
Surrogate: 4-BFB (PID)	2.76		"	3.07		89.9	53-142			

Batch 5K16028: Prepared	11/16/05	Using E	PA 5030B	(P/T)		GLOS.			
Blank (5K16028-BLK1)						1,2	- Ac		- 350
Gasoline Range Hydrocarbons		ND	5.00	mg/kg		=11	107		
Benzene		ND	0.0200	#					
Toluene		ND	0.0500	n n				6	
Ethylbenzene		ND	0.0500	11					
Xylenes (total)		ND	0.100	н					
Surrogate: 4-BFB (FID)		2.54		"	3.00		84.7	50-150	
Surrogate: 4-BFB (PID)		2.99		"	3.00		99.7	53-142	
LCS (5K16028-BS1)									
Gasoline Range Hydrocarbons		54.4	5.00	mg/kg	50.0	00/1 11	109	75-125	
Benzene		0.627	0.0200	es n	0.565		111	75-125	
Toluene		3.85	0.0500	No.	4.22		91.2	75-125	
Ethylbenzene		0.833	0.0500	п	0.848		98.2	75-125	
Xylenes (total)		4.42	0.100	n	4.92		89.8	75-125	
Surrogate: 4-BFB (FID)		3.13		"	3.00		104	50-150	
Surrogate: 4-BFB (PID)		2.80		"	3.00		93.3	53-142	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 10 of 15



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project Number: 036026.02 Project Manager: Galen Davis Reported: 12/05/05 18:17

## Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

#### North Creek Analytical - Bothell

I have			Reporting	Maria Article	Spike	Source	111	%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K16028:	Prepared 11/16/05	Using I	EPA 5030E	3 (P/T)	*					10 (0.32)	11 -140
LCS Dup (5K16028	B-BSD1)		77.		C Dep	щ	3134			X 'Eq	
Gasoline Range Hydro	carbons	51.4	5.00	mg/kg	50.0		103	75-125	5.67	25	#
Benzene		0.608	0.0200	я п	0.565		108	75-125	3.08	25	1
Toluene		3.78	0.0500	п	4.22		89.6	75-125	1.83	25	
Ethylbenzene		0.812	0.0500	n	0.848		95.8	75-125	2.55	25.	
Xylenes (total)		4.32	0.100	н —	4.92		87.8	75-125	2.29	25	
Surrogate: 4-BFB (FIL	))	3.17	_ 8	"	3.00		106	50-150			
Surrogate: 4-BFB (PIL	))	2.88		. "	3.00		96.0	53-142			
Matrix Spike (5K1)	6028-MS1)					Source: B	5K0134-	17			
Gasoline Range Hydrod	carbons	52.0	5.15	mg/kg dry	51.5	0.969	99.1	42-125			
Benzene		0.608	0.0206	n	0.582	ND	104	45-125			
Toluene		3.76	0.0515	n	4.35	0.0222	85.9	55-125			
Ethylbenzene		0.806	0.0515		0.873	0.00989	91.2	53-132			
Xylenes (total)		4.32	0.103	Ħ	5.07	0.0384	84.4	59-125			
Surrogate: 4-BFB (FIL	)	3.29		- vi "	3.09		106	50-150			
Surrogate: 4-BFB (PIL	))	2.97		"	3.09		96.1	53-142			
Matrix Spike Dup (	5K16028-MSD1)					Source: B	5K0134-	17			
Gasoline Range Hydrod	arbons	53.6	5.15	mg/kg dry	51.5	0.969	102	42-125	3.03	40	K
Benzene		0.616	0.0206	н	0.582	ND	106	45-125	1.31	40	
Toluene		3.80	0.0515	n	4.35	0.0222	86.8	55-125	1.06	40	
Ethylbenzene		0.820	0.0515	H	0.873	0.00989	92.8	53-132	1.72	40	i.
Xylenes (total)		4.39	0.103	n	5.07	0.0384	85.8	59-125	1.61	40	
Surrogate: 4-BFB (FID	)	3.31		"	3.09	ш.	107	50-150	· · · · · · · · · · · · · · · · · · ·		<del></del>
Surrogate: 4-BFB (PID	)	2.99		n	3.09		96.8	53-142			
1											

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 11 of 15



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported: 12/05/05 18:17

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control North Creek Analytical - Bothell

		Reporting	600 60	Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K19002: Prepared 11/19/05	Using I	EPA 3550B		INI A						
Blank (5K19002-BLK1)				us (flya)	4200	THE SECTION AND ADDRESS OF THE PERSON AND AD	THE TO		i seile	:3 5 6 7
Diesel Range Hydrocarbons	ND	10.0	mg/kg						10.02 0	- 43.4
Lube Oil Range Hydrocarbons	ND	25.0	н	Con S						
Surrogate: 2-FBP	7.85	16	"	8.33	Efffr	94.2	50-150			Similar
Surrogate: Octacosane	8.39		<b>"</b> 10	8.33		101	50-150			
LCS (5K19002-BS1)										
Diesel Range Hydrocarbons	68.1	10.0	mg/kg	66.7		102	61-120			(2),21
Surrogate: 2-FBP	7.78		"	8.33	71-14-1	93.4	50-150			
LCS Dup (5K19002-BSD1)										
Diesel Range Hydrocarbons	73.1	10.0	mg/kg	66.7		110	61-120	7.08	40	
Surrogate: 2-FBP	8.14	- N	n IZ	8.33		97.7	50-150		OI 1 15-11	312.0
Duplicate (5K19002-DUP1)					Source: E	5K0404-	01			
Diesel Range Hydrocarbons	1050	120	mg/kg dry	- 1	452	91.64		79.6	50	Q-0
Lube Oil Range Hydrocarbons	57.7	299	100 11		26.9				50	lwwl -
Surrogate: 2-FBP	9.13	-	н	9.96		91.7	50-150	-		3
Surrogate: Octacosane	9.23		rt	9.96		92.7	50-150			

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

#### Total Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

4			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K16035:	Prepared 11/16/05	Using I	EPA 3050B		153	STEP OF	m/s	31/39/11		1 3	HIS.ET
Blank (5K16035-B)	LK1)									4. 11.	W HORE
Lead		ND	0.500	mg/kg	PE 116	11.	710.1				
LCS (5K16035-BS1	1)										
Lead		37.4	0.500	mg/kg	40.0		93.5	80-120	6	i Ny inj≢, I	ويعظران مكس
LCS Dup (5K16035	5-BSD1)										
Lead		38.5	0.495	mg/kg	39.6		97.2	80-120	2.90	20	
Matrix Spike (5K1)	6035-MS1)					Source: B	5K0301	-04			
Lead		42.3	0.555	mg/kg dry	44.4	4.10	86.0	29-166			
Matrix Spike Dup (	5K16035-MSD1)					Source: B	5K0301	-04			
Lead		46.1	0.544	mg/kg dry	43.5	4.10	96.6	29-166	8.60	40	
Post Spike (5K1603	5-PS1)					Source: B	5K0301	-04			
Lead		0.103	2	ug/ml	0.100	0.00754	95.5	75-125			

North Creek Analytical - Bothell

Kate Haney, Project Manager

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:17

### Physical Parameters by APHA/ASTM/EPA Methods - Quality Control North Creek Analytical - Bothell

Analyte	ill.e	Result	Reporting Limit	Units	4714	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K14052:	Prepared 11/14/05	Using Dr	y Weight	*****	70,000	A A A	MF X TO	- Driet	2)\27\15	em com	112.55	WEREN
Blank (5K14052-B)	LK1)										11 BL-25 V	Horse Stell
Dry Weight		100	1.00	%	- Pari	r 24°		(D)	* 181			1969
Batch 5K22039:	Prepared 11/22/05	Using Dr	y Weight									- 1.0% 2Q
Blank (5K22039-B)	LK1)	u love	D.G.	j.	rights.	in the	470	500	· · · · · · · · · · · · · · · · · · ·	1-1		× 780
Dry Weight		100	1.00	%	IA.					165	10/12/2	
	7811 11211002											

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. **Environmental Laboratory Network**



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:17

#### **Notes and Definitions**

D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

G-01 Results reported for the gas range are primarily due to overlap from diesel range hydrocarbons.

Q-07 The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does

not represent an out-of-control condition for the batch.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
 11922 E 1st Ave, Spokane, WA 99206-5302
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145
 20332 Empire Ave, Ste F1, Bend, OR 97701-5712
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

FAX 420-9210 FAX 924-9290 FAX 906-9210 FAX 382-7388 FAX 563-9210

425-420-9200 509-924-9200 503-906-9200 541-383-9310 907-563-9200

	ט	CHAIN OF CUST	COSI	Q	ODY REPORT	RT				Work Order #:	65	6540301	
REPORT TO: Golden Dewy	18 4	Kennedy Tenks Consulkuts	Su lkut		INVOICE TO	F- BRU	NOICETO: BNSF-BRUCE Sheppuel	-8	s ultic		TURNARC in Bu	TURNAROUND REQUEST in Business Days	н 1
Felen way,		\$ \$ \frac{1}{2}	5				-		u eT		rganic & In	Organic & Inorganic Analyses	-
PHONE (253) 974-0555	FAX:				P.O. NUMBER:	R. See	Jork	order	Tim		Stroleum H.	ocarbon A	]
PROJECT NAME: BNSF - WISHRAM	wighrem		-	-		PRESERVATIVE	ATIVE	-		<b>5</b> 2	•	-	₹
PROJECT NUMBER: 036026.62	20.9		Ch							E			1
7 7 8			de			REQUESTED ANALYSES	NALYSES			ت	OTRER	Specify:	
SAMPLED BY: MULLA C.	omi		P	010						·	,	o flow condition large houre flood Charges.	
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME		Rtwa Iscièle Intrua X9TB	X318 6 A43 604	e von					MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
41-2-W	11 8 105	0151	X					D D	ing a co	S	_		0/
01-H-W 2	20/ 10/11	1310	×					- 12		5			B
8-2-W E	b) 8 los	1515	X						men.	S			$\mathcal{B}$
4 M-6-10	20/01/11	0 800	X	X						2		ш	40
5 M-3-8	11/4/05	1500	X							8	12.,		05
6 M-10-14	Soforfu	1000	×					217/002		8	N		00
7 M-9-14	1/10/05	0060	×	X				ufff23		Ŋ	M	-	20
4-1-14	50/8/11	1500	X					Čillarii.		5		den	000
8-5-We	11/9/05	1300	X				ш	eror fo		5			60
10 M-8-6	11/10/05	1105	X					arks	e d'us	7	_		10/
RELEASED BY: Hollin C. Borrie	Davie				DATE: 11)	11/10/05	RECEIVED BY:	Jon /	1/2	X	0	DATE: 1	DATE: 11/11/05
PRINT NAME: Galley DOWIS	Suni 5	FIRM: RJ			TIME: 15	1500	PRINT NAME:	Bas	Bankinskip	J. I	FIRM: NCA	4 TIME: 0930	28
RELEASED BY:					DATE:		RECEIVED BY:	ere ov li	riegi National	(g 11		DATE	1
PRINT NAME:		FIRM:			TIME:		PRINT NAME:			HRM:	M:	TIME:	. **
ADDITIONAL REMARKS:	Ø.					* *		-			- 3		
COC REV 09/04											20	T,T PAGE	E OF



FAX 420-9210 FAX 924-9290 FAX 906-9210 FAX 382-7588 FAX 563-9210 425-420-9200 509-924-9200 503-906-9200 541-383-9310 907-563-9200 11720 North Creek Phwy N Suite 400, Bothell, WA 98011-8244
 11922 E 1st Ave, Spokane, WA 99206-5302
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145
 20332 Empire Ave, Ste Ft, Bend, OR 97701-5712
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

CHAIN OF CUSTODY REPORT

CHAINO	CHAIN OF CUSTODY REPORT	REPORT		Work Order #:	
NCA CLIENT: BASF KJ		INVOICE TO:		TURNAROUND REQUEST	QUEST
REPORT TO: Galen Dewn's Kennely Jenks ADDRESS:	Consultants	BNSF-BAR	BNSF-BARE Ship Royal	ha Bustness Days e Oresnic & Indresnic Analyses	a dania
- 1		P.O. NUMBER: See	See Work ORDER	<b>. 5</b>	ĺ
PROJECT NAME: BUSF - WISHOW		PRESERV/	TIVE		▽ -
PROJECT NUMBER: 0.36.026.02	3v			E.	
	إبرا	REQUESTED ANALYSES	NALYSES	OTHER Specify:	
SAMPLED BY: Hallen Orcus	2)- 2)- 0-			* Temperand Anguests has then stendard may a	have first Charge.
CLIENT SAMPLE SAMPLING IDENTIFICATION DATE/TIME	NGTPU 12 12 [w 13 TB X3 TB	3		MATRIX # OF LOCATION / (W, S, O) CONT. COMMENTS	TON / NCA ENTS WO ID
1 M-7-8 11/1965 1200	×			2	11
2 M-8-14 11/10/05 1100	X			<i>N</i>	×
3 M-7-14 11/10/05 1205	X			ر ا	(3
4 TRIP Black	X			mekan 1	14
\$					
9					
7					
6					
10					
RELEASED BY: Jallan C. Buni		DATE: 11/10/05	RECEIVED BY: / on	Jank Co o	DATE: 11/11/05
PRINT NAME: Galen Day 3 FIRM: KJC	ر ۲	TIME: 1500	PRINT NAME: Blankinship	FIRM: NCA	TIME: 0930
		рате:	RECEIVED BY:		DATE:
PRINT NAME: FIRM:		TIME:	PRINT NAME:	FIRM:	TDME:
ADDITIONAL REMARKS:	le o			ACA CAN	7 , 7
COC REV 09/04				, L / / / /	PAGE OF



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 **Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

#### **CASE NARRATIVE for B5J0645**

Client: Kennedy/Jenks Consultants Project Manager: Galen Davis Project Name: BNSF – Wishram Project Number: 036026.02

#### 1.0 DESCRIPTION OF CASE

Five soil samples and one trip blank were submitted for analysis of:

- Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B
- Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up
- Total Metals by EPA 6000/7000 Series Methods
- Polychlorinated Biphenyls by EPA Method 8082
- Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method)

#### 2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received October 29<sup>th</sup>, 2005 by North Creek Analytical Bothell. The temperature of the samples at the time of receipt was 4.7 degrees Celsius. There was no date/time on the label or COC for the trip blank. The sample was logged in with a sampled date/time of 10/26/05 1200. For the trip blank, NWTPH-G/BTEX analysis was requested, however the sample was received in a 5035 prepared VOA vial and the sample was analyzed for VOCs.

#### 3.0 PREPARATIONS AND ANALYSIS

Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

#### Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

#### Total Metals by EPA 6000/7000 Series Methods

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

#### Polychlorinated Biphenyls by EPA Method 8082

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

RECEIVED

DEC -8 2005

K/J Ro/File\_\_\_\_

North Creek Analytical, Inc. Environmental Laboratory Network Page 1 of 2



425.420.9200 fax 425.420.9210

11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method)

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

Kate Haney Project Manager North Creek Analytical



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

05 December 2005

Galen Davis Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

to Shung

RE: BNSF-Wishram, WA

Enclosed are the results of analyses for samples received by the laboratory on 10/29/05 08:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kate Hanev

**Project Manager** 



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported: 12/05/05 17:58

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FIEXC-W-10	B5J0645-01	Soil	10/27/05 08:00	10/29/05 08:50
FIEXC-S-10	B5J0645-02	Soil	10/27/05 09:00	10/29/05 08:50
FIEXC-N-8	B5J0645-03	Soil	10/27/05 08:30	10/29/05 08:50
FI-EAST-6	B5J0645-04	Soil	10/26/05 16:20	10/29/05 08:50
FI-MID-10	B5J0645-05	Soil	10/26/05 16:00	10/29/05 08:50
TRIP BLANK	B5J0645-06	Soil	10/26/05 12:00	10/29/05 08:50

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

## Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B North Creek Analytical - Bothell

Analyte	15.11(d)	form	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-W-10 (B5	J0645-01) S	oil Sampl	ed: 10/27/0	5 08:00 Re	ceived: 10/2	9/05 08:50	Barry 1	The state of	g (41 L		weight.
Gasoline Range Hydi	rocarbons		ND	6.77	mg/kg dry	g lps 1 =	5K02031	11/02/05	11/02/05	NWTPH-Gx/8021B	
Benzene			ND	0.0271	"	11	**	tr .	"	n	
Toluene			ND	0.0677	11	- 11	н		**		
Ethylbenzene			ND	0.0677			n l	**	н	m	
Xylenes (total)			ND	0.135		n				n	
Surrogate: 4-BFB (F.	ID)		88.7 %	50-150			n	"	"	"	
Surrogate: 4-BFB (P.	ID)		101 %	53-142			n	"	n	"	
FIEXC-S-10 (B5J	0645-02) So	il Sampleo	l: 10/27/05	09:00 Rec	eived: 10/29	/05 08:50					
Gasoline Range Hydr	ocarbons		ND	6.13	mg/kg dry	1	5K02031	11/02/05	11/02/05	NWTPH-Gx/8021B	11 4 11
Benzene			ND	0.0245	"	"	H	11,02,05	11/02/03	n	
Toluene			ND	0.0613	н	2011 22577	**			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Ethylbenzene			ND	0.0613	**		**	11	11	m and a second	
Xylenes (total)			ND	0.123	н	"	R	**	н —	-224	
Surrogate: 4-BFB (FI	(D)		89.1 %	50-150			"	"	"	,,	
Surrogate: 4-BFB (P)	(D)		104 %	53-142			*	"	"	"	
FIEXC-N-8 (B5J0	645-03) Soil	Sampled	10/27/05	08:30 Recei	ved: 10/29/0	05 08:50					
Gasoline Range Hydro	ocarbons		ND	6.16	mg/kg dry	1	5K02031	11/02/05	11/02/05	NWTPH-Gx/8021B	
Benzene			ND	0.0246	"	**	**	11	H	H	
Toluene			ND	0.0616	11	tt	7 11 02	8	**		
Ethylbenzene			ND	0.0616	11	н	"	**	н	н — =	
Kylenes (total)			ND	0.123			H178	H 113	Jahren	west a chix o	
Surrogate: 4-BFB (FI	D)		88.6 %	50-150			n	"	"	"	- GE., E
Surrogate: 4-BFB (Pl	D)		105 %	53-142				,,	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 2 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02
Project Manager: Galen Davis

Reported: 12/05/05 17:58

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
FIEXC-W-10 (B5J0645-01) Soil	Sampled: 10/27/0	5 08:00 Re	ceived: 10/2	9/05 08:50	(A) (I) (1)	12.00		171,221,311	
Diesel Range Hydrocarbons	ND	10.5	mg/kg dry	1 1	5J31090	11/01/05	11/03/05	NWTPH-Dx	22100 5221
Lube Oil Range Hydrocarbons	ND	26.3	"	"	u u	11	#	11	
Surrogate: 2-FBP	95.3 %	50-150			outill ,	"	,,	"	
Surrogate: Octacosane	109 %	50-150			H H	,,	"	"	,
FIEXC-S-10 (B5J0645-02) Soil	Sampled: 10/27/05	09:00 Rec	eived: 10/29/	05 08:50					
Diesel Range Hydrocarbons	52.5	21.9	mg/kg dry	2	5J31090	11/01/05	11/03/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	493	54.7	"	**	11	**	11	11	200
Surrogate: 2-FBP	94.5 %	50-150	Paylow, 1	II heiger	n	n	n		
Surrogate: Octacosane	96.1 %	50-150			n	"	n	"	
FIEXC-N-8 (B5J0645-03) Soil S	ampled: 10/27/05 (	8:30 Recei	ived: 10/29/(	05 08:50					
Diesel Range Hydrocarbons	853	108	mg/kg dry	10	5J31090	11/01/05	11/03/05	NWTPH-Dx	D-15
Lube Oil Range Hydrocarbons	3390	269	11	**	n	11	11	11	D-15
Surrogate: 2-FBP	ND	50-150			"	n	n	n	S-01
Surrogate: Octacosane	ND	50-150			"	"	"	"	S-01
FI-EAST-6 (B5J0645-04) Soil Sa	mpled: 10/26/05 1	6:20 Receiv	ved: 10/29/0	5 08:50					
Diesel Range Hydrocarbons	152	10.7	mg/kg dry	1	5J31090	11/01/05	11/03/05	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	26.8	"	11	н	**	#	H	D 00
Surrogate: 2-FBP	91.6%	50-150			"	"	"	п	
Surrogate: Octacosane	113 %	50-150		350	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	77	"	"	
FI-MID-10 (B5J0645-05) Soil Sa	mpled: 10/26/05 1	6:00 Receiv	ved: 10/29/0	5 08:50					
Diesel Range Hydrocarbons	ND	10.9	mg/kg dry	1	5J31090	11/01/05	11/03/05	NWTPH-Dx	V=_ 11 =11
Lube Oil Range Hydrocarbons	ND	27.4	"	- 11		н	11	H	
Surrogate: 2-FBP	102 %	50-150			n	"	"	"	
Surrogate: Octacosane	114 %	50-150			**	"	"	,,	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 17:58

#### Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-W-10 (B5J0645-01) Soil	Samp	ed: 10/27/0	5 08:00 Re	ceived: 10/2	9/05 08:50	1 1136	Wing Mark			5.34.31
Lead	50 P	2.74	0.518	mg/kg dry	gawit1	5K04071	11/04/05	11/07/05	EPA 6020	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 4 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02
Project Manager: Galen Davis

**Reported:** 12/05/05 17:58

## Polychlorinated Biphenyls by EPA Method 8082 North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-N-8 (B5J0645-03) Soil	Sampled: 10/27/05	08:30 Rece	ived: 10/29	/05 08:50	E World B	ACS-MEDIC	novež tav	decimal de la	aliz seon
Aroclor 1016	ND	27.3	ug/kg dry	various I	5K04050	11/04/05	11/07/05	EPA 8082	Sec.
Aroclor 1221	ND	54.6	"	II.	11	11.04.05	"	EFA 6062	
Aroclor 1232	ND	27.3	11		11	n	**		
Aroclor 1242	ND	27.3	11	п	н			"	
Aroclor 1248	ND	27.3	11						•
Aroclor 1254	ND	27.3	**	н	"	"	"	н	
Aroclor 1260	ND	27.3	**		**		**	R	
Aroclor 1262	ND	27.3	11	" "	" "	**	. "	n	
Aroclor 1268	ND	27.3	11	,,	"	**	"	n	
Surrogate: TCX	73.1 %	39-139	70		"			n	
Surrogate: Decachlorobiphenyl	69.2 %	33-163			"	"	"	"	

North Creek Analytical - Bothell

Kate Haney, Project Manager

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network

Page 5 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

#### Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte		orting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-S-10 (B5J0645-02) Soil	Sampled: 10/27/05 09:00	Rec	eived: 10/29/	05 08:50	0100111	or Miller	story 1 100		A-02
Acetone	ND	30.6	ug/kg dry	goreo I	5K09038	11/09/05	11/09/05	EPA 8260B	III EQUINITIES S
Benzene	ND	1.53	17	n H	"	11	er	н	
Bromobenzene	ND	5.10	**	Ħ	**	11	**	and and	
Bromochloromethane	ND	5.10	n	11	n	11	**	17	
Bromodichloromethane	ND	5.10	n	**	н	**	91	n	
Bromoform	ND	5.10	**	11	n	**	***	н	
Bromomethane	ND	10.2	**	Ħ	n	11	**	Ħ	
2-Butanone	ND	15.3	н	11	Ħ	11	**	n	
n-Butylbenzene	ND	5.10	н	**	n	11	11	77	
sec-Butylbenzene	ND	5.10	tt tt	**	***	11	11	Ħ	
tert-Butylbenzene	ND	5.10	**	**	**	М н	11	π	
Carbon disulfide	ND	3.06	e	# =	97	11	11	**	
Carbon tetrachloride	ND	5.10	· ·	н		н	11	Ħ	
Chlorobenzene	ND	2.04	**	n	**	n	11	**	
Chloroethane	ND	5.10	**	**	"	11	н	II.	
Chloroform	ND	2.55	"	8	11	11	H	n	
Chloromethane	ND	10.2		н	**	11	**	n	
2-Chlorotoluene	ND	5.10	**	**	"	11	11	11	
4-Chlorotoluene	ND	5.10	н	**	**	21	11	n	
Dibromochloromethane	ND	5.10	н	H S	"	Ħ	tt	17	
1,2-Dibromo-3-chloropropane	ND	10.2	n	200	**	н	***	n	
1,2-Dibromoethane (EDB)	ND	5.10	**	n	\$1	#	**	**	
Dibromomethane	ND	5.10	**	**	11	**	**	11	
1,2-Dichlorobenzene	ND	5.10	11	н	11	11	**	**	
1,3-Dichlorobenzene	ND	5.10	11	**	11	11	11	**	
1,4-Dichlorobenzene	ND	5.10	н	**	n	11		n	
Dichlorodifluoromethane	ND	5.10	**	H.	Ħ	**	Ħ	Ħ	
1,1-Dichloroethane	ND	2.04	11	"	- 11	11	**	Ħ	
1,2-Dichloroethane	ND	1.28	**	"	11	**	"		
1,1-Dichloroethene	ND	3.06	н	- 11	0.5 H	11	ıı	H	
cis-1,2-Dichloroethene	ND	3.06	u	**	n ·	- 11	n	n	
trans-1,2-Dichloroethene	ND	2.55	n		**	н	Ħ	11	
1,2-Dichloropropane	ND	5.10	**	"	**	**	**	n	
1,3-Dichloropropane	ND	5.10	**	"	11	**	11	**	
2,2-Dichloropropane	ND	10.2	11	"	11	**	**	11	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported:

12/05/05 17:58

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

PIEXC S-10 (B530645-02) Soil   Sampled: 10/27/05 09:00   Received: 10/29/05 08:50	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
1,1-Dichloropropene ND 5.10 ug/kg dry 1 5K09038 11/09/05 11/09/05 "cis-1,3-Dichloropropene ND 5.10 " " " " " " " " " " " " " " " " " " "	FIEXC-S-10 (B5J0645-02) Soil	Sampled: 10/27/0	5 09:00 Rec	eived: 10/29	0/05 08:50	a suesto s	enilăre a	Waring No. 1		- A-02
Description	1,1-Dichloropropene			Tarrett of the control		5K09038	11/09/05	11/00/05		A-0.
Ethylbenzene ND 4.08 " " " " " " " " " " " " " " " " " " "		ND	5.10							
Hexachlorobutadiene   ND   5.10	trans-1,3-Dichloropropene	ND	1.28	**	н		<b>= 1</b>	**	**	
Methyl tert-butyl ether ND 1.02 " " " " " " " " " " " " " " " " " " "	Ethylbenzene	ND	4.08	**	tr .	н		11	,	14 7 AC 14 AC
2-Hexanone ND 20.4 " " " " " " " " " " " " " " " " " " "	Hexachlorobutadiene	ND	5.10	**	"	ti	**	**	**	A - 0.1
2-Hexanone ND 20.4 " " " " " " " " " " " " " " " " " " "	Methyl tert-butyl ether	ND	1.02	"		11	11	11		A-01
p-Isopropyltoluene  ND 5.10 " " " " " " " " " " " " " " " " " " "	2-Hexanone	ND	20.4				. 0			
p-Isopropyltoluene	sopropylbenzene	ND	5.10	**	n	н		"	**	
4-Methyl-2-pentanone Methylene chloride ND 3.57 Nphthalene ND 5.10 ND 5.10 ND 1.02 ND 1.02 ND 1.2,3-Trichlorobenzene ND 1.2,4-Trichlorobenzene ND 5.10 ND 5.10 ND 1.1,1,2-Tetrachloroethane ND 5.10 ND 1.1,1,2-Tetrachloroethane ND 5.10 ND 1.1,2,2-Trichloroethane ND 5.10 ND 1.1,2,2-Trichloroethane ND 5.10 ND 1.1,2,2-Trichloroethane ND 5.10 ND 1.53 ND 1.55 ND 1.51 ND 1.52 ND 1.53 ND 1.53 ND 1.54 ND 1.55 ND 1.55 ND 1.55 ND 1.51 ND 1.52 ND 1.51 ND 1.51 ND 1.52 ND 1.51 ND 1	o-Isopropyltoluene	ND	5.10	ŧŧ		**	**			
Methylene chloride         ND         3.57         """"""""""""""""""""""""""""""""""""	l-Methyl-2-pentanone	ND	20.4	n	11	11	#			
Naphthalene ND 5.10 " " " " " " " " " " " " " " " " " " "	Methylene chloride	ND	3.57		11	**				
ND	Vaphthalene	ND	5.10	н		**	**			
1,2,3-Trichlorobenzene   ND   1.02	-Propylbenzene	ND	5.10	11	"	**	**			
1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1,2-Tetrachloroethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,2,3-Trichloroethane 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene 1,3,6-Trimethylbenzene 1,3	Styrene	ND				11				
1,2,4-Trichlorobenzene	,2,3-Trichlorobenzene	ND		**		i 10	"			
1,1,2,2-Tetrachloroethane	,2,4-Trichlorobenzene	ND		**	**	**				
1,1,2,2-Tetrachloroethane	,1,1,2-Tetrachloroethane	ND	5.10	, w		11		10		
Tetrachloroethene	,1,2,2-Tetrachloroethane	ND	5.10	11	н	11	11			
Toluene ND 1.53 " " " " " " " " " " " " " " " " " " "	etrachloroethene	ND	2.04	**	**	er er				
1,1,1-Trichloroethane	oluene	ND		**						
1,2-Trichloroethane	,1,1-Trichloroethane			**	n .					
Trichloroethene ND 2.55 " " " " " " " " " " " " " " " " " "	,1,2-Trichloroethane	ND		**	**				1.5	
Trichlorofluoromethane  ND 5.10 " " " " " " " " " " " " " " " " " " "	richloroethene			"					**************************************	
1,2,3-Trichloropropane	richlorofluoromethane			**	н					
1,2,4-Trimethylbenzene	2,3-Trichloropropane				,,					
7,3,5-Trimethylbenzene ND 5.10 " " " " " " " " " " " " " " " " " " "	2,4-Trimethylbenzene	ND		11						
Vinyl chloride ND 2.55 " " " " " " " " " " " " " " " " " "	3,5-Trimethylbenzene	ND		**	**					
Oatal Xylenes         ND         10.2         "	inyl chloride			"	H.				"	
Surrogate: 1,2-DCA-d4 92.2 % 60-140 " " " " " " " " " " " " " " " " " " "	otal Xylenes									
urrogate: Toluene-d8 107 % 60-140 " " " " " " " " " " " " " " " " " " "	urrogate: 1,2-DCA-d4	92.2 %			W	"	"			
Currogate: 4-BFB 103 % 60-140 " " " "	urrogate: Toluene-d8	107 %	60-140			"	n	"		
	urrogate: 4-BFB	103 %	60-140			"	n	"	"	

North Creek Analytical - Bothell

Katoskun

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Number: 036026.02 Project Manager: Galen Davis

**Reported:** 12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte		orting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method Notes
FIEXC-N-8 (B5J0645-03) Soil	Sampled: 10/27/05 08:30	Recei	ved: 10/29/0	05 08:50	E. 17.762	11.00 B	ahngga 1	
Acetone	ND PROCE	32.1	ug/kg dry	1 3	5K02048	11/01/05	11/01/05	EPA 8260B
Benzene	ND	1.61	11	"		**	**	THE BUILDING
Bromobenzene	ND	5.36	**		**		27	-
Bromochloromethane	ND	5.36	***	91	n	052842	11	n invated a
Bromodichloromethane	ND	5.36	n	*	н	11	Ħ	TOTAL THEORY
Bromoform	ND	5.36	PI .	**	11	11	11	. (4 / F. 19 TH W W W
Bromomethane	ND	10.7	"	H 5	n	17	11	
2-Butanone	ND	16.1	"	tt	**	n	**	H HOSPINE
n-Butylbenzene	ND	5.36	11		**	n	11	H THE RESERVED
sec-Butylbenzene	ND	5.36	**	n e	**	er .	**	and the state of t
tert-Butylbenzene	ND	5.36	11	11	n	n	**	
Carbon disulfide	ND	3.21	tt .	11	i n	H	**	1109(01)//100
Carbon tetrachloride	ND	5.36	H H	- 11	n	**	**	n Suji rilyi i
Chlorobenzene	ND	2.14	H	11		**	**	n
Chloroethane	ND	5.36	т. п	11	***	11	"	
Chloroform	ND	2.68		n (1)		**	11	n Sillo-1/ -
Chloromethane	ND	10.7		n 14	H H	**	n	
2-Chlorotoluene	ND	5.36		11	le .	**	**	1
4-Chlorotoluene	ND	5.36	11	00 H	11	,,	**	H OFFICE A II I
Dibromochloromethane	ND	5.36	11	11	47	н	н	n
1,2-Dibromo-3-chloropropane	ND	10.7		· 10	n n	11	11	- THE P. S. LEWIS CO., LANSING
1,2-Dibromoethane (EDB)	ND	5.36		n	**	**	11	GENTRE STORE TO SERVICE
Dibromomethane	ND	5.36		11	11	H	11	H (1)
1,2-Dichlorobenzene	ND	5.36	"	er er	H		11	
1,3-Dichlorobenzene	ND	5.36	**	11	н .	11	**	
1,4-Dichlorobenzene	ND	5.36		н		H	ıı .	H THE PROPERTY OF THE PARTY OF
Dichlorodifluoromethane	ND	5.36	11 11	12 m		**	ti	,
1,1-Dichloroethane	ND	2.14	**		н		"	
1,2-Dichloroethane	ND	1.34	**	**	"	"	н	
1,1-Dichloroethene	ND	3.21	**	**		**	tt	Approximate the state of the state o
cis-1,2-Dichloroethene	ND	3.21	"	"	**	11	**	· V camera care
trans-1,2-Dichloroethene	ND	2.68	**	н	- n -0	. 11	ŧſ	n Marian Separate
1,2-Dichloropropane	ND	5.36	11	- **	11	11	tt	**
1,3-Dichloropropane	ND	5.36	11	Ħ	n	н	11	я
2,2-Dichloropropane	ND	10.7	**	**	11	п	н	,

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Dung



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9290 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

**Reported:** 12/05/05 17:58

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte	Result	Repo I	rting imit	Units	Dilt	ition	Batch	Prepared	Analyzed	Method	Notes
FIEXC-N-8 (B5J0645-03) Soil	Sampled: 10/27/05	08:30	Recei	ved: 10/29/	05 08:	50	e itali		0.0% - 100 K	e recruit	37 D 73 MB
1,1-Dichloropropene	ND		5.36	ug/kg dry		i	5K02048	11/01/05	11/01/05	п	19 259
cis-1,3-Dichloropropene	ND		5.36	11		•	"	11/01/05	11/01/05	ħ	
trans-1,3-Dichloropropene	ND		1.34	**				"	H	**	
Ethylbenzene	ND		4.28	Ħ	,	,	89	41	н	,	
Hexachlorobutadiene	ND		5.36	**	,	,	11	**	**	n	
Methyl tert-butyl ether	ND		1.07	lt .			**	**	H		
2-Hexanone	ND		21.4	n	**		**	"	11		
Isopropylbenzene	ND		5.36	н			11	**	,,	,,	
p-Isopropyltoluene	ND		5.36	11	tt	- 1		**	11	"	
4-Methyl-2-pentanone	ND	:	21.4	91	n				11	" "	
Methylene chloride	ND	3	3.75	e	**					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Naphthalene	ND		5.36	**	11		**	н	89	,,	
n-Propylbenzene	ND		5.36	11				**	#	"	
Styrene	ND		1.07	,,	н		,,	**	"	**	
,2,3-Trichlorobenzene	ND		5.36		**		11		11	n	
,2,4-Trichlorobenzene	ND		.36	"	**			7.80	"	" n	
,1,1,2-Tetrachloroethane	ND		.36	**			,,	- n	"	"	
,1,2,2-Tetrachloroethane	ND		.36	11	11				"	n n	
etrachloroethene	ND		.14	н	11			**	"	"	
oluene	ND		.61	,,	**		**		"		
,1,1-Trichloroethane	ND		.68	**	*11		**	3 H	**	*	
,1,2-Trichloroethane	ND		.34	**				#	"	TO QUEITO 18	
richloroethene	ND		.68					"	"	H = 1112	
richlorofluoromethane	ND		.36					"		п	
,2,3-Trichloropropane	ND		.36		1		"	"	#	n	
2,4-Trimethylbenzene	ND		.36	,,	II			"	**		
3,5-Trimethylbenzene	ND		.36	"	"		" "		Ħ	"	
inyl chloride	ND		.68	- 11			"	-167	**	11	
otal Xylenes	ND		0.7	**			ш и	**	#! #!	11	
urrogate: 1,2-DCA-d4	127 %	60-140					n	,,	"	"	
urrogate: Toluene-d8	128 %	60-140					"	"	" " 18 11	"	
arrogate: 4-BFB	138 %	60-140					"	"	"	***	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 9 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

### Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte	Result	Reporting Limit		Dilution	Batch	Prepared	Analyzed	Method	Notes
TRIP BLANK (B5J0645-06) Soil	Sampled: 10/26/0	5 12:00 I	Received: 10/2	29/05 08:50		30 25	5-15 E.H.	everywa.	A-01a
Acetone	ND	30.0	ug/kg wet	1	5K02060	11/02/05	11/02/05	EPA 8260B	
Benzene	ND	1.50	**	H 30		н	н		
Bromobenzene	ND	5.00	n	er II	"	**	n	Ħ	
Bromochloromethane	ND	5.00	"	11	11	H	11		
Bromodichloromethane	ND	5.00	**	n	н	**	<b>H</b> 10	tt	
Bromoform	ND	5.00	"	"	Ħ	**	**	*	
Bromomethane	ND	10.0	11	11	11	n -	**	11	
2-Butanone	ND	15.0		**	11	- 11	11	11	
n-Butylbenzene	ND	5.00	н	n n		Ħ	B†	47	
sec-Butylbenzene	ND	5.00	n	n II	т_ и	Ħ	11	11	
tert-Butylbenzene	ND	5.00	n	"	n	11	**	91	
Carbon disulfide	ND	3.00	THE STATE OF THE S	Ħ	0 H	н	**	Ħ	
Carbon tetrachloride	ND	5.00	u	н	100 m		**	n	
Chlorobenzene	ND	2.00	II.	· n	n n	**	n	н	
Chloroethane	ND	5.00	**	***	**	**	**	n (3-1)	
Chloroform	ND	2.50			**	11	**	W	
Chloromethane	ND	10.0	11	n		11	**	н	
2-Chlorotoluene	ND	5.00	, ,,	n	n n	tt	H	н	
4-Chlorotoluene	ND	5.00	n	11	- п	11	**	и	
Dibromochloromethane	ND	5.00	, "	11	eside o	**	**	н	
1,2-Dibromo-3-chloropropane	ND	10.0	•	26		11	**	n	
1,2-Dibromoethane (EDB)	ND	5.00	- "		н	#	**	n	
Dibromomethane	ND	5.00	т —		***	11	***	m	
1,2-Dichlorobenzene	ND	5.00	,	H	**	11	III	n	
1,3-Dichlorobenzene	ND	5.00	, "	**		**	**	11	
1,4-Dichlorobenzene	ND	5.00	, ,,	"	**	**	**	n = 1	
Dichlorodifluoromethane	ND	5.00	, - "	11	11	11	11	Ħ	
1,1-Dichloroethane	ND	2.00	н	n	n	Ħ	n	**	
1,2-Dichloroethane	ND	1.25	; "	- n	tr.	**	11	n	
1,1-Dichloroethene	ND	3.00		11		11	н	**	
cis-1,2-Dichloroethene	ND	3.00		#1	- n	n	it to	**	
trans-1,2-Dichloroethene	ND	2.50	) "	**		**	#	ti	
1,2-Dichloropropane	ND	5.00		"	**		II	11	
1,3-Dichloropropane	ND	5.00		**	11	"	n	<b>n</b> :	
2,2-Dichloropropane	ND	10.0		11	**	**	81	Ħ.	

