



HWS Consulting Group
14748 W. Center Road, Suite 200
Omaha, NE 68144-2209
402.333.5792 • Fax: 402.333.2248
www.hws.com

June 30, 2008

Ina Square
Brownfields Project Officer
U.S. Environmental Protection Agency
Region 7 SUPR/STAR
901 N. 5th St.
Kansas City, KS 66101

Reference: City of Lincoln, Nebraska Brownfields Assessment Grant no. BF-98763401-0
Limited Phase II Subsurface Assessment – BNSF Railway Former Roundhouse

Dear Ms. Square:

Enclosed please find the referenced report provided for your review and signature. Charlene Sundermann with the Nebraska Department of Environmental Quality (NDEQ) has indicated her office will not be a signature to the report at this time. After you have reviewed and signed the report (signature page in Attachment F), please forward a copy of the signature sheet to my office.

If you have any questions regarding this report, please contact me at your convenience at telephone No. 402-333-5792.

Sincerely,

HWS CONSULTING GROUP

A handwritten signature in black ink that reads "Frank Uhlarik". The signature is written in a cursive, flowing style.

Frank E. Uhlarik, CPG, CEA
Environmental Compliance Team Leader

FEU

O:\Proj\72463394\Brownfields Assessment Grant 48th and O\West Haymarket\Haymarket Investigations\BNSF\Draft
Final BNSF Phase II Report Correspondence.doc

Enclosure

Cc: Ernie Castillo – City of Lincoln Urban Development
Charlene Sundermann – NDEQ
Greg Jeffries – BNSF Railway Co.



HWS Consulting Group
14748 W. Center Road, Suite 200
Omaha, NE 68144-2209
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June 17, 2008

Ernesto Castillo
City of Lincoln
Urban Development Department
808 P Street, Suite 400
Lincoln, NE 68508

Reference: Limited Phase II Subsurface Assessment Report and Analysis of Brownfields Cleanup Alternatives at the Former Burlington Roundhouse, BNSF Railway Company Property, West Haymarket Study Area; Lincoln, Nebraska.
Brownfields Assessment Grant No. BF-98763401-0

Dear Mr. Castillo:

This report provides a summary of findings associated with drilling and sampling activities performed on October 1, 2007 at the above-referenced site. Field investigation activities were performed by HWS Consulting Group, Inc. (HWS) in general accordance with the Site Specific Quality Assurance Project Plan Addendum and Field Sampling Plan (QAPP and FSP) submitted to the Nebraska Department of Environmental Quality (NDEQ) in September 2007, with subsequent modifications and clarifications prescribed by the NDEQ and the U.S. Environmental Protection Agency (USEPA).

Attachments to this report include:

- A - Figures
- B - Boring Logs
- C - Field Notes
- D - Laboratory Data and Chain of Custody Form
- E - Analysis of Brownfields Cleanup Alternatives (ABCA)
- F - Approval Signature Page

Background and Purpose

The City of Lincoln, Nebraska (the City) was the recipient of a community wide Brownfields Assessment Grant (Grant No. BF-98763401-0) issued to the City by the Environmental Protection Agency (EPA) in 2005. In March of 2006, the City engaged HWS Consulting Group, Inc. (HWS) to conduct various programmatic tasks in execution of the Grant including development of a Brownfields inventory of sites, public outreach support and conducting Phase I Environmental Site Assessments (ESAs) and Phase II Limited Subsurface Assessments.

HWS completed a Phase I ESA in August of 2007 on the above-referenced parcel known as the BNSF Railway Company Property located within the West Haymarket Study Area (the site). The Phase I ESA was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-05. Findings of the Phase I ESA revealed the following tangible evidence of "recognized environmental conditions" in connection with the site:

1. In 1987 a diesel fuel spill occurred at a location northwest of the BNSF railroad depot.
2. A diesel fuel contamination plume was encountered in the BNSF railroad yard by the City of Lincoln - Department of Public Works in 1993 during sanitary sewer line repairs.
3. In 2004 a RBCA Tier 2 Assessment was conducted related to previously documented diesel fuel spills at a location west of the BNSF railroad depot. A plume of diesel fuel located west-northwest of the depot is currently being remediated under the NDEQ Title 200 program.
4. In 2007 a diesel fuel spill occurred at a location west of the BNSF railroad depot.
5. A former Burlington roundhouse that was apparently de-commissioned and removed prior to the 1940s* is located along the northern property boundary.

Based on the Phase I ESA findings, and in consideration of non-eligibility of petroleum compound contaminants related to the grant funding, a Limited Phase II Subsurface Assessment was proposed at the location of the roundhouse formerly located at the site. Railroad roundhouse facilities are possible sources of soil and groundwater contamination generally associated with the fueling, maintenance, and repair of locomotives. Non-petroleum contaminants generally include, but are not limited to, degreasing solvents and heavy metals. Based on preliminary land use planning performed for the City of Lincoln, the former roundhouse is located in an area of the West Haymarket District slated for future development in conjunction with a proposed municipal arena and convention center and associated parking facilities.

The overall objectives of the field investigation consistent with NDEQ's Brownfields assessment program objectives were to:

- o Identify and sample potential source(s) of contamination and thus demonstrate whether a release of hazardous substances has or has not occurred related to historical railroad operations at the site; and
- o Determine if there will be a need to conduct any restoration activities before the property may be redeveloped for commercial or municipal use.

Public Involvement

In April, 2006, a public meeting was held at the Villager Motel near 52nd and O St. in Lincoln to inform the public of the overall goals and schedule of the Brownfields Assessment Grant to be completed by the City. The focus of the study at that time was in the vicinity of 48th and O Streets. Subsequent focus of the project on the West Haymarket Area has been the topic of numerous planning and public meetings, the latest of which included an Open House at the

Pershing Auditorium in Lincoln on October 18, 2007. In that meeting HWS and City representatives provided general information on the environmental conditions related to the site and fielded questions from the public. No significant comments were received particular to the former roundhouse site.

*According to *The Hub of Burlington Lines West*, Alfred J.J. Holch, ©1991 Service Press, flooding along Salt Creek in 1908 put the 'old roundhouse' under several feet of water and spurred the construction of a 'new roundhouse' in 1910 located at the Hobson Yards in west Lincoln. The 'old roundhouse' structure is not depicted on a 1949 aerial photograph of the area of the site.

Summary of Field Investigation Methods

On October 1, 2007, four soil probe holes (hereafter referred to as borings) designated as SB-1, SB-2, SB-3, and SB-4 were advanced at the following locations at the former roundhouse facility: boring SB-1 was located within the former turntable; boring SB-2 was located west of the former turntable within what appears to have been one of several former workshop bays comprising the roundhouse; boring SB-3 was located northwest of the former turntable within a former workshop bay; and boring SB-4 was located northeast of the former turntable within a former workshop bay. The soil borings were advanced to a depth of 12.0 ft. below ground surface (bgs) using a truck-mounted Geoprobe direct push drill equipped with 2½ in. inside diameter macro-core sampler advanced ahead of 1.5 in. steel rods.

Soil samples were collected from the macro-core sampler, divided into 1-foot increments, and field screened for the presence of organic vapors potentially indicative of Polynuclear Aromatic Hydrocarbons (PAHs), Semi Volatile Organic Compounds (SVOCs), and Volatile Organic Compounds (VOCs) using a photo ionization detector (PID). Where field screening indicated an instrument response above background readings, the soil sample corresponding to the highest PID reading (if any) within each boring was collected and submitted for laboratory analysis using EPA Methods 8270 (PAHs) and (SVOCs), and 8260B (VOCs), respectively. If field screening did not indicate any instrument responses above background readings in a given soil boring, a soil sample was not collected from that boring location for laboratory analysis. One additional shallow soil sample (sample interval 1-3 ft. bgs) was retrieved from each soil boring and analyzed for Total RCRA Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver) using EPA Method 6010.

Following the advancement of soil borings, each soil probe hole was filled to grade with bentonite. Note that minimal recovery from boring SB-1 at a depth of 6-7 ft. bgs prevented the collection of a field duplicate at that location as was anticipated within the scope of the Field Sampling Plan.

The approximate locations of the soil borings are depicted on the Boring Location Diagram (Figure 2) provided as Attachment A. During field work, samples were logged and described by an HWS environmental professional using the Unified Soils Classification System. Detailed soil boring logs are provided as Attachment B. Copies of field notes prepared by an HWS environmental professional are provided as Attachment C.

Findings

Results of the field investigation are as follows:

- Field screening of soils for organic vapors suggestive of contaminant impacts from PAHs, SVOCs, and/or VOCs in boring SB-1 indicated relative response units (rrus) readings of 45.0 and 33.0 at depths of 6-7 ft. bgs and 11-12 ft. bgs, respectively. Laboratory analytical results (provided as Attachment D) for boring SB-1 at sample depth 6-7 ft. indicated detections of Benzo(a)anthracene (8.45 mg/kg [a factor greater than 13 times EPA and NDEQ Remediation Goals]) and Benzo(b)Fluoranthene (4.72 mg/kg [a factor greater than 7 times EPA and NDEQ Remediation Goals]) in soils. EPA has classified Benzo(a)anthracene and Benzo(b)Fluoranthene as probable human carcinogens (see <http://www.epa.gov/ttnatw01/hlthef/polycycl.html>).
- Field screening of soils for organic vapors suggestive of PAHs, SVOCs, and VOCs did not indicate evidence of impacts from these types of contaminants in borings SB-2, SB-3, and SB-4.
- Laboratory analytical results for Total RCRA Metals in soil borings indicated Arsenic is present in shallow soils at borings SB-1, SB-2, SB-3, and SB-4 at levels above USEPA remediation goals, and at borings SB-1 and SB-4 above NDEQ remediation goals. Arsenic contamination in soils is often associated with heavy industrial use such as railroad roundhouses. However, it should be noted that arsenic is also generally found as a naturally occurring compound in soils in Lancaster County, and background samples from presumably uncontaminated locations in the study area were not collected as part of the scope of the Limited Phase II Subsurface Assessment as a method of comparison to determine the significance of arsenic contamination in shallow soils at the site.
- Laboratory analytical results for Total RCRA Metals in soil borings indicated Chromium is present in shallow soils at boring SB-1 at a level slightly above NDEQ remediation goals.
- Laboratory analytical results for Total RCRA Metals in soil borings indicated significant levels of lead (4,870 mg/kg [a factor greater than 12 times RGs]) is present in shallow soils at boring SB-1.

The following table provides a summary of analytical laboratory data listing constituents that were measured above the respective method reporting limit. The table includes columns comparing the laboratory analytical results of selected soil samples to the NDEQ's Voluntary Cleanup Guidance "Look-up Tables" and USEPA Region 9 Preliminary Remediation Goals. Results exceeding published remediation goals are depicted in bold lettering. The complete laboratory analytical results including Chain of Custody documentation are provided as Attachment D.

Table 1 - Summary of Analytical Sample Data

<u>Boring</u>	<u>Depth</u>	<u>Method/Matrix</u>	<u>Parameter</u>	<u>Results</u>	<u>NDEQ Remediation Goals*</u>	<u>USEPA Remediation Goals**</u>
SB-1	1-3 ft. bgs	6010B/Soil	Arsenic	8.2 mg/kg	5.4 mg/kg	0.39 mg/kg
			Barium	138 mg/kg	1,400 mg/kg	5,400 mg/kg
			Chromium (total)	34.2 mg/kg	34 mg/kg	210 mg/kg
			Lead	4,870 mg/kg	400 mg/kg	400 mg/kg
	6-7 ft. bgs	8270/Soil	Acenaphthene	7.90 mg/kg	1,200 mg/kg	3,700 mg/kg
			Dibenzofuran	5.21 mg/kg	39 mg/kg	150 mg/kg
			Diethyl Phthalate	4.97 mg/kg	12,000 mg/kg	49,000 mg/kg
			Fluorene	7.54 mg/kg	780 mg/kg	2,700 mg/kg
			Phenanthrene	39.1 mg/kg	N/A	N/A
			Anthracene	9.98 mg/kg	5,900 mg/kg	22,000 mg/kg
			Fluoranthene	34.1 mg/kg	570 mg/kg	2,300 mg/kg
			Pyrene	24.8 mg/kg	590 mg/kg	2,300 mg/kg
			Benzo(a) anthracene	8.45 mg/kg	0.62 mg/kg	0.62 mg/kg
			Chrysene	8.62 mg/kg	62 mg/kg	62 mg/kg
			Benzo(b) Fluoranthene	4.72 mg/kg	0.62 mg/kg	0.62 mg/kg
			Benzo(k) Fluoranthene	3.86 mg/kg	6.2 mg/kg	6.2 mg/kg
SB-2	1-3 ft. bgs	6010B/Soil	Arsenic	3.2 mg/kg	5.4 mg/kg	0.39 mg/kg
			Barium	179 mg/kg	1,400 mg/kg	5,400 mg/kg
			Chromium	12.5 mg/kg	34 mg/kg	210 mg/kg
			Lead	8.4 mg/kg	400 mg/kg	400 mg/kg
SB-3	1-3 ft. bgs	6010B/Soil	Arsenic	2.7 mg/kg	5.4 mg/kg	0.39 mg/kg
			Barium	136 mg/kg	1,400 mg/kg	5,400 mg/kg
			Chromium	8.9 mg/kg	34 mg/kg	210 mg/kg
			Lead	17.2 mg/kg	400 mg/kg	400 mg/kg
SB-4	1-3 ft. bgs	6010B/Soil	Arsenic	8.9 mg/kg	5.4 mg/kg	0.39 mg/kg
			Barium	80.5 mg/kg	1,400 mg/kg	5,400 mg/kg
			Chromium	8.9 mg/kg	34 mg/kg	210 mg/kg
			Lead	39.0 mg/kg	400 mg/kg	400 mg/kg

*Constituent concentrations represent NDEQ Voluntary Cleanup Program (VCP) Remediation Goals (RGs) for residential soil - direct contact exposure pathway.

**Constituent concentrations represent USEPA Region 9 Preliminary Remediation Goals (PRGs) for residential soil - direct contact exposure pathway.

N/A = The NDEQ and the USEPA have not established RGs for the respective analyte. Analytical values depicted in **bold lettering** indicate values above RGs.

