



PACIFIC

SAFETY • TRAINING • INDUSTRIAL HYGIENE

November 20, 2006

Halah Voges  
The RETEC Group, Inc.  
1011 SW Klickitat Way, Suite 207  
Seattle, Washington 98134-1162

**RE: WEEKLY AIR AND NOISE MONITORING REPORT  
OCTOBER 23 – OCTOBER 27, 2006  
Levee Zone Interim Action  
Skykomish, Washington**

Ms. Voges,

This document represents the twenty-second report of weekly air and noise monitoring data for the BNSF Skykomish levee zone interim action for the town of Skykomish, Washington conducted by Argus Pacific, Inc. (Argus Pacific) during the week of October 23 through October 27, 2006. The purpose of this report is to summarize and interpret air and noise sampling data collected in the town of Skykomish during the levee zone interim action conducted by The RETEC Group (RETEC). Argus Pacific conducted monitoring in accordance with the revised BNSF Skykomish Air and Noise Monitoring Plan issued by Argus Pacific on September 19, 2006.

## **WORK ACTIVITIES**

Argus Pacific collected chemical and respirable dust samples and noise measurements on October 23 and 26, 2006. RETEC technicians collected noise measurements on October 24, 25, and 27 of that week. RETEC technicians did not collect respirable dust samples on these days due to heavy and persistent rain.

During sampling, workers started foundation work in the levee zone. Backfilling materials were imported and backfilling activities continued throughout the levee zone. Workers continued with storm sewer catch basin installation in the levee zone. Workers continued grading and compacting backfilled areas. Loaders loaded railcars with impacted materials from the railyard stockpiles. A water truck wetted down construction-affected areas on days with no rain.

## **SAMPLING METHODOLOGY**

All samples were collected in accordance with the methods specified in the BNSF Skykomish Air and Noise Monitoring Plan. Please refer to this Plan for specific details on sampling methodology.

On October 23, 2006, Argus Pacific collected air samples at the east end of the railyard (on ladder between eastern-most railcar and east end of railyard stockpiles) in a downwind direction relative to construction activities. Air samples were also collected at the northeast corner of the schoolyard, not directly downwind of construction activities, but immediately adjacent to the levee zone. Samples taken on October 23, 2006 at these two locations were analyzed for lead, arsenic, petroleum hydrocarbons (Naphthas), diesel particulate matter, and polynuclear aromatic hydrocarbons (PAHs). Air samples were also taken inside the school building (third floor, northeast room). Samples taken on October 23, 2006 inside the school building were analyzed for petroleum hydrocarbons (Naphthas) and polynuclear aromatic hydrocarbons (PAHs).

On October 26, 2006, Argus Pacific collected air samples at the east end of the railyard, the northeast corner of the schoolyard, and inside the school building. Samples collected on October 26, 2006 from the railyard and schoolyard were analyzed for lead, arsenic, and petroleum hydrocarbons (Naphthas). The samples collected on October 26, 2006 inside the school were analyzed for petroleum hydrocarbons (Naphthas) and polynuclear aromatic hydrocarbons (PAHs).

Argus Pacific also conducted community noise monitoring at the northwest corner of the railyard (just north of railroad tracks on the corner of Railroad Avenue and North 5<sup>th</sup> Street), and at the northeast corner of the schoolyard, immediately adjacent to the levee zone. Argus Pacific conducted respirable dust monitoring on October 23 and 26, 2006. On days during the week when Argus Pacific was not on site (October 24, 25, and 27), RETEC technicians conducted community noise monitoring at the northwest corner of the railyard and the northeast corner of the schoolyard. RETEC technicians did not conduct respirable dust monitoring on October 24, 25, or 27 due to heavy and persistent rain.

Approximate air and noise sample locations are indicated on the attached Air and Noise Monitoring Sample Locations Plan.

## **SAMPLING RESULTS**

Detectable concentrations of diesel particulate matter were found in the samples collected at both the east end of the railyard and the northeast corner of the schoolyard on October 23, 2006. None of the other target compounds were identified at or above the laboratory limits of detection at any of the three sampling stations. Respirable dust concentrations and community noise levels were below project action limits during sampling for the entire week. Laboratory results, and dust and noise monitoring data are attached.