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 **Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	n Batch	Prepared	Analyzed	Method	Notes
TRIP BLANK (B5J0645-06) Soil	Sampled: 10/2	5/05 12:00 R	eceived: 10	/29/05 08:5	0 0 5 5 5 0	viitiis add	Mark Hilly	2 1 5 5 7 1 1 1 1	
1,1-Dichloropropene	ND	5.00	ug/kg wet		5K02060	11/02/05	11/02/05	# #	A-01a
cis-1,3-Dichloropropene	ND	5.00	11		31K02000	11/02/03	11/02/03		
trans-1,3-Dichloropropene	ND	1.25	11	**	**		Ħ	,	
Ethylbenzene	ND	4.00	11	**	- 11	er	**	,,	-1001 100
Hexachlorobutadiene	ND	5.00	н ,	н Н		**	11		and Market
Methyl tert-butyl ether	ND	1.00			**	"	11	"	
2-Hexanone	ND	20.0	11	**	**		**	" "	
Isopropylbenzene	ND	5.00	li li			11	11	n	
p-Isopropyltoluene	ND	5.00	n	**		11	**	"	
4-Methyl-2-pentanone	ND	20.0	**	17	y	H		"	
Methylene chloride	ND	3.50	Ħ	"	"	PI .	17	,,	
Naphthalene	ND	5.00		. "				, "	
n-Propylbenzene	ND	5.00			n	. 11	**	n 0	
Styrene	ND	1.00	**	н	n	"	"	,	
1,2,3-Trichlorobenzene	ND	5.00	**	**	**	11			
1,2,4-Trichlorobenzene	ND	5.00		n		"	" #	#	
1,1,1,2-Tetrachloroethane	ND	5.00	n n	**		"	"	11	
1,1,2,2-Tetrachloroethane	ND	5.00	n		(60) H	"	"	Ħ	
Tetrachloroethene	ND	2.00	н		in i		#	it	
Toluene	ND	1.50			" "	**		n	
1,1,1-Trichloroethane	ND	2.50	#		"	**	11	"	
,1,2-Trichloroethane	ND	1.25	"	_		. 11	11	"	
Trichloroethene	ND	2.50	"	"	di.i. "		Ħ	н	
richlorofluoromethane	ND	5.00		"	"	n.s.	er	н	
,2,3-Trichloropropane	ND	5.00	11	"			**	- 11	
,2,4-Trimethylbenzene	ND	5.00					"	Ħ	
,3,5-Trimethylbenzene	ND	5.00	,	71			Ħ	**	
/inyl chloride	ND	2.50		,	**		**	n	
otal Xylenes	ND	10.0		"	"	"	11	n	
urrogate: 1,2-DCA-d4	136 %	60-140			"	"	,,	,,	
urrogate: Toluene-d8	137 %	60-140			115, <b>n</b>	11 m	,,	,,	
urrogate: 4-BFB	136 %	60-140			- n	"	"	,,	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 11 of 31



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 17:58

## Physical Parameters by APHA/ASTM/EPA Methods North Creek Analytical - Bothell

	Reporting	20, 10, 275	54.5%					
Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
l Sampled: 10/27/05	08:00 Rec	eived: 10/2	29/05 08:50	2 108				
95.5	1.00	%	1	5K03079	11/03/05	11/07/05	BSOPSPL003R08	SELVI ALE
Sampled: 10/27/05	9:00 Recei	ved: 10/2	9/05 08:50		45	10.10.1.01	History and the	Carrie Indiana
91.4	1.00	%	1	5K03079	11/03/05	11/07/05	BSOPSPL003R08	
Sampled: 10/27/05 0	8:30 Receiv	ved: 10/29	/05 08:50					
92.8	1.00	%	1	5K03079	11/03/05	11/07/05	BSOPSPL003R08	
Sampled: 10/26/05 16	5:20 Receiv	ed: 10/29/	05 08:50	5 =	on the			= calliff c
93.0	1.00	%	1	5K03079	11/03/05	11/07/05	BSOPSPL003R08	
Sampled: 10/26/05 16	:00 Receiv	ed: 10/29/	05 08:50				BEIN	
92.3	1.00	%	1	5K03079	11/03/05	11/07/05	BSOPSPL003R08	
	Sampled: 10/27/05 0 95.5  Sampled: 10/27/05 0 91.4  Sampled: 10/27/05 0 92.8  Sampled: 10/26/05 10 93.0  Sampled: 10/26/05 10	Result Limit    Sampled: 10/27/05 08:00   Received	Result Limit Units    Sampled: 10/27/05 08:00   Received: 10/2   95.5   1.00 %     Sampled: 10/27/05 09:00   Received: 10/29/91.4   1.00 %     Sampled: 10/27/05 08:30   Received: 10/29/92.8   1.00 %     Sampled: 10/26/05 16:20   Received: 10/29/93.0   1.00 %     Sampled: 10/26/05 16:00   Received: 10/29/93.0   1.00 %	Result         Limit         Units         Dilution           I Sampled: 10/27/05 08:00         Received: 10/29/05 08:50           95.5         1.00         %         1           Sampled: 10/27/05 09:00         Received: 10/29/05 08:50         1           Sampled: 10/27/05 08:30         Received: 10/29/05 08:50         1           92.8         1.00         %         1           Sampled: 10/26/05 16:20         Received: 10/29/05 08:50         1           93.0         1.00         %         1           Sampled: 10/26/05 16:00         Received: 10/29/05 08:50         1	Result         Limit         Units         Dilution         Batch           Sampled: 10/27/05 08:00         Received: 10/29/05 08:50           95.5         1.00         %         1         5K03079           Sampled: 10/27/05 09:00         Received: 10/29/05 08:50         5K03079           Sampled: 10/27/05 08:30         Received: 10/29/05 08:50         5K03079           Sampled: 10/26/05 16:20         Received: 10/29/05 08:50         5K03079           Sampled: 10/26/05 16:20         Received: 10/29/05 08:50         5K03079           Sampled: 10/26/05 16:00         Received: 10/29/05 08:50         5K03079	Result         Limit         Units         Dilution         Batch         Prepared           I Sampled: 10/27/05 08:00         Received: 10/29/05 08:50         5K03079         11/03/05           Sampled: 10/27/05 09:00         Received: 10/29/05 08:50         5K03079         11/03/05           Sampled: 10/27/05 08:30         Received: 10/29/05 08:50         5K03079         11/03/05           Sampled: 10/26/05 16:20         Received: 10/29/05 08:50         5K03079         11/03/05           Sampled: 10/26/05 16:20         Received: 10/29/05 08:50         5K03079         11/03/05           Sampled: 10/26/05 16:00         Received: 10/29/05 08:50         10/29/05 08:50	Result         Limit         Units         Dilution         Batch         Prepared         Analyzed           Sampled: 10/27/05 08:00 Received: 10/29/05 08:50           91.4         1.00         %         1         5K03079         11/03/05         11/07/05           Sampled: 10/27/05 09:00 Received: 10/29/05 08:50           91.4         1.00         %         1         5K03079         11/03/05         11/07/05           Sampled: 10/27/05 08:30 Received: 10/29/05 08:50           92.8         1.00         %         1         5K03079         11/03/05         11/07/05           Sampled: 10/26/05 16:20 Received: 10/29/05 08:50           93.0         1.00         %         1         5K03079         11/03/05         11/07/05           Sampled: 10/26/05 16:00 Received: 10/29/05 08:50	Result         Limit         Units         Dilution         Batch         Prepared         Analyzed         Method           I Sampled: 10/27/05 08:00 Received: 10/29/05 08:50           95.5         1.00         %         1         5K03079         11/03/05         11/07/05         BSOPSPL003R08           Sampled: 10/27/05 09:00 Received: 10/29/05 08:50           91.4         1.00         %         1         5K03079         11/03/05         11/07/05         BSOPSPL003R08           Sampled: 10/27/05 08:30 Received: 10/29/05 08:50           92.8         1.00         %         1         5K03079         11/03/05         11/07/05         BSOPSPL003R08           Sampled: 10/26/05 16:20 Received: 10/29/05 08:50           93.0         1.00         %         1         5K03079         11/03/05         11/07/05         BSOPSPL003R08           Sampled: 10/26/05 16:00 Received: 10/29/05 08:50

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network Page 12 of 31



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported:

12/05/05 17:58

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

#### North Creek Analytical - Bothell

Blank (5K02031-BLK1)	Moses and the second se
Gasoline Range Hydrocarbons   ND   10.0   mg/kg	Mac P
Benzene   ND   0,0400   "	
Benzene	
Toluene ND 0.100 " Ethylbenzene ND 0.100 " Xylenes (total) ND 0.200 "  Surrogate: 4-BFB (FID) 5.24 " 6.00 87.3 50-150 Surrogate: 4-BFB (PID) 6.18 " 6.00 103 53-142  LCS (5K02031-BS1)  Gasoline Range Hydrocarbons 101 10.0 mg/kg 100 101 75-125 Benzene 1.29 0.0400 " 1.13 114 75-125 Toluene 8.18 0.100 " 8.45 96.8 75-125 Ethylbenzene 1.75 0.100 " 1.70 103 75-125  Xylenes (total) 9.55 0.200 " 9.85 97.0 75-125  Surrogate: 4-BFB (FID) 5.87 " 6.00 97.8 50-150 Surrogate: 4-BFB (FID) 5.80 " 6.00 97.8 50-150  Surrogate: 4-BFB (FID) 5.80 " 6.00 96.7 53-142  LCS Dup (5K02031-BSD1)  Gasoline Range Hydrocarbons 92.2 10.0 mg/kg 100 92.2 75-125 9.11 25 Gasoline Range Hydrocarbons 92.2 10.0 mg/kg 100 92.2 75-125 8.91 25 Toluene 7.54 0.100 " 1.13 104 75-125 8.91 25 Ethylbenzene 1.18 0.0400 " 1.13 104 75-125 8.91 25 Ethylbenzene 1.60 0.100 " 8.45 89.2 75-125 8.14 25	Service of the servic
Xylenes (total)   ND   0.200   "	95 134V
Surrogate: 4-BFB (FID) 5.24 " 6.00 87.3 50-150 Surrogate: 4-BFB (PID) 6.18 " 6.00 103 53-142  LCS (5K02031-BS1)  Gasoline Range Hydrocarbons 101 10.0 mg/kg 100 101 75-125  Benzene 1.29 0.0400 " 1.13 114 75-125  Toluene 8.18 0.100 " 8.45 96.8 75-125  Ethylbenzene 1.75 0.100 " 1.70 103 75-125  Xylenes (total) 9.55 0.200 " 9.85 97.0 75-125  Surrogate: 4-BFB (FID) 5.87 " 6.00 97.8 50-150  Surrogate: 4-BFB (PID) 5.80 " 6.00 96.7 53-142  LCS Dup (5K02031-BSD1)  Gasoline Range Hydrocarbons 92.2 10.0 mg/kg 100 92.2 75-125 9.11 25  Benzene 1.18 0.0400 " 1.13 104 75-125 8.91 25  Toluene 7.54 0.100 " 8.45 89.2 75-125 8.14 25  Ethylbenzene 1.60 0.100 " 8.45 89.2 75-125 8.14 25	19 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
Surrogate: 4-BFB (PID)  6.18  " 6.00  103  53-142  LCS (5K02031-BS1)  Gasoline Range Hydrocarbons  101  10.0  mg/kg  100  101  75-125  Benzene  1.29  0.0400  " 1.13  114  75-125  Ethylbenzene  1.75  0.100  " 1.70  103  75-125  Xylenes (total)  9.55  0.200  " 9.85  97.0  75-125  Surrogate: 4-BFB (FID)  5.87  " 6.00  97.8  50-150  Surrogate: 4-BFB (PID)  5.80  " 6.00  96.7  53-142  LCS Dup (5K02031-BSD1)  Gasoline Range Hydrocarbons  92.2  10.0  mg/kg  100  92.2  75-125  9.11  25  Benzene  1.18  0.0400  " 1.13  104  75-125  8.91  25  Ethylbenzene  1.60  0.100  8.45  89.2  75-125  8.14  25  Ethylbenzene	44 PM
Surrogate: 4-BFB (PID)       6.18       "       6.00       103       53-142         LCS (5K02031-BS1)         Gasoline Range Hydrocarbons       101       10.0       mg/kg       100       101       75-125         Benzene       1.29       0.0400       "       1.13       114       75-125         Toluene       8.18       0.100       "       8.45       96.8       75-125         Ethylbenzene       1.75       0.100       "       1.70       103       75-125         Xylenes (total)       9.55       0.200       "       9.85       97.0       75-125         Surrogate: 4-BFB (FID)       5.87       "       6.00       97.8       50-150         Surrogate: 4-BFB (PID)       5.80       "       6.00       96.7       53-142         LCS Dup (5K02031-BSD1)         Gasoline Range Hydrocarbons       92.2       10.0       mg/kg       100       92.2       75-125       9.11       25         Benzene       1.18       0.0400       "       1.13       104       75-125       8.91       25         Ethylbenzene       1.60       0.100       "       8.45       89.2       75-125	March 1
Gasoline Range Hydrocarbons       101       10.0       mg/kg       100       101       75-125         Benzene       1.29       0.0400       "       1.13       114       75-125         Toluene       8.18       0.100       "       8.45       96.8       75-125         Ethylbenzene       1.75       0.100       "       1.70       103       75-125         Xylenes (total)       9.55       0.200       "       9.85       97.0       75-125         Surrogate: 4-BFB (FID)       5.87       "       6.00       97.8       50-150         Surrogate: 4-BFB (PID)       5.80       "       6.00       96.7       53-142         LCS Dup (5K02031-BSD1)         Gasoline Range Hydrocarbons       92.2       10.0       mg/kg       100       92.2       75-125       9.11       25         Benzene       1.18       0.0400       "       1.13       104       75-125       8.91       25         Toluene       7.54       0.100       "       8.45       89.2       75-125       8.14       25         Ethylbenzene       1.60       0.100       "       1.77       1.78       1.78       1.78       1.78	
Benzene   1.29   0.0400   "   1.13   114   75-125     Toluene   8.18   0.100   "   8.45   96.8   75-125     Ethylbenzene   1.75   0.100   "   1.70   103   75-125     Xylenes (total)   9.55   0.200   "   9.85   97.0   75-125     Surrogate: 4-BFB (FID)   5.87   "   6.00   97.8   50-150     Surrogate: 4-BFB (PID)   5.80   "   6.00   96.7   53-142     LCS Dup (5K02031-BSD1)     Gasoline Range Hydrocarbons   92.2   10.0   mg/kg   100   92.2   75-125   9.11   25     Benzene   1.18   0.0400   "   1.13   104   75-125   8.91   25     Toluene   7.54   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100   "   8.45   89.2   75-125   8.14   25     Ethylbenzene   1.60   0.100	
Benzene   1.29   0.0400   "   1.13   114   75-125	
Toluene 8.18 0.100 " 8.45 96.8 75-125 Ethylbenzene 1.75 0.100 " 1.70 103 75-125  Xylenes (total) 9.55 0.200 " 9.85 97.0 75-125  Surrogate: 4-BFB (FID) 5.87 " 6.00 97.8 50-150  Surrogate: 4-BFB (PID) 5.80 " 6.00 96.7 53-142  LCS Dup (5K02031-BSD1)  Gasoline Range Hydrocarbons 92.2 10.0 mg/kg 100 92.2 75-125 9.11 25  Benzene 1.18 0.0400 " 1.13 104 75-125 8.91 25  Toluene 7.54 0.100 " 8.45 89.2 75-125 8.14 25  Ethylbenzene 1.60 0.100 " 8.45 89.2 75-125 8.14 25	
Ethylbenzene       1.75       0.100       "       1.70       103       75-125         Xylenes (total)       9.55       0.200       "       9.85       97.0       75-125         Surrogate: 4-BFB (FID)       5.87       "       6.00       97.8       50-150         Surrogate: 4-BFB (PID)       5.80       "       6.00       96.7       53-142         LCS Dup (5K02031-BSD1)         Gasoline Range Hydrocarbons       92.2       10.0       mg/kg       100       92.2       75-125       9.11       25         Benzene       1.18       0.0400       "       1.13       104       75-125       8.91       25         Toluene       7.54       0.100       "       8.45       89.2       75-125       8.14       25         Ethylbenzene       1.60       0.100       "       1.50       1.	
Xylenes (total)       9.55       0.200       "       9.85       97.0       75-125         Surrogate: 4-BFB (FID)       5.87       "       6.00       97.8       50-150         Surrogate: 4-BFB (PID)       5.80       "       6.00       96.7       53-142         LCS Dup (5K02031-BSD1)         Gasoline Range Hydrocarbons       92.2       10.0       mg/kg       100       92.2       75-125       9.11       25         Benzene       1.18       0.0400       "       1.13       104       75-125       8.91       25         Toluene       7.54       0.100       "       8.45       89.2       75-125       8.14       25         Ethylbenzene       1.60       0.100       "       1.50       89.2       75-125       8.14       25	
Surrogate: 4-BFB (FID)       5.87       "       6.00       97.8       50-150         Surrogate: 4-BFB (PID)       5.80       "       6.00       96.7       53-142         LCS Dup (5K02031-BSD1)       Gasoline Range Hydrocarbons         Benzene       1.18       0.0400       "       1.13       104       75-125       8.91       25         Toluene       7.54       0.100       "       8.45       89.2       75-125       8.14       25         Ethylbenzene       1.60       0.100       "       1.50       8.25       89.2       75-125       8.14       25	
Surrogate: 4-BFB (PID) 5.80 " 6.00 96.7 53-142  LCS Dup (5K02031-BSD1)  Gasoline Range Hydrocarbons 92.2 10.0 mg/kg 100 92.2 75-125 9.11 25  Benzene 1.18 0.0400 " 1.13 104 75-125 8.91 25  Toluene 7.54 0.100 " 8.45 89.2 75-125 8.14 25  Ethylbenzene 1.60 0.100 " 8.45	
Gasoline Range Hydrocarbons     92.2     10.0     mg/kg     100     92.2     75-125     9.11     25       Benzene     1.18     0.0400     "     1.13     104     75-125     8.91     25       Toluene     7.54     0.100     "     8.45     89.2     75-125     8.14     25       Ethylbenzene     1.60     0.100     "     1.50     1.50     1.50	
Benzene 1.18 0.0400 " 1.13 104 75-125 8.91 25 Toluene 7.54 0.100 " 8.45 89.2 75-125 8.14 25 Ethylbenzene 1.60 0.100 " 8.75 1.75	
Benzene     1.18     0.0400     "     1.13     104     75-125     8.91     25       Toluene     7.54     0.100     "     8.45     89.2     75-125     8.14     25       Ethylbenzene     1.60     0.100     "     1.50     1.50     1.50	
Toluene 7.54 0.100 " 8.45 89.2 75-125 8.14 25	
Ethylbenzene 160 0100 7 170	
Xylenes (total) 1.70 94.1 75-125 8.96 25 8.77 0.200 " 9.85 89.0 75-125 8.52 25	
Surrogate: 4-BFB (FID) 6.23 " 6.00 104 50-150	
Surrogate: 4-BFB (PID) 5.99 " 6.00 99.8 53-142	
Matrix Spike (5K02031-MS1)	
Source: B5J0624-01 Gasoline Range Hydrocarbons 102 10.8 mg/kg dry 108 1.75 92.8 42-125	(4)
Benzene 1.27 0.0431 " 1.22 ND 104 45-125	
Toluene 9.06 0.100 " 107 43-125	
8.06 0.108 " 9.10 0.0234 88.3 55-125 Chylbenzene 1.71 0.108 " 1.82 0.00829 93.5 53-132	
Kylenes (total)     9.38     0.215     "     10.6     0.0449     88.1     59-125	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 13 of 31



425.420.9200 fax 425.420.9210

11922 East 1st Avenue, Spokane Valley, WA 99206-5302

%REC

Limits

59-125

50-150

53-142

**RPD** 

0.749

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Analyte

Xylenes (total)

Surrogate: 4-BFB (FID)

Surrogate: 4-BFB (PID)

Project: BNSF-Wishram, WA

Spike

Level

10.6

6.46

6.46

Source

Result

0.0449

%REC

87.4

102

99.7

Project Number: 036026.02 Project Manager: Galen Davis

Reporting

Limit

0.215

Result

9.31

6.62

6.44

Reported:

RPD

Limit

Notes

12/05/05 17:58

#### Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality **Control**

#### North Creek Analytical - Bothell

Units

Batch 5K02031: Prepare	ed 11/02/05	Using E	PA 5030F	3 (P/T)							4 12 3
Matrix Spike (5K02031-MS1)	)				livie- O	Source: B	5J0624-	01		SH W S	other is the second
Surrogate: 4-BFB (FID)		6.60	L	mg/kg dry	6.46		102	50-150			
Surrogate: 4-BFB (PID)		6.25		"	6.46		96.7	53-142			1 1 1 1 1 1 1
Matrix Spike Dup (5K02031-	MSD1)					Source: B	5J0624-	01			
Gasoline Range Hydrocarbons		98.6	10.8	mg/kg dry	108	1.75	89.7	42-125	3.39	40	15 11
Benzene		1.25	0.0431	, T	1.22	ND	102	45-125	1.59	40	
Toluene		8.00	0.108	71	9.10	0.0234	87.7	55-125	0.747	40	
Ethylbenzene		1.71	0.108	17	1.82	0.00829	93.5	53-132	0.00	40	

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02
Project Manager: Galen Davis