Conclusions and Recommendations

- Impacts to soils from PAHs were observed at boring SB-4.
- Impacts to shallow soils from lead were observed at boring SB-1.
- Elevated impacts to shallow soils that may represent Arsenic contamination from industrial use and/or naturally occurring Arsenic were observed at all the shallow soil boring locations.
- In consideration of the likely exposure scenarios and future use of the site as described above, additional site-specific remediation goals for PAHs and lead (Tier 3 Evaluation per NDEQ VCP guidance) are warranted.
- Additional confirmatory sampling or soils screening may be warranted prior to or during construction to ensure proper worker protection and disposition of potentially impacted soils. This is further discussed in the Analyses of Brownfields Cleanup Alternatives (ABCA) included as Attachment E of this report.

If you have any questions regarding this report, please contact either of the undersigned at your convenience at telephone No. 402-333-5792.

Sincerely,

HWS CONSULTING GROUP



Patrick L. Sward, J.D.
Project Manager



Frank E. Uhlarik, CPG, CEA
Environmental Compliance Team Leader

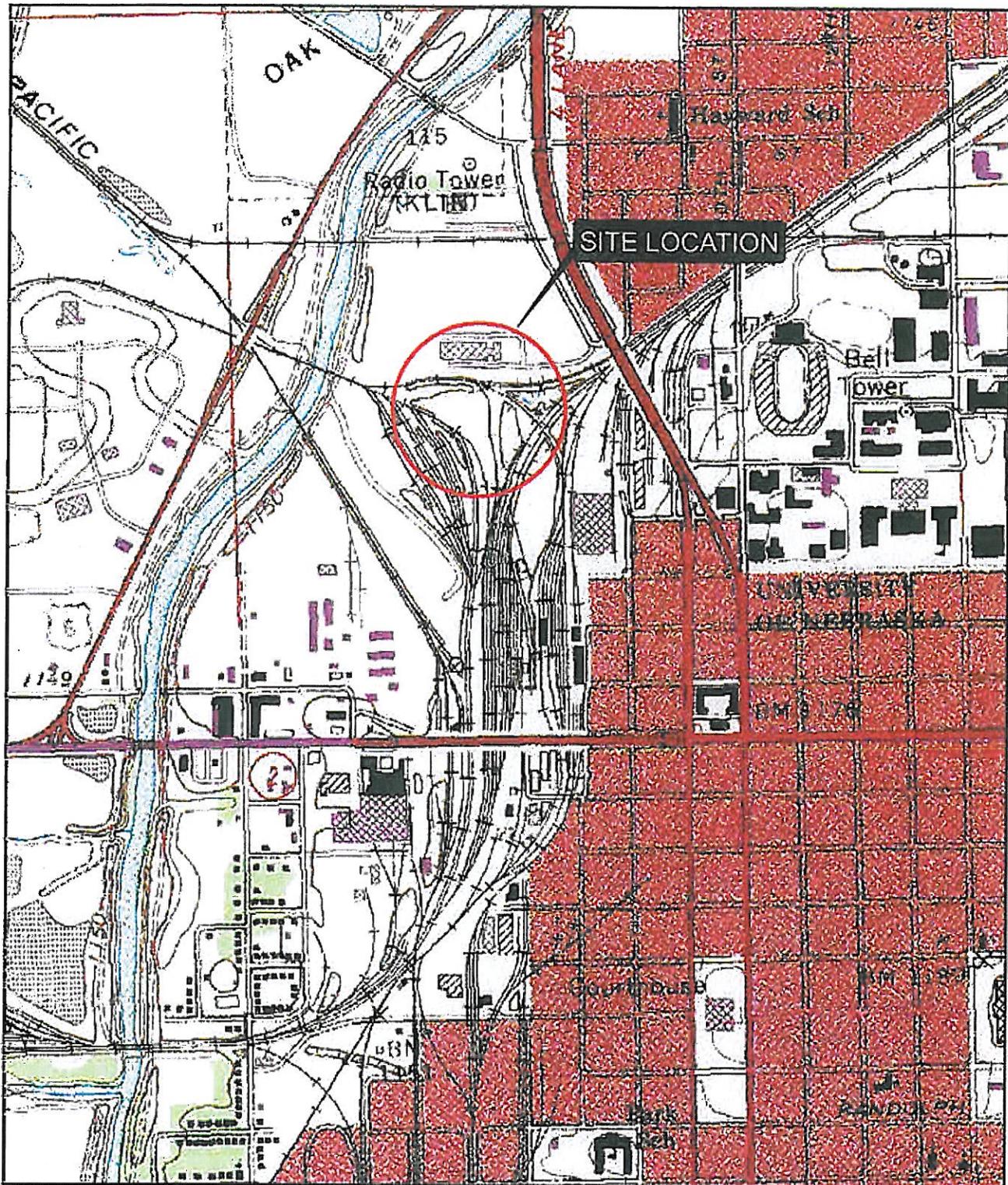
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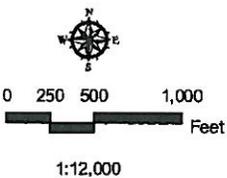
Attachments (6)

- A - Figures
- B - Boring Logs
- C - Field Notes
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- F - Approval Signature Page

ATTACHMENT A – FIGURES

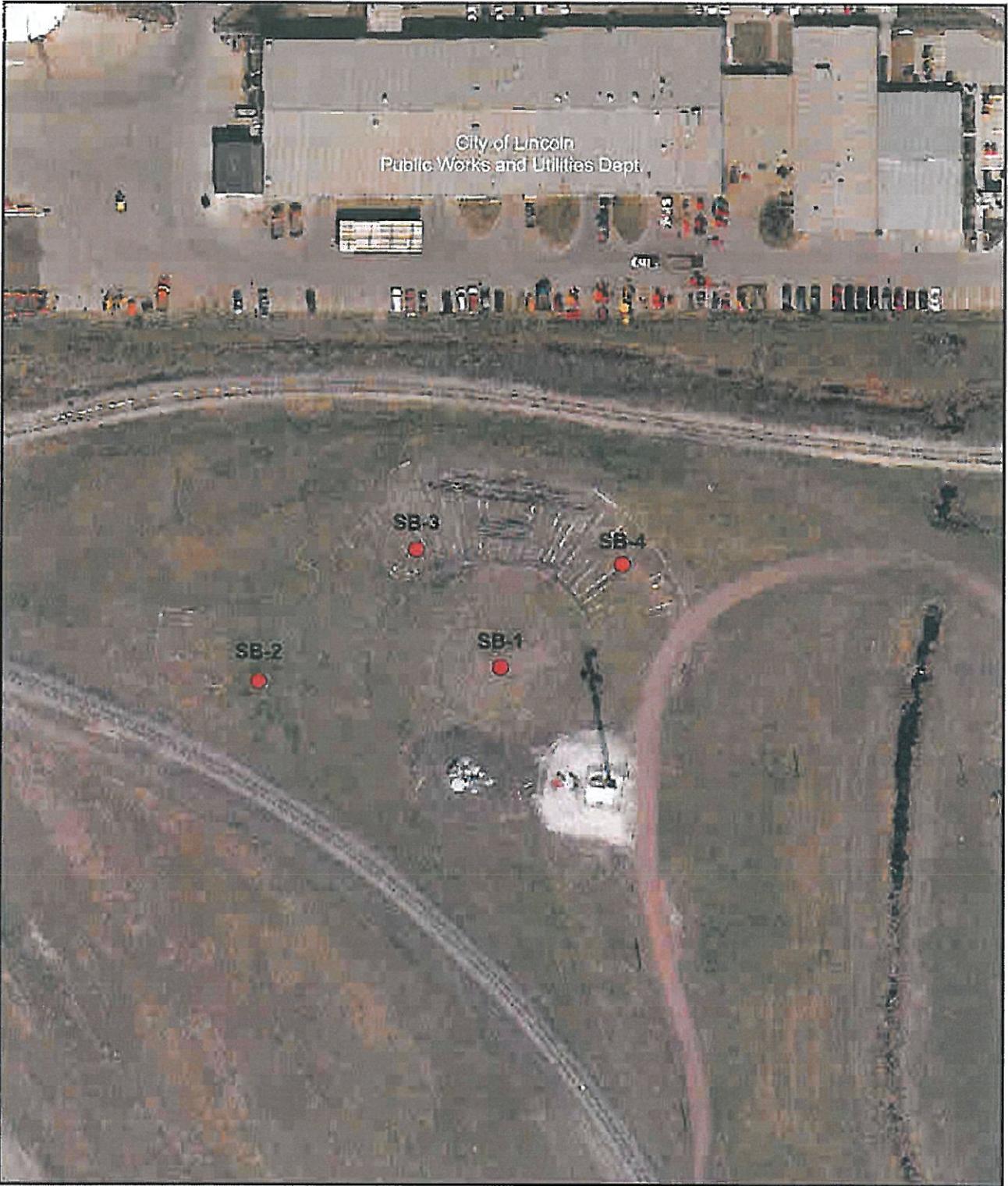


USDA Geospatial Data Gateway - USGS 7.5' Topographic Map Lancaster County



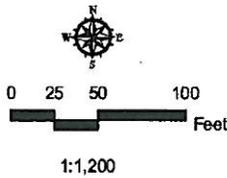
FORMER BNSF ROUNDHOUSE
 City of Lincoln - Lancaster County, NE
 West Haymarket Development Study

SITE LOCATION MAP
FIGURE 1



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MAPA 2004 Air Photo - Lancaster County



FORMER BNSF ROUNDHOUSE
City of Lincoln - Lancaster County, NE
West Haymarket Development Study

SOIL BORING LOCATIONS
FIGURE 2

ATTACHMENT B – BORING LOGS



825 J Street
Lincoln, NE 68508
402-479-2200 * Fax: 402-479-2276

PROJECT: Former BNSF Round house
LOCATION: Lincoln, Lancaster, Nebraska
JOB NO.: 72-46-3394.0006
RIG / METHOD: Geoprobe / Geoprobe
CREW: Jeremy Raye & Ron Prochaska

BORING LOG

BORING NO.: SB-1

SHEET 1 of 1

DATE: 10-1-2007

WATER LEVELS

ELEV (Project)	DEPTH (feet)	LOG	LITHOLOGY DESCRIPTION	SAMPLE	PID (ppmv)	REMARKS	DEPTH (feet)
	0.0		CL - LEAN CLAY; dark brown; organics and vegetation; loose and uncompacted; moist; small rocks and brick chips; trace fine sand.				0.0
				RH-SB1-M	0.0	RCRA Metal Sample	2.5
							5.0
				RH-SB1 6'	45.0		7.5
							10.0
	10.0		CL - LEAN CLAY; dark grayish brown; medium stiff				10.0
					33.0		12.0
	12.0		Boring Terminated at: 12.0 ft				12.5

ENVIR WELL LOG FORMER BNSF ROUNDHOUSE.GPJ HWS MAR06.GDT 10/17/07



825 J Street
Lincoln, NE 68508
402-479-2200 * Fax: 402-479-2276

PROJECT: Former BNSF Round house
LOCATION: Lincoln, Lancaster, Nebraska
JOB NO.: 72-46-3394.0006
RIG / METHOD: Geoprobe / Geoprobe
CREW: Jeremy Raye & Ron Prochaska

BORING LOG

BORING NO.: SB-2

SHEET 1 of 1

DATE: 10-1-2007

WATER LEVELS

ELEV (Project)	DEPTH (feet)	LOG	LITHOLOGY DESCRIPTION	SAMPLE	PID (ppmv)	REMARKS	DEPTH (feet)
	0.0	[Hatched Pattern]	CL - LEAN CLAY; dark gray; organics in upper 6 inches, slight brick and concrete rubble. Fill				0.0
	2.5		CL - LEAN CLAY; gray; silty clay. Fill	RH-SB2-M	0.0	RCRA Metal Sample	2.5
	6.0	[Hatched Pattern]	CL - LEAN CLAY; gray mottled with tan slightly mottled with dark yellowish red. (Fill)		0.0		5.0
	7.0		ML - SILT with Sand; 20-30% fine sand; tan with gray mottled with dark gray; loose. (Alluvium)				7.5
	9.0	[Hatched Pattern]	CL/CH - LEAN TO FAT CLAY; dark gray slightly mottled with tan and dark yellowish red and black. (Alluvium)				9.0
	10.5		ML - SILT with Sand; 20-30% fine sand; gray heavily mottled with tan mottled with yellowish red; loose. (Alluvium)			0.0	10.0
	12.0		Boring Terminated at: 12.0 ft				12.5

ENVR WELL LOG FORMER BNSF ROUNDHOUSE GPJ HWS MAR06.GDT 10/19/07



HWS

Solutions Through Service

825 J Street
Lincoln, NE 68508
402-479-2200 * Fax: 402-479-2276

PROJECT: Former BNSF Round house

LOCATION: Lincoln, Lancaster, Nebraska

JOB NO.: 72-46-3394.0006

RIG / METHOD: Geoprobe / Geoprobe

CREW: Jeremy Raye & Ron Prochaska

BORING LOG

BORING NO.: SB-3

SHEET 1 of 1

DATE: 10-1-2007

WATER LEVELS

ELEV (Project)	DEPTH (feet)	LOG	LITHOLOGY DESCRIPTION	SAMPLE	PID (ppmv)	REMARKS	DEPTH (feet)
	0.0		CL - LEAN CLAY; mostly brick, rock and concrete rubble.				0.0
				RH-SB3-M	0.0	RCRA Metal Sample	2.5
	4.0		ML - SILT; 30-40% fines, low plasticity; gray heavily mottled with tan and dark gray; loose. (Alluvium)				5.0
					0.0		7.5
	9.0		CL - LEAN CLAY; dark gray mottled with gray slightly mottled with tan, black and yellowish red. (Alluvium)				10.0
	10.0		ML - SILT with Sand; 20-30% fine sand; gray heavily mottled with tan. (Alluvium)				12.0
	12.0		Boring Terminated at: 12.0 ft		0.0		12.5

ENVR WELL LOG FORMER BNSF ROUNDHOUSE.GPJ HWS MAR08.GDT 10/18/07



825 J Street
Lincoln, NE 68508
402-479-2200 * Fax 402-479-2276

PROJECT: Former BNSF Round house
LOCATION: Lincoln, Lancaster, Nebraska
JOB NO.: 72-46-3394.0006
RIG / METHOD: Geoprobe / Geoprobe
CREW: Jeremy Raye & Ron Prochaska