OCTOBER 23, 2006

**RAILYARD (EAST END) SAMPLES – LOADING OF IMPACTED MATERIALS INTO RAILCARS**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1023-ERY-LA	Lead	520 minutes	0.096 µg/m <sup>3</sup>	<0.096 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Arsenic	520 minutes	0.19 µg/m <sup>3</sup>	<0.19 µg/m <sup>3</sup>	10 µg/m <sup>3</sup>
1023-FB-LA	Lead	Field Blank	0.1 µg/sample	ND	NA
	Arsenic	Field Blank	0.2 µg/sample	ND	NA
1023-ERY-N	Naphthas	520 minutes	0.49 mg/m <sup>3</sup>	<0.49 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
1023-FB-N	Naphthas	Field Blank	0.01 mg/sample	ND	NA
1023-ERY-DPM	Diesel Particulate (as Elemental Carbon)	520 minutes	1.7 µg/m <sup>3</sup>	1.7 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
1023-FB-DPM	Diesel Particulate (as Elemental Carbon)	Field Blank	1.7 µg/sample	ND	NA
1023-ERY-PAH	PAHs (as benzene solubles)	520 minutes	0.04 mg/m <sup>3</sup>	<0.04 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
1023-FB-PAH	PAHs (as benzene solubles)	Field Blank	0.04 mg/m <sup>3</sup>	ND	NA

ND = Non-Detect

**SCHOOLYARD (NE CORNER) SAMPLES – BACKFILLING, FOUNDATION WORK, STORM SEWER CATCH BASIN INSTALLATION, TRUCK TRAFFIC**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1023-NSY-LA	Lead	513 minutes	0.097 µg/m <sup>3</sup>	<0.097 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Arsenic	513 minutes	0.19 µg/m <sup>3</sup>	<0.19 µg/m <sup>3</sup>	10 µg/m <sup>3</sup>
1023-NSY-N	Naphthas	513 minutes	0.48 mg/m <sup>3</sup>	<0.48 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
1023-NSY-DPM	Diesel Particulate (as Elemental Carbon)	513 minutes	1.7 µg/m <sup>3</sup>	2.6 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
1023-NSY-PAH	PAHs (as benzene solubles)	513 minutes	0.04 mg/m <sup>3</sup>	<0.04 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>

**INSIDE SCHOOL BUILDING (THIRD FLOOR, NE ROOM) SAMPLES – BACKFILLING,  
FOUNDATION WORK, STORM SEWER CATCH BASIN INSTALLATION, TRUCK TRAFFIC**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1023-ISB-N	Naphthas	500 minutes	0.50 mg/m <sup>3</sup>	<0.50 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
1023-ISB-PAH	PAHs (as benzene solubles)	500 minutes	0.04 mg/m <sup>3</sup>	<0.04 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>

**OCTOBER 26, 2006**

**RAILYARD (EAST END) SAMPLES – LOADING OF EXCAVATED MATERIALS INTO RAILCARS**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1026-ERY-LA	Lead	532 minutes	1.9 µg/m <sup>3</sup>	<1.9 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Arsenic	532 minutes	2.8 µg/m <sup>3</sup>	<2.8 µg/m <sup>3</sup>	10 µg/m <sup>3</sup>
1026-ERY-N	Naphthas	532 minutes	0.47 mg/m <sup>3</sup>	<0.47 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>

**SCHOOLYARD (NE CORNER) SAMPLES – BACKFILLING, FOUNDATION WORK, STORM  
SEWER CATCH BASIN INSTALLATION, TRUCK TRAFFIC**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1026-NSY-LA	Lead	528 minutes	1.9 µg/m <sup>3</sup>	<1.9 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Arsenic	528 minutes	2.8 µg/m <sup>3</sup>	<2.8 µg/m <sup>3</sup>	10 µg/m <sup>3</sup>
1026-NSY-N	Naphthas	528 minutes	0.47 mg/m <sup>3</sup>	<0.47 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>

**INSIDE SCHOOL BUILDING (THIRD FLOOR, NE ROOM) SAMPLES – BACKFILLING,  
FOUNDATION WORK, STORM SEWER CATCH BASIN INSTALLATION, TRUCK TRAFFIC**

SAMPLE ID	COMPOUND	SAMPLE TIME	LIMIT OF DETECTION	RESULT	MONITORING PLAN LIMIT
1026-ISB-N	Naphthas	491 minutes	0.50 mg/m <sup>3</sup>	<0.50 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
1026-ISB-PAH	PAHs (as benzene solubles)	491 minutes	0.04 mg/m <sup>3</sup>	<0.04 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>

**OCTOBER 23 AND OCTOBER 26, 2006**

**RESPIRABLE DUST MONITORING RESULTS – RAILYARD (EAST END)**

SAMPLE NUMBERS	DATE SAMPLE COLLECTED	PEAK CONCENTRATION (ONE MINUTE)	AVERAGE CONCENTRATION	MONITORING PLAN LIMIT
DataRam4, Serial #D417 Tag 031	October 23, 2006	135 µg/m <sup>3</sup>	9.0 µg/m <sup>3</sup>	5,000 µg/m <sup>3</sup>
DataRam4, Serial #D417 Tag 032	October 26, 2006	111 µg/m <sup>3</sup>	5.5 µg/m <sup>3</sup>	

**RESPIRABLE DUST MONITORING RESULTS – NE SCHOOLYARD**

SAMPLE NUMBERS	DATE SAMPLE COLLECTED	PEAK CONCENTRATION (ONE MINUTE)	AVERAGE CONCENTRATION	MONITORING PLAN LIMIT
DataRam4, Serial #D416 Tag 031	October 26, 2006	27 µg/m <sup>3</sup>	3.8 µg/m <sup>3</sup>	5,000 µg/m <sup>3</sup>
DataRam4, Serial #D416 Tag 032	October 26, 2006	14 µg/m <sup>3</sup>	1.3 µg/m <sup>3</sup>	

**RESPIRABLE DUST MONITORING RESULTS – BRIDGE**

SAMPLE NUMBERS	DATE SAMPLE COLLECTED	PEAK CONCENTRATION (ONE MINUTE)	AVERAGE CONCENTRATION	MONITORING PLAN LIMIT
DataRam4, Serial #D495 Tag 19	October 23, 2006	33 µg/m <sup>3</sup>	10.8 µg/m <sup>3</sup>	5,000 µg/m <sup>3</sup>
DataRam4, Serial #D495 Tag 20	October 26, 2006	85 µg/m <sup>3</sup>	6.9 µg/m <sup>3</sup>	

**COMMUNITY NOISE MONITORING – RAILYARD**

DATE OF MONITORING	AVERAGE NOISE LEVEL	MAXIMUM NOISE LEVEL	MONITORING PLAN LIMIT
October 23, 2006	79.9 dB	118.2 dB	85 dB
October 24, 2006	78.1 dB	114.3 dB	
October 25, 2006	77.7 dB	116.6 dB	
October 26, 2006	71.8 dB	107.2 dB	
October 27, 2006	74.4 dB	113.5 dB	

## COMMUNITY NOISE MONITORING – NE SCHOOLYARD

DATE OF MONITORING	AVERAGE NOISE LEVEL	MAXIMUM NOISE LEVEL	MONITORING PLAN LIMIT
October 23, 2006	73.3 dB	96.3 dB	80 dB
October 24, 2006	63.9 dB	89.1 dB	
October 25, 2006	73.7 dB	95.4 dB	
October 26, 2006	68.9 dB	95.5 dB	
October 27, 2006	61.4 dB	97.5 dB	

### CONCLUSIONS

Based on this data, dirt hauling, backfilling, foundation work, storm sewer catch basin installation, and loading of impacted materials into railcars conducted from October 23 through October 27, 2006 did not release the contaminants of concern or respirable dust in concentrations above the project action limits specified in the BNSF Skykomish Air and Noise Monitoring Plan for the areas monitored.

The average noise levels documented from October 23 to October 27, 2006 were below the project action limit for community noise in the areas monitored. Maximum noise levels were recorded above the project action level at both locations; however, these exceedances were for extremely short durations and occurred when BNSF trains passed through the town and during some heavy equipment operations.


Although the elevated noise limits are above the project action limit, they do not exceed the King County Noise Code or the Skykomish Municipal Noise Code, which allow for any source of construction noise that is of short duration to be increased by:

- 5 dB(A) for a total of fifteen minutes in any one-hour period; or
- 10 dB(A) for a total of five minutes in any one-hour period; or
- 15 dB(A) for a total of one and one-half minutes in any one-hour period.

All readings greater than 100 dB for the railyard and schoolyard monitoring stations were instantaneous readings that occurred while a train passed through town. Since train noise is exempt from the applicable noise codes, no exceedances of County or Municipal Code were recorded at either location during the monitoring period.

We appreciate this opportunity to be of service to you. Please contact us at (206) 285-3373 if you have questions regarding this report, or if you require additional information.

Sincerely,



Scott Rinear  
Industrial Hygienist

Reviewed by,



Elisabeth Black, CIH  
Argus Pacific, Inc.

***Attachments:***

Air and Noise Monitoring Sample Locations Plan (10/23/06 to 10/27/06)

**Laboratory Certificates of Analysis**

DataChem Laboratories, Batch #06I-5732-01

DataChem Laboratories, Batch #06I-5732-02

DataChem Laboratories, Batch #06I-5732-03

DataChem Laboratories, Batch #06I-5732-04

DataChem Laboratories, Batch #06I-5827-01

DataChem Laboratories, Batch #06I-5827-02

DataChem Laboratories, Batch #06I-5827-03

DataRam4 data for instrument D-417 (10/23/06 & 10/26/06)

DataRam4 data for instrument D-416 (10/23/06 & 10/26/06)

DataRam4 data for instrument D-495 (10/23/06 & 10/26/06)

Larson Davis 820 Noise Data – East Railyard (10/23/06 – 10/27/06)

Larson Davis 820 Noise Data – Northeast Schoolyard (10/23/06 – 10/27/06)