Reported: 12/05/05 17:58

Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5J31090:	Prepared 11/01/05	Using E	PA 3550B	is j	18 ju		101				-37/
Blank (5J31090-BL	K1)				1 24 1		ō is i	ne)witte	lee inget	s Rep	1258
Diesel Range Hydrocar	bons	ND	10.0	mg/kg					To be	Turear	
Lube Oil Range Hydroc	earbons	ND	25.0	H = -							
Surrogate: 2-FBP		8.78	1	- "	8.33		105	50-150		Mark	*
Surrogate: Octacosane		9.55		H	8.33		115	50-150			
LCS (5J31090-BS1)											
Diesel Range Hydrocarl	oons	71.6	10.0	mg/kg	66.7		107	61-120			
Surrogate: 2-FBP	Trap Span	7.58	lu ta i		8.33	: it	91.0	50-150			
LCS Dup (5J31090-	BSD1)										
Diesel Range Hydrocart	oons	70.6	10.0	mg/kg	66.7	14	106	61-120	1.41	40	
Surrogate: 2-FBP		7.62		"	8.33		91.5	50-150			
Duplicate (5J31090-	DUP1)					Source: B	SJ0645-0	)1			
Diesel Range Hydrocart	oons	ND	10.4	mg/kg dry		ND			NA	50	
Lube Oil Range Hydroc	arbons	ND	26.1	n		ND			NA	50	
Surrogate: 2-FBP		8.41		"	8.70		96.7	50-150	=		
Surrogate: Octacosane		9.48		n	8.70		109	50-150			

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network



425.420.9200 fax 425.420.9210

11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

### Total Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting					%REC		RPD		
		Vezait	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	
Batch 5K04071:	Prepared 11/04/05	Using	EPA 3050B		13:	atte state	n 14614		i dilinged S	E 1571	di Auru	
Blank (5K04071-BL	_K1)	10 TE							. vop	Ales-de	Step Dalish	
Lead		ND	0.500	mg/kg	Hg=	. All	3.105				18504 no [955	
LCS (5K04071-BS1	)						- 1				Children and a	
Lead		39.1	0.495	mg/kg	39.6		98.7	80-120			Call Labor	
LCS Dup (5K04071-	-BSD1)											
Lead		39.2	0.495	mg/kg	39.6	IE	99.0	80-120	0.255	20	ensil tella	
Matrix Spike (5K04	071-MS1)					Source: I	35J0645-	01				
Lead		43.6	0.524	mg/kg dry	41.9	2.74	97.5	29-162			1 1000	
Matrix Spike Dup (5	5K04071-MSD1)	115				Source: I	B5J0645-	01				
Lead		43.9	0.524	mg/kg dry	41.9	2.74	98.2	29-162	0.686	30	STANDARD AND	
Post Spike (5K04071	I-PS1)					Source: E	35J0645-4	01				
Lead	-10-23	0.100		ug/ml	0.100	0.00528	94.7	75-125			A LET MEAN	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported: 12/05/05 17:58

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

Analyte	0,000	SHAPE I	Result	Reporting Limit	Units	ene!	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K04050:	Prepared	11/04/05	Using	EPA 3550B			I (n	THE THE	gentit.	PS Forts	08148551		ner dage
Blank (5K04050-BLI	<b>K1</b> )										2	75.5	(B) Lypted
Aroclor 1016			ND	25.0	ug/kg	_35		-d:	EUT				
Aroclor 1221	4		ND	50.0	"								
Aroclor 1232			ND	25.0	- 11								
Aroclor 1242			ND	25.0	11								
Aroclor 1248			ND	25.0	, "								
Aroclor 1254			ND	25.0	tr tr								
Aroclor 1260			ND	25.0	н								
Aroclor 1262			ND	25.0	H								
Aroclor 1268			ND	25.0	#								
Surrogate: TCX			5.83	Starting	"		6.67		87.4	39-139		×	
Surrogate: Decachlorobij	phenyl		6.66		H #		6.67		99.9	33-163			
LCS (5K04050-BS1)													
Aroclor 1016		21 2010	77.2	25.0	ug/kg	-	83.3		92.7	54-125			
Aroclor 1260			84.3	25.0	n		83.3		101	58-128			
Surrogate: TCX			5.65		**		6.67		84.7	39-139			
Surrogate: Decachlorobij	ohenyl		6.90		"		6.67		103	33-163			
LCS Dup (5K04050-E	SD1)												
Aroclor 1016			76.1	25.0	ug/kg		83.3		91.4	54-125	1.44	30	
Aroclor 1260			84.8	25.0	н		83.3		102	58-128	0.591	30	
Surrogate: TCX			5.46		"		6.67		81.9	39-139			
Surrogate: Decachlorobip	ohenyl		6.78		"		6.67		102	33-163			
Matrix Spike (5K0405	50-MS1)							Source: E	85 <b>J</b> 0583-1	8			
Aroclor 1016			90.0	29.2	ug/kg dry	,	97.4	ND	92.4	47-134			
Aroclor 1260			96.4	29.2	n		97.4	ND	99.0	22-171			
Surrogate: TCX	-4		6.66		"		7.79		85.5	39-139			
Surrogate: Decachlorobip	ohenyl		7.89		"		7.79		101	33-163			

North Creek Analytical - Bothell

Katoblyund

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

%REC

Limits

**RPD** 

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Analyte

Project: BNSF-Wishram, WA

Spike

Level

Source

Result

%REC

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

**RPD** 

Limit

Notes

## Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

Units

Reporting

Limit

Result

Batch 5K04050: Prepared 11/04/05	Using EPA	3550B		37		240	#se(M)		_ P 5/45	1.00
Matrix Spike Dup (5K04050-MSD1)				0.	Source: 1	B5J0583-	18	- VI	-Evant	osti Juta
Aroclor 1016	83.8	28.3	ug/kg dry	94.2	ND	89.0	47-134	7.13	35	1157 442
Aroclor 1260	90.2	28.3	н	94.2	ND	95.8	22-171	6.65	35	
Surrogate: TCX	6.69		n	7.54		88.7	39-139			4
Surrogate: Decachlorobiphenyl	7.55		"	7.54		100	33-163			

North Creek Analytical - Bothell

Kate Haney, Project Manager

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. Infernational Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02
Project Manager: Galen Davis

Reported: 12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	250×07 151.2 Efect	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K02048: 1	Prepared 11/01/05	Using	EPA 5035		Over	do Afrid	wan.	and Line	ne verk	E 16321	4-10-601
Blank (5K02048-BLK	(1)	102460	7 e 4 J 30					75 r Bir	T-TRUE	98e 75 :	the state
Acetone		ND	30.0	ug/kg	4.0	Ell .					HIG THE
Benzene	÷ 2 no	ND	1.50	11							
Bromobenzene		ND	5.00								
Bromochloromethane		ND	5.00	**							
Bromodichloromethane		ND	5.00	н							
Bromoform		ND	5.00	н							
Bromomethane		ND	10.0	-11							
2-Butanone		ND	15.0								
n-Butylbenzene		ND	5.00	n							
sec-Butylbenzene		ND	5.00	Ħ							
tert-Butylbenzene		ND	5.00	H							
Carbon disulfide		ND	3.00	Ħ							
Carbon tetrachloride		ND	5.00	11							
Chlorobenzene		ND	2.00	n							
Chloroethane		ND	5.00	11							
Chloroform		ND	2.50	Ħ							
Chloromethane		ND	10.0	**							
2-Chlorotoluene		ND	5.00	11							
4-Chlorotoluene		ND	5.00	Ħ							
Dibromochloromethane		ND	5.00	n		37					
1,2-Dibromo-3-chloropropa	ane	ND	10.0	**							
1,2-Dibromoethane (EDB)		ND	5.00	Ħ							
Dibromomethane		ND	5.00	11							
1,2-Dichlorobenzene		ND	5.00	**							
,3-Dichlorobenzene		ND	5.00	87							
,4-Dichlorobenzene		ND	5.00	Ħ							
Dichlorodifluoromethane		ND	5.00	Ħ							
,1-Dichloroethane		ND	2.00	Ħ							
,2-Dichloroethane		ND	1.25	tr							-
,1-Dichloroethene		ND	3.00	*							
is-1,2-Dichloroethene		ND	3.00	71							
rans-1,2-Dichloroethene		ND	2.50	Ħ							
,2-Dichloropropane		ND	5.00	n							
,3-Dichloropropane		ND	5.00	**							

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Dung



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	N/He		Result	Reporting Limit	Units	Spike Level			%REC Limits	RPD	RPD Limit	Notes
Batch 5K02048:	Prepared	11/01/05	Using 1	EPA 5035	***		87 m	إلاس	21 (BV )	90,0	13:11	
Blank (5K02048-BL	.K1)										11111130	4270.20
2,2-Dichloropropane		= 11.04-	ND	10.0	ug/kg	14 91						100
1,1-Dichloropropene	127		ND	5.00	n							
cis-1,3-Dichloropropene	•		ND	5.00								
trans-1,3-Dichloroprope	ne		ND	1.25								
Ethylbenzene			ND	4.00	Ħ							
Hexachlorobutadiene			ND	5.00	n							
Methyl tert-butyl ether			ND	1.00								
2-Hexanone			ND	20.0	Ħ							
Isopropylbenzene			ND	5.00	п							
p-Isopropyltoluene			ND	5.00	Ħ							
4-Methyl-2-pentanone			ND	20.0	#1							
Methylene chloride			ND	3.50	н							
Naphthalene			ND	5.00	п							
n-Propylbenzene			ND	5.00	п							
Styrene			ND	1.00	н		1155					8
1,2,3-Trichlorobenzene			ND	5.00	ıπ							
1,2,4-Trichlorobenzene			ND	5.00	**			8				
1,1,1,2-Tetrachloroethan	ie		ND	5.00	17							
1,1,2,2-Tetrachloroethan	e		ND	5.00	н							
Tetrachloroethene			ND	2.00	11	2.						
Toluene			ND	1.50	n							
1,1,1-Trichloroethane			ND	2.50	11							
1,1,2-Trichloroethane			ND	1.25	II. e							
Trichloroethene			ND	2.50	E							
Trichlorofluoromethane			ND	5.00	n							
1,2,3-Trichloropropane			ND	5.00								
1,2,4-Trimethylbenzene			ND	5.00	н							
1,3,5-Trimethylbenzene			ND	5.00								
Vinyl chloride			ND	2.50	e u							
Total Xylenes			ND	10.0	Ħ							411
Surrogate: 1,2-DCA-d4			44.6		"	40.0		112	60-140			
Surrogate: Toluene-d8			47.6		#	40.0		119	60-140			
Surrogate: 4-BFB			45.2		"	40.0		113	60-140			
								1000	3			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis **Reported:** 12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K02048:	Prepared 11/01/05	Using	EPA 5035		2	ne net	W U	i piu k	enega jes	in di	dila aya
LCS (5K02048-BS1)	tage of the second of the seco	- N					······			LULI	MAY 11.9
Acetone		108	30.0	ug/kg	100	tre .	108	70-130		T <sub>D</sub>	TI 2002
Benzene	¥	10.5	1.50	11	10.0		105	70-130			
2-Butanone		114	15.0		100		114	70-130			- 11
Carbon disulfide		11.5	3.00	n	10.0		115	70-130			
Chlorobenzene		10.2	2.00	Ħ	10.0		102	70-130			
1,1-Dichloroethane		10.8	2.00	H .	10.0		108	70-130			
1,1-Dichloroethene		10.9	3.00	*1	10.0		109	70-130			
cis-1,2-Dichloroethene		10.6	3.00	н	10.0		106	70-130			
Ethylbenzene		10.5	4.00	11	10.0		105	70-130			
Hexachlorobutadiene		9.79	5.00	**	10.0		97.9	70-130			
Methyl tert-butyl ether		11.3	1.00	Ħ	10.0		113	70-130			
4-Methyl-2-pentanone		113	20.0	н	100		113	70-130			
Tetrachloroethene		10.7	2.00	н	10.0		107	70-130			
Toluene		10.4	1.50	н	10.0		104	70-130			
1,1,1-Trichloroethane		11.1	2.50	Ħ	10.0		111	70-130			
Trichloroethene		10.2	2.50	н	10.0		102	70-130			
Surrogate: 1,2-DCA-d4		43.8		"	40.0		110	60-140			
Surrogate: Toluene-d8		43.9		"	40.0		110	60-140			
Surrogate: 4-BFB		44.0		"	40.0		110	60-140			
LCS Dup (5K02048-I	SSD1)										
Acetone		101	30.0	ug/kg	100		101	70-130	6.70	30	
Benzene		10.7	1.50	#	10.0		107	70-130	1.89	30	
-Butanone		108	15.0	п	100		107	70-130	5.41	30	
Carbon disulfide		11.0	3.00	n	10.0		110	70-130	4.44	30	
Chlorobenzene		10.6	2.00	**	10.0		106	70-130	3.85	30	
,1-Dichloroethane		10.5	2.00	Ħ	10.0		105	70-130	2.82	30	
,1-Dichloroethene		10.7	3.00	n	10.0		107	70-130	1.85	30	
is-1,2-Dichloroethene		10.7	3.00	lt .	10.0		107	70-130	0.939	30	140
Ethylbenzene		10.4	4.00	n	10.0		104	70-130	0.957	30	
Iexachlorobutadiene		9.21	5.00	,	10.0		92.1	70-130	6.11	30	
lethyl tert-butyl ether		11.2	1.00	n	10.0		112	70-130	0.889	30	
-Methyl-2-pentanone		108	20.0	п	100		108	70-130	4.52	30	
etrachloroethene		9.80	2.00		100		100	10-130	7.32	30	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Katoshung



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 17:58

### Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	D 14410410				20101	A 400	741420	HARMAN	IG D	I ASSUE	110003
Batch 5K02048:	Prepared 11/01/05	Using E	EPA 5035		::25				0.76		
LCS Dup (5K02048	-BSD1)									III IS III	11 12 11 1
Toluene		10.4	1.50	ug/kg	10.0		104	70-130	0.00	30	
1,1,1-Trichloroethane	2	10.6	2.50	n	10.0		106	70-130	4.61	30	
Trichloroethene		10.1	2.50	TT TT	10.0		101	70-130	0.985	30	-
Surrogate: 1,2-DCA-d4	1	41.0		n n	40.0		102	60-140			The second
Surrogate: Toluene-d8		37.7		"	40.0		94.2	60-140			
Surrogate: 4-BFB		36.8		n	40.0		92.0	60-140			
Matrix Spike (5K02	048-MS1)					Source: E	S5J0463-0	)1			
Acetone		132	35.5	ug/kg dry	118	7.04	106	60-140			7-120-211
Benzene		9.66	1.77	n	11.8	ND	81.9	60-140			
2-Butanone		103	17.7	11	118	ND	87.3	60-140			
Carbon disulfide		5.71	3.55		11.8	ND	48.4	60-140			Q-01
Chlorobenzene		7.95	2.37	Ħ	11.8	ND	67.4	60-140			
1,1-Dichloroethane		12.5	2.37	н	11.8	ND	106	60-140			
1,1-Dichloroethene		11.1	3.55	n	11.8	ND	94.1	60-140			
cis-1,2-Dichloroethene		11.6	3,55	n	11.8	ND	98.3	60-140			
Ethylbenzene		3.10	4.73	; n ;	11.8	ND	26.3	60-140			Q-01
Hexachlorobutadiene		3.88	5.91	i ii	11.8	ND	32.9	60-140			Q-01
Methyl tert-butyl ether		13.2	1.18	m m	11.8	ND	112	60-140			
4-Methyl-2-pentanone		103	23.7	Ħ	118	ND	87.3	60-140			
Tetrachloroethene		8.41	2.37	п	11.8	ND	71.3	60-140			
Toluene		7.56	1.77	n	11.8	ND	64.1	60-140			
1,1,1-Trichloroethane		12.3	2.96	н	11.8	ND	104	60-140			
Trichloroethene		18.2	2.96	n	11.8	ND	154	60-140			Q-01
Surrogate: 1,2-DCA-d4		54.3		"	47.3	-1112	115	60-140			
Surrogate: Toluene-d8		35.5		"	47.3		75.1	60-140			
Surrogate: 4-BFB		43.1		"	47.3		91.1	60-140			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	171 (4 T	Result	Reporting Limit	Units		Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K02060: P	repared 11/02/05	Using 1	EPA 5035				SE MOU	p fact	die pet	aryina	, sklitts	turž ilum
Blank (5K02060-BLK1	1)									3190	1. 244	
Acetone	nadii - I	ND	30.0	ug/kg	2.4							
Benzene		ND	1.50	Ħ								
Bromobenzene		ND	5.00	н								
Bromochloromethane		ND	5.00	en .								
Bromodichloromethane		ND	5.00									
Bromoform		ND	5.00	**								
Bromomethane		ND	10.0	**								
2-Butanone		ND	15.0	**								
n-Butylbenzene		ND	5.00	n								
sec-Butylbenzene		ND	2114 5.00	n								
tert-Butylbenzene		ND	5.00	n								
Carbon disulfide		ND	3.00	. 17								
Carbon tetrachloride		ND	5.00									
Chlorobenzene		ND	2.00	н								
Chloroethane		ND	5.00	н								
Chloroform		ND	2.50									
Chloromethane		ND	10.0	п								11631 2651
2-Chlorotoluene		ND	5.00	Ħ								
4-Chlorotoluene		ND	5.00	. 17								
Dibromochloromethane		ND	5.00	ti .		4						
1,2-Dibromo-3-chloropropar		ND	10.0	**								
1,2-Dibromoethane (EDB)		ND	5.00	n								
Dibromomethane		ND	5.00	11								
1,2-Dichlorobenzene		ND	5.00	**								
1,3-Dichlorobenzene		ND	5.00	m ~								
1,4-Dichlorobenzene		ND	5.00	71								
Dichlorodifluoromethane		ND	5.00	**								
1,1-Dichloroethane		ND	2.00	n								
1,2-Dichloroethane		ND	1.25	Ħ								
1,1-Dichloroethene		ND	3.00	m								
cis-1,2-Dichloroethene		ND	3.00	e								
rans-1,2-Dichloroethene		ND	2.50	#								
1,2-Dichloropropane		ND	5.00	n								
1,3-Dichloropropane		ND	5.00	**								

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 23 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

## Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte			Result	Reporting Limit	Units	Spike	Source	WREC	%REC	DDD	RPD	1.95
	D	11/02/05			Omis	Level	Result	%REC	Limits	RPD	Limit	Notes
		11/02/05	Using	EPA 5035		en e			No. of the last		1101	Marie Sala
Blank (5K02060-BLK	(1)										Tron. 3	310 505
2,2-Dichloropropane			ND	10.0	ug/kg							
1,1-Dichloropropene	45		ND	5.00	н							
cis-1,3-Dichloropropene			ND	5.00								
trans-1,3-Dichloropropend	•		ND	1.25	H							
Ethylbenzene			ND	4.00	T.T. PI							
Hexachlorobutadiene			ND	5.00	н							
Methyl tert-butyl ether			ND	1.00	н							
2-Hexanone			ND	20.0	Ħ							
Isopropylbenzene			ND	5.00	**							
p-Isopropyltoluene			ND	5.00								
4-Methyl-2-pentanone			ND	20.0	н							
Methylene chloride			ND	3.50	- 17							
Naphthalene			ND	5.00	*							
n-Propylbenzene			ND	5.00	ir ir							
Styrene			ND	1.00	н							
1,2,3-Trichlorobenzene			ND	5.00	87							
1,2,4-Trichlorobenzene			ND	5.00	**							
1,1,1,2-Tetrachloroethane			ND	5.00	71							
1,1,2,2-Tetrachloroethane			ND	5.00	11							
Tetrachloroethene			ND	2.00	n	18					548-20	
Toluene			ND	1.50	**							
1,1,1-Trichloroethane			ND	2.50								
1,1,2-Trichloroethane			ND	1.25								
Trichloroethene			ND	2.50								newkin fills.
Trichlorofluoromethane			ND	5.00	**							41.00
1,2,3-Trichloropropane			ND	5.00	n							
1,2,4-Trimethylbenzene			ND	5.00	n all							
1,3,5-Trimethylbenzene			ND	5.00								
Vinyl chloride			ND	2.50								
Total Xylenes			ND	10.0								
Surrogate: 1,2-DCA-d4			53.3		"	40.0	par .	133	60-140		= 31	
Surrogate: Toluene-d8			52.1		"	40.0		130	60-140			
Surrogate: 4-BFB			50.0		"	40.0		125	60-140			
						70.0		123	JU-140			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Shung