BORING LOG

BORING NO.: SB-4

SHEET 1 of 1

DATE: 10-1-2007

WATER LEVELS

ELEV (Project)	DEPTH (feet)	LOG	LITHOLOGY DESCRIPTION	SAMPLE	PID (ppmv)	REMARKS	DEPTH (feet)
	0.0		CL - LEAN CLAY; gray to very dark gray mottled with dark yellowish red; gravel throughout. (Fill)				0.0
				RH-SB4-M	0.0	RCRA Metals Sample	2.5
	4.5		SM - SAND with Silty Clay; 25-35% fines, low plasticity; yellowish brown; loose. (Fill)				
	5.0		SC - SANDY LEAN CLAY; 35-45% fine to medium sand; yellowish brown mottled with black slightly mottled with yellowish red; loose. (Fill)		0.0		5.0
	7.0		CL - LEAN CLAY; yellowish brown mottled with gray slightly mottled with dark yellowish red and black. (Alluvium)				7.5
	8.5		CL - LEAN CLAY; very dark gray slightly mottled with yellowish red. (Alluvium)				
	9.5		CL - LEAN CLAY; gray mottled with yellowish red slightly mottled with tan. (Alluvium)				10.0
	12.0		Boring Terminated at: 12.0 ft		0.0		12.5

ENVR WELL LOG FORMER BNSF ROUNDHOUSE.GPJ HWS MAR06.GDT 10/18/07

ATTACHMENT C – FIELD NOTES

10-1-07

CITY OF LINCOLN

BOOK 912

BROWNFIELDS (BNSF ROUNDHOUSE) PAGE 21

72-46-3399-0006

- 1130 HRS. ARRIVE ON SITE AT OLD ROUNDHOUSE SITE. FRANK U, R. PROCHASKA, JEREMY RAYE
- 1140 HRS. SET UP AT SB-1
- 1145 HRS. SB-1 1-4' DONE, GROUND SOFT, LITTLE RECOVERY
- 1150 HRS. SB-1 4-8' DONE. GROUND SOFT, LITTLE RECOVERY
- 1153 HRS. SB-1 8-12' DONE
- 1155 HRS. PID OF SB-1 1-4' = 0.0 ppm (NO SAMPLE)
- 1203 HRS. PID OF SB-1 4-8' = 45 ppm (SAMPLED)
- 1206 HRS. PID OF SB-1 8-12' = 33 ppm (NO SAMPLE)
- NOTE: COLLECTED METALS SAMPLE @ 5' + FD
- 1217 HRS. EQUIP IS DECONNED AND WE MOVE TO SB2.
- 1221 HRS. BEGIN SB-2, FRANK U. DEPARTS SITE
- 1222 HRS. SB-2 1-4' DONE, COLLECT METALS @ 3'±
- 1225 HRS. SB-2 4-8' DONE,
- 1228 HRS. SB-2 8-12' DONE,
- 1233 HRS. PID OF SB-2 1-4' = 0.0 ppm (NO SAMPLE)
- 1236 HRS. PID OF SB-2 4-8' = 0.0 ppm (NO SAMPLE)
- 1239 HRS. PID OF SB-2 8-12' = 0.0 ppm (NO SAMPLE)
- 1245 HRS. EQUIP IS DECONNED SET UP @ SB-3.
- 1250 HRS. ATTEMPT @ PROBE @ SB-3. HIT BRICK AND CONC @ 3'±. DID NOT HIT WITH HAND PROBE.
- 1255 HRS. TRIED ANOTHER SPOT AND SAME RESULT. MOVE TO JUST OUTSIDE NORTH EDGE OF TURNABLE.
- 1304 HRS. SB-3 1-4' DONE. STILL SOME BRICK DEBR. NOT GOOD RECOVERY. COLLECT METALS SAMPLE FROM 3'±.

10-1-07

CITY OF LINCOLN
BROWNFIELD (BUSE ROUNDHOUSE)

BOOK 912
PAGE 22

- 1307 HRS. SB3 4-8 DONE. GOOD RECOVERY, NO STAINS. SOME BRICK PARTS.
- 1312 HRS. SB3 8-12 DONE. GOOD RECOVERY, NO STAINS. SOME BRICK DEBRIS @ 9'± AND ORGANIC DEBRIS.
- 1314 HRS. PID OF SB3 1-4 = 0.0 ppm (NO SAMPLE)
- 1317 HRS. PID OF SB3 4-8 = 0.0 ppm (NO SAMPLE)
- 1323 HRS. PID OF SB3 8-12 = 0.0 ppm (NO SAMPLE)
- 1332 HRS. SET UP AT SBA AND START
- 1336 HRS. SBA 1-4 DONE. 2' OF RECOVERY, NO STAINS. SAMPLE FOR METALS @ 3'± (CINDERS IN METALS SAMPLE).
- 1339 HRS. SBA 4-8 DONE GOOD RECOVERY NO STAINS.
- 1345 HRS. SBA 8-12 DONE GOOD RECOVERY. NO STAINING, SOME CINDERS AT 9'±.
- 1347 HRS. PID OF SBA 1-4 = 0.0 ppm (NO SAMPLE)
- 1349 HRS. PID OF SBA 4-8 = 0.0 ppm (NO SAMPLE)
- 1350 HRS. PID OF SBA 8-12 0.0 ppm (NO SAMPLE)
- 1410 HRS. AREA CLEANED UP. DETEK AND MYSELF DEPART SITE.

NOTE: EACH HOLE WAS ABANDONED w/ BETAHITE SEAL.

ATTACHMENT D – LABORATORY DATA

BNSF Former Roundhouse QA/QC

This section describes quality assurance activities during the limited Phase II ESA sampling at the BNSF former Roundhouse. A complete listing of sample locations and corresponding duplicates collected during the investigation was included in the Phase II report and in the laboratory analytical report. Adequate numbers of samples were collected during this sampling in accordance with the field sampling plan. A duplicate soil sample was taken in accordance with the approved sampling plan. One duplicate was collected at (labeled as FD-1). Relative percent of differences between samples and duplicates were generally satisfactory (<20%), and in accordance with the approved QAPP. Some discrepancies (RPD >20%) were noted, but this is not uncommon in soil sampling, when required sample volume is considered.

Laboratory quality control results indicated good sample recovery and satisfactory internal quality checks. Laboratory quality control data are appended to the end of each laboratory report. These data include matrix spike % recovery, matrix spike duplicates, lab blanks, surrogate recovery, and results of retests. While not reproduced here, those QC data were inspected in detail. While certain samples had conditional notes attached to the results, the data set and laboratory reports, when reviewed in total, appeared to be valid and useable for the defined purpose, in the judgment of the HWS project manager and QA officer. The lab analyses and reporting were in accordance with the approved QAPP.

Keystone

LABORATORIES, INC.

600 E. 17th St. S.
 Newton, IA 50208
 Phone: 641-792-8451
 Fax: 641-792-7989

3012-Ansbrough Ave.
 Waterloo, IA 50701
 Phone: 319-235-4440
 Fax: 319-235-2480
 www.keystonelabs.com

1155 Adams, Suite 120
 Kansas City, KS 66103
 Phone: 913-321-7856
 Fax: 913-321-7937

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW
 SAMPLER: ROY PROCHINSKA
 SITE NAME: OLD BASE BROADWAY
 ADDRESS: CITY OF LINCOLN
 CITY/ST/ZIP: LINCOLN, NE
 PHONE: _____

REPORT TO: FRANK WILHELM
 NAME: _____
 COMPANY NAME: _____
 ADDRESS: _____
 CITY/ST/ZIP: _____
 PHONE: _____
 FAX: _____

BILL TO: STATE AS REPORT
 NAME: _____
 COMPANY NAME: _____
 ADDRESS: _____
 CITY/ST/ZIP: _____
 PHONE: _____
 KeyStone Quote No.: _____

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED			LABORATORY SAMPLE NUMBER
							PCDA METALS	PAH - 8270	SVOCs - 8270	
RH-SB1-M	10/1/07	1145	SB1 - 31	1	SOIL G	X	X	X	01	
RH-SB2-M	10/1/07	1222	SB2 - 31	1	SOIL G	X	X	X	02	
RH-SB3-M	10/1/07	1304	SB3 - 21	1	SOIL G	X	X	X	03	
RH-SB4-M	10/1/07	1336	SB4 - 21	1	SOIL G	X	X	X	04	
ED-1	10/1/07	---	---	1	SOIL G	X	X	X	05	
RH-SB1-61	10/1/07	1203	SB1 - 48'	2	SOIL G	X	X	X	06	

Received by: (Signature) [Signature] Date 10-2-07 Time 1600 hrs

Received for Lab by: (Signature) [Signature] Date 10/3/07 Time 9:30 AM

Turn-Around: Standard Rush

Remarks: _____

Contact Lab Prior to Submission

ANALYTICAL REPORT

October 12, 2007

Work Order: 17J0135

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Report To
Frank Uhlarik HWS Consulting Group, Inc. 825 J Street Lincoln, NE 68508

Work Order Information
Date Received: 10/03/2007 9:20AM
Collector: Prochaska, Ron
Phone: (402) 479-2200
PO Number:

Project : Site Assessments

Project Number: Old BNSF Round House

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0135-01	RH-SB1-M			Matrix:Soil		Collected: 10/01/07 11:45	
% Solids	89.1 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	
Silver, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Arsenic, total	8.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Barium, total	138 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Cadmium, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Chromium, total	34.2 mg/kg dry	1.8	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Mercury, total	<0.1 mg/kg	0.1	1J70412	EPA 7471A	SAA	10/04/07 14:21	
Lead, total	4870 mg/kg dry	14.8	1J70845	EPA 6010B	RVV	10/10/07 10:04	
Selenium, total	<1.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:04	
17J0135-02	RH-SB2-M			Matrix:Soil		Collected: 10/01/07 12:22	
% Solids	83.9 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	
Silver, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Arsenic, total	3.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Barium, total	179 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Cadmium, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Chromium, total	12.5 mg/kg dry	1.9	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Mercury, total	<0.2 mg/kg	0.2	1J70412	EPA 7471A	SAA	10/04/07 14:23	
Lead, total	8.4 mg/kg dry	3.1	1J70845	EPA 6010B	RVV	10/10/07 10:08	
Selenium, total	<1.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:08	
17J0135-03	RH-SB3-M			Matrix:Soil		Collected: 10/01/07 13:04	
% Solids	85.5 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	
Silver, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:12	
Arsenic, total	2.7 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:12	
Barium, total	136 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:12	
Cadmium, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:12	
Chromium, total	8.9 mg/kg dry	1.8	1J70845	EPA 6010B	RVV	10/10/07 10:12	
Mercury, total	<0.2 mg/kg	0.2	1J70412	EPA 7471A	SAA	10/04/07 14:25	
Lead, total	17.2 mg/kg dry	3.0	1J70845	EPA 6010B	RVV	10/10/07 10:12	

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HWS Consulting Group, Inc.
825 J Street
Lincoln, NE 68508

October 12, 2007

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Work Order: 17J0135

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0135-03	RH-SB3-M			Matrix:Soil		Collected: 10/01/07 13:04	
Selenium, total	<1.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:12	
17J0135-04	RH-SB4-M			Matrix:Soil		Collected: 10/01/07 13:36	
% Solids	87.2 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	
Silver, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Arsenic, total	8.9 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Barium, total	80.5 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Cadmium, total	<0.6 mg/kg dry	0.6	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Chromium, total	8.9 mg/kg dry	1.8	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Mercury, total	<0.2 mg/kg	0.2	1J70412	EPA 7471A	SAA	10/04/07 14:27	
Lead, total	39.0 mg/kg dry	3.0	1J70845	EPA 6010B	RVV	10/10/07 10:16	
Selenium, total	<1.2 mg/kg dry	1.2	1J70845	EPA 6010B	RVV	10/10/07 10:16	
17J0135-05	FD-1			Matrix:Soil		Collected: 10/01/07 00:00	
% Solids	88.1 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	
Silver, total	<0.7 mg/kg dry	0.7	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Arsenic, total	13.5 mg/kg dry	1.3	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Barium, total	144 mg/kg dry	0.7	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Cadmium, total	<0.7 mg/kg dry	0.7	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Chromium, total	32.5 mg/kg dry	2.0	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Mercury, total	<0.2 mg/kg	0.2	1J70412	EPA 7471A	SAA	10/04/07 14:28	
Lead, total	253 mg/kg dry	3.3	1J70845	EPA 6010B	RVV	10/10/07 10:20	
Selenium, total	<1.3 mg/kg dry	1.3	1J70845	EPA 6010B	RVV	10/10/07 10:20	
17J0135-06	RH-SB1 6'			Matrix:Soil		Collected: 10/01/07 12:03	
N-Nitrosodimethylamine	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Phenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Aniline	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Bis(2-Chloroethyl) Ether	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Chlorophenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
1,3-Dichlorobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
1,4-Dichlorobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzyl Alcohol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
1,2-Dichlorobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Methylphenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Bis(2-Chloroisopropyl) Ether	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
n-Nitroso-di-n-propylamine	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
(3 & 4)-Methylphenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Hexachloroethane	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Nitrobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	