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K02060: Prepared 11/02/0	5 Using	EPA 5035		.07	10 44/1	HALL ST	engiker:		¥ 199	NE Hodge
LCS (5K02060-BS1)		a manufer englishing in aparina	a mares of term						e-thirty	tali - Tial
Acetone	93.5	30.0	ug/kg	100		93.5	70-130		1911	man lagri s
Benzene	10.4	1.50	Ħ	10.0		104	70-130			
2-Butanone	77.1	15.0	н	100		77.1	70-130			5.5
Carbon disulfide	10.7	3.00	н	10.0		107	70-130			
Chlorobenzene	10.6	2.00	n	10.0		106	70-130			
1,1-Dichloroethane	10.3	2.00	п	10.0		103	70-130			
1,1-Dichloroethene	10.7	3.00	n	10.0		107	70-130			
cis-1,2-Dichloroethene	10.7	3.00	Ħ	10.0		107	70-130			
Ethylbenzene	11.1	4.00	н	10.0		111	70-130			
Hexachlorobutadiene	12.5	5.00	n	10.0		125	70-130			
4-Methyl-2-pentanone	81.2	20.0	n	100		81.2	70-130			1007-1017
Tetrachloroethene	11.3	2.00		10.0		113	70-130			
Toluene	10.3	1.50	н	10.0		103	70-130			
,1,1-Trichloroethane	10.8	2.50	**	10.0		108	70-130			
Trichloroethene	11.5	2.50	n	10.0		115	70-130			
Surrogate: 1,2-DCA-d4	41.0		"	40.0		102	60-140			
Surrogate: Toluene-d8	51.8		. "	40.0		130	60-140			
Surrogate: 4-BFB	49.2		"	40.0		123	60-140			
CCS Dup (5K02060-BSD1)					7					
Acetone	104	30.0	ug/kg	100		104	70-130	10.6	30	
Benzene	10.3	1.50	"	10.0		103	70-130	0.966	30	
-Butanone	86.2	15.0	**	100		86.2	70-130	11.1	30	
Carbon disulfide	10.9	3.00	н	10.0		109	70-130	1.85	30	
Chlorobenzene	11.3	2.00	n	10.0	-3:	113	70-130	6.39	30	
,1-Dichloroethane	10.7	2.00	11	10.0		107	70-130	3.81	30	
,1-Dichloroethene	10.6	3.00	н	10.0		106	70-130	0.939	30	
is-1,2-Dichloroethene	10.4	3.00	**	10.0		104	70-130	2.84	30	
thylbenzene	11.1	4.00	n	10.0		111	70-130	0.00	30	
lexachlorobutadiene	12.0	5.00	11	10.0		120	70-130	4.08	30	
-Methyl-2-pentanone	91.0	20.0	11	100		91.0	70-130	11.4	30	
etrachloroethene	11.1	2.00		10.0		111	70-130	1.79	30	
'oluene	10.4	1.50	Р н	10.0		104	70-130	0.966		
		1.50		10.0		104	10-130	0.700	30	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 25 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

%REC

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

Project: BNSF-Wishram, WA

Spike

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

RPD

Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K02060: Prepared 11	/02/05 Using	EPA 5035		2	DE AL	بالغي	11121			
LCS Dup (5K02060-BSD1)										militi gasari
Frichloroethene	11.0	2.50	ug/kg	10.0	9 .	110	70-130	4.44	30	The state of
Surrogate: 1,2-DCA-d4	37.7		n	40.0		94.2	60-140			
Surrogate: Toluene-d8	41.8		"	40.0		104	60-140			
Surrogate: 4-BFB	41.4		"	40.0		104	60-140			
	/00/05 Haine	FD A 5025								
Batch 5K09038: Prepared 11	709/05 Using	EPA 5035		, II,	1.0	-				
Blank (5K09038-BLK1)										_ went;
Acetone	ND	30.0	ug/kg							de la
Senzene	ND	1.50	11							
romobenzene	ND	5.00	Ħ							
romochloromethane	ND	5.00	H							
romodichloromethane	ND	5.00	**							
romoform	ND	5.00	n							
romomethane	ND	10.0	Ħ							
-Butanone	ND	15.0	11							
-Butylbenzene	ND	5.00	11							
ec-Butylbenzene	ND	5.00	n							
ert-Butylbenzene	ND	5.00	"							
Carbon disulfide	ND	3.00	97	378						
Carbon tetrachloride	ND	5.00	11		28					
Chlorobenzene	ND	2.00	Ħ							
Chloroethane	ND	5.00	Ħ							
Chloroform	ND	2.50	n							
Chloromethane	ND	10.0	**							
-Chlorotoluene	ND	5.00	n							
-Chlorotoluene	ND	5.00	**							
Dibromochloromethane	ND	5.00	**							
,2-Dibromo-3-chloropropane	ND	10.0	n							
,2-Dibromoethane (EDB)	ND	5.00	п							
Dibromomethane	ND	5.00	Ħ	370						
,2-Dichlorobenzene	ND	5.00	*1							
1,3-Dichlorobenzene	ND	5.00	n							
1,4-Dichlorobenzene	ND	5.00	n							

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	Sign point	Result	Reporting Limit	Units	_ m	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K09038:	Prepared 11/09/05	Using 1	EPA 5035	2.		-10	44 s 44	rgenv =		ren evil	evil	Late Res
Blank (5K09038-BL										VUITOI	10.0	
Dichlorodifluoromethan	e 13 = 31 =	ND	5.00	ug/kg		_11				101		
1,1-Dichloroethane		ND	2.00	#								
1,2-Dichloroethane		ND	1.25	71								
1,1-Dichloroethene		ND	3.00	н								2 10000
cis-1,2-Dichloroethene		ND	3.00	77								
trans-1,2-Dichloroethene		ND	2.50	n								
1,2-Dichloropropane		ND	5.00	н								
1,3-Dichloropropane		ND	5.00	п								
2,2-Dichloropropane		ND	10.0	Ħ								
1,1-Dichloropropene		ND	5.00	11								
cis-1,3-Dichloropropene		ND	5.00	Ħ								
trans-1,3-Dichloroproper	ne	ND	1.25	71								
Ethylbenzene		ND	4.00	**								
Hexachlorobutadiene		ND	5.00	Ħ								
Methyl tert-butyl ether		ND	1.00	n								
2-Hexanone		ND	20.0	11								
Isopropylbenzene		ND	5.00	n								
p-Isopropyltoluene		ND	5.00	11								
4-Methyl-2-pentanone		ND	20.0	n								
Methylene chloride		ND	3.50	**		8 N						
Naphthalene		ND	5.00	н								
n-Propylbenzene		ND	5.00	11								
Styrene		ND	1.00	n								
1,2,3-Trichlorobenzene		ND	5.00	n							74	
1,2,4-Trichlorobenzene		ND	5.00	и .								
1,1,1,2-Tetrachloroethane		ND	5.00	Ħ								
1,1,2,2-Tetrachloroethane		ND	5.00	n								
Tetrachloroethene		ND	2.00	ņ								
<b>Foluene</b>		ND	1.50	n								
1,1,1-Trichloroethane		ND	2.50	T								
1,1,2-Trichloroethane		ND	1.25	**								
Trichloroethene		ND	2.50									
Trichlorofluoromethane		ND	5.00	*								
,2,3-Trichloropropane		ND	5.00	n								

North Creek Analytical - Bothell

Kate Haney, Project Manager

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network

Page 27 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 17:58

### Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	Seal		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K09038:	Prepared	11/09/05	Using 1	EPA 5035		2 1	Acres 6		V <sub>1</sub> (1)	11 1 Y	10/21	1912
Blank (5K09038-BL	K1)									- Mingra	in Made U.S.	
1,2,4-Trimethylbenzene	E#4	1 2 1	ND	5.00	ug/kg	fogur i tr						
1,3,5-Trimethylbenzene			ND	5.00	H							
Vinyl chloride			ND	2.50	H			13				
Total Xylenes			ND	10.0	H							
Surrogate: 1,2-DCA-d4	16v	Will be	40.7		"	40.0		102	60-140			
Surrogate: Toluene-d8			41.3		"	40.0		103	60-140			
Surrogate: 4-BFB			42.8		"	40.0		107	60-140			
LCS (5K09038-BS1)	2027					7.						OF U. BHIDD
Acetone		1771-05	352	30.0	ug/kg	400	4	88.0	70-130		TETĒTI	i i i i i i i i i i i i i i i i i i i
Benzene			39.0	1.50	**	40.0		97.5	70-130			
2-Butanone			369	15.0	п	400		92.2	70-130			
Carbon disulfide			39.7	3.00	n e	40.0		99.2	70-130			
Chlorobenzene			42.9	2.00	***	40.0		107	70-130			
1,1-Dichloroethane			39.0	2.00	11	40.0		97.5	70-130			
1,1-Dichloroethene			39.1	3.00	11	40.0		97.8	70-130			
cis-1,2-Dichloroethene			39.0	3.00	our n	40.0		97.5	70-130			
Ethylbenzene			43.9	4.00	н	40.0		110	70-130			
Hexachlorobutadiene			41.4	5.00	n	40.0		104	70-130			
4-Methyl-2-pentanone			353	20.0	Ħ	400		88.2	70-130			
Tetrachloroethene			43.8	2.00	n	40.0		110	70-130			
Toluene			41.5	1.50	11	40.0		104	70-130			
1,1,1-Trichloroethane			39.6	2.50	n	40.0		99.0	70-130			
Trichloroethene			38.2	2.50	n	40.0		95.5	70-130			
Surrogate: 1,2-DCA-d4			29.9		"	40.0		74.8	60-140			
Surrogate: Toluene-d8			29.1		"	40.0		72.8	60-140			
Surrogate: 4-BFB			32.6		"	40.0		81.5	60-140			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network**  Page 28 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

Federal Way, WA/USA 98001

Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	150	Result	Reporting Limit	Units	Spike	Source	A/DEG	%REC		RPD	
	Wilder School Control	result	SHIPE CHINA	Omis	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K09038:	Prepared 11/09/05	Using E	PA 5035							1	TITLE MAYOR
LCS Dup (5K09038	B-BSD1)		Harris III			n -				134	Mark States
Acetone		308	30.0	ug/kg	400		77.0	70-130	13.3	30	man of Catholic
Benzene		43.2	1.50	11	40.0		108	70-130	10.2		
2-Butanone		323	15.0	17	400		80.8	70-130	13.3	30	Sharing IV
Carbon disulfide		41.9	3.00	n	40.0		105	70-130		30	
Chlorobenzene		46.0	2.00		40.0		115		5.39	30	
1,1-Dichloroethane		41.6	2.00		40.0			70-130	6.97	30	
1,1-Dichloroethene		41.5	3.00	**	40.0		104	70-130	6.45	30	
cis-1,2-Dichloroethene		41.4	3.00	н	40.0		104	70-130	5.96	30	
Ethylbenzene		47.4	4.00	11			104	70-130	5.97	30	
Hexachlorobutadiene		52.6		17	40.0		118	70-130	7.67	30	
1-Methyl-2-pentanone	THE BANK	32.0	5.00	**	40.0		132	70-130	23.8	30	A-01
Tetrachloroethene		47.9	20.0	н	400		80.0	70-130	9.81	30	
Toluene			2.00		40.0		120	70-130	8.94	30	
,1,1-Trichloroethane		45.0	1.50		40.0		112	70-130	8.09	30	4 1 2d
Frichloroethene		42.8	2.50	n	40.0		107	70-130	7.77	30	
		42.1	2.50	11	40.0		105	70-130	9.71	30	
Surrogate: 1,2-DCA-d4		31.9		"	40.0		79.8	60-140		Patie	HEAT DEED BY
Surrogate: Toluene-d8		35.2		"	40.0		88.0	60-140			
urrogate: 4-BFB		37.0	6.65	"	40.0		92.5	60-140			

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

### Physical Parameters by APHA/ASTM/EPA Methods - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K03079:	Prepared 11/03/05	Using Dr	y Weight		72				- Iu D	Ziant .	Hotes
Blank (5K03079-Bl	LK1)		17 0		MIN. SAIT		to all lines	S   38			
Dry Weight		100	1.00	%	Miller III I	St. 12:1 11		Layette 2	ha ± =	0	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. **Environmental Laboratory Network**

Page 30 of 31



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 17:58

### **Notes and Definitions**

A-01	The blank spike duplicate recovery of this analyte fell outside of	f acceptance criteria and was bised high. Sample was ND.
	therefore results are not negatively impacted.	3. 17 63.4

A-01a This sample was analyzed outside of the acceptable 12 hour QC window. No additional sample is available for re-analysis.

A-02 The sample aliquot for analysis was taken from the 4oz. jar.

The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

D-15 Hydrocarbon pattern most closely resembles a heavy fuel oil product.

Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.

S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

D-06

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

Kato Sur

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

9405 SW Nimbus Ave, Beaverton, OR 97008-7145 20332 Empire Ave, Ste FI, Bend, OR 97701-5712 2000 W International Airport Rd Ste A10, Auctionage, AK 99502-1119 11720 North Creek Plwy N Suite 400, Bothell, WA 98011-8244 11922 E 1st Ave, Spokane, WA 99206-5302

FAX 420-9210 FAX 924-9290 FAX 906-9210 FAX 382-7588 FAX 563-9210

425-420-9200 509-924-9200 503-906-9200 541-383-9310 907-563-9200

Revised Chain of Custody

S Inca

CHAIN OF CUSTODY REPORT

t			7		CHAIN OF COSTODI NEFORI		Work Order #		ののとして	<u> </u>
NCACLIENT: BUSE / KJ			1	Z,	INVOICE TO:				TURNAROUND REQUEST	)
ADDRESS: 32001 32.	Gasten Davis Kennely Tenks 32001 32" Ave South svik 100 Telegal Way, WA 98001	32/ 3			skice sikt	BRUCE SIKEMARD - BANST	<u> </u>	h B rganic & I	in Business Deys * Organic & Inorganic Analyses	
PHONE: 253 942-3421 FAX: 253	FAX: 25'3			I E	P.O. NUMBER: See	S WORK CORP	<b>∃ X!</b>			3 -
PROJECT NAME: BASE LUISHRAM	dishem				PRESE	TIVE			A Land	ŗ
PROJECT NUMBER: 036026,02	26,02	ď						_	<u>-</u> ]	7
SAMPLED BY: 12 M.	Brown	77	12		REQUESTE	REQUESTED ANALYSES		OTHER	Specify	
		124	-//	50	2			Townson / Report	he des an des my har last Clares.	
DENTIFICATION	SAMPLING DATE/TIME	איש צו	12 6016 4	31.8 31.8 31.8	\$08 103 103		MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 FIEXC - W - 10	volentos c300	X	X		X		Ŋ	2		0.1
2 FIEX -5-10	10/11/05 0900	X	X	X			N	7		62
3FIEXC-N-8	10/21/05 0830	X	×	×			S	4		-03
·FI-EAST-6	10/26/05 1620	X	Į,	 . The			S	-		96
5 FI-MID -10	10/26/05 1600	×	Į,	4			Ŋ	-	,	05
· TRIP BIANK	10/26/05 Pt 1200		×.	113			emp	-		90-
2		V F	ST :			•	100	8   8   8		
. 8		CSW I	11					8 9 9		
6		¥. 1								iic.
10		1		1 6			Į.	17		100
1	bui			DA	DATE: 1928/05	RECEIVED BY: CALLEL LUCALE	reaver		DATE: 10.29.05	8 8
PRINT NAME: Gilen	Daw, 5 FIRM: K.	KJC		TIME	IR 1600	PRINT NAME: COLETTO WILBURY		FIRM: N/"A		(2)
RELEASED BY:				DATE	3	RECEIVED BY:		3	<u> </u>	3
PRINT NAME:	FIRM:			TIME		PRINT NAME:	FIRM:	-	TIME:	
COC REV 09/04	FOR VOCS Check MTBE	TBE	4	+ EDB	Meas	Measure Temp USING		34.	TRAIP: 3/6	
						このえか からない			PAGE	9



11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
11922 E 1st Ave, Spokane, WA 99206-5302
9405 SW Nimbus Ave, Beaverton, OR 97008-7145
20332 Empire Ave, Ste Ft, Bend, OR 97701-5712
2000 W International Airport Rd Ste A10, Auchorage, AK 99502-1119

FAX 906-9210 FAX 382-7588 FAX 563-9210

\$41-383-9310

FAX 420-9210 FAX 924-9290

425-420-9200 509-924-9200 503-906-9200

REPORT TO: CALANS				À (	INVOICE 10:						TURNAR	DNA DOTTAIN DECINEEN	
ADDRESS. 22-01 27-0	Kenney Jenks	2		$\overline{z}$	Ruce sh	BRUCE SIKEPARD - BASSIT	BASS			ř Ž		I OKNAKOUND KEQUEST in Business Days	
Feleral Way,	redeal Way, wh 48001									2		ganic Analy	
PHONE: 253 942-3421 FA	VX: 25/3			P.O.	P.O. NUMBER:	Sec 10	WORK ORDER	RDER			_		₹ -
PROJECT NAME: BNSF WISHEM	ishem		-		PR		1					1	, [ <del>-</del>
PROJECT NUMBER: 036026,02	20%	di		100000000000000000000000000000000000000						E		1	
SAMPLED BY: THE A	Am	ופעי	12	-		REQUESTED ANALYSES	SE				OTHER.	Specify:	
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	197 LLU 19 15 JW	STE X	SERVING STERVING STER	7109 7009					MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 FIEXC - W-10 10	volenies coco	X	X		X				1	S	4		10-
2 FIEX-5-10 W	10/21/05 0900 -	X	X	X		ļ.			+	N	p		40
3 FIEXC-N-8 10	0580 50/2/01	X	X	×						N	٥		-03
4FI-EAST-6 10	10/20/65 1620	X	12	4.5						V			10-
5 FI-MID-10 16	10/26/05 1600	X							1	N	1.2		9
6 TRIP BIANK	•		2							emph		1	00-
7 42543555										× 1			
			EA.					İ			7,110		
6 Hilliam Constitution of the constitution of													i i
10			9	1,5									
RELEASED BY: Apply Bound	· · ·			DATE	E 1928 05		RECEIVED BY: (	Set	27.2	sette meave		DATE: IC	DATE: 10.29.05
PRINT NAME: Gilen De	Dewis FIRM: KTC	36		TIME			PRINT NAME: COLEHE WEBUST	2/ett	17/1/2		FIRM: NCA		1851
RELEASED BY:				DATE			RECEIVED BY:			1		3	
PRINT NAME:	FIRM:			TIME	tii	PRINT	PRINT NAME:			E	FIRM:	TIME	



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

### **CASE NARRATIVE for B5K0127**

Client: Kennedy/Jenks Consultants Project Manager: Galen Davis Project Name: BNSF – Wishram Project Number: 036026.02

#### 1.0 DESCRIPTION OF CASE

Eight soil samples and one trip blank were submitted for analysis of:

- Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B
- Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up
- Total Metals by EPA 6000/7000 Series Methods
- Polychlorinated Biphenyls by EPA Method 8082
- Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method)

#### 2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received November 5<sup>th</sup>, 2005 by North Creek Analytical Bothell. The temperature of the samples at the time of receipt was 5.4 degrees Celsius. There was no date/time on the label or COC for the trip blank. The sample was logged in with a sampled date/time of 11/02/05 1200.

### 3.0 PREPARATIONS AND ANALYSIS

Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

### Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

#### Total Metals by EPA 6000/7000 Series Methods

No anomalies were associated with the sample preparation and analysis. All criteria for acceptable QC measurements were met.

### Polychlorinated Biphenyls by EPA Method 8082

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

DEC -8 2005

K/J Federal Way
K/J No/File\_\_\_\_\_
Route\_\_\_\_
Return To/By\_\_\_\_\_



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method)

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

Kato Dung

Kate Haney Project Manager North Creek Analytical



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

### 05 December 2005

Galen Davis Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

to Shung

RE: BNSF-Wishram, WA

Enclosed are the results of analyses for samples received by the laboratory on 11/05/05 10:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kate Haney

**Project Manager** 



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:15

### **ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FIEXC-B-7-10	B5K0127-01	Soil	11/02/05 13:00	11/05/05 10:05
FIEXC-B-1-12	B5K0127-02	Soil	11/03/05 08:00	11/05/05 10:05
PH-1-10	B5K0127-03	Soil	11/02/05 14:00	11/05/05 10:05
FIEXC-E-8	B5K0127-04	Soil	11/02/05 09:00	11/05/05 10:05
FIEXC-B-6-10	B5K0127-05	Soil	11/01/05 16:00	11/05/05 10:05
FIEXC-B-5-10	B5K0127-06	Soil	11/01/05 11:00	11/05/05 10:05
FIEXC-B-3-15	B5K0127-07	Soil	11/02/05 15:00	11/05/05 10:05
РН-2-17	B5K0127-08	Soil	11/04/05 08:00	11/05/05 10:05
TRIP BLANK	B5K0127-09	Soil	11/02/05 12:00	11/05/05 10:05

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:15

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B North Creek Analytical - Bothell

Analyte	1_000105	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Analyte Employer		Ttobalt	23444							10000
FIEXC-B-1-12 (B5K0127-02)	) Soil Sam	pled: 11/03/	05 08:00 R	eceived: 11	/05/05 10:0	05	Maria Sella	401		
Gasoline Range Hydrocarbons	I THVIET, I K	10.4	6.70	mg/kg dry	1	5K07025	11/07/05	11/07/05	NWTPH-Gx/8021B	G-01
Benzene		ND	0.0268		**	т н	11	11	H	
Toluene		ND	0.0670	11	11		**	11	n	
Ethylbenzene		ND	0.0670	n	11	II II	11	11	н	
Xylenes (total)		ND	0.134	"	н	н	- 1	Ħ	п	
Surrogate: 4-BFB (FID)		81.6 %	50-150			n	"	"	n	
Surrogate: 4-BFB (PID)		98.0 %	53-142			"	"	**	и запада	
PH-1-10 (B5K0127-03) Soil	Sampled:	11/02/05 14:0	00 Receive	d: 11/05/05	10:05					
Gasoline Range Hydrocarbons		ND	6.27	mg/kg dry	1	5K07025	11/07/05	11/07/05	NWTPH-Gx/8021B	
Benzene		ND	0.0251	**	11	Ħ	Ħ	**	Ħ	
Toluene		ND	0.0627	Ħ	**	11	**	**	n	
Ethylbenzene		ND	0.0627	**	**	11	**	11	Ħ	
Xylenes (total)		ND	0.125	11		55 H	10	***	11	7 = 11
Surrogate: 4-BFB (FID)		83.0 %	50-150			n	n	"	#	
Surrogate: 4-BFB (PID)		97.1 %	53-142			"	"	"	n	
PH-2-17 (B5K0127-08) Soil	Sampled:	11/04/05 08:	00 Receive	d: 11/05/05	10:05	- 1				
Gasoline Range Hydrocarbons		ND	7.29	mg/kg dry	1	5K07025	11/07/05	11/07/05	NWTPH-Gx/8021B	
Benzene		ND	0.0292	Ħ	**	11	**	**	н	
Toluene		ND	0.0729	**		ts		Ħ	**	
Ethylbenzene		ND	0.0729	**		**	**	11	n	
Xylenes (total)	- <u></u> '	ND	0.146	н	**	11	#	11	11	
Surrogate: 4-BFB (FID)		76.2 %	50-150			n	n	"	n	
Surrogate: 4-BFB (PID)		97.5 %	53-142			n	n 	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 18:15

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B North Creek Analytical - Bothell

Analyte	Result	Reporting Limit		Dilut	ion B	atch	Prepared	Analyzed	Method	Note
TRIP BLANK (B5K0127-09) Soil	Sampled: 11/02	2/05 12:00	Received: 11/0	05/05 1	0:05	A.116	a an Ababa	70E 8	. 2017 THE SECTION	Back and
Gasoline Range Hydrocarbons Benzene	ND	5.00	mg/kg wet	1		07025	11/07/05	11/07/05	NWTPH-Gx/8021B	E Walley
Toluene	ND ND	0.0200 0.0500	11 11	**		11		"	n	
Ethylbenzene Xylenes (total)	ND	0.0500	н	11		n	1.0	11	п	
Surrogate: 4-BFB (FID)	ND 79.7 %	0.100 50-150	11			H .	· ·	н	n .	- 12=1340
Surrogate: 4-BFB (PID)	94.3 %	53-142				"	"	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Project: BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Kennedy/Jenks Consultants

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:15

### Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-B-7-10 (B5K0127-01) So	il Sam	oled: 11/02	2/05 13:00 F	Received: 11/0	05/05 10:0	5 1 10 1		7 004		11/2/27
Diesel Range Hydrocarbons	29124	ND	10.5	mg/kg dry	tac 1	5K09044	11/09/05	11/10/05	NWTPH-Dx	
Lube Oil Range Hydrocarbons		ND	26.2	11	- H 18	Н	9 11		BIE II TUVE	7.1
Surrogate: 2-FBP	41	75.2 %	50-150			11 PO	"	"	"	
Surrogate: Octacosane		94.7 %	50-150			**	"	"	"	
FIEXC-B-1-12 (B5K0127-02) So	il Sam	oled: 11/03	7/05 08:00 F	Received: 11/	05/05 10:0	5	11 1161			The dated
Diesel Range Hydrocarbons	XUATI	908	110	mg/kg dry	10	5K09044	11/09/05	11/10/05	NWTPH-Dx	
Lube Oil Range Hydrocarbons		1920	274	**		#1	41	Ħ	was man	THIRD SH
Surrogate: 2-FBP	Tree -	54.3 %	50-150			n	"	"	"	
Surrogate: Octacosane		98.2 %	50-150			"	т.	"	"	
PH-1-10 (B5K0127-03) Soil Sa	mpled: 1	1/02/05 14	:00 Receive	d: 11/05/05 1	0:05			Trace and the	F4 18 14	
Diesel Range Hydrocarbons	111	ND	10.4	mg/kg dry	1	5K09044	11/09/05	11/10/05	NWTPH-Dx	
Lube Oil Range Hydrocarbons		ND	26.0	**	"		11	"	n	
Surrogate: 2-FBP		75.8 %	50-150				"	"	- "	
Surrogate: Octacosane		93.3 %	50-150			**	H	n	"	
			50 150							
FIEXC-E-8 (B5K0127-04) Soil	Sampled			eived: 11/05/	05 10:05					
FIEXC-E-8 (B5K0127-04) Soil Diesel Range Hydrocarbons	Sampled			eived: 11/05/0 mg/kg dry	05 10:05 1	5K09044	11/09/05	11/10/05	NWTPH-Dx	
Diesel Range Hydrocarbons	Sampled	l: 11/02/05	09:00 Rec			5K09044	11/09/05	11/10/05	NWTPH-Dx	
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	Sampled	1: 11/02/05 56.1	5 <b>09:00 Rec</b>	mg/kg dry	1		,,			
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons Surrogate: 2-FBP	Sampled	56.1 37.2	5 09:00 Reco	mg/kg dry	1	n	Ħ	н	н	
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane		1: 11/02/05 56.1 37.2 71.7 % 88.6 %	10.7 26.6 50-150 50-150	mg/kg dry	I "	" "	n	17	"	
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane FIEXC-B-6-10 (B5K0127-05) So		1: 11/02/05 56.1 37.2 71.7 % 88.6 %	10.7 26.6 50-150 50-150	mg/kg dry "	I "	" "	n	17	"	
Diesel Range Hydrocarbons  Lube Oil Range Hydrocarbons  Surrogate: 2-FBP  Surrogate: Octacosane  FIEXC-B-6-10 (B5K0127-05) So  Diesel Range Hydrocarbons		1: 11/02/05 56.1 37.2 71.7 % 88.6 % pled: 11/01	10.7 26.6 50-150 50-150	mg/kg dry " Received: 11/	1 " 05/05 10:0	" "	n n	11 17	11 11	
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons Surrogate: 2-FBP		1: 11/02/05 56.1 37.2 71.7 % 88.6 % pled: 11/01	10.7 26.6 50-150 50-150 1/05 16:00 I	mg/kg dry " Received: 11/ mg/kg dry	1 " 05/05 10:0	" " 95 5K09044	" " 11/09/05	" " 11/10/05	" " " NWTPH-Dx	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 4 of 22



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9290 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 18:15

# Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-B-5-10 (B5K0127-06) Soil	Sampled: 11/01	1/05 11:00	Received: 1	1/05/05 10:0	15	Mart deser	earl Hills	74-17 (013)-71	in the Lygina
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	ND	10.4 26.1	mg/kg dry		5K09044	11/09/05	11/10/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane	66.7 % 92.6 %	50-150 50-150			W. W.	n	"	# # \$50.32	
FIEXC-B-3-15 (B5K0127-07) Soil	Sampled: 11/02	/05 15:00 I	Received: 11	/05/05 10:0	5				
Diesel Range Hydrocarbons  Lube Oil Range Hydrocarbons	ND ND	10.9 27.2	mg/kg dry	1	5K09044	11/09/05	11/10/05	NWTPH-Dx	ett i jask faeri er vijk storen:
Surrogate: 2-FBP Surrogate: Octacosane	74.8 % 96.7 %	50-150 50-150			"	n	"	"	1925 <u> </u>
PH-2-17 (B5K0127-08) Soil Sample	d: 11/04/05 08:	00 Receive	d: 11/05/05	10:05				I to and nets	
Diesel Range Hydrocarbons Lube Oil Range Hydrocarbons	ND ND	10.6 26.5	mg/kg dry	1 "	5K09044	11/09/05	11/10/05	NWTPH-Dx	
Surrogate: 2-FBP Surrogate: Octacosane	81.9 % 95.9 %	50-150 50-150			n	n a	n	n n	

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:15

### Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	ness*	1-348	Result	Reporting Limit	Units	Dilution	n Batch	Prepared	Analyzed	Method	Notes
FIEXC-B-1	1-12 (B5K0127-02	2) Soil San	npled: 11/03	/05 08:00 F	Received: 11	/05/05 10:	05	I PALES A		1 1 1 1 2 1 2 1 1 1	
Lead		1 = = 4	4.37	0.504	mg/kg dry	1	5K14037	11/14/05	11/19/05	EPA 6020	
PH-1-10 (B	5K0127-03) Soil	Sampled:	11/02/05 14:	00 Receive	d: 11/05/05	10:05			8	·	et II. gag
Lead	=		10.0	0.481	mg/kg dry	1	5K14037	11/14/05	11/19/05	EPA 6020	II THE STILL

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 

Page 6 of 22



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 18:15

# Polychlorinated Biphenyls by EPA Method 8082 North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PH-1-10 (B5K0127-03) Soil	Sampled: 11/02/05 14:00	Received	1: 11/05/05	10:05	ia ou sa s	and obstace	Jeans	All Comment	
Aroclor 1016	ND	25.6	ug/kg dry	1	5K09047	11/09/05	11/10/05	EPA 8082	Fun
Aroclor 1221	ND	51.3	H		91	n	#		
Aroclor 1232	ND	25.6		The Walled	2000 p. 19			Service Control	
Aroclor 1242	ND	25.6		er er	W	.1151	,,	,,	
Aroclor 1248	ND	25.6	**	11	,,		**		`
Aroclor 1254	ND	25.6	**		**	,,	"		
Aroclor 1260	ND	25.6	n	,,	11	**	"	*	
Aroclor 1262	ND	25.6	**	"	,,	"		п	
Aroclor 1268	ND	25.6	n		11	"	**	n	
Surrogate: TCX	82.0 % 39	-139			"	"	"	"	
Surrogate: Decachlorobiphenyl	76.0 % 33	-163			"	,,	,,	"	

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210 **Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

**Reported:** 12/05/05 18:15

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte	los son live		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PH-1-10 (B5K0127-03) Soil	Sampled: 11/02	2/05 14:00	Receive	d: 11/05/05	10:05	W. 25	1954	[P.] [a#]	3711 B	
Acetone	TONTO VII	ND	36.1	ug/kg dry	1 to 1	5K08064	11/08/05	11/08/05	EPA 8260B	3/2 or 10 mag
Benzene	26	ND	1.80	"	11	**	n .	tt	"ATTENDED	
Bromobenzene		ND	6.02	н	**	B	e e	Ħ	6011111111	
Bromochloromethane		ND	6.02	н н	n	11	11	Ħ	**	
Bromodichloromethane		ND	6.02			**	n	н	Ħ	
Bromoform		ND	6.02	11 H		n n	n	*1	# ==#Th	
Bromomethane		ND	12.0	"	- 11		11	11	**	
2-Butanone		ND	18.0	n	"	н	n n	11		
n-Butylbenzene		ND	6.02	11		11	H	11	n	
sec-Butylbenzene		ND	6.02	11			**	11		
tert-Butylbenzene		ND	6.02	11	n n	11	= 4	n	ıı	
Carbon disulfide		ND	3.61	17	н	FE #	11	n	11	
Carbon tetrachloride	1	ND	6.02	T H	11	er	"	н	11	
Chlorobenzene		ND	2.41	н	н	P1	**	11	91	
Chloroethane		ND	6.02	tt .	n I	**	**	n	**	
Chloroform		ND	3.01	н	n = 4	н .	"	**	**	
Chloromethane	1	ND	12.0	n		11	**	"	н	
2-Chlorotoluene	1	ND	6.02	**	"	н	**	11	n n	
4-Chlorotoluene	1	ND	6.02	n	F 4	11	Ħ	ıı .	11	
Dibromochloromethane	1	ND	6.02	н		11	er	11	n	
1,2-Dibromo-3-chloropropane	34	ND	12.0		THE STREET	н	in i	11	11	
1,2-Dibromoethane (EDB)	1	ND	6.02		**	// II n	11	- n	п	
Dibromomethane	1	ND	6.02	- "	н	11	n E	11	**	
1,2-Dichlorobenzene		ND	6.02	н	**			"	n n	
1,3-Dichlorobenzene	1	ND	6.02	n	**	11	n	11		
1,4-Dichlorobenzene	1	ND	6.02		11	= #	n			
Dichlorodifluoromethane		ND	6.02	11	0 11	11	Ħ	u	11	
1,1-Dichloroethane	1	ND	2.41		**		11	11	**	
1,2-Dichloroethane	1	ND	1.50	H H	**	н	11	u	и	
1,1-Dichloroethene	1	ND	3.61	11	**	н		11	n	
cis-1,2-Dichloroethene		ND	3.61	н	**	н		" -		
trans-1,2-Dichloroethene		ND	3.01	н	**	With Late	**	**	н	
1,2-Dichloropropane		ND	6.02	**	**	н	*1	**	н	
1,3-Dichloropropane	1	ND	6.02	**		*1	**			
2,2-Dichloropropane		ND	12.0	**	11	Ħ	**	11	n	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kato Dung



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02
Project Manager: Galen Davis

**Reported:** 12/05/05 18:15

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	i I	Dilutio	on	Batch	Prepared	Analyzed	Method	Note
PH-1-10 (B5K0127-03) Soil	Sampled: 11/02/05 1	4:00 Receive	d: 11/05/05	5 10:0	)5	risy	e H	2 5/L	. Hallena	- 2 (**P.23%_E)	
1,1-Dichloropropene	ND	6.02	ug/kg dry		1	nas 4	5K08064	11/08/05	11/08/05	н	1/201
cis-1,3-Dichloropropene	ND	6.02			**		**		#	n	
trans-1,3-Dichloropropene	ND	1.50	**		**		**	**	n	11	
Ethylbenzene	ND	4.81	**		**		н	11	**	# EEL	Parametric S
Hexachlorobutadiene	ND	6.02			11		11		"	n 111	MANUFACTURE
Methyl tert-butyl ether	ND	1.20	н		**		**	**	**	n	
2-Hexanone	ND	24.1	**		**		**	"	11	n	
sopropylbenzene	ND	6.02			11		H	н	н	n	
o-Isopropyltoluene	ND	6.02	н		н			11	**	н	
l-Methyl-2-pentanone	ND	24.1			**		"		**	**	
Methylene chloride	ND	4.21	"		"		n		н	0	
Naphthalene	ND	6.02	н		**		99	**	**	"	
-Propylbenzene	ND	6.02	"		**		11	**	N	Ħ	
Styrene	ND	1.20	n		"		er -	н	**	n	
,2,3-Trichlorobenzene	ND	6.02	**		**		**	н	#	Ħ	
,2,4-Trichlorobenzene	ND	6.02	#		**		н	11	п	**	
,1,1,2-Tetrachloroethane	ND	6.02	н		н			<b>87</b>	tt		
,1,2,2-Tetrachloroethane	ND	6.02	ŧr		**			**	11	**	
etrachloroethene	ND	2.41	**				17	н	**	n	
oluene	ND	1.80	н		es			**	11	n	
,1,1-Trichloroethane	ND	3.01	**		111		**	н	**		
,1,2-Trichloroethane	ND	1.50	н		**		H.		"	,	
richloroethene	ND	3.01	**		**		17		Ħ	n	
richlorofluoromethane	ND	6.02	**		H		n	11	**		
2,3-Trichloropropane	ND	6.02	**		**			**	**	"	
2,4-Trimethylbenzene	ND	6.02	"		н		"	н	11	11	
3,5-Trimethylbenzene	ND	6.02	**		**			#	Ħ	n	
inyl chloride	ND	3.01	91		n			<b>H</b> 9.	"	н	
otal Xylenes	ND	12.0	**		,,		. 11		**	n	
urrogate: 1,2-DCA-d4	104 %	60-140					n	n	"	"	HUN, ET
urrogate: Toluene-d8	110 %	60-140					"	"	n	n B	
urrogate: 4-BFB	113 %	60-140					"	"	"	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis **Reported:** 12/05/05 18:15

# Physical Parameters by APHA/ASTM/EPA Methods North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FIEXC-B-7-10 (B5K0127-01) Soil	Sampled: 11/02/0	05 13:00 Re	ceived: 11	/05/05 10:0	5	NAME OF THE PERSON OF THE PERS			m/Anni
Dry Weight	95.3	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	Video and
FIEXC-B-1-12 (B5K0127-02) Soil	Sampled: 11/03/0	5 08:00 Re	ceived: 11	/05/05 10:0	5	H.EL.	AVE UNITED		
Dry Weight	91.0	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	
PH-1-10 (B5K0127-03) Soil Sampl	ed: 11/02/05 14:0	0 Received:	11/05/05	10:05					
Dry Weight	96.2	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	# 4=
FIEXC-E-8 (B5K0127-04) Soil Sar	npled: 11/02/05 0	9:00 Receiv	ved: 11/05	/05 10:05	1 -	χ=			ндарда То
Dry Weight	92.6	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	
FIEXC-B-6-10 (B5K0127-05) Soil	Sampled: 11/01/0	5 16:00 Re	ceived: 11	/05/05 10:0	5			4.0	- 12 - 1
Dry Weight	90.8	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	
FIEXC-B-5-10 (B5K0127-06) Soil	Sampled: 11/01/0	5 11:00 Re	ceived: 11	/05/05 10:0	5			T Might g	ROTTERS 100 9
Dry Weight	95.3	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	7082
FIEXC-B-3-15 (B5K0127-07) Soil	Sampled: 11/02/0	5 15:00 Red	ceived: 11	/05/05 10:0	5				
Dry Weight	91.1	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	ficare i <sub>n</sub> su
PH-2-17 (B5K0127-08) Soil Sample	ed: 11/04/05 08:0	0 Received:	11/05/05	10:05	E 6"				
Dry Weight	94.5	1.00	%	1	5K10044	11/10/05	11/11/05	BSOPSPL003R08	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

**Reported:** 12/05/05 18:15

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

### North Creek Analytical - Bothell

		Reporting		Spike	Source	0.0134	%REC	= , , , , , , ,	RPD	le = yu
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K07025: Prepared 11/07/05	Using I	EPA 5030I	B (P/T)	7		V = +				
Blank (5K07025-BLK1)		7.3	a secondina					Part of the second	-	125
Gasoline Range Hydrocarbons	ND	5.00	mg/kg							
Benzene	ND	0.0200								
Toluene	ND	0.0500								
Ethylbenzene	ND	0.0500	n							
Xylenes (total)	ND	0.100	*							
Surrogate: 4-BFB (FID)	2.39	5.67	"	3.00	100 1 1 10	79.7	50-150	ZIIIIZ		
Surrogate: 4-BFB (PID)	2.79		"	3.00		93.0	53-142			
LCS (5K07025-BS1)										
Gasoline Range Hydrocarbons	54.2	5.00	mg/kg	50.0		108	75-125			
Benzene	0.545	0.0200	н	0.565		96.5	75-125			
Toluene	3.42	0.0500	n	4.22		81.0	75-125			
Ethylbenzene	0.722	0.0500	Ħ	0.845		85.4	75-125			
Xylenes (total)	4.05	0.100	o "I 5 I	4.92		82.3	75-125			
Surrogate: 4-BFB (FID)	3.01	1/4021	n	3.00		100	50-150			
Surrogate: 4-BFB (PID)	2.81		"	3.00		93.7	53-142			
LCS Dup (5K07025-BSD1)				15						
Gasoline Range Hydrocarbons	50.1	5.00	mg/kg	50.0		100	75-125	7.86	25	
Benzene	0.585	0.0200	11	0.565		104	75-125	7.08	25	
Toluene	3.68	0.0500	Ħ	4.22		87.2	75-125	7.32	25	
Ethylbenzene	0.773	0.0500	n	0.845		91.5	75-125	6.82	25	
Kylenes (total)	4.32	0.100	Ħ	4.92		87.8	75-125	6.45	25	
Surrogate: 4-BFB (FID)	2.62		"	3.00		87.3	50-150			
Surrogate: 4-BFB (PID)	2.80		"	3.00		93.3	53-142			
Matrix Spike (5K07025-MS1)					Source: B	5K0127-0	)2			
Gasoline Range Hydrocarbons	86.5	6.70	mg/kg dry	67.0	10.4	114	42-125			
Benzene	0.766	0.0268	н	0.757	ND	101	45-125			
'oluene	4.83	0.0670	Ħ	5.66	0.00503	85.2	55-125			
thylbenzene	1.01	0.0670	**	1.13	ND	89.4	53-132			
Cylenes (total)	5.64	0.134	m	6.59	0.0192	85.3	59-125			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 11 of 22