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Lincoln, NE 68508

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0135-06	RH-SB1 6'			Matrix:Soil		Collected: 10/01/07 12:03	
Isophorone	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Nitrophenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4-Dimethylphenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Bis (2-Chloroethoxy) Methane	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4-Dichlorophenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
1,2,4-Trichlorobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Naphthalene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Chloroaniline	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Hexachlorobutadiene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Chloro-3-methylphenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Methylnaphthalene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Hexachlorocyclopentadiene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4,6-Trichlorophenol	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4,5-Trichlorophenol	<16.5 mg/kg dry	16.5	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Chloronaphthalene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2-Nitroaniline	<16.5 mg/kg dry	16.5	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Dimethylphthalate	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Acenaphthylene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,6-Dinitrotoluene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
3-Nitroaniline	<16.5 mg/kg dry	16.5	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Acenaphthene	7.90 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4-Dinitrophenol	<16.5 mg/kg dry	16.5	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Dibenzofuran	5.21 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
2,4-Dinitrotoluene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Nitrophenol	<6.60 mg/kg dry	6.60	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Diethyl Phthalate	4.97 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Fluorene	7.54 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Chlorophenyl Phenyl Ether	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Nitroaniline	<6.60 mg/kg dry	6.60	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4,6-Dinitro-2-methylphenol	<16.5 mg/kg dry	16.5	1J70902	EPA 8270C	EPP	10/10/07 8:47	
N-Nitrosodiphenylamine	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Azobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
4-Bromophenyl Phenyl Ether	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Hexachlorobenzene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Pentachlorophenol	<6.60 mg/kg dry	6.60	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Phenanthrene	39.1 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Anthracene	9.98 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Di-n-butyl Phthalate	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Fluoranthene	34.1 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
17J0135-06	RH-SB1 6'			Matrix:Soil		Collected: 10/01/07 12:03	
Benzidine	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Pyrene	24.8 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Butyl Benzyl Phthalate	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzo(a)anthracene	8.45 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Chrysene	8.62 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Bis(2-Ethylhexyl) Phthalate	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Di-n-octyl Phthalate	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Indeno(1,2,3-cd)Pyrene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
3,3'-Dichlorobenzidine	<6.60 mg/kg dry	6.60	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzo(b)Fluoranthene	4.72 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzo(k)Fluoranthene	3.86 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzo(a)Pyrene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Dibenzo(a,h)anthracene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Benzo(g,h,i)perylene	<3.30 mg/kg dry	3.30	1J70902	EPA 8270C	EPP	10/10/07 8:47	
Surrogate: 2-Fluorophenol	73.4 %			50-110	EPP	10/10/07 8:47	
Surrogate: Phenol-d6	94.7 %			50-121	EPP	10/10/07 8:47	
Surrogate: Nitrobenzene-d5	57.7 %			50-124	EPP	10/10/07 8:47	
Surrogate: 2-Fluorobiphenyl	52.9 %			50-126	EPP	10/10/07 8:47	
Surrogate: 2,4,6-Tribromophenol	62.1 %			50-142	EPP	10/10/07 8:47	
Surrogate: Terphenyl-d14	70.0 %			50-146	EPP	10/10/07 8:47	
% Solids	76.2 %	0.1	1J70321	SM 2540 G	DRB	10/03/07 11:38	

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Lincoln, NE 68508

October 12, 2007

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Work Order: 17J0135

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1213 - 1J71213										
Calibration Check (17J1213-CCV1)										
Prepared & Analyzed: 10/12/07										
Surrogate: Dibromofluoromethane	43.73		mg/kg wet	50.0000		87.5	80-120			
Surrogate: 1,2-Dichloroethane-d4	41.71		"	50.0000		83.4	80-120			
Surrogate: Toluene-d8	42.59		"	50.0000		85.2	80-120			
Surrogate: 4-Bromofluorobenzene	43.46		"	50.0000		86.9	80-120			
Chloromethane	74.36		"	100.450		74.0	80-120			
Vinyl Chloride	74.96		"	100.450		74.6	80-120			
Bromomethane	71.39		"	100.450		71.1	80-120			
Chloroethane	87.54		"	100.450		87.1	80-120			
1,1-Dichloroethylene	41.05		"	50.0000		82.1	80-120			
Acetone	126.7		"	123.000		103	80-120			
Carbon Disulfide	98.42		"	105.000		93.7	80-120			
Methylene Chloride	41.85		"	50.0000		83.7	80-120			
trans-1,2-Dichloroethylene	45.74		"	50.0000		91.5	80-120			
Methyl-t-butyl Ether (MTBE)	84.33		"	91.2000		92.5	80-120			
1,1-Dichloroethane	41.54		"	50.0000		83.1	80-120			
cis-1,2-Dichloroethylene	48.03		"	50.0000		96.1	80-120			
2-Butanone (MEK)	98.70		"	106.200		92.9	80-120			
Chloroform	43.84		"	50.0000		87.7	80-120			
1,1,1-Trichloroethane	46.06		"	50.0000		92.1	80-120			
Carbon Tetrachloride	47.23		"	50.0000		94.5	80-120			
Benzene	47.75		"	50.0000		95.5	80-120			
1,2-Dichloroethane	44.41		"	50.0000		88.8	80-120			
Trichloroethylene	49.02		"	50.0000		98.0	80-120			
1,2-Dichloropropane	45.40		"	50.0000		90.8	80-120			
Bromodichloromethane	45.23		"	50.0000		90.5	80-120			
cis-1,3-Dichloropropene	47.28		"	50.0000		94.6	80-120			
4-Methyl-2-pentanone (MIBK)	86.54		"	91.2000		94.9	80-120			
Toluene	48.17		"	50.0000		96.3	80-120			
trans-1,3-Dichloropropene	48.34		"	50.0000		96.7	80-120			
1,1,2-Trichloroethane	45.36		"	50.0000		90.7	80-120			
Tetrachloroethylene	59.19		"	50.0000		118	80-120			
2-Hexanone (MBK)	105.8		"	104.400		101	80-120			
Dibromochloromethane	50.94		"	50.0000		102	80-120			
Chlorobenzene	51.56		"	50.0000		103	80-120			
Ethylbenzene	47.29		"	50.0000		94.6	80-120			
Xylenes, total	141.6		"	150.000		94.4	80-120			
Bromoform	47.67		"	50.0000		95.3	80-120			
1,1,2,2-Tetrachloroethane	37.03		"	50.0000		74.1	80-120			
1,3-Dichlorobenzene	60.41		"	50.0000		121	80-120			

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825 J Street
Lincoln, NE 68508

October 12, 2007
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Work Order: 17J0135

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1213 - 1J71213										
Calibration Check (17J1213-CCV1)				Prepared & Analyzed: 10/12/07						
1,4-Dichlorobenzene	59.31		mg/kg wet	50.0000		119	80-120			
1,2-Dichlorobenzene	57.05		"	50.0000		114	80-120			
Naphthalene	51.33		"	50.0000		103	80-120			

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Work Order: 17J0135

Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
Batch 17J1019 - 1J70902										
Calibration Check (17J1019-CCV1)										
Prepared & Analyzed: 10/09/07										
Surrogate: 2-Fluorophenol	40.7		mg/kg wet	42.2700		96.4	80-120			
Surrogate: Phenol-d6	46.7		"	41.9100		111	80-120			
Surrogate: Nitrobenzene-d5	40.6		"	41.6325		97.5	80-120			
Surrogate: 2-Fluorobiphenyl	39.9		"	41.0625		97.1	80-120			
Surrogate: 2,4,6-Tribromophenol	47.0		"	41.2875		114	80-120			
Surrogate: Terphenyl-d4	47.0		"	42.0000		112	80-120			
N-Nitrosodimethylamine	44.17		"	42.0000		105	80-120			
Phenol	43.18		"	42.0000		103	80-120			
Aniline	51.95		"	42.0000		124	80-120			C-18
Bis(2-Chloroethyl) Ether	46.02		"	42.0000		110	80-120			
2-Chlorophenol	41.08		"	42.0000		97.8	80-120			
1,3-Dichlorobenzene	43.71		"	42.2100		104	80-120			
1,4-Dichlorobenzene	44.17		"	42.0000		105	80-120			
Benzyl Alcohol	47.69		"	42.0000		114	80-120			
1,2-Dichlorobenzene	44.09		"	42.4200		104	80-120			
2-Methylphenol	43.84		"	42.0000		104	80-120			
Bis(2-Chloroisopropyl) Ether	41.32		"	42.0000		98.4	80-120			
n-Nitroso-di-n-propylamine	47.57		"	42.0000		113	80-120			
(3 & 4)-Methylphenol	45.20		"	42.2100		107	80-120			
Hexachloroethane	44.28		"	42.0000		105	80-120			
Nitrobenzene	43.96		"	42.0000		105	80-120			
Isophorone	40.72		"	42.0000		97.0	80-120			
2-Nitrophenol	41.75		"	42.0000		99.4	80-120			
2,4-Dimethylphenol	43.12		"	42.0000		103	80-120			
Bis (2-Chloroethoxy) Methane	41.80		"	42.0000		99.5	80-120			
2,4-Dichlorophenol	42.79		"	42.0000		102	80-120			
1,2,4-Trichlorobenzene	42.69		"	42.0000		102	80-120			
Naphthalene	36.36		"	39.0000		93.2	80-120			
4-Chloroaniline	41.79		"	42.0000		99.5	80-120			
Hexachlorobutadiene	43.81		"	42.2100		104	80-120			
4-Chloro-3-methylphenol	43.70		"	42.2100		104	80-120			
2-Methylnaphthalene	42.54		"	42.0000		101	80-120			
Hexachlorocyclopentadiene	31.07		"	42.0000		74.0	80-120			C-18
2,4,6-Trichlorophenol	45.23		"	42.2100		107	80-120			
2,4,5-Trichlorophenol	46.08		"	42.0000		110	80-120			
2-Chloronaphthalene	42.44		"	42.0000		101	80-120			
Dimethylphthalate	40.45		"	42.0000		96.3	80-120			
2-Nitroaniline	42.20		"	42.0000		100	80-120			
Acenaphthylene	38.01		"	39.0000		97.5	80-120			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1019 - 1J70902										
Calibration Check (17J1019-CCVI)				Prepared & Analyzed: 10/09/07						
2,6-Dinitrotoluene	41.14		mg/kg wet	42.0000		98.0	80-120			
3-Nitroaniline	44.11		"	42.0000		105	80-120			
Acenaphthene	36.63		"	39.0000		93.9	80-120			
2,4-Dinitrophenol	40.01		"	42.0000		95.3	80-120			
Dibenzofuran	40.77		"	42.0000		97.1	80-120			
2,4-Dinitrotoluene	41.20		"	42.0000		98.1	80-120			
4-Nitrophenol	45.63		"	42.0000		109	80-120			
Diethyl Phthalate	41.19		"	42.0000		98.1	80-120			
Fluorene	39.04		"	39.0000		100	80-120			
4-Chlorophenyl Phenyl Ether	42.85		"	42.0000		102	80-120			
4-Nitroaniline	39.27		"	42.0000		93.5	80-120			
4,6-Dinitro-2-methylphenol	43.06		"	42.0000		103	80-120			
N-Nitrosodiphenylamine	40.68		"	42.0000		96.9	80-120			
Azobenzene	40.46		"	42.0000		96.3	80-120			
4-Bromophenyl Phenyl Ether	40.58		"	42.0000		96.6	80-120			
Hexachlorobenzene	45.33		"	42.0000		108	80-120			
Pentachlorophenol	49.05		"	42.0000		117	80-120			
Phenanthrene	39.21		"	39.0000		101	80-120			
Anthracene	38.64		"	39.0000		99.1	80-120			
Di-n-butyl Phthalate	43.67		"	42.0000		104	80-120			
Fluoranthene	38.99		"	39.0000		100	80-120			
Pyrene	42.79		"	39.0000		110	80-120			
Butyl Benzyl Phthalate	46.24		"	42.0000		110	80-120			
Benzo(a)anthracene	38.49		"	39.0000		98.7	80-120			
Chrysene	42.70		"	39.0000		109	80-120			
Bis(2-Ethylhexyl) Phthalate	54.46		"	42.0000		130	80-120			C-18
Di-n-octyl Phthalate	51.15		"	42.0000		122	80-120			C-18
Indeno(1,2,3-cd)Pyrene	42.98		"	39.0000		110	80-120			
Benzo(b)Fluoranthene	36.42		"	39.0000		93.4	80-120			
Benzo(k)Fluoranthene	42.12		"	39.0000		108	80-120			
Benzo(a)Pyrene	40.04		"	39.0000		103	80-120			
Dibenzo(a,h)anthracene	43.13		"	39.0000		111	80-120			
Benzo(g,h,i)perylene	44.96		"	38.8650		116	80-120			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Blank (1J70902-BLK1)										
Prepared & Analyzed: 10/09/07										
Surrogate: 2-Fluorophenol	1.27		mg/kg wet	3.09000		41.1	50-110			S-AC
Surrogate: Phenol-d6	1.70		"	3.06333		55.5	50-121			
Surrogate: Nitrobenzene-d5	1.68		"	3.04667		55.0	50-124			
Surrogate: 2-Fluorobiphenyl	1.58		"	3.00000		52.7	50-126			
Surrogate: 2,4,6-Tribromophenol	2.16		"	3.01833		71.4	50-142			
Surrogate: Terphenyl-d14	2.77		"	3.00500		92.3	50-146			
N-Nitrosodimethylamine	ND	0.33	"							
Phenol	ND	0.33	"							
Aniline	ND	0.33	"							
Bis(2-Chloroethyl) Ether	ND	0.33	"							
2-Chlorophenol	ND	0.33	"							
1,3-Dichlorobenzene	ND	0.33	"							
1,4-Dichlorobenzene	ND	0.33	"							
Benzyl Alcohol	ND	0.33	"							
1,2-Dichlorobenzene	ND	0.33	"							
2-Methylphenol	ND	0.33	"							
Bis(2-Chloroisopropyl) Ether	ND	0.33	"							
n-Nitroso-di-n-propylamine	ND	0.33	"							
(3 & 4)-Methylphenol	ND	0.33	"							
Hexachloroethane	ND	0.33	"							
Nitrobenzene	ND	0.33	"							
Isophorone	ND	0.33	"							
2-Nitrophenol	ND	0.33	"							
2,4-Dimethylphenol	ND	0.33	"							
Bis (2-Chloroethoxy) Methane	ND	0.33	"							
2,4-Dichlorophenol	ND	0.33	"							
1,2,4-Trichlorobenzene	ND	0.33	"							
Naphthalene	ND	0.33	"							
4-Chloroaniline	ND	0.33	"							
Hexachlorobutadiene	ND	0.33	"							
4-Chloro-3-methylphenol	ND	0.33	"							
2-Methylnaphthalene	ND	0.33	"							
Hexachlorocyclopentadiene	ND	0.33	"							
2,4,6-Trichlorophenol	ND	0.33	"							
2,4,5-Trichlorophenol	ND	1.65	"							
2-Chloronaphthalene	ND	0.33	"							
Dimethylphthalate	ND	0.33	"							
2-Nitroaniline	ND	1.65	"							
Acenaphthylene	ND	0.33	"							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Blank (1J70902-BLK1)										
Prepared & Analyzed: 10/09/07										
2,6-Dinitrotoluene	ND	0.33	mg/kg wet							
3-Nitroaniline	ND	1.65	"							
Acenaphthene	ND	0.33	"							
2,4-Dinitrophenol	ND	1.65	"							
Dibenzofuran	ND	0.33	"							
2,4-Dinitrotoluene	ND	0.33	"							
4-Nitrophenol	ND	0.66	"							
Diethyl Phthalate	ND	0.33	"							
Fluorene	ND	0.33	"							
4-Chlorophenyl Phenyl Ether	ND	0.33	"							
4-Nitroaniline	ND	0.66	"							
4,6-Dinitro-2-methylphenol	ND	1.65	"							
N-Nitrosodiphenylamine	ND	0.33	"							
Azobenzene	ND	0.33	"							
4-Bromophenyl Phenyl Ether	ND	0.33	"							
Hexachlorobenzene	ND	0.33	"							
Pentachlorophenol	ND	0.66	"							
Phenanthrene	ND	0.33	"							
Anthracene	ND	0.33	"							
Di-n-butyl Phthalate	ND	0.33	"							
Fluoranthene	ND	0.33	"							
Benzidine	ND	0.33	"							
Pyrene	ND	0.33	"							
Butyl Benzyl Phthalate	ND	0.33	"							
Benzo(a)anthracene	ND	0.33	"							
Chrysene	ND	0.33	"							
Bis(2-Ethylhexyl) Phthalate	ND	0.33	"							
Di-n-octyl Phthalate	ND	0.33	"							
Indeno(1,2,3-cd)Pyrene	ND	0.33	"							
3,3'-Dichlorobenzidine	ND	0.66	"							
Benzo(b)Fluoranthene	ND	0.33	"							
Benzo(k)Fluoranthene	ND	0.33	"							
Benzo(a)Pyrene	ND	0.33	"							
Dibenzo(a,h)anthracene	ND	0.33	"							
Benzo(g,h,i)perylene	ND	0.33	"							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
LCS (1J70902-BS1)										
Prepared & Analyzed: 10/09/07										
Surrogate: 2-Fluorophenol	1.27		mg/kg wet	3.09000		41.0	50-110			S-AC
Surrogate: Phenol-d6	1.71		"	3.06333		55.8	50-121			
Surrogate: Nitrobenzene-d5	1.77		"	3.04667		58.0	50-124			
Surrogate: 2-Fluorobiphenyl	1.77		"	3.00000		58.9	50-126			
Surrogate: 2,4,6-Tribromophenol	2.19		"	3.01833		72.5	50-142			
Surrogate: Terphenyl-d14	2.48		"	3.00500		82.5	50-146			
N-Nitrosodimethylamine	1.159	0.33	"	1.86667		62.1	50-112			
Phenol	0.945	0.33	"	1.86667		50.6	50-110			
Bis(2-Chloroethyl) Ether	1.032	0.33	"	1.86667		55.3	50-110			
2-Chlorophenol	0.947	0.33	"	1.86667		50.7	50-110			
1,3-Dichlorobenzene	0.876	0.33	"	1.87308		46.8	50-110			QS-03
1,4-Dichlorobenzene	0.974	0.33	"	1.86667		52.2	50-110			
Benzyl Alcohol	1.214	0.33	"	1.86667		65.0	60-140			
1,2-Dichlorobenzene	0.979	0.33	"	1.88708		51.9	50-110			
2-Methylphenol	1.005	0.33	"	1.86667		53.8	50-110			
Bis(2-Chloroisopropyl) Ether	1.068	0.33	"	1.86667		57.2	50-110			
n-Nitroso-di-n-propylamine	1.241	0.33	"	1.86667		66.5	50-112			
(3 & 4)-Methylphenol	1.064	0.33	"	1.86667		57.0	50-110			
Hexachloroethane	0.969	0.33	"	1.86667		51.9	50-110			
Nitrobenzene	1.133	0.33	"	1.86667		60.7	50-110			
Isophorone	1.339	0.33	"	1.86667		71.7	50-110			
2-Nitrophenol	1.026	0.33	"	1.86667		54.9	50-110			
2,4-Dimethylphenol	1.133	0.33	"	1.86667		60.7	50-110			
Bis (2-Chloroethoxy) Methane	1.120	0.33	"	1.86667		60.0	50-110			
2,4-Dichlorophenol	0.995	0.33	"	1.86667		53.3	50-110			
1,2,4-Trichlorobenzene	1.069	0.33	"	1.86667		57.3	50-110			
Naphthalene	0.985	0.33	"	1.86667		52.8	50-110			
4-Chloroaniline	0.863	0.33	"	2.00000		43.2	60-140			QS-03
Hexachlorobutadiene	1.065	0.33	"	1.87775		56.7	50-110			
4-Chloro-3-methylphenol	1.217	0.33	"	1.86667		65.2	50-112			
2-Methylnaphthalene	1.109	0.33	"	1.86667		59.4	50-110			
Hexachlorocyclopentadiene	0.742	0.33	"	1.86667		39.7	60-140			QS-03
2,4,6-Trichlorophenol	1.194	0.33	"	1.86667		64.0	50-113			
2,4,5-Trichlorophenol	1.156	1.65	"	1.86667		61.9	50-115			
2-Chloronaphthalene	1.238	0.33	"	1.86667		66.3	50-110			
2-Nitroaniline	1.315	1.65	"	2.00000		65.8	50-117			
Dimethylphthalate	1.286	0.33	"	1.86667		68.9	52-122			
Acenaphthylene	1.198	0.33	"	1.86667		64.2	50-110			
2,6-Dinitrotoluene	1.348	0.33	"	1.86667		72.2	50-113			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
LCS (1J70902-BS1)										
Prepared & Analyzed: 10/09/07										
3-Nitroaniline	1.455	1.65	mg/kg wet	2.00000		72.8	60-140			
Acenaphthene	1.164	0.33	"	1.86667		62.3	50-122			
2,4-Dinitrophenol	0.828	1.65	"	1.86667		44.4	50-112			QS-03
Dibenzofuran	1.296	0.33	"	1.86667		69.4	50-117			
2,4-Dinitrotoluene	1.389	0.33	"	1.86667		74.4	50-125			
4-Nitrophenol	1.260	0.66	"	1.86667		67.5	50-133			
Diethyl Phthalate	1.381	0.33	"	1.86667		74.0	50-127			
Fluorene	1.290	0.33	"	1.86667		69.1	50-117			
4-Chlorophenyl Phenyl Ether	1.231	0.33	"	1.86667		65.9	54-111			
4-Nitroaniline	1.250	0.66	"	2.00000		62.5	50-127			
4,6-Dinitro-2-methylphenol	1.204	1.65	"	1.86667		64.5	50-123			
N-Nitrosodiphenylamine	1.388	0.33	"	1.86667		74.4	50-128			
Azobenzene	1.191	0.33	"	2.00000		59.6	50-121			
4-Bromophenyl Phenyl Ether	1.235	0.33	"	1.86667		66.2	60-116			
Hexachlorobenzene	1.312	0.33	"	1.86667		70.3	58-116			
Pentachlorophenol	1.010	0.66	"	1.86667		54.1	50-132			
Phenanthrene	1.340	0.33	"	1.86667		71.8	56-117			
Anthracene	1.235	0.33	"	1.86667		66.1	53-112			
Di-n-butyl Phthalate	1.439	0.33	"	1.86667		77.1	50-140			
Fluoranthene	1.396	0.33	"	1.86667		74.8	57-120			
Pyrene	1.472	0.33	"	1.86667		78.9	52-119			
Butyl Benzyl Phthalate	1.577	0.33	"	1.86667		84.5	53-127			
Benzo(a)anthracene	1.384	0.33	"	1.86667		74.1	57-121			
Chrysene	1.492	0.33	"	1.86667		79.9	50-127			
Bis(2-Ethylhexyl) Phthalate	1.730	0.33	"	1.86667		92.7	50-139			
Di-n-octyl Phthalate	1.759	0.33	"	1.86667		94.2	50-150			
Indeno(1,2,3-cd)Pyrene	1.491	0.33	"	1.86667		79.9	50-127			
Benzo(b)Fluoranthene	1.452	0.33	"	1.86667		77.8	50-144			
Benzo(k)Fluoranthene	1.464	0.33	"	1.86667		78.4	50-141			
Benzo(a)Pyrene	1.458	0.33	"	1.86667		78.1	50-127			
Dibenzo(a,h)anthracene	1.423	0.33	"	1.86667		76.2	50-133			
Benzo(g,h,i)perylene	1.445	0.33	"	1.86025		77.7	50-130			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Matrix Spike (1J70902-MS1)										
Source: 17J0135-06 Prepared: 10/09/07 Analyzed: 10/10/07										
Surrogate: 2-Fluorophenol	1.67		mg/kg dry	4.04433		41.2	50-110			S-AC
Surrogate: Phenol-d6	2.36		"	4.00943		58.8	50-121			
Surrogate: Nitrobenzene-d5	3.14		"	3.98762		78.7	50-124			
Surrogate: 2-Fluorobiphenyl	3.06		"	3.92654		78.0	50-126			
Surrogate: 2,4,6-Tribromophenol	3.33		"	3.95053		84.4	50-142			
Surrogate: Terphenyl-d14	3.66		"	3.93308		93.2	50-146			
N-Nitrosodimethylamine	1.558	3.30	"	2.44318	ND	63.7	50-115			
Phenol	1.719	3.30	"	2.44318	ND	70.4	50-114			
Bis(2-Chloroethyl) Ether	1.693	3.30	"	2.44318	ND	69.3	50-111			
2-Chlorophenol	1.566	3.30	"	2.44318	ND	64.1	50-110			
1,3-Dichlorobenzene	1.409	3.30	"	2.45158	ND	57.5	50-110			
1,4-Dichlorobenzene	1.745	3.30	"	2.44318	ND	71.4	50-110			
Benzyl Alcohol	1.998	3.30	"	2.44318	ND	81.8	60-140			
1,2-Dichlorobenzene	1.776	3.30	"	2.46990	ND	71.9	50-110			
2-Methylphenol	1.645	3.30	"	2.44318	ND	67.3	50-118			
Bis(2-Chloroisopropyl) Ether	2.059	3.30	"	2.44318	ND	84.3	50-140			
n-Nitroso-di-n-propylamine	2.033	3.30	"	2.44318	ND	83.2	50-125			
(3 & 4)-Methylphenol	1.649	3.30	"	2.44318	ND	67.5	50-110			
Hexachloroethane	1.654	3.30	"	2.44318	ND	67.7	50-110			
Nitrobenzene	2.299	3.30	"	2.44318	ND	94.1	50-144			
Isophorone	2.186	3.30	"	2.44318	ND	89.5	50-123			
2-Nitrophenol	2.055	3.30	"	2.44318	ND	84.1	50-122			
2,4-Dimethylphenol	1.326	3.30	"	2.44318	ND	54.3	50-137			
Bis(2-Chloroethoxy) Methane	1.994	3.30	"	2.44318	ND	81.6	50-122			
2,4-Dichlorophenol	1.763	3.30	"	2.44318	ND	72.1	50-110			
1,2,4-Trichlorobenzene	2.024	3.30	"	2.44318	ND	82.9	50-110			
Naphthalene	4.415	3.30	"	2.44318	0.896	144	50-150			
4-Chloroaniline	0.428	3.30	"	2.61769	ND	16.3	60-140			QM-05
Hexachlorobutadiene	2.046	3.30	"	2.45768	ND	83.3	50-111			
4-Chloro-3-methylphenol	2.037	3.30	"	2.44318	ND	83.4	50-120			
2-Methylnaphthalene	12.44	3.30	"	2.44318	1.416	451	50-121			QM-02
2,4,6-Trichlorophenol	2.116	3.30	"	2.44318	ND	86.6	50-124			
2,4,5-Trichlorophenol	2.290	16.5	"	2.44318	ND	93.7	50-129			
2-Chloronaphthalene	2.120	3.30	"	2.44318	ND	86.8	50-110			
Dimethylphthalate	1.981	3.30	"	2.44318	ND	81.1	50-116			
2-Nitroaniline	2.029	16.5	"	2.61769	ND	77.5	50-110			
Acenaphthylene	2.526	3.30	"	2.44318	ND	103	50-116			
2,6-Dinitrotoluene	2.173	3.30	"	2.44318	ND	88.9	50-113			
3-Nitroaniline	1.466	16.5	"	2.61769	ND	56.0	60-140			QM-05

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Work Order: 17J0135

Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Matrix Spike (1J70902-MS1)	Source: 17J0135-06			Prepared: 10/09/07		Analyzed: 10/10/07				
Acenaphthene	11.30	3.30	mg/kg dry	2.44318	7.904	139	50-150			
2,4-Dinitrophenol	6.073	16.5	"	2.44318	ND	249	50-150			QM-05
Dibenzofuran	4.913	3.30	"	2.44318	5.211	NR	50-117			QM-02
2,4-Dinitrotoluene	1.889	3.30	"	2.44318	ND	77.3	50-113			
4-Nitrophenol	3.281	6.60	"	2.44318	ND	134	50-150			
Diethyl Phthalate	18.04	3.30	"	2.44318	4.966	535	50-127			QM-02
Fluorene	9.171	3.30	"	2.44318	7.537	66.9	50-129			
4-Chlorophenyl Phenyl Ether	2.142	3.30	"	2.44318	ND	87.7	50-110			
4-Nitroaniline	3.695	6.60	"	2.61769	ND	141	50-144			
4,6-Dinitro-2-methylphenol	2.975	16.5	"	2.44318	ND	122	50-146			
N-Nitrosodiphenylamine	2.391	3.30	"	2.44318	ND	97.9	50-128			
Azobenzene	2.788	3.30	"	2.61769	ND	106	50-110			
4-Bromophenyl Phenyl Ether	1.893	3.30	"	2.44318	ND	77.5	50-110			
Hexachlorobenzene	2.269	3.30	"	2.44318	ND	92.9	50-115			
Pentachlorophenol	5.611	6.60	"	2.44318	ND	230	50-150			QM-05
Phenanthrene	25.28	3.30	"	2.44318	39.06	NR	50-150			QM-02
Anthracene	8.987	3.30	"	2.44318	9.976	NR	50-127			QM-02
Di-n-butyl Phthalate	2.544	3.30	"	2.44318	ND	104	50-140			
Fluoranthene	13.10	3.30	"	2.44318	34.05	NR	50-150			QM-02
Pyrene	14.42	3.30	"	2.44318	24.76	NR	50-150			QM-02
Butyl Benzyl Phthalate	2.282	3.30	"	2.44318	ND	93.4	50-150			
Benzo(a)anthracene	6.086	3.30	"	2.44318	8.455	NR	50-114			QM-02
Chrysene	6.274	3.30	"	2.44318	8.621	NR	50-133			QM-02
Bis(2-Ethylhexyl) Phthalate	2.910	3.30	"	2.44318	ND	119	50-150			
Di-n-octyl Phthalate	3.787	3.30	"	2.44318	ND	155	50-150			QM-05
Indeno(1,2,3-cd)Pyrene	2.792	3.30	"	2.44318	1.604	48.6	50-127			QM-02
Benzo(b)Fluoranthene	5.183	3.30	"	2.44318	4.717	19.1	50-150			QM-02
Benzo(k)Fluoranthene	0.925	3.30	"	2.44318	3.864	NR	50-150			QM-02
Benzo(a)Pyrene	5.013	3.30	"	2.44318	2.549	101	50-137			
Dibenzo(a,h)anthracene	2.120	3.30	"	2.44318	0.879	50.8	50-133			
Benzo(g,h,i)perylene	3.233	3.30	"	2.43478	1.819	58.1	50-130			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Matrix Spike Dup (1J70902-MSD1)										
	Source: 17J0135-06			Prepared: 10/09/07		Analyzed: 10/10/07				
Surrogate: 2-Fluorophenol	1.49		mg/kg dry	4.05512		36.8	50-110			S-AC
Surrogate: Phenol-d6	2.23		"	4.02012		55.5	50-121			
Surrogate: Nitrobenzene-d5	3.08		"	3.99825		77.1	50-124			
Surrogate: 2-Fluorobiphenyl	2.95		"	3.93701		75.0	50-126			
Surrogate: 2,4,6-Tribromophenol	2.94		"	3.96107		74.2	50-142			
Surrogate: Terphenyl-d14	3.88		"	3.94357		98.5	50-146			
N-Nitrosodimethylamine	1.330	3.30	"	2.44969	ND	54.3	50-115	15.8	25	
Phenol	1.374	3.30	"	2.44969	ND	56.1	50-114	22.3	25	
Bis(2-Chloroethyl) Ether	1.855	3.30	"	2.44969	ND	75.7	50-111	9.13	23	
2-Chlorophenol	1.461	3.30	"	2.44969	ND	59.6	50-110	6.95	30	
1,3-Dichlorobenzene	1.395	3.30	"	2.45812	ND	56.8	50-110	0.980	30	
1,4-Dichlorobenzene	1.605	3.30	"	2.44969	ND	65.5	50-110	8.34	30	
Benzyl Alcohol	1.811	3.30	"	2.44969	ND	73.9	60-140	9.83	40	
1,2-Dichlorobenzene	1.566	3.30	"	2.47649	ND	63.2	50-110	12.5	28	
2-Methylphenol	1.391	3.30	"	2.44969	ND	56.8	50-118	16.7	30	
Bis(2-Chloroisopropyl) Ether	1.772	3.30	"	2.44969	ND	72.3	50-140	15.0	29	
n-Nitroso-di-n-propylamine	1.885	3.30	"	2.44969	ND	77.0	50-125	7.54	28	
(3 & 4)-Methylphenol	1.527	3.30	"	2.44969	ND	62.3	50-110	7.71	30	
Hexachloroethane	1.374	3.30	"	2.44969	ND	56.1	50-110	18.5	30	
Nitrobenzene	2.034	3.30	"	2.44969	ND	83.0	50-144	12.2	22	
Isophorone	1.885	3.30	"	2.44969	ND	77.0	50-123	14.8	25	
2-Nitrophenol	1.842	3.30	"	2.44969	ND	75.2	50-122	10.9	30	
2,4-Dimethylphenol	1.391	3.30	"	2.44969	ND	56.8	50-137	4.77	30	
Bis(2-Chloroethoxy) Methane	1.785	3.30	"	2.44969	ND	72.9	50-122	11.1	21	
2,4-Dichlorophenol	1.640	3.30	"	2.44969	ND	67.0	50-110	7.18	22	
1,2,4-Trichlorobenzene	1.798	3.30	"	2.44969	ND	73.4	50-110	11.8	20	
Naphthalene	4.239	3.30	"	2.44969	0.896	136	50-150	4.08	27	
4-Chloroaniline	0.332	3.30	"	2.62467	ND	12.7	60-140	25.0	40	QM-05
Hexachlorobutadiene	1.842	3.30	"	2.46424	ND	74.7	50-111	10.5	30	
4-Chloro-3-methylphenol	1.815	3.30	"	2.44969	ND	74.1	50-120	11.5	29	
2-Methylnaphthalene	7.253	3.30	"	2.44969	1.416	238	50-121	52.7	23	QM-02
2,4,6-Trichlorophenol	2.069	3.30	"	2.44969	ND	84.5	50-124	2.24	30	
2,4,5-Trichlorophenol	2.087	16.5	"	2.44969	ND	85.2	50-129	9.32	30	
2-Chloronaphthalene	2.047	3.30	"	2.44969	ND	83.6	50-110	3.51	30	
Dimethylphthalate	1.829	3.30	"	2.44969	ND	74.6	50-116	7.99	25	
2-Nitroaniline	1.649	16.5	"	2.62467	ND	62.8	50-110	20.6	26	
Acenaphthylene	2.305	3.30	"	2.44969	ND	94.1	50-116	9.14	22	
2,6-Dinitrotoluene	1.881	3.30	"	2.44969	ND	76.8	50-113	14.4	30	
3-Nitroaniline	1.356	16.5	"	2.62467	ND	51.7	60-140	7.78	40	QM-05

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Matrix Spike Dup (1J70902-MSD1)										
		Source: 17J0135-06		Prepared: 10/09/07	Analyzed: 10/10/07					
Acenaphthene	18.16	3.30	mg/kg dry	2.44969	7.904	419	50-150	46.5	30	QM-02
2,4-Dinitrophenol	ND	16.5	"	2.44969	ND		50-150		30	QM-05
Dibenzofuran	11.22	3.30	"	2.44969	5.211	245	50-117	78.2	30	QM-02
2,4-Dinitrotoluene	1.732	3.30	"	2.44969	ND	70.7	50-113	8.66	30	
4-Nitrophenol	4.191	6.60	"	2.44969	ND	171	50-150	24.4	30	QM-05
Diethyl Phthalate	2.222	3.30	"	2.44969	4.966	NR	50-127	156	29	QM-02
Fluorene	16.85	3.30	"	2.44969	7.537	380	50-129	59.0	27	QM-02
4-Chlorophenyl Phenyl Ether	1.929	3.30	"	2.44969	ND	78.8	50-110	10.5	30	
4-Nitroaniline	3.377	6.60	"	2.62467	ND	129	50-144	9.00	30	
4,6-Dinitro-2-methylphenol	2.498	16.5	"	2.44969	ND	102	50-146	17.5	29	
N-Nitrosodiphenylamine	2.183	3.30	"	2.44969	ND	89.1	50-128	9.09	29	
Azobenzene	5.354	3.30	"	2.62467	ND	204	50-110	63.0	24	QM-05
4-Bromophenyl Phenyl Ether	2.021	3.30	"	2.44969	ND	82.5	50-110	6.52	40	
Hexachlorobenzene	2.244	3.30	"	2.44969	ND	91.6	50-115	1.09	23	
Pentachlorophenol	4.943	6.60	"	2.44969	ND	202	50-150	12.6	26	QM-05
Phenanthrene	47.24	3.30	"	2.44969	39.06	334	50-150	60.6	30	QM-02
Anthracene	16.68	3.30	"	2.44969	9.976	274	50-127	60.0	24	QM-02
Di-n-butyl Phthalate	2.025	3.30	"	2.44969	ND	82.7	50-140	22.7	30	
Fluoranthene	29.98	3.30	"	2.44969	34.05	NR	50-150	78.4	30	QM-02
Pyrene	25.93	3.30	"	2.44969	24.76	47.8	50-150	57.0	30	QM-02
Butyl Benzyl Phthalate	2.371	3.30	"	2.44969	ND	96.8	50-150	3.83	23	
Benzo(a)anthracene	8.775	3.30	"	2.44969	8.455	13.1	50-114	36.2	24	QM-02
Chrysene	9.392	3.30	"	2.44969	8.621	31.5	50-133	39.8	30	QM-02
Bis(2-Ethylhexyl) Phthalate	2.962	3.30	"	2.44969	ND	121	50-150	1.75	22	
Di-n-octyl Phthalate	4.965	3.30	"	2.44969	ND	203	50-150	26.9	30	QM-05
Indeno(1,2,3-cd)Pyrene	3.495	3.30	"	2.44969	1.604	77.2	50-127	22.4	27	
Benzo(b)Fluoranthene	8.136	3.30	"	2.44969	4.717	140	50-150	44.3	30	QM-02
Benzo(k)Fluoranthene	6.072	3.30	"	2.44969	3.864	90.1	50-150	147	30	QM-02
Benzo(a)Pyrene	3.876	3.30	"	2.44969	2.549	54.2	50-137	25.6	30	
Dibenzo(a,h)anthracene	2.485	3.30	"	2.44969	0.879	65.6	50-133	15.8	30	
Benzo(g,h,i)perylene	4.383	3.30	"	2.44127	1.819	105	50-130	30.2	25	QM-02

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Reference (1J70902-SRM1)				Prepared & Analyzed: 10/09/07						
Surrogate: 2-Fluorophenol	2.08		mg/kg wet	3.09000		67.3	50-110			
Surrogate: Phenol-d6	2.47		"	3.06333		80.8	50-121			
Surrogate: Nitrobenzene-d5	2.52		"	3.04667		82.6	50-124			
Surrogate: 2-Fluorobiphenyl	2.03		"	3.00000		67.7	50-126			
Surrogate: 2,4,6-Tribromophenol	2.75		"	3.01833		91.0	50-142			
Surrogate: Terphenyl-d14	2.25		"	3.00500		75.0	50-146			
N-Nitrosodimethylamine	1.629	0.33	"	1.86667		87.2	70-130			
Phenol	1.647	0.33	"	1.86667		88.2	70-130			
Aniline	1.715	0.33	"	2.00000		85.8	70-130			
Bis(2-Chloroethyl) Ether	1.532	0.33	"	1.86667		82.1	70-130			
2-Chlorophenol	1.698	0.33	"	1.86667		90.9	70-130			
1,3-Dichlorobenzene	1.993	0.33	"	1.87308		106	70-130			
1,4-Dichlorobenzene	1.275	0.33	"	1.86667		68.3	70-130			QR-06
Benzyl Alcohol	1.837	0.33	"	1.86667		98.4	70-130			
1,2-Dichlorobenzene	1.685	0.33	"	1.88708		89.3	70-130			
2-Methylphenol	1.508	0.33	"	1.86667		80.8	70-130			
Bis(2-Chloroisopropyl) Ether	1.697	0.33	"	1.86667		90.9	70-130			
n-Nitroso-di-n-propylamine	1.849	0.33	"	1.86667		99.1	70-130			
(3 & 4)-Methylphenol	1.746	0.33	"	1.86667		93.5	70-130			
Hexachloroethane	1.725	0.33	"	1.86667		92.4	70-130			
Nitrobenzene	1.731	0.33	"	1.86667		92.7	70-130			
Isophorone	1.967	0.33	"	1.86667		105	70-130			
2-Nitrophenol	1.601	0.33	"	1.86667		85.8	70-130			
2,4-Dimethylphenol	1.853	0.33	"	1.86667		99.2	70-130			
Bis (2-Chloroethoxy) Methane	1.714	0.33	"	1.86667		91.8	70-130			
2,4-Dichlorophenol	1.583	0.33	"	1.86667		84.8	70-130			
1,2,4-Trichlorobenzene	1.746	0.33	"	1.86667		93.6	70-130			
Naphthalene	1.546	0.33	"	1.86667		82.8	70-130			
4-Chloroaniline	1.726	0.33	"	2.00000		86.3	70-130			QM-05
Hexachlorobutadiene	1.758	0.33	"	1.87775		93.6	70-130			
4-Chloro-3-methylphenol	1.730	0.33	"	1.86667		92.7	70-130			
2-Methylnaphthalene	1.738	0.33	"	1.86667		93.1	70-130			
Hexachlorocyclopentadiene	1.588	0.33	"	1.86667		85.1	70-130			
2,4,6-Trichlorophenol	1.762	0.33	"	1.86667		94.4	70-130			
2,4,5-Trichlorophenol	1.581	1.65	"	1.86667		84.7	70-130			
2-Chloronaphthalene	1.711	0.33	"	1.86667		91.7	70-130			
2-Nitroaniline	1.709	1.65	"	2.00000		85.4	70-130			
Dimethylphthalate	1.570	0.33	"	1.86667		84.1	70-130			
Acenaphthylene	1.530	0.33	"	1.86667		82.0	70-130			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70902 - 3545 BNA PFE										
Reference (1J70902-SRM1)				Prepared & Analyzed: 10/09/07						
2,6-Dinitrotoluene	1.599	0.33	mg/kg wet	1.86667		85.7	70-130			
3-Nitroaniline	1.686	1.65	"	2.00000		84.3	70-130			QM-05
Acenaphthene	1.601	0.33	"	1.86667		85.8	70-130			
2,4-Dinitrophenol	1.658	1.65	"	1.86667		88.8	70-130			QM-05
Dibenzofuran	1.731	0.33	"	1.86667		92.7	70-130			
2,4-Dinitrotoluene	1.801	0.33	"	1.86667		96.5	70-130			
4-Nitrophenol	1.961	0.66	"	1.86667		105	70-130			QM-05
Diethyl Phthalate	1.583	0.33	"	1.86667		84.8	70-130			
Fluorene	1.595	0.33	"	1.86667		85.5	70-130			
4-Chlorophenyl Phenyl Ether	1.565	0.33	"	1.86667		83.9	70-130			
4-Nitroaniline	1.116	0.66	"	2.00000		55.8	70-130			QR-06
4,6-Dinitro-2-methylphenol	1.585	1.65	"	1.86667		84.9	70-130			
N-Nitrosodiphenylamine	1.518	0.33	"	1.86667		81.3	70-130			
Azobenzene	1.515	0.33	"	2.00000		75.8	70-130			QM-05
4-Bromophenyl Phenyl Ether	1.537	0.33	"	1.86667		82.4	70-130			
Hexachlorobenzene	1.651	0.33	"	1.86667		88.5	70-130			
Pentachlorophenol	1.916	0.66	"	1.86667		103	70-130			QM-05
Phenanthrene	1.621	0.33	"	1.86667		86.8	70-130			
Anthracene	1.504	0.33	"	1.86667		80.6	70-130			
Di-n-butyl Phthalate	1.559	0.33	"	1.86667		83.5	70-130			
Fluoranthene	1.723	0.33	"	1.86667		92.3	70-130			
Pyrene	1.607	0.33	"	1.86667		86.1	70-130			
Butyl Benzyl Phthalate	1.572	0.33	"	1.86667		84.2	70-130			
Benzo(a)anthracene	1.571	0.33	"	1.86667		84.1	70-130			
Chrysene	1.666	0.33	"	1.86667		89.2	70-130			
Bis(2-Ethylhexyl) Phthalate	1.650	0.33	"	1.86667		88.4	70-130			
Di-n-octyl Phthalate	1.791	0.33	"	1.86667		95.9	70-130			QM-05
Indeno(1,2,3-cd)Pyrene	1.604	0.33	"	1.86667		85.9	70-130			
Benzo(b)Fluoranthene	1.637	0.33	"	1.86667		87.7	70-130			
Benzo(k)Fluoranthene	1.839	0.33	"	1.86667		98.5	70-130			
Benzo(a)Pyrene	1.738	0.33	"	1.86667		93.1	70-130			
Dibenzo(a,h)anthracene	1.571	0.33	"	1.86667		84.1	70-130			
Benzo(g,h,i)perylene	1.439	0.33	"	1.86025		77.4	70-130			

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Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70321 - Wet Chem Preparation										
Duplicate (1J70321-DUP1)		Source: 17J0135-06			Prepared & Analyzed: 10/03/07					
% Solids	75.7	0.1	%		76.2			0.658	20	

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Determination of Total Metals - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1001 - 1J71013										
Calibration Blank (17J1001-CCB1) Prepared & Analyzed: 10/10/07										
Arsenic, total	0.00390		mg/l	0.00000						
Barium, total	0.0002		"	0.00000						
Cadmium, total	0.0003		"	0.00000						
Chromium, total	0.00		"	0.00000						
Lead, total	-0.000300		"	0.00000						
Selenium, total	-0.0053		"	0.00000						
Silver, total	0.001		"	0.00000						
Calibration Blank (17J1001-CCB2) Prepared & Analyzed: 10/10/07										
Arsenic, total	0.00460		mg/l	0.00000						
Barium, total	0.0001		"	0.00000						
Cadmium, total	0.0002		"	0.00000						
Chromium, total	0.0007		"	0.00000						
Lead, total	0.000100		"	0.00000						
Selenium, total	0.0001		"	0.00000						
Silver, total	0.0005		"	0.00000						
Calibration Blank (17J1001-CCB3) Prepared & Analyzed: 10/10/07										
Arsenic, total	0.00220		mg/l	0.00000						
Barium, total	0.0005		"	0.00000						
Cadmium, total	0.0009		"	0.00000						
Chromium, total	-0.0002		"	0.00000						
Lead, total	-0.000400		"	0.00000						
Selenium, total	-0.0019		"	0.00000						
Silver, total	0.001		"	0.00000						
Calibration Blank (17J1001-CCB4) Prepared & Analyzed: 10/10/07										
Arsenic, total	0.00670		mg/l	0.00000						
Barium, total	0.0003		"	0.00000						
Cadmium, total	0.0005		"	0.00000						
Chromium, total	-0.0004		"	0.00000						
Lead, total	-0.000700		"	0.00000						
Selenium, total	-0.0037		"	0.00000						
Silver, total	0.0009		"	0.00000						

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1001 - 1J71013										
Calibration Check (17J1001-CCV1) Prepared & Analyzed: 10/10/07										
Arsenic, total	1.02		mg/l	1.00000		102	90-110			
Barium, total	0.962		"	1.00000		96.2	90-110			
Cadmium, total	1.00		"	1.00000		100	90-110			
Chromium, total	1.01		"	1.00000		101	90-110			
Lead, total	0.999		"	1.00000		99.9	90-110			
Selenium, total	1.017		"	1.00000		102	90-110			
Silver, total	0.975		"	1.00000		97.5	90-110			
Calibration Check (17J1001-CCV2) Prepared & Analyzed: 10/10/07										
Arsenic, total	1.04		mg/l	1.00000		104	90-110			
Barium, total	0.956		"	1.00000		95.6	90-110			
Cadmium, total	1.01		"	1.00000		101	90-110			
Chromium, total	1.02		"	1.00000		102	90-110			
Lead, total	1.03		"	1.00000		103	90-110			
Selenium, total	1.047		"	1.00000		105	90-110			
Silver, total	0.980		"	1.00000		98.0	90-110			
Calibration Check (17J1001-CCV3) Prepared & Analyzed: 10/10/07										
Arsenic, total	1.04		mg/l	1.00000		104	90-110			
Barium, total	0.956		"	1.00000		95.6	90-110			
Cadmium, total	1.00		"	1.00000		100	90-110			
Chromium, total	1.02		"	1.00000		102	90-110			
Lead, total	1.02		"	1.00000		102	90-110			
Selenium, total	1.038		"	1.00000		104	90-110			
Silver, total	0.982		"	1.00000		98.2	90-110			
Calibration Check (17J1001-CCV4) Prepared & Analyzed: 10/10/07										
Arsenic, total	1.04		mg/l	1.00000		104	90-110			
Barium, total	0.960		"	1.00000		96.0	90-110			
Cadmium, total	1.00		"	1.00000		100	90-110			
Chromium, total	1.02		"	1.00000		102	90-110			
Lead, total	1.02		"	1.00000		102	90-110			
Selenium, total	1.037		"	1.00000		104	90-110			
Silver, total	0.986		"	1.00000		98.6	90-110			

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Determination of Total Metals - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1001 - 1J71013										
High Cal Check (17J1001-HCV2)										
Prepared & Analyzed: 10/10/07										
Arsenic, total	18.7		mg/l	20.0000		93.7	90-110			
Barium, total	18.8		"	20.0000		93.8	90-110			
Cadmium, total	18.7		"	20.0000		93.6	90-110			
Chromium, total	19.6		"	20.0000		98.0	90-110			
Lead, total	19.8		"	20.0000		98.8	90-110			
Selenium, total	19.73		"	20.0000		98.6	90-110			
Silver, total	19.6		"	20.0000		98.2	90-110			
High Cal Check (17J1001-HCV3)										
Prepared & Analyzed: 10/10/07										
Chromium, total	98.5		mg/l	100.000		98.5	90-110			
Initial Cal Blank (17J1001-ICB1)										
Prepared & Analyzed: 10/10/07										
Arsenic, total	0.00220		mg/l	0.00000						
Barium, total	0.0003		"	0.00000						
Cadmium, total	0.0004		"	0.00000						
Chromium, total	0.001		"	0.00000						
Lead, total	-0.000300		"	0.00000						
Selenium, total	-0.0016		"	0.00000						
Silver, total	0.0007		"	0.00000						
Initial Cal Check (17J1001-ICV1)										
Prepared & Analyzed: 10/10/07										
Arsenic, total	1.02		mg/l	1.00000		102	90-110			
Barium, total	0.983		"	1.00000		98.3	90-110			
Cadmium, total	1.00		"	1.00000		100	90-110			
Chromium, total	1.01		"	1.00000		101	90-110			
Lead, total	1.01		"	1.00000		101	90-110			
Selenium, total	1.031		"	1.00000		103	90-110			
Silver, total	0.984		"	1.00000		98.4	90-110			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 17J1001 - 1J71013										
Secondary Cal Check (17J1001-SCV1)				Prepared & Analyzed: 10/10/07						
Arsenic, total	0.501		mg/l	0.500000		100	90-110			
Barium, total	0.493		"	0.500000		98.6	90-110			
Cadmium, total	0.502		"	0.500000		100	90-110			
Chromium, total	0.500		"	0.500000		99.9	90-110			
Lead, total	0.494		"	0.500000		98.9	90-110			
Selenium, total	0.4950		"	0.500000		99.0	90-110			
Silver, total	0.483		"	0.500000		96.6	90-110			
Batch 1J70412 - EPA 7471A Hg Solid										
Blank (1J70412-BLK1)				Prepared & Analyzed: 10/04/07						
Mercury, total	ND	0.0005	mg/kg							
LCS (1J70412-BS1)				Prepared & Analyzed: 10/04/07						
Mercury, total	0.00227	0.0005	mg/kg	0.00200000		114	81-133			
Matrix Spike (1J70412-MS1)				Source: 17J0135-05		Prepared & Analyzed: 10/04/07				
Mercury, total	0.810	0.2	mg/kg	0.625391	ND	130	66-140			
Matrix Spike Dup (1J70412-MSD1)				Source: 17J0135-05		Prepared & Analyzed: 10/04/07				
Mercury, total	0.784	0.2	mg/kg	0.637755	ND	123	66-140	3.19	29	
Batch 1J70845 - EPA 3050B Solid Dig										
Blank (1J70845-BLK1)				Prepared: 10/08/07 Analyzed: 10/10/07						
Arsenic, total	ND	0.02	mg/kg wet							
Barium, total	ND	0.01	"							
Cadmium, total	ND	0.01	"							
Chromium, total	ND	0.03	"							
Lead, total	ND	0.05	"							
Selenium, total	ND	0.02	"							
Silver, total	ND	0.01	"							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J70845 - EPA 3050B Solid Dig										
LCS (1J70845-BS1)				Prepared: 10/08/07		Analyzed: 10/10/07				
Arsenic, total	2.0	0.02	mg/kg wet	2.00000		101	86-115			
Barium, total	2.0	0.01	"	2.00000		98.8	85-112			
Cadmium, total	2.0	0.01	"	2.00000		100	90-112			
Chromium, total	2.0	0.03	"	2.00000		101	86-115			
Lead, total	2.0	0.05	"	2.00000		101	89-111			
Selenium, total	1.9	0.02	"	2.00000		94.8	80-110			
Silver, total	2.0	0.01	"	2.00000		99.4	68-130			
Matrix Spike (1J70845-MS1)				Source: 17J0135-05		Prepared: 10/08/07		Analyzed: 10/10/07		
Arsenic, total	133	1.3	mg/kg dry	149.352	13.5	80.1	69-114			
Barium, total	293	0.7	"	149.352	144	99.8	60-140			
Cadmium, total	112	0.7	"	149.352	0.6	74.8	68-110			
Chromium, total	141	2.0	"	149.352	32.5	72.6	61-124			
Lead, total	310	3.3	"	149.352	253	38.0	60-116			QM-14
Selenium, total	115	1.3	"	149.352	0.4	76.8	63-110			
Silver, total	126	0.7	"	149.352	0.2	84.1	65-121			
Matrix Spike Dup (1J70845-MSD1)				Source: 17J0135-05		Prepared: 10/08/07		Analyzed: 10/10/07		
Arsenic, total	136	1.3	mg/kg dry	146.461	13.5	83.9	69-114	2.44	11	
Barium, total	336	0.6	"	146.461	144	131	60-140	13.6	26	
Cadmium, total	116	0.6	"	146.461	0.6	78.7	68-110	3.10	11	
Chromium, total	140	1.9	"	146.461	32.5	73.6	61-124	0.429	18	
Lead, total	330	3.2	"	146.461	253	52.4	60-116	6.28	23	QM-14
Selenium, total	120	1.3	"	146.461	0.4	81.3	63-110	3.78	14	
Silver, total	127	0.6	"	146.461	0.2	86.9	65-121	1.37	24	
Post Spike (1J70845-PS1)				Source: 17J0135-05		Prepared: 10/08/07		Analyzed: 10/10/07		
Arsenic, total	1.8		mg/kg dry	2.00000	0.2	81.6	61-117			
Barium, total	3.5		"	2.00000	1.9	76.8	60-118			
Cadmium, total	1.5		"	2.00000	0.008	75.7	60-110			
Chromium, total	2.0		"	2.00000	0.4	80.1	60-120			
Lead, total	4.9		"	2.00000	3.4	74.2	62-118			
Selenium, total	1.5		"	2.00000	0.005	77.2	60-115			
Silver, total	1.7		"	2.00000	0.002	84.8	60-126			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
EPA 6010B In Soil		
	Arsenic, total	IA-NT
	Barium, total	IA-NT,KS-NT,NELAC
	Cadmium, total	IA-NT,KS-NT,NELAC
	Chromium, total	IA-NT,KS-NT,NELAC
	Lead, total	IA-NT,KS-NT,NELAC
	Selenium, total	IA-NT,KS-NT
	Silver, total	IA-NT,KS-NT,NELAC
EPA 6010B in Water		
	Arsenic, total	IA-NT
	Barium, total	IA-NT,KS-NT,NELAC
	Cadmium, total	IA-NT,KS-NT,NELAC
	Chromium, total	IA-NT,KS-NT,NELAC
	Lead, total	IA-NT,KS-NT,NELAC
	Selenium, total	IA-NT,KS-NT
	Silver, total	IA-NT,KS-NT,NELAC
EPA 7471A In Solid		
	Mercury, total	IA-NT,KS-NT,NELAC
EPA 8260B In Soil		
	Chloromethane	IA-NT,KS-NT,NELAC
	Vinyl Chloride	IA-NT,KS-NT,NELAC
	Bromomethane	IA-NT,KS-NT,NELAC
	Chloroethane	IA-NT,KS-NT,NELAC
	1,1-Dichloroethylene	IA-NT,KS-NT,NELAC
	Acetone	IA-NT,KS-NT,NELAC
	Carbon Disulfide	IA-NT,KS-NT,NELAC
	Methylene Chloride	IA-NT,KS-NT,NELAC
	trans-1,2-Dichloroethylene	IA-NT,KS-NT,NELAC
	Methyl-t-butyl Ether (MTBE)	IA-NT,KS-NT,NELAC
	1,1-Dichloroethane	IA-NT,KS-NT,NELAC
	cis-1,2-Dichloroethylene	IA-NT
	2-Butanone (MEK)	IA-NT,KS-NT,NELAC
	Chloroform	IA-NT,KS-NT,NELAC
	1,1,1-Trichloroethane	IA-NT,KS-NT,NELAC
	Carbon Tetrachloride	IA-NT,KS-NT,NELAC

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Benzene	IA-NT,KS-NT,NELAC
1,2-Dichloroethane	IA-NT,KS-NT,NELAC
Trichloroethylene	IA-NT,KS-NT,NELAC
1,2-Dichloropropane	IA-NT,KS-NT,NELAC
Bromodichloromethane	IA-NT,KS-NT,NELAC
cis-1,3-Dichloropropene	IA-NT,KS-NT,NELAC
4-Methyl-2-pentanone (MIBK)	IA-NT,KS-NT,NELAC
Toluene	IA-NT,KS-NT,NELAC
trans-1,3-Dichloropropene	IA-NT,KS-NT,NELAC
1,1,1-Trichloroethane	IA-NT,KS-NT,NELAC
Tetrachloroethylene	IA-NT,KS-NT,NELAC
2-Hexanone (MBK)	IA-NT,KS-NT,NELAC
Dibromochloromethane	IA-NT,KS-NT,NELAC
Chlorobenzene	IA-NT,KS-NT,NELAC
Ethylbenzene	IA-NT,KS-NT,NELAC
Xylenes, total	IA-NT,KS-NT,NELAC
Bromoform	IA-NT,KS-NT,NELAC
1,1,2,2-Tetrachloroethane	IA-NT,KS-NT,NELAC
1,3-Dichlorobenzene	IA-NT,KS-NT,NELAC
1,4-Dichlorobenzene	IA-NT,KS-NT,NELAC
1,2-Dichlorobenzene	IA-NT,KS-NT,NELAC
Naphthalene	KS-NT,NELAC

EPA 8270C in Soil

N-Nitrosodimethylamine	IA-NT
Phenol	IA-NT,KS-NT,NELAC
Bis(2-Chloroethyl) Ether	IA-NT
2-Chlorophenol	IA-NT,KS-NT,NELAC
1,3-Dichlorobenzene	IA-NT
1,4-Dichlorobenzene	IA-NT,KS-NT,NELAC
Benzyl Alcohol	IA-NT
1,2-Dichlorobenzene	IA-NT
2-Methylphenol	IA-NT,KS-NT,NELAC
Bis(2-Chloroisopropyl) Ether	IA-NT,KS-NT,NELAC
n-Nitroso-di-n-propylamine	IA-NT
(3 & 4)-Methylphenol	IA-NT,KS-NT,NELAC
Hexachloroethane	IA-NT,KS-NT,NELAC
Nitrobenzene	IA-NT,KS-NT,NELAC
Isophorone	IA-NT,KS-NT,NELAC

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2-Nitrophenol	IA-NT,KS-NT,NELAC
2,4-Dimethylphenol	IA-NT,KS-NT,NELAC
Bis (2-Chloroethoxy) Methane	IA-NT,KS-NT,NELAC
2,4-Dichlorophenol	IA-NT,KS-NT,NELAC
1,2,4-Trichlorobenzene	IA-NT,KS-NT,NELAC
Naphthalene	IA-NT,KS-NT,NELAC
4-Chloroaniline	IA-NT,KS-NT,NELAC
Hexachlorobutadiene	IA-NT,KS-NT,NELAC
4-Chloro-3-methylphenol	IA-NT,KS-NT,NELAC
2-Methylnaphthalene	IA-NT,KS-NT,NELAC
Hexachlorocyclopentadiene	IA-NT,KS-NT,NELAC
2,4,6-Trichlorophenol	IA-NT,KS-NT,NELAC
2,4,5-Trichlorophenol	IA-NT,KS-NT,NELAC
2-Chloronaphthalene	IA-NT,KS-NT,NELAC
2-Nitroaniline	IA-NT,KS-NT,NELAC
Dimethylphthalate	IA-NT,KS-NT,NELAC
Acenaphthylene	IA-NT,KS-NT,NELAC
2,6-Dinitrotoluene	IA-NT,KS-NT,NELAC
3-Nitroaniline	IA-NT
Acenaphthene	IA-NT,KS-NT,NELAC
2,4-Dinitrophenol	IA-NT,KS-NT,NELAC
Dibenzofuran	IA-NT,KS-NT,NELAC
2,4-Dinitrotoluene	IA-NT,KS-NT,NELAC
4-Nitrophenol	IA-NT,KS-NT,NELAC
Diethyl Phthalate	IA-NT,KS-NT,NELAC
Fluorene	IA-NT,KS-NT,NELAC
4-Chlorophenyl Phenyl Ether	IA-NT,KS-NT,NELAC
4-Nitroaniline	IA-NT
4,6-Dinitro-2-methylphenol	IA-NT,KS-NT,NELAC
N-Nitrosodiphenylamine	KS-NT,NELAC
4-Bromophenyl Phenyl Ether	IA-NT,KS-NT,NELAC
Hexachlorobenzene	IA-NT,KS-NT,NELAC
Pentachlorophenol	IA-NT,KS-NT,NELAC
Phenanthrene	IA-NT,KS-NT,NELAC
Anthracene	IA-NT,KS-NT,NELAC
Di-n-butyl Phthalate	IA-NT,KS-NT,NELAC
Fluoranthene	IA-NT,KS-NT,NELAC
Pyrene	IA-NT,KS-NT,NELAC

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. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

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Butyl Benzyl Phthalate	IA-NT,KS-NT,NELAC
Benzo(a)anthracene	IA-NT,KS-NT,NELAC
Chrysene	IA-NT,KS-NT,NELAC
Bis(2-Ethylhexyl) Phthalate	IA-NT,KS-NT,NELAC
Di-n-octyl Phthalate	IA-NT,KS-NT,NELAC
Indeno(1,2,3-cd)Pyrene	IA-NT,KS-NT,NELAC
3,3'-Dichlorobenzidine	IA-NT,KS-NT,NELAC
Benzo(b)Fluoranthene	IA-NT,KS-NT,NELAC
Benzo(k)Fluoranthene	IA-NT,KS-NT,NELAC
Benzo(a)Pyrene	IA-NT,KS-NT,NELAC
Dibenzo(a,h)anthracene	IA-NT,KS-NT,NELAC
Benzo(g,h,i)perylene	IA-NT,KS-NT,NELAC

SM 2540 G in Solid

% Solids IA-NT

Code	Description	Number	Expires
IA-NT	Iowa Department of Natural Resources	095	02/01/2008
KS-NT	Kansas Department of Health and Environment	E-10287	07/31/2008
NELAC	New Jersey Department of Environmental Protection	IA001	06/30/2008

Notes and Definitions

- C-18 The CCV was outside of acceptance limits. However the data was accepted on the basis of acceptable SRM recovery.
- QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- QM-05 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- QM-14 The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
- QR-06 The reference standard was outside of established control limits.
- QS-03 The blank spike recovery was below established acceptance limits.
- S-AC Acid surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two acid surrogates.

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End of Report

Sue Thompson

Keystone Laboratories, Inc.

Sue Thompson
Project Manager I

**ATTACHMENT E – ANALYSIS OF BROWNFIELDS
CLEANUP ALTERNATIVES**

ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

Former BNSF Railway Company Round House Area
Lincoln, Nebraska
May 23, 2008

1.0 INTRODUCTION

This Analysis of Brownfields Cleanup Alternatives (ABCA) is intended as a screening tool to ensure and document that the appropriate type of cleanup is selected to address environmental impairments at the site that could prohibit development. The preferred remedial action considers the site characteristics, surrounding environment, land-use restrictions, potential future uses, and cleanup goals.

1.1 Background and Purpose

The City of Lincoln, Nebraska Department of Urban Development was awarded \$128,200.00 under EPA Cooperative Agreement Grant no. BF-98763401-0 in September of 2005. This Cooperative Agreement provides \$128,200.00 for development of a Brownfields inventory, conducting Phase I and Phase II Environmental Site Assessments, conducting public outreach and remedial action planning (including preparation of an Analyses of Brownfields Cleanup Alternatives).

A Phase I Environmental Site Assessment (ESA) was completed in August of 2007 on the referenced parcel. The Phase I (ESA) was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-05. Findings of the Phase I ESA revealed "recognized environmental conditions" consisting of the following:

1. In 1987 a diesel fuel spill occurred at a location northwest of the BNSF railroad depot.
2. A diesel fuel contamination plume was encountered in the BNSF railroad yard by the City of Lincoln - Department of Public Works in 1993 during sanitary sewer line repairs.
3. In 2004 a RBCA Tier 2 Assessment was conducted related to previously documented diesel fuel spills at a location west of the BNSF railroad depot. A plume of diesel fuel located west-northwest of the depot is currently being remediated under the NDEQ Title 200 program.
4. In 2007 a diesel fuel spill occurred at a location west of the BNSF railroad depot.
5. A former BNSF Railway Company roundhouse that was apparently de-commissioned and removed prior to the 1940s* is located along the northern property boundary.

Based on the Phase I ESA findings, and in consideration of non-eligibility of petroleum compound contaminants related to the grant funding, a Limited Phase II Subsurface Assessment was proposed at the location of the former roundhouse located at the site. Railroad roundhouse facilities are possible sources of soil and groundwater contamination generally associated with the fueling, maintenance, and repair of locomotives. Non-petroleum contaminants generally include, but are not limited to, degreasing solvents and heavy metals.

Conclusions of a limited Phase II ESA completed for the site include as follows:

- Field screening of soils for organic vapors suggestive of contaminant impacts from Polycyclic Aromatic Hydrocarbons (PAHs), Semi-Volatile Organic Compounds (SVOCs), and/or Volatile Organic Compounds (VOCs) in boring SB-1 indicated relative response units (rrus) readings of 45.0 and 33.0 at depths of 6-7 ft. bgs and 11-12 ft. bgs, respectively. Laboratory analytical results for boring SB-1 at sample depth 6-7 ft. indicated detections of Benzo(a)anthracene (8.45 mg/kg [a factor greater than 13 times RGs]) and Benzo(b)Fluoranthene (4.72 mg/kg [a factor greater than 7

times RGs]) in soils. EPA has classified Benzo(a)anthracene and Benzo(b)Fluoranthene as probable human carcinogens (See <http://www.epa.gov/ttnatw01/hlthef/polycycl.html>).

- Field screening of soils for organic vapors suggestive of PAHs, SVOCs, and VOCs did not indicate evidence of impacts from these types of contaminants in borings SB-2, SB-3, and SB-4.
- Laboratory analytical results for Total RCRA Metals in soil borings indicated Chromium is present in shallow soils at boring SB-1 at a level slightly above NDEQ remediation goals.
- Laboratory analytical results for Total RCRA Metals in soil borings indicated significant levels of lead (4,870 mg/kg [a factor greater than 12 times RGs]) is present in shallow soils at boring SB-1.

Based on preliminary land use planning performed for the City of Lincoln, the former Burlington roundhouse is located in an area of the West Haymarket District slated for future development in conjunction with a proposed municipal arena and convention center and associated parking facilities.

2.0 REMEDIAL ALTERNATIVES CONSIDERED

This section identifies various remediation alternatives that may be used to address environmental impairments at the former roundhouse facility. The “No Action Alternative” is used as the baseline against which all other alternatives are analyzed.

The following broad categories of evaluation criteria were considered in assembling remediation alternatives at the site:

- Overall protectiveness to public health and the environment
- Feasibility in achieving site redevelopment
- Impacts to the proposed future use of the property
- Impacts to the surrounding environment

2.1 No Action Alternative

The “No Action Alternative” would leave the impacted soils in place. The effectiveness of this alternative is uncertain until the extent of soil and groundwater impacts are determined and a final use for the site is established. This alternative would not be consistent with planned development in the immediate area as it is likely that any development in the area will require some soil disturbance that could present an exposure risk to construction workers and may also severely restrict future development at the site.

2.2 Characterization and Removal of Impacted Soil and Debris

This option includes further characterization and removal of impacted soil and debris to contaminant levels that are compatible with future use. Additional soil probes and groundwater sampling would be conducted to determine the nature and extent of soil and groundwater impacts at the site. Based on the findings, exposure scenarios will be developed and appropriate plans for source removal prepared that would be compatible with future site development.

2.3 Engineered Barriers and Institutional Controls Alternative

The in-situ capping of impacted soil can be considered an appropriate soil performance remedy. In general, a soil performance standard, i.e. capping, is considered an engineered control that is kept in-place, operated and maintained, until the lowest concentration that is practicable is achieved so that the residual contaminants left in the soil do not pose a threat to public health, safety and welfare or the environment. Engineered controls may include the following types of "caps"; soil covers, pavement covers, and building/structural covers.

The use of engineered barriers and institutional controls are common elements of many site remedies since they allow closure of sites that may exceed remediation goals for impacted soil media, provided groundwater use restrictions are adopted to prevent exposure. These remedial action options provide short-term control of exposure while longer-term processes such as natural attenuation reduce constituent concentrations to below the regulatory limits. Together, the long-term and short-term elements protect human health and the environment.

In the proposed site redevelopment (probable parking facilities), all potentially impacted soils could be covered/capped with concrete or asphalt that will eliminate direct exposure to the soils. The effectiveness of this alternative is uncertain since preliminary project concepts are being evaluated which include potential grade modifications and the use of permeable parking areas for low impact development.

2.4 Natural Attenuation Alternative

Natural attenuation is a viable remedial alternative recognized by the EPA and NDEQ, and can be as effective as engineered remedial systems at achieving remedial goals. While the scope of the field investigation to date has not characterized potential groundwater impacts associated with the site, it does not appear that groundwater is a direct exposure pathway of concern. Whether or not groundwater is impacted and the extent to which migration of contaminants to surface features (salt creek and adjacent wetlands) is a viable secondary exposure pathway must first be determined.

This remedial technique is a long-term technique for addressing groundwater contaminants. The scope of the investigation does not necessitate evaluation of this option at this time.

3.0 PREFERRED REMEDIAL ALTERNATIVE

The remedial alternatives were evaluated based on effectiveness, ease of implementation, the cost of each alternative, the potential future uses of the property and the proposed redevelopment plan.

All of the alternatives are considered technically feasible; however, the cost effectiveness and capability of protecting human health and the environment for each alternative cannot be determined until site redevelopment plans are progressed. A prudent approach would include further soil and groundwater investigation to determine the nature and extent of impacts and to combine the findings with planned site improvements into an integrated risk-based site plan.

ATTACHMENT F – SIGNATURE PAGE

HWS Consulting Group Inc. (HWS) has performed a limited Phase II Environmental Site Assessment (ESA) on the former railroad roundhouse site within the BNSF Railway Company yards in the West Haymarket Area in Downtown Lincoln, NE. The ESA was performed in general conformance with the Quality Assurance Project Plan and Field Sampling Plan prepared for the project. An Analysis of Brownfields Cleanup Alternatives (ABCA) is also provided as Attachment E to this report.

Report Prepared By:

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