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported: 12/05/05 18:15

RPD

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control

### North Creek Analytical - Bothell

Reporting

Analyte		Result	Limit U	Jnits Leve	el Result	%REC Limits	RPD Li	mit Notes
Batch 5K07025:	Prepared 11/07/05	Using El	PA 5030B (P/	Γ)			(20)	FREDE IN
Matrix Spike (5K0	7025-MS1)			9180	Source:	B5K0127-02	9(H))99 V	njje v masižionak Poudo debije
Surrogate: 4-BFB (FIL	D)	3.98	mg	/kg dry 4.02	?	99.0 50-150		

Surrogate: 4-BFB (PID)		3.75		"	4.02		93.3	53-142			127
Matrix Spike Dup (5K07025-	MSD1)		Y			Source: B	5K0127	-02			
Gasoline Range Hydrocarbons		92.2	6.70	mg/kg dry	67.0	10.4	122	42-125	6.38	40	
Benzene		0.785	0.0268	и и	0.757	ND	104	45-125	2.45	40	
Toluene		4.92	0.0670	H .	5.66	0.00503	86.8	55-125	1.85	40	
Ethylbenzene		1.04	0.0670	n	1.13	ND	92.0	53-132	2.93	40	
Xylenes (total)		5.80	0.134	- H	6.59	0.0192	87.7	59-125	2.80	40	
Surrogate: 4-BFB (FID)		4.11		<i>"</i>	4.02		102	50-150		***	
Surrogate: 4-BFB (PID)		3.78		"	4.02		94.0	53-142			

North Creek Analytical - Bothell

Kate Haney, Project Manager

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported:

12/05/05 18:15

# Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K09044: Prepared 11/09/05	Using 1	EPA 3550B	er e	KLP	a T	mandr				17 (183)
Blank (5K09044-BLK1)				116	EFFE EAST	Tiva Y	28 T. IV	PC (1) (5.1)	N RELEASE	NE state
Diesel Range Hydrocarbons	ND	10.0	mg/kg					A STATE OF		
Lube Oil Range Hydrocarbons	ND	25.0	н						27.11.20	
Surrogate: 2-FBP	7.33	11 73	n	8.33		88.0	50-150		180 100	•
Surrogate: Octacosane	8.48		"	8.33		102	50-150			
LCS (5K09044-BS1)	in Mari									Mary of the
Diesel Range Hydrocarbons	74.9	10.0	mg/kg	66.7	UKS B	112	61-120			1 20002010
Surrogate: 2-FBP	7.45	1 N/A 1	"	8.33	707	89.4	50-150			
LCS Dup (5K09044-BSD1)										
Diesel Range Hydrocarbons	72.8	10.0	mg/kg	66.7		109	61-120	2.84	40	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
Surrogate: 2-FBP	7.23		# 43	8.33		86.8	50-150		Law mar	30000
Duplicate (5K09044-DUP1)					Source: B	5K0166-	03			
Diesel Range Hydrocarbons	ND	12.1	mg/kg dry		ND			NA	50	
Lube Oil Range Hydrocarbons	ND	30.2	17		ND			NA	50	
Surrogate: 2-FBP	7.55		"	10.1		74.8	50-150			-
Surrogate: Octacosane	9.08		"	10.1		89.9	50-150			

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Reported: Project Manager: Galen Davis 12/05/05 18:15

### Total Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

		Reporting	g411	Spike	Source		%REC		RPD	
Analyte	Res	ılt Limi	t Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K14037: Prepare	ed 11/14/05 Usi	ng EPA 3050	В	. 100	12, 13	цуджаг	ale vi	Faggir !	S 1000	
Blank (5K14037-BLK1)								- 4	ye is	KIEL J.
Lead	N	D 0.500	mg/kg	<u>     </u>		Ŭ-s:		<del></del>		100
LCS (5K14037-BS1)										
Lead	40	.4 0.500	mg/kg	40.0		101	80-120			
LCS Dup (5K14037-BSD1)						1.94				
Lead	40	.1 0.500	mg/kg	40.0	81.	100	80-120	0.745	20	10 1 10-2
Matrix Spike (5K14037-MS1)					Source: I	R5160055_	.03			
ead	56	2 0.521	mg/kg dry	41.7	13.1	103	29-166			1 - L. 100-
Matrix Spike Dup (5K14037-M	(ISD1)				Source: I	35K0055-	03			
ead	63.	8 0.516	mg/kg dry	41.3	13.1	123	29-166	12.7	40	
Post Spike (5K14037-PS1)					Source: I	35K0055-	03			
ead	0.12	9	ug/ml	0.100	0.0249	104	75-125			1. 1 111

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Reported: 12/05/05 18:15

Project Manager: Galen Davis

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

Analyte	Leaf mond	Result	Reporting Limit	Units	Spike Level		%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K09047:	Prepared 11/09/05	Using	EPA 3550B			Yrang Bhili	Eur	ASSEZ I S	Palifor		1 192
Blank (5K09047-BLK	(1)			Ш						A. TE. Valle	\$74[ runen*
Aroclor 1016		ND	12.5	ug/kg	-		n-B				- 4
Aroclor 1221	43	ND	25.0	n							
Aroclor 1232		ND	= 12.5 =								
Aroclor 1242		ND	12.5	9							
Aroclor 1248		ND	12.5	Ħ							
Aroclor 1254		ND	12.5	III N							
Aroclor 1260		ND	12.5	n							
Aroclor 1262		ND	12.5	n							
Aroclor 1268		ND	12.5	*							
Surrogate: TCX	18:	2.99	i en e	"	3.33		89.8	39-139	9-17		1 0 a
Surrogate: Decachlorobij	ohenyl do all	3.50		"	3.33		105	33-163			
LCS (5K09047-BS1)	(L) (089										
Aroclor 1016		35.9	12.5	ug/kg	41.7		86.1	54-125			
Aroclor 1260		39.1	12.5	**	41.7		93.8	58-128			
Surrogate: TCX		3.04		"	3.33		91.3	39-139			
Surrogate: Decachlorobip	phenyl	3.33		***	3.33		100	33-163			
LCS Dup (5K09047-B	SD1)										
Aroclor 1016		35.5	12.5	ug/kg	41.7		85.1	54-125	1.12	30	
Aroclor 1260		41.3	12.5	**	41.7		99.0	58-128	5.47	30	
Surrogate: TCX		2.99		"	3.33		89.8	39-139			
Surrogate: Decachlorobip	henyl	3.53		"	3.33		106	33-163			
Matrix Spike (5K0904	7-MS1)					Source: B	5K0194-	02			C-02
Aroclor 1016		55.2	17.9	ug/kg dry	59.6	ND	92.6	47-134			
Aroclor 1260		57.5	17.9	"	59.6	ND	96.5	22-171			
Surrogate: TCX		4.37		**	4.77		91.6	39-139			
Surrogate: Decachlorobip	henyl	4.83		"	4.77		101	33-163			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network

Page 15 of 22



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

%REC

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Source

Project Number: 036026.02 Project Manager: Galen Davis

Reported:

RPD

12/05/05 18:15

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

Reporting

1998 - 196a F	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Prepared 11/09/05	Using EP	A 3550B	X Labor	1	347.11		EVIT BULL	Theeler,	t with	BATA MELAN
5K09047-MSD1)					Source: I	35K0194-	02	U	3. H. W	C-02
	50.8	17.7	ug/kg dry	59.0	ND	86.1	47-134	8.30	35	
161	56.1	17.7	п	59.0	ND	95.1	22-171	2.46	35	
	4.04		n	4.72		85.6	39-139	·		-
biphenyl	4.73		n	4.72		100	33-163			
	Prepared 11/09/05 5K09047-MSD1)	Prepared 11/09/05 Using EP 5K09047-MSD1) 50.8 56.1 4.04	Prepared 11/09/05 Using EPA 3550B  5K09047-MSD1)  50.8 17.7 56.1 17.7 4.04	Prepared 11/09/05 Using EPA 3550B  5K09047-MSD1)  50.8 17.7 ug/kg dry 56.1 17.7 "  4.04 "	Prepared 11/09/05 Using EPA 3550B  5K09047-MSD1)  50.8 17.7 ug/kg dry 59.0 56.1 17.7 " 59.0 4.04 " 4.72	Prepared 11/09/05 Using EPA 3550B  5K09047-MSD1)  50.8 17.7 ug/kg dry 59.0 ND 56.1 17.7 " 59.0 ND 4.04 " 4.72	Prepared 11/09/05 Using EPA 3550B  Source: B5K0194-  50.8 17.7 ug/kg dry 59.0 ND 86.1  56.1 17.7 " 59.0 ND 95.1  4.04 " 4.72 85.6	Result Limit Units Level Result %REC Limits  Prepared 11/09/05 Using EPA 3550B  5K09047-MSD1)  Source: B5K0194-02  50.8 17.7 ug/kg dry 59.0 ND 86.1 47-134 56.1 17.7 " 59.0 ND 95.1 22-171  4.04 " 4.72 85.6 39-139	Prepared 11/09/05 Using EPA 3550B    Source: B5K0194-02	Result Limit Units Level Result %REC Limits RPD Limit  Prepared 11/09/05 Using EPA 3550B  Source: B5K0194-02  50.8 17.7 ug/kg dry 59.0 ND 86.1 47-134 8.30 35 56.1 17.7 " 59.0 ND 95.1 22-171 2.46 35  4.04 " 4.72 85.6 39-139

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported: 12/05/05 18:15

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K08064: Prepared 11/08/05	Using	EPA 5035		868		Bully T	HE GREAT AT		3040	VARE Sate
Blank (5K08064-BLK1)	AND POST	199 m 2					7 1118	e tepur	ato unit	said i al
Acetone	ND	30.0	ug/kg	e/han H		8174				William albert
Benzene	ND	1.50	71			1.55				1915 to 1986 t
Bromobenzene	ND	5.00	H							The American
Bromochloromethane	ND	5.00	11							
Bromodichloromethane	ND	5.00	Ħ							
Bromoform	ND	5.00	n							
Bromomethane	ND	10.0	ir							
2-Butanone	ND	15.0	11							
n-Butylbenzene	ND	5.00	н							
sec-Butylbenzene	ND	5.00	Ħ							
tert-Butylbenzene	ND	5.00	n							
Carbon disulfide	ND	3.00	Ħ							
Carbon tetrachloride	ND	5.00	Ħ							
Chlorobenzene	ND	2.00	H							
Chloroethane	ND	5.00	n					•		·
Chloroform	ND	2.50	17							
Chloromethane	ND	10.0	m —							
2-Chlorotoluene	ND	5.00	n							
4-Chlorotoluene	ND	5.00	tr							
Dibromochloromethane	ND	5.00	Ħ	75						
1,2-Dibromo-3-chloropropane	ND	10.0	m							
1,2-Dibromoethane (EDB)	ND	5.00	n							
Dibromomethane	ND	5.00	Ħ							
,2-Dichlorobenzene	ND	5.00	n							
,3-Dichlorobenzene	ND	5.00	n							
,4-Dichlorobenzene	ND	5.00	n							
Dichlorodifluoromethane	ND	5.00	n							
,1-Dichloroethane	ND	2.00	89							
,2-Dichloroethane	ND	1.25	Ħ							
,1-Dichloroethene	ND	3.00	n							
ris-1,2-Dichloroethene	ND	3.00	Ħ							
rans-1,2-Dichloroethene	ND	2.50	н							
,2-Dichloropropane	ND	5.00	н							
,3-Dichloropropane	ND	5.00	п .							

North Creek Analytical - Bothell

Kato Dung

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc. Environmental Laboratory Network

Page 17 of 22



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis Reported: 12/05/05 18:15

Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

								•	
	Repor	ing	Spike	Source		%REC		RPD	_
Analyte	Result L	mit Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 5K08064:	Prepared	11/08/05	Using EF	A 5035	9		300 F.	(in help	11.	April 5-W min soull
Blank (5K08064-BL)	K1)	111111111111111111111111111111111111111								
2,2-Dichloropropane		VILL	ND	10.0	ug/kg	Toplem	4H			MACE SAN
1,1-Dichloropropene	2		ND	5.00						MINOSH
cis-1,3-Dichloropropene			ND	5.00	**					
trans-1,3-Dichloroproper	ne		ND	1.25						
Ethylbenzene			ND	4.00	Ħ					
Hexachlorobutadiene			ND	5.00						
Methyl tert-butyl ether			ND	1.00	**					
2-Hexanone			ND	20.0						
Isopropylbenzene			ND	5.00	Ħ					
p-Isopropyltoluene			ND	5.00						
4-Methyl-2-pentanone			ND	20.0	11					
Methylene chloride			ND	3.50	Ħ					
Naphthalene			ND	5.00						
n-Propylbenzene			ND	5.00	n					
Styrene			ND	1.00	T T					
1,2,3-Trichlorobenzene			ND	5.00	11					
1,2,4-Trichlorobenzene			ND	5.00						We will be a second
1,1,1,2-Tetrachloroethan	е		ND	5.00						
1,1,2,2-Tetrachloroethan	e		ND	5.00	н					
Tetrachloroethene			ND	2.00	**	*				
Toluene			ND	1.50	No.					
1,1,1-Trichloroethane			ND	2.50	**					
1,1,2-Trichloroethane			ND	1.25	i ii					
Trichloroethene			ND	2.50						
Trichlorofluoromethane			ND	5.00	**					
1,2,3-Trichloropropane			ND	5.00	n n					
1,2,4-Trimethylbenzene			ND	5.00						
1,3,5-Trimethylbenzene			ND	5.00	8 #					
Vinyl chloride			ND	2.50	H H					
Total Xylenes			ND	10.0	п					
Surrogate: 1,2-DCA-d4	bet	Yazaki	42.5		"	40	0.0	106	60-140	media ar aran
Surrogate: Toluene-d8		1 64	43.9		"	40	0.0	110	60-140	
Surrogate: 4-BFB			41.3		"	40	0.0	103	60-140	
-										

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Katoskung



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project Number: 036026.02

Project: BNSF-Wishram, WA

Project Manager: Galen Davis

Reported: 12/05/05 18:15

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Analyte		Dogule	Reporting			Spike	Source		%REC		RPL	)	
When the second	THE STATE OF THE S	Result	Limit	Units	e le	Level	Resul	t %REC	Limits	RPD	Limi	it	Notes
Batch 5K08064:	Prepared 11/08/05	Using 1	EPA 5035			3	Sold Sa		an 85 m	Bayl saf		ų, qn	ed for
LCS (5K08064-BS1)											18.	LEST	REMAN)
Acetone	Veta = 1 - 100 = 1	396	30.0	ug/kg	-11,	400	13.1	99.0	70-130				
Benzene	ia .	40.8	1.50	н		40.0		102	70-130				
2-Butanone		424	15.0	n		400		106	70-130				
Carbon disulfide		40.1	3.00	п		40.0		100	70-130				
Chlorobenzene		39.9	2.00	tr		40.0		99.8	70-130				
1,1-Dichloroethane		40.3	2.00	11		40.0		101	70-130		377		
1,1-Dichloroethene		40.0	3.00			40.0		100	70-130				
cis-1,2-Dichloroethene		41.6	3.00	**		40.0		104	70-130				
Ethylbenzene		41.2	4.00	tr		40.0		103	70-130				
Hexachlorobutadiene		39.4	5.00	n		40.0		98.5	70-130				
4-Methyl-2-pentanone		392	20.0	**		400		98.0	70-130				
Tetrachloroethene		40.9	2.00	**		40.0		102	70-130				
Toluene		39.7	1.50	н		40.0		99.2					
1,1,1-Trichloroethane		39.2	2.50	it		40.0		98.0	70-130				
Trichloroethene		42.2	2.50	**		40.0		106	70-130 70-130				
Surrogate: 1,2-DCA-d4		39.6		"	-	40.0		99.0	60-140				
Surrogate: Toluene-d8		38.4		"		40.0		96.0	60-140				
Surrogate: 4-BFB		37.9		"		40.0		94.8	60-140				
LCS Dup (5K08064-B	SD1)					į.		111	00 140				
Acetone	301)	430	30.0			400		16/1				A.	# B = 1
Benzene		42.1	1.50	ug/kg		400		108	70-130	8.23	30		
-Butanone		457		**		40.0		105	70-130	3.14	30		
Carbon disulfide		42.9	15.0			400		114	70-130	7.49	30		
Chlorobenzene		41.9	3.00			40.0		107	70-130	6.75	30		
,1-Dichloroethane		43.2	2.00	**		40.0		105	70-130	4.89	30		
,1-Dichloroethene			2.00	,,		40.0		108	70-130	6.95	30		
is-1,2-Dichloroethene		42.5	3.00	"		40.0		106	70-130	6.06	30		
Ethylbenzene		42.7	3.00	,,		40.0		107	70-130	2.61	30		
lexachlorobutadiene		42.1	4.00			40.0		105	70-130	2.16	30		
-Methyl-2-pentanone		31.7	5.00	"		40.0		79.2	70-130	21.7	30		
etrachloroethene		418	20.0			400		104	70-130	6.42	30		
oluene		39.2	2.00	Ħ		40.0		98.0	70-130	4.24	30		
		41.9	1.50	H	4	40.0		105	70-130	5.39	30		
,1,1-Trichloroethane		42.2	2.50	н		40.0		106	70-130	7.37	30		

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



425.420.9200 fax 425.420.9210

**Spokane** 11922 East 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

%REC

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100

Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02

Project Manager: Galen Davis

Reported:

12/05/05 18:15

RPD

# Volatile Organic Compounds (Special List) per EPA Method 8260B (Low Soil Method) - Quality Control North Creek Analytical - Bothell

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5K08064:	Prepared 11/08/05	Using E	PA 5035		, was	Witu G	cula , u	9.35	Mary La		
LCS Dup (5K08064-	BSD1)									THE STATE	Eller Ave
Trichloroethene		42.4	2.50	ug/kg	40.0		106	70-130	0.473	30	1-101-1-1
Surrogate: 1,2-DCA-d4	.te	39.0		n	40.0		97.5	60-140			
Surrogate: Toluene-d8		37.8		"	40.0		94.5	60-140			
Surrogate: 4-BFB		37.4		"	40.0		93.5	60-140			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kate Haney, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network Page 20 of 22



425.420.9200 fax 425.420.9210

 Spokane
 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

 509.924.9200
 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis

Reported: 12/05/05 18:15

# Physical Parameters by APHA/ASTM/EPA Methods - Quality Control North Creek Analytical - Bothell

Analyte and a second se	Result	porting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5K10044: Prepared 11/10/05	Using Dry	Weight		- Bur	DE ANTE	gell 15	DOMESTIC E		ı sikilgi	TA WHELE
Blank (5K10044-BLK1) Dry Weight	00.8	1.00						1.00	Tiphoni is	IN INSTITUTE

North Creek Analytical - Bothell

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. **Environmental Laboratory Network**

Page 21 of 22



425.420.9200 fax 425.420.9210

Spokane 11922 East 1st Avenue, Spokane Valley, WA 99206-5302

509.924.9200 fax 509.924.9290 **Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project: BNSF-Wishram, WA

Project Number: 036026.02 Project Manager: Galen Davis **Reported:** 12/05/05 18:15

#### **Notes and Definitions**

C-02 To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur

contamination.

G-01 Results reported for the gas range are primarily due to overlap from diesel range hydrocarbons.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



509-924-9200 425-420-9200 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 11922 E 1st Ave, Spokane, WA 99206-5302 20332 Empire Ave, Ste F1, Bend, OR 97701-5712

541-383-9310 503-906-9200 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

CHAIN OF CUSTODY REPORT

FAX 382-7588 FAX 563-9210

FAX 420-9210 FAX 924-9290 FAX 906-9210

11/5/05 **▽** WO ID 6 3 2  $\mathcal{B}$ 30 7 etroleum Hydrocarbon Analyses DATE TIME LOCATION / COMMENTS TIME TURNAROUND REQUEST DATE Organic & Inorganic Analyses TEMP: Work Order #: 2540177 in Business Days Specify: #OF OTHER M • 4 MATRIX (W, S, O) S V) S V S S messore Temp by Tempolaruk P.O. NUMBER: SEE WOLK OKIK-R BRUCE SLEPPUR BNSF RECEIVED BY: RECEIVED BY: PRINT NAME: PRINT NAME: REQUESTED ANALYSES PRESERVATIVE DATE: 11/4/05 15'00 2010 6010 Ę 2808 5934 7-111200 2808 5934 7-111200 2007 2007 18-15-16 0-1814 TIME TIME DATE 圣树 X X COCREVOSING FOR VICES CARLE MITBE, EDB, EDC 1/1/ × NO X X X × 50,18,100 1500 00%C 0091 0011 0200 cennely jewks 1400 0800 1300 FIRM: PROJECT NAME: BASE WISHRAM DATE/TIME SAMPLING RELEASED BY: JALLA C. Jan 20/2/11 FIEXC-8-6-10 11/105 6 FIEXC-B-5-10 1111105 11/2/05 114165 11/2/05 1112105 11/3/05 PROJECT NUMBER: 036026,02 **Vans** ADDRESS: 32001 Jeans Aver ADDRESS: 32001 3200 Ave Rederal WAY, WA PHONE: 25.3 574 CSSS FAX: 18051 FIEXC-E-8 2 FIEXC - 13-1-12 7 FIEXL-B-3-15 PRINT NAME / TELLERA FIEXC-8-7-10 ADDITIONAL REMARKS: **IDENTIFICATION** CLIENT SAMPLE 9 TRID Blowk 8 PII-2-17 3 PH-1-10 RELEASED BY: PRINT NAME: SAMPLED BY: NCA CLIENT:



SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

November 30, 2006

Galen Davis Kennedy/Jenks Consultants 32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001

RE: BNSF-Wishram, WA

Enclosed are the results of analyses for samples received by the laboratory on 11/13/06 17:45. The following list is a summary of the Work Orders contained in this report, generated on 11/30/06 17:47.

If you have any questions concerning this report, please feel free to contact me.

Work Order **Project ProjectNumber** BPK0390 BNSF-Wishram, WA [none]

TestAmerica - Seattle, WA

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the labo





SEATTLE, WA

11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Name:

BNSF-Wishram, WA

Project Number: Project Manager: [none]

Galen Davis

Report Created: 11/30/06 17:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	BPK0390-01	Water	11/09/06 11:00	11/13/06 17:45
MW-3	BPK0390-02	Water	11/09/06 11:50	11/13/06 17:45
MW-5	BPK0390-03	Water	11/09/06 12:40	11/13/06 17:45
MW-100	BPK0390-04	Water	11/09/06 12:45	11/13/06 17:45

TestAmerica - Seattle, WA

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.





SEATTLE, WA

11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Name:

BNSF-Wishram, WA

Project Number: Project Manager: [none]

Galen Davis

Report Created:

11/30/06 17:47

### **Analytical Case Narrative**

TestAmerica - Seattle, WA

#### **BPK0390**

SAMPLE RECEIPT

Samples were received November 11th, 2006 by TestAmerica - Seattle. The temperature of the samples at the time of receipt was 4.2 degrees Celsius.

### PREPARATIONS AND ANALYSIS

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of the report.

TestAmerica - Seattle, WA

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full,





SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

Project Name:

BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Number: Project Manager:

[none] Galen Davis Report Created:

11/30/06 17:47

### Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B

TestAmerica - Seattle, WA

	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BPK0390-01 (MW-1)		Wa	iter		Sampl	ed: 11/0	9/06 11:00			D-1
Gasoline Range Hydrocarbons	NWTPH-Gx/802	ND		250	ug/l	5x	6K21020	11/21/06 11:15	11/22/06 02:06	per Turk
Benzene		ND		2.50	•	•				
Toluene	THE PERSON NAMED IN	ND		2.50						
Ethylbenzene	•	ND	_	2,50	*				•	
Xylenes (total)	• • •	ND		5,00	*		•	•		
Surrogate(s): 4-BFB (1	FID)		91.7%		58 - 144 %	lx				- Vote Gire
4-BFB (I	PID)		97.0%		68 - 140 %					
BPK0390-02 (MW-3)		Wa	iter		Sample	ed: 11/(	9/06 11:50			
Gasoline Range Hydrocarbon	18 NWTPH-Gx/802	209		50.0	ug/l	1x	6K21020	11/21/06 11:15	11/22/06 04:11	
Y	1B									
Benzene	•	ND		0.500	•	•	•	•	•	
Toluene		ND		0.500			•	•	•	
Ethylbenzene		ND		0.500		•	•	•	•	
Xylenes (total)	•	ND		1.00		94		*	•	
Surrogate(s): 4-BFB (1	FID)		93.3%		58 - 144 %	H			*	
4-BFB (I	PID)		100%		68 - 140 %	*			"	
	P(D)	w					19/06 12:40		*	
BPK0390-03 (MW-5)			iter		Sample	ed: 11/(	9/06 12:40			· - · ·
		Ws ND		50.0			09/06 12:40 6K21020	11/21/06 11:15	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons	NWTPH-Gx/802		iter		Sample	ed: 11/(		11/21/06 11:15	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons	NWTPH-Gx/802	ND	iter	50,0	Sample	ed: 11/0		11/21/06 11:15	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene	NWTPH-Gx/802	ND ND		50.0	Sample	ed: 11/0		11/21/06 11:15	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene	NWTPH-Gx/802	ND ND ND		50.0 0.500 0.500	Sample	ed: 11/0		11/21/06 11:15	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene	NWTPH-Gx/802 1B "	ND ND ND ND		50.0 0.500 0.500 0.500 1.00	Sample	lx	6K21020	:	11/22/06 04:42	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene Xylenes (total)	NWTPH-Gx/802 1B " " "	ND ND ND ND		50.0 0.500 0.500 0.500 1.00	Sample	lx	6K21020	:		
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1)	NWTPH-Gx/802 1B " " " " " " " " " " " " " " " " " " "	ND ND ND ND	88.3%	50.0 0.500 0.500 0.500 1.00	Sample ug/l	ed: 11/0	6K21020	:		
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (l.4-BFB	NWTPH-Gx/802  1B  " " " " " " " "  PID)  NWTPH-Gx/802	ND ND ND ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00	Sample ug/l	ed: 11/0	6K21020	:		
BPK0390-03 (MW-5)  Gasoline Range Hydrocarbons  Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1)	NWTPH-Gx/802 1B	ND ND ND ND ND ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00	Sample ug/l	ed: 11/0	6K21020 	:	:	
BPK0390-03 (MW-5)  Gasoline Range Hydrocarbons  Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1) 4-BFB (1) Gasoline Range Hydrocarbons Benzene	NWTPH-Gx/802  1B  " " " " " " " "  PID)  NWTPH-Gx/802	ND ND ND ND ND ND ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00	Sample ug/l	ed: 11/0	6K21020 	:	:	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1) 4-BFB (1) Gasoline Range Hydrocarbons Benzene Toluene	NWTPH-Gx/802  1B  " " " " " " " "  PID)  NWTPH-Gx/802	ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00 50.0 0.500 0.500	Sample ug/l	ed: 11/0	6K21020 	:	:	
BPK0390-03 (MW-5) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1) Gasoline Range Hydrocarbons Benzene Toluene Ethylbenzene	NWTPH-Gx/802  1B  " " " " " " " "  PID)  NWTPH-Gx/802	ND ND ND ND ND ND ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00	Sample ug/l	ed: 11/0	6K21020 	:	:	
BPK0390-03 (MW-5)  Gasoline Range Hydrocarbons  Benzene Toluene Ethylbenzene Xylenes (total)  Surrogate(s): 4-BFB (1 4-BFB (1) 4-BFB (1) Gasoline Range Hydrocarbons Benzene	NWTPH-Gx/802  1B	ND	88.3% 96.5%	50.0 0.500 0.500 0.500 1.00 50.0 0.500 0.500 0.500	Sample ug/l 58 - 144 % 68 - 140 % Sample ug/l	ed: 11/0	6K21020 	11/21/06 11:15	:	

TestAmerica - Seattle, WA

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



SEATTLE, WA

11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Name:

BNSF-Wishram, WA

Project Number:
Project Manager:

[none]
Galen Davis

Report Created: 11/30/06 17:47

### Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BPK0390-01 (MW-1)	16) A 110/FIX 2/33 (17)	W	ater	V 12	Sampl	ed: 11	/09/06 11:00	DDWW9-		3 5
Diesel Range Hydrocarbons	NWTPH-Dx	ND		0.236	mg/l	1×	6K16025	11/16/06 10:48	11/17/06 22:02	id a
Lube Oil Range Hydrocarbons	TO THE PERSON OF	ND		0,472	Allille .		100			
Surrogate(s): 2-FBP			109%	48	53 - 125 %	н	7811	# 112	н	
Octacosane			94.9%		68 - 125 %				*	
BPK0390-02 (MW-3)		W	ater		Sampl	ed: 11/	/09/06 11:50			
Diesel Range Hydrocarbons	NWTPH-Dx	0.659	TI, iii	0.250	mg/l	lx	6K16025	11/16/06 10:48	11/17/06 22:28	TAKE THE
Lube Oil Range Hydrocarbons		ND	H S 100	0.500	•	•	•	•	w tell y	17.77
Surrogate(s): 2-FBP			112%		53 - 125 %	**			<b>"</b> 4.74	
Octacosane			98.8%	<b>S</b> C	68 - 125 %	"				1) 12
BPK0390-03 (MW-5)		W	ater		Sampl	ed: 11	/09/06 12:40			
Diesel Range Hydrocarbons	NWTPH-Dx	ND		0.250	mg/l	1x	6K16025	11/16/06 10:48	11/17/06 22:54	
Lube Oil Range Hydrocarbons		ND		0.500	•		•			
Surrogate(s): 2-FBP			95.6%	(1)	53 - 125 %	*		11	*	
Octacosane			93.2%		68 - 125 %	*			,	
BPK0390-04 (MW-100)	X Description	W	ater	E	Sampl	ed: 11/	09/06 12:45			F
Diesel Range Hydrocarbons	NWTPH-Dx	ND		0.248	mg/l	lx	6K16025	11/16/06 10:48	11/17/06 23:21	
Lube Oil Range Hydrocarbons	mi sarêr Hesiên	ND	Ekokê	0.495	ASCERSE:			*	ar Emalisari	
Surrogate(s): 2-FBP	1 2	1977	99.2%	2) th	53 - 125 %		agre.	14 HOTE 84	<b>"</b> 1=-110	I II III III II
Octacosane			91.9%		68 - 125 %	*			*	

TestAmerica - Seattle, WA

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.





SEATTLE, WA

11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Name:

BNSF-Wishram, WA

Project Number: Project Manager: [none]

Galen Davis

Report Created:

11/30/06 17:47

# Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results TestAmerica - Seattle, WA

Analyte	Method	Result	241 -17	MDL*	MRL	Units	Dil	Source Result	Spike Amt	e % REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6K21020-BLK1)	Terror during	4445	530		ge First	6		188		11/2	11/21/06 11	:15		sal nookym na	9.5
Gasoline Range Hydrocarbons	NWTPH-Gx/	ND			50.0	ug/l	1x	TRE	-	Ų-	-	-	3000	11/21/06 12:56	
Benzene	8021B	ND			0,500		-01	_			_		33	i - 1	rwot
Toluene		ND			0.500		100	-			A		146	10 m	
Ethylbenzene	•	ND			0.500				_				_		
Xylenes (total)		ND			1.00			-	-	-	-		- 4	Contraction of	
Surrogate(s): 4-BFB (FID)	Shirt T	Recovery:	88.5%	1	Limi	ts: 58-144%	,,	W. J.		150	" V"		776	11/21/06 12:56	691 (NG)
4-BFB (PID)			99.5%			68-140%	•							the street	
LCS (6K21020-BS1)									Ext	racted:	11/21/06 11	:15			
Gasoline Range Hydrocarbons	NWTPH-Gx/	896		11 -	50.0	ug/l	1×	-	1000	89.6%	(80-120)		-	11/21/06 13:31	
Surrogate(s): 4-BFB (FID)	8021B	Recovery:	93.2%	11,000	Limi	ts: 58-144%							- 0	11/21/06 13:31	MEXICO (1)
LCC ((VA1020 DC2)									-	with	###D			entries rest of	
LCS (6K21020-BS2) Benzene	NWTPH-Gx/	25.4	- 1	_	0.500	ug/l	1x		30.0	84.7%	(80-120)	:15	_	11/21/06 14:26	
Toluene	8021B	25.5		- MITT	0.500		ANN .	_		85.0%			_		
Ethylbenzene	U .	24.9			0.500			_		83.0%			100350	•	
Xylenes (total)		74.2			1.00		Netso I	-	90.0	82.4%			- 1011	Marce Service	
Surrogate(s): 4-BFB (PID)	1199001	Recovery:	97.0%		Limi	ts: 68-140%	*			. 22T F	scw1		1111166	11/21/06 14:26	On Halley
Duplicate (6K21020-DUP1)					QC Source:	BPK0355-02			Ext	racted:	11/21/06 11	:15	1.650)		
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	2140		- 55	250	ug/l	5x	2240	-		-	4.57%	(25)	11/21/06 18:07	PEROD
Benzene	8021B	ND			2,50			ND	_ "			9.52%		7	
Toluene		ND			2.50			ND			-	4.26%	*		
Ethylbenzene	•	ND			2.50	•	•	18.3		-		160%	•	•	RP-
Xylenes (total)	• •	57.8			5.00	*	*	62.4	-			7.65%	•	•	
Surrogate(s): 4-BFB (FID) 4-BFB (PID)		Recovery:	93.8% 102%		Limi	ts: 58-144% 68-140%	lx "							11/21/06 18:07	
Duplicate (6K21020-DUP2)					QC Source:	BPK0390-04			Ext	racted:	11/21/06 11	:15			
Gasoline Range Hydrocarbons	NWTPH-Gz/ 8021B	ND		-	50.0	ug/l	1x	ND	-		-	NR	(25)	11/22/06 05:44	-
Benzene	8021B	ND			0.500			ND			-	NR		*	
Toluene	•	ND			0.500		*	ND	-	-		NR		•	
Ethylbenzene	• 11	ND			0.500		*	ND	_	-		NR			
Xylenes (total)		ND			1.00	•		ND	-	-		NR			14
Surrogate(s): 4-BFB (F1D) 4-BFB (P1D)		Recovery:	89.8% 97.0%		Limi	ts: 58-144% 68-140%	"							11/22/06 05:44	

TestAmerica - Seattle, WA

Jaw Dhuy

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.





SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

Project Name:

BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Number: Project Manager: [none] Galen Davis

Report Created: 11/30/06 17:47

Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results TestAmerica - Seattle, WA

QC Batch: 6K21020	Water 1			- R		REANTEL LANCE	WATER TO	1HA	\$250 0 k2 k1 K					
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	) Analyzed	Notes
Matrix Spike (6K21020-MS1)	STEWNE .			QC Source:	BPK0355-02		1 4	Extr	acted:	11/21/06 11	:15	= 2 =	And the second	自怕
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	6910	-	250	ug/l	5x	2240	5000	93,4%	(75-131)	-	-	11/21/06 18:39	
Surrogate(s): 4-BFB (FID)		Recovery:	95.2%	Lim	nits: 58-144%	lx							11/21/06 18:39	
Matrix Spike (6K21020-MS2)				Extracted: 11/21/06 11:15					17					
Benzene	NWTPH-Gx/ 8021B	159	_	2,50	ug/l	5x	1.54	150	105%	(46-130)	-	-	11/21/06 19:13	31
Toluene		154		2.50			1.20		102%	(60-124)				
Ethylbenzene		173		2,50			18.3		103%	(56-141)	_		•	
Xylenes (total)		513		5.00			62.4	450	100%	(66-132)	_	_ =	77	

TestAmerica - Seattle, WA

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.





SEATTLE, WA

11720 NORTH CREEK PKWY N, SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Name:

BNSF-Wishram, WA

Project Number: Project Manager: [none] Galen Davis Report Created:

11/30/06 17:47

Semivolatile P	etroleum Pro	ducts by I	NWTPE		cid/Silica G a - Seattle, W.		an-up -	Labor	ratory	Quality	Cont	trol Res	ults	
QC Batch: 6K16025	Water I	Water Preparation Method: EPA 3520C												40
Analyte	Method	Result	М	DL* MR	L Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	) Analyzed	Notes
Blank (6K16025-BLK1)			1			-1++-		Ext	racted:	11/16/06 10	:48	MALES I		
Diesel Range Hydrocarbons	NWTPH-Dx	ND	-	- 0,250	mg/l	1x	-		-		-	-	11/17/06 20:18	111-0-0-
Lube Oil Range Hydrocarbons		ND	-	- 0,500		*	_				_			
Surrogate(s): 2-FBP Octacosane		Recovery:	100% 98.0%		Limits: 53-125% 68-125%	"							11/17/06 20:18	-1755
LCS (6K16025-BS1)	n_init s		1,10	4 -			Ext							
Diesel Range Hydrocarbons	NWTPH-Dx	1.86	17-	- 0.250	mg/l	1x		2.00	93.0%	(61-132)	-	-	11/17/06 20:44	
Surrogate(s): 2-FBP Octacosane	All to	Recovery:	106% 94.8%		Limits: 53-125% 68-125%	"		Įū N					11/17/06 20:44	1000
Matrix Spike (6K16025-MS1)				QC Sour	ce: BPK0393-10			Ext	racted:	11/16/06 10	:48			
Diesel Range Hydrocarbons	NWTPH-Dx	1.77		- 0.243	mg/l	1x	ND	1.94	91.2%	(32-143)	_	_	11/17/06 21:10	
Surrogate(s): 2-FBP Octacosane		Recovery:	104% 86.8%		Limits: 53-125% 68-125%	,							11/17/06 21:10	П
Matrix Spike Dup (6K16025-MS	SD1)			QC Sour	ce: BPK0393-10			Ext	racted:	11/16/06 10	:48			
Diesel Range Hydrocarbons	NWTPH-Dx	1.81		0.243	mg/l	1x	ND	1.94	93.3%	(32-143)	2.23%	6 (50)	11/17/06 21:36	
Surrogate(s): 2-FBP Octacosane	,	Recovery:	105% 93.4%		Limits: 53-125% 68-125%								11/17/06 21:36	

TestAmerica - Seattle, WA

Kate Haney, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.





SEATTLE, WA

11720 NORTH CREEK PKWY N. SUITE 400 BOTHELL, WA 98011-8244 PH: (425) 420.9200 FAX: (425) 420.9210

Kennedy/Jenks Consultants

Project Name:

BNSF-Wishram, WA

32001 32nd Ave S Ste 100 Federal Way, WA/USA 98001 Project Number:

[none]

Project Manager: Galen Davis

Report Created: 11/30/06 17:47

#### **Notes and Definitions**

#### Report Specific Notes:

D-14

Diluted due to matrix effect.

RP-4

Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

#### **Laboratory Reporting Conventions:**

DET Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA \_ Not Reported / Not Available

Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight. dry

Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported

on a Wet Weight Basis.

RPD RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table. MRL

MDL\* METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported

Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution

found on the analytical raw data.

Reporting -Limits

Dil

Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature

Electronic Signature added in accordance with TestAmerica's Electronic Reporting and Electronic Signatures Policy. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory



# NALYTICAL TESTING CORPORATION Test/Imerica

AND THE REPORT OF THE PROPERTY 
11922 E. First Ave, Spokane, WA 99206-5302 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 11720 North Creek Play N Suite 400, Bothell, WA 98011-8244 9405 SW Nimbus Ave, Beaverton, OR 97008-7145

425-420-9200 PAX 420-9210 509-924-9200 FAX 924-9290 503-906-9200 FAX 906-9210 907-563-9200 FAX 563-9210

And the Control of th

Work Order # DP/ (1390) WO IA 63 DATE 1/13/06 Tade: 1333 T DATE TURNAROUND REQUES 4.26 LOCATION / in Business Days OTHER Specify. THE Francis CO Luna, Jr. MALTH-S 876 174S # OF CONT. 9 (W. S. O) 3 KISTO PENEW INVOICE LINET BCEIVED BY: M AV Fr 8TEX BCEIVED BY: REQUESTED ANALYSES PRESERVATIVE いっとのからはる十 INVOICE TO: RNS F 333 DATE: 1/1/3/06 CHAIN OF CUSTODY REPORT いがた DATE スメメス メメメ YOW (MTCA) REPORTING ADDRESS: SCOT 32-10 HE S. SHE-100 FEDEUAL WAY, WAY OF BOOK PHONE STOWNST PAX: 253-952-3435 × 大 BHOTON OF JANE (W 1150 0<del>1</del>2] Inda KORNDA MOL SAMPLING DATE/TIME ROJECT NAME: GUSF WISH TAM BNSF Railroad 11 9/06 CLIENT SAMPLE IDENTIFICATION LEASED BY: RUN ROJECT NUMBER MW-100 DOTTIONAL REMARKS: AW-3 AW-N J-MW SAMPLED BY: UNT NAME: LEASED BY: INT NAME CLIENT

weer. By relinquishing samples to fest America, client agrees to pay for the services requested on this chain of custody form and for any additional analyses performed on this project.

Payment for services is the within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted.