DATA GAPS ASSESSMENT TECHNICAL MEMORANDUM
OPERABLE UNIT NO. 1

UNION PACIFIC RAILROAD
OMAHA SHOPS

Union Pacific Railroad Company
1416 Dodge Street
Omaha, Nebraska 68179

RECEIVED
8/10/00
ARTD/RCAP

CERTIFICATION

"I certify that this document and all attachments hereto were prepared under my direction or supervision. To the best of my knowledge, information and belief, the information submitted is true, accurate and complete. I am aware that there are criminal penalties for knowingly providing false information."

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Title: Mgr. Environmental Site Remediation

Date: July 21, 2000

R00176477
RCRA RECORDS CENTER
A6

OU1 DATA GAPS ASSESSMENT — Technical Memorandum

DATE: July 20, 2000

PROJECT: RCRA Facility Investigation
Omaha Shops Facility
Omaha, Nebraska
U.S. EPA Docket No. RCRA-7-2000-0026
RCRA I.D. No. NED000829754

RECEIVED 8/10/00 ARTD/RCAP

PURPOSE

URS Corporation (URS) has prepared this technical memorandum for the Union Pacific Railroad Company (UPRR) Omaha Shops, located north of downtown Omaha near 9th and Webster Streets. The purpose of this technical memorandum is to describe the field activities and present the results of the OU1 Data Gaps Assessment completed to address data gaps identified in the Draft OU1 RFI Report.

SOIL SAMPLING PROCEDURES

The sample locations are shown on Figure 1. The following procedures were used to collect soil samples:

1. A utility clearance was completed at each proposed sampling location prior to the start of sampling activities.

2. Field investigation activities were completed following procedures specified in the site specific Health and Safety Plan.

3. Soil samples were collected at the specified target depth(s) using a stainless-steel split-spoon sampler or a stainless-steel hand auger.

4. Recovered soil samples were described in the field according to the Unified Soil Classification System (USCS) by a geologist or engineer. A portion of each sample was field screened for potential volatile organic vapors. Copies of the boring logs are included in Attachment A.

5. Sampling equipment was decontaminated prior to use at each sampling location using an Alconox-hot water wash and clean water rinse.

6. Sample material was placed in the appropriate container, labeled, packaged in a cooler with ice, and shipped to Test America for chemical analysis.

7. All sampling locations were marked/flagged for surveying.

8. Borings were backfilled with soil cuttings.

Site 1 - West Yard Area

A 300 foot sampling grid was staked across the area (Figure 2). Soil samples were collected at each of the 14 grid locations. Recovered soil samples were field screened for potential organic vapors.

Soil samples for chemical analysis were collected from each of the borings at depth intervals of 0.0 to 1.0 foot, 2.0 to 3.5 feet, 4.5 to 6.0 feet, 7.0 to 8.5 feet, and 9.5 to 11.0 feet using a truck-mounted drilling rig and stainless-steel split-spoon samplers. The soil samples were analyzed for volatile organic compounds (VOCs), arsenic, lead, and total extractable hydrocarbons (TEH). In addition, all 0.0 to 1.0-foot samples and half of the 2.0 to 3.5-foot samples were also analyzed for asbestos.

Site 2 - East Abbott Drive Area

Three soil sampling locations were staked across the area. Soil samples were collected at each of the three locations (Figure 3). Recovered soil samples were field screened for potential organic vapors.

Soil samples for chemical analysis were collected from each of the borings at depth intervals of 0.0 to 1.0 foot, 4.5 to 6.0 feet, and 9.0 to 10.5 feet using a truck-mounted drilling rig and stainless-steel split-spoon samplers. The soil samples were analyzed for VOCs, arsenic, lead, and TEH. In addition, the 0.0 to 1.0 foot samples were also analyzed for asbestos.

Site 3 - Eighth Street Yard

Soil samples were collected at 9 locations across the Eighth Street Yard as shown on Figure 4. These soil samples were collected to better define the depth of lead contamination that will need to be excavated as part of the Corrective Measures.

Soil samples were collected from 1.0 to 1.5 feet, 2.0 to 2.5 feet, 3.0 to 3.5 feet, 4.0 to 4.5 feet, 7 to 8.5 feet, and 9.5 to 11.0 feet at each location using a truck-mounted drilling rig and stainless-steel split-spoon samplers. Soil samples were analyzed for arsenic and lead.

Site 4 - New Coal Track

Soil samples were collected at 8 locations along the new coal track alignment as shown on Figure 4. The sample locations were spaced about 300 feet apart. These soil samples were collected to determine if lead contaminated soil would be encountered during railroad track grading and relocation.

Soil samples were collected from 0.0 to 1.0 foot, 1.0 to 2.0 feet, and 2.0 to 3.0 feet at each location using a truck-mounted drilling rig and stainless-steel split-spoon samplers. The samples will be analyzed for arsenic and lead.

Site 5 - South Yard Area

A 300-foot sampling grid was staked across the area. Soil samples were collected at each of the 6 grid locations (Figure 5).

Soil samples for chemical analysis were collected from each of the borings at depth intervals of 0.0 to 1.0 foot, 4.5 to 6.0 feet, and 9.0 to 10.5 feet using a truck-mounted drilling rig and stainless-steel split-spoon samplers. The soil samples were analyzed for VOCs, arsenic, lead, and TEH. In addition, the 0.0 to 1.0-foot samples were also analyzed for asbestos.

CHEMICAL ANALYTICAL RESULTS

A total of 188 soil samples (including 29 field duplicate samples) were collected for chemical analysis. Lead was detected in 11 soil samples above the 1,218 milligram per kilogram (mg/kg) action level. A summary of the soil sampling analytical results is shown in Tables 1 through 4. Data review of the laboratory analytical reports is included in Attachment B.

LABORATORY CHEMICAL DATA REVIEW

Soil samples were submitted for chemical analysis to Test America, in Cedar Falls, Iowa. The analytical data were reviewed by URS using guidance provided in the USEPA National Functional Guidelines of Organic and Inorganic Data Review 1994 where applicable. The data review included evaluation of the following elements:

1. Data Package Completeness: All data package items were delivered as specified in the QAPP and COC.

2. Laboratory Case Narrative: The laboratory case narratives indicated that some VOC MS/MSD were outside evaluation criteria. While not noted in the case narratives, some surrogate and MS/MSD recoveries were also outside evaluation criteria. Additionally, some volatile compounds were detected in the method blanks.

3. Holding Time Evaluation: All samples were extracted and analyzed within the holding times specified.

4. Blank Contamination: Qualifications due to blank contamination are included in the table below. Analytical data reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
UPSY-SB05-0101	1,2,4-trimethylbenzene	5.1	U	BLK (3/5/00)
UPSY-SB05-1101	1,2,4-trimethylbenzene	6.5	U	BLK (3/7/00)

5. Laboratory Control Sample Recoveries: All laboratory control sample (LCS) recoveries were within the evaluation criteria.

6. Surrogate Compound Recoveries: Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as non-detect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPSY-SB04-0101	Total extractable hydrocarbons	J
UPSY-SB04-0101	Diesel	UJ
UPSY-SB04-0101	Gasoline	UJ
UPSY-SB04-0101	Motor Oil	J
UPSY-SB01-0101	Total extractable hydrocarbons	J
UPSY-SB01-0101	Diesel	J
UPSY-SB02-0101	Total extractable hydrocarbons	J
UPSY-SB02-0101	Diesel	UJ
UPSY-SB02-0101	Gasoline	UJ
UPSY-SB02-0101	Motor Oil	J
UPWY-SB01-0601	Total extractable hydrocarbons	J
UPWY-SB01-0601	Diesel	J
UPWY-SB01-0601	Motor Oil	J
UPWY-SB02-0301	Total extractable hydrocarbons	J
UPWY-SB02-0301	Diesel	J
UPWY-SB02-0301	Motor Oil	J
UPWY-SB04-0201	Total extractable hydrocarbons	J
UPWY-SB04-0201	Diesel	J
UPWY-SB04-0201	Motor Oil	J
UPWY-SB05-0101	Total extractable hydrocarbons	J
UPWY-SB05-0101	Motor Oil	J
UPWY-SB06-0301	Total extractable hydrocarbons	J
UPWY-SB06-0301	Motor Oil	J
UPWY-SB11-0101	Total extractable hydrocarbons	J
UPWY-SB11-0101	Motor Oil	J
UPWY-SB12-0101	Total extractable hydrocarbons	J
UPWY-SB12-0101	Motor Oil	J
UPWY-SB09-0101	Total extractable hydrocarbons	J
UPWY-SB09-0101	Motor Oil	J
UPWY-SB12-0101	Total extractable hydrocarbons	J
UPWY-SB12-0101	Motor Oil	J
UPWY-SB12-0101	Diesel	J
UPWY-SB13-0301	Total extractable hydrocarbons	J
UPWY-SB13-0301	Diesel	J
UPWY-SB13-0301	Gasoline	J
UPWY-SB14-0301	Total extractable hydrocarbons	J
UPWY-SB14-0301	Motor Oil	J
UPEA-SB01-0601	Total extractable hydrocarbons	J

Field ID	Analyte	Qualification
UPEA-SB01-0601	Motor Oil	J
UPEA-SB01-1001	Total extractable hydrocarbons	J
UPEA-SB01-1001	Motor Oil	J

7. Matrix Spike and Matrix Spike Duplicate Recoveries: All MS/MSD samples were reported as part of the corresponding sample delivery groups (SDG). Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for arsenic and mercury had sample concentrations greater than four times (4X) the matrix spike concentration therefore no qualification of the data was required. Since the antimony MS recovery (29%R) was only slightly less than 30%R and the MSD recovery was 34%R, the antimony data was qualified estimated (**J**). The antimony and arsenic data for sample UPWY-SB01-0101 were qualified unusable (**R**) since recoveries were less than 30%R. Since the antimony recoveries were less than 30%, the antimony data for UPES-SB21-0201 was qualified unusable (**R**).

Field ID	Analyte	Qualification
UPSY-SB05-0601	Selenium	J
UPSY-SB05-0601	Antimony	J
UPWY-SB01-0101	Antimony	R
UPWY-SB01-0101	Arsenic	R
UPWY-SB01-0101	Selenium	J
UPWY-SB26-1101	Mercury	J
UPWY-SB09-1101	Selenium	J
UPWY-SB09-1101	Antimony	R
UPWY-SB12-0101	Selenium	J
UPWY-SB08-0801	Antimony	J
UPES-SB17-0201	Selenium	UJ
UPES-SB18-0301	Selenium	UJ
UPES-SB18-0401	Antimony	UJ
UPES-SB21-0201	Selenium	J
UPES-SB21-0201	Antimony	R
UPES-SB24-0401	Arsenic	J
UPES-SB24-0401	Selenium	J
UPES-SB24-0401	Antimony	J
UPES-SB24-0401	Mercury	J
UPES-SB24-0401	Zinc	J
UPCT-SB04-0201	Copper	J
UPCT-SB04-0201	Antimony	J

7. Laboratory Duplicate Results: No laboratory duplicate samples were collected as part of these SDG.

8. Field Duplicate Results: Field duplicate samples were collected as part of this SDG. However, not all field duplicates were within the evaluation criteria. Analytical data which required qualification based on field duplicates are included in the table below.

Field ID	Field Duplicate ID	Analyte	Qual
UPSY-SB03-1101	UPSY-SB13-1101	Tert-butylbenzene	J
UPWY-SB01-0801	UPWY-SB21-0801	Arsenic	J
UPWY-SB11-0801	UPWY-SB31-0801	Mercury	J
UPWY-SB07-0601	UPWY-SB27-0601	Total Extractable Hydrocarbons	J
UPWY-SB07-0601	UPWY-SB27-0601	Diesel	J
UPWY-SB07-0601	UPWY-SB27-0601	Motor Oil	J
UPWY-SB07-0801	UPWY-SB27-0801	Lead	J
UPWY-SB09-0301	UPWY-SB29-0301	Diesel	J
UPWY-SB13-0801	UPWY-SB33-0801	Lead	J
UPWY-SB13-0801	UPWY-SB33-0801	Zinc	J
UPES-SB20-0101	UPES-SB40-0101	Arsenic	J
UPES-SB20-0101	UPES-SB40-0101	Mercury	J
UPES-SB20-0101	UPES-SB40-0101	Nickel	J
UPES-SB22-0201	UPES-SB42-0201	Arsenic	J
UPES-SB22-0201	UPES-SB42-0201	Mercury	J
UPES-25-0101	UPES-SB45-0101	Chromium	J
UPES-25-0101	UPES-SB45-0101	Copper	J
UPES-25-0101	UPES-SB45-0101	Lead	J
UPES-25-0101	UPES-SB45-0101	Nickel	J
UPES-25-0101	UPES-SB45-0101	Zinc	J
UPCT-SB03-0201	UPCT-SB23-0201	Arsenic	J
UPCT-SB03-0201	UPCT-SB23-0201	Lead	J
UPEA-SB03-1101	UPEA-SB23-1101	Copper	J
UPEA-SB03-1101	UPEA-SB23-1101	Lead	J

9. Sample Dilution: Samples were diluted, some of which exceeded the 10X limits.

10. Additional Qualifications Using Professional Judgment: Professional judgement was used to qualify the listed data as non-detect (**U**) since methylene chloride is a common laboratory contaminant.

Field ID	Analyte	New RL	Qualification
UPSY-SB05-0101	Methylene chloride	50.7	U
UPSY-SB04-1101	Methylene chloride	64.8	U
UPSY-SB14-0601	Methylene chloride	78.3	U
UPSY-SB01-1101	Methylene chloride	74.3	U
UPSY-SB03-0601	Methylene chloride	71.5	U
UPSY-SB03-1101	Methylene chloride	55.5	U
UPSY-SB02-0601	Methylene chloride	89.6	U
UPWY-SB01-0101	Methylene chloride	72.8	U
UPWY-SB01-0301	Methylene chloride	136	U
UPWY-SB03-0301	Methylene chloride	150	U
UPWY-SB03-0101	Methylene chloride	90.4	U
UPWY-SB03-0601	Methylene chloride	143	U
UPWY-SB04-0301	Methylene chloride	78.4	U
UPWY-SB04-0601	Methylene chloride	189	U
UPWY-SB10-0101	Methylene chloride	138	U

Field ID	Analyte	New RL	Qualification
UPWY-SB11-0101	Methylene chloride	117	U
UPWY-SB11-0601	Methylene chloride	51.5	U
UPWY-SB12-0601	Methylene chloride	150	U
UPWY-SB08-0601	Methylene chloride	60.1	U
UPWY-SB09-0101	Methylene chloride	62.1	U
UPWY-SB09-0601	Methylene chloride	65.9	U
UPWY-SB07-0101	Methylene chloride	106	U
UPWY-SB13-0101	Methylene chloride	125	U
UPEA-SB01-0601	Methylene chloride	126	U
UPEA-SB01-1001	Methylene chloride	114	U
UPEA-SB02-0301	Methylene chloride	154	U
UPEA-SB03-0701	Methylene chloride	67.2	U
UPEA-SB03-1101	Methylene chloride	52.7	U
UPEA-SB03-1501	Methylene chloride	54.2	U

Based on the data reviews, the analytical data generated, including data qualified estimated (**J**), were acceptable for their intended use with the exception of data qualified rejected (**R**).

CONCLUSIONS

In areas where lead was detected above the action level of 1,218 mg/kg, an area approximately 50-feet by 50-feet by 12-inches will be excavated. The excavated material will be placed in the Abbott Drive/Cumings Street roadway embankment and confirmation samples collected as per the OU1 Statement of Basis.

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB01-0101			UPWY-SB01-0301			UPWY-SB01-0601			UPWY-SB01-0801		
DATE COLLECTED	03/02/00			03/02/00			03/02/00			03/2/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	<	5	U	<	160	U			
1,2-Dichlorobenzene	<	5	U	<	5	U	<	160	U			
1,3,5-Trimethylbenzene	<	5	U	<	5	U	<	160	U			
1,3-Dichlorobenzene	<	5	U	<	5	U	<	160	U			
1,4-Dichlorobenzene	<	5	U	<	5	U	<	160	U			
Cis-1,2-dichloroethene	<	5	U	<	5	U	<	160	U			
Ethylbenzene	<	5	U	<	5	U	<	160	U			
Isopropylbenzene	<	5	U	<	5	U	326	160				
Methylene Chloride	<	72.8	U	<	136	U	<	1600	U			
N-butylbenzene	<	5	U	<	5	U	1170	160				
N-propylbenzene	<	5	U	<	5	U	879	160				
P-isopropyltoluene	<	5	U	<	5	U	<	160	U			
Sec-butylbenzene	<	5	U	<	5	U	860	160				
Tert-butylbenzene	<	5	U	<	5	U	<	160	U			
Tetrachloroethene	<	5	U	<	5	U	<	160	U			
Trichloroethylene	<	5	U	<	5	U	<	160	U			
Xylenes, Total	5.7	5		<	5	U	<	160	U			
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	15.1	10		57.5	10		4200	300	J			
Gasoline	<	10	U	<	10	U	<	10	U			
Motor Oil	18.4	10		110	10		400	300	J			
Total Extractable Hydrocarbons	33.5	10		168	10		4600	300	J			
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	7.9	1		29	1		3.6	1		9.9	1	J
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	2.7	1		<	1	U	<	1	U
Chromium	8.4	1		5.4	1		9.7	1		10	1	
Copper	15	1		410	1		16	1		20	1	
Lead	<	5	U	360	5		9.1	5		12	5	
Mercury	0.039	0.02		0.074	0.02		0.033	0.02		0.043	0.02	
Nickel	21	2.5		7.4	2.5		18	2.5		20	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	54	1		110	1		58	1		66	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB21-0801			UPWY-SB01-1101			UPWY-SB02-0201			UPWY-SB02-0301		
DATE COLLECTED	Dup. of SB01-0801			03/2/00			03/2/00			03/02/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							5.7	5		<	150	U
1,2-Dichlorobenzene							5.4	5		<	150	U
1,3,5-Trimethylbenzene							<	5	U	<	150	U
1,3-Dichlorobenzene							6.3	5		<	150	U
1,4-Dichlorobenzene							8.9	5		<	150	U
Cis-1,2-dichloroethene							<	5	U	<	150	U
Ethylbenzene							<	5	U	<	150	U
Isopropylbenzene							<	5	U	<	150	U
Methylene Chloride							248	50		<	1500	U
N-butylbenzene							<	5	U	<	150	U
N-propylbenzene							<	5	U	<	150	U
P-isopropyltoluene							<	5	U	<	150	U
Sec-butylbenzene							<	5	U	<	150	U
Tert-butylbenzene							<	5	U	<	150	U
Tetrachloroethene							<	5	U	<	150	U
Trichloroethylene							<	5	U	<	150	U
Xylenes, Total							12.8	5		<	150	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							14	10		50	10	J
Gasoline							<	10	U	<	10	U
Motor Oil							79	10		540	50	J
Total Extractable Hydrocarbons							93	10		590	50	J
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	14	5		10	5	
Arsenic	4.7	1	J	6.4	1		9.1	1		19	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	3.7	1		4.3	1	
Chromium	11	1		8.8	1		5.2	1		19	1	
Copper	16	1		14	1		1400	1		640	1	
Lead	<	5	U	<	5	U	340	5		1100	5	
Mercury	0.033	0.02		0.03	0.02	J	1.3	0.02		5.6	0.02	
Nickel	17	2.5		20	2.5		12	2.5		17	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	58	1		59	1		260	1		230	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB02-0601			UPWY-SB02-0801			UPWY-SB02-1101			UPWY-SB03-0101		
DATE COLLECTED	03/02/00			03/2/00			03/2/00			03/2/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	12.1	5								<	5	U
1,2-Dichlorobenzene	<	5	U							<	5	U
1,3,5-Trimethylbenzene	<	5	U							<	5	U
1,3-Dichlorobenzene	<	5	U							<	5	U
1,4-Dichlorobenzene	<	5	U							<	5	U
Cis-1,2-dichloroethene	<	5	U							<	5	U
Ethylbenzene	11.9	5								<	5	U
Isopropylbenzene	<	5	U							<	5	U
Methylene Chloride	262	50								<	90.4	U
N-butylbenzene	42.1	5								<	5	U
N-propylbenzene	<	5	U							<	5	U
P-isopropyltoluene	16.8	5								<	5	U
Sec-butylbenzene	56.1	5								<	5	U
Tert-butylbenzene	54.8	5								<	5	U
Tetrachloroethene	<	5	U							<	5	U
Trichloroethylene	<	5	U							<	5	U
Xylenes, Total	13.9	5								<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	1500	100								<	10	U
Gasoline	<	10	U							<	10	U
Motor Oil	<	10	U							59.8	10	
Total Extractable Hydrocarbons	1500	100								59.8	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	4.8	1		9.4	1		4.6	1		4.3	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	1	U
Cadmium	<	1	U	<	1	U	<	1	U	<	2	U
Chromium	11	1		8	1		9.6	1		46	1	
Copper	54	1		18	1		18	1		13	1	
Lead	40	5		10	5		<	5	U	37	5	
Mercury	0.432	0.02		0.049	0.02		0.039	0.02		0.102	0.02	
Nickel	20	2.5		16	2.5		16	2.5		7.7	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	73	1		53	1		57	1		59	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB03-0301			UPWY-SB23-0301			UPWY-SB03-0601			UPWY-SB23-0601		
DATE COLLECTED	03/02/00			Dup. of SB03-0301			03/02/00			Dup. of SB03-0601		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	7	5		<	5	U			
1,2-Dichlorobenzene	<	5	U	<	5	U	10.5	5				
1,3,5-Trimethylbenzene	<	5	U	<	5	U	<	5	U			
1,3-Dichlorobenzene	<	5	U	<	5	U	<	5	U			
1,4-Dichlorobenzene	<	5	U	<	5	U	<	5	U			
Cis-1,2-dichloroethene	<	5	U	<	5	U	<	5	U			
Ethylbenzene	<	5	U	<	5	U	<	5	U			
Isopropylbenzene	<	5	U	<	5	U	<	5	U			
Methylene Chloride	<	150	U	241	50		<	143	U			
N-butylbenzene	<	5	U	<	5	U	<	5	U			
N-propylbenzene	<	5	U	<	5	U	<	5	U			
P-isopropyltoluene	<	5	U	<	5	U	<	5	U			
Sec-butylbenzene	<	5	U	<	5	U	<	5	U			
Tert-butylbenzene	<	5	U	<	5	U	<	5	U			
Tetrachloroethene	<	5	U	<	5	U	<	5	U			
Trichloroethylene	<	5	U	<	5	U	<	5	U			
Xylenes, Total	5.1	5		<	5	U	6.3	5				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U				<	10	U	<	10	U
Gasoline	<	10	U				<	10	U	<	10	U
Motor Oil	17.2	10					16.4	10		<	10	U
Total Extractable Hydrocarbons	17.2	10					16.4	10		<	10	U
METALS (mg/kg)												
Antimony	<	5	U				<	5	U			
Arsenic	3.1	1					4.5	1				
Beryllium	<	0.5	U				<	1	U			
Cadmium	<	1	U				<	1	U			
Chromium	5.3	1					6.1	1				
Copper	37	1					10	1				
Lead	67	5					<	5	U			
Mercury	0.053	0.02					0.075	0.02				
Nickel	8	2.5					13	2.5				
Silver	<	1	U				<	1	U			
Zinc	58	1					36	1				

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB03-0801			UPWY-SB03-1101			UPWY-SB04-0201			UPWY-SB04-0301		
DATE COLLECTED	03/2/00			03/2/00			03/2/00			03/02/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							<	110	U	<	5	U
1,2-Dichlorobenzene							<	110	U	<	5	U
1,3,5-Trimethylbenzene							<	110	U	<	5	U
1,3-Dichlorobenzene							<	110	U	<	5	U
1,4-Dichlorobenzene							<	110	U	<	5	U
Cis-1,2-dichloroethene							<	110	U	<	5	U
Ethylbenzene							<	110	U	<	5	U
Isopropylbenzene							<	110	U	<	5	U
Methylene Chloride							<	1100	U	<	78.4	U
N-butylbenzene							<	110	U	<	5	U
N-propylbenzene							<	110	U	<	5	U
P-isopropyltoluene							<	110	U	<	5	U
Sec-butylbenzene							<	110	U	<	5	U
Tert-butylbenzene							<	110	U	<	5	U
Tetrachloroethene							<	110	U	<	5	U
Trichloroethylene							<	110	U	<	5	U
Xylenes, Total							<	110	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							57.3	10	J	<	10	U
Gasoline							<	10	U	<	10	U
Motor Oil							260	10	J	34	10	
Total Extractable Hydrocarbons							317	10	J	34	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	11	5		<	5	U
Arsenic	4.1	1					12	1		6.8	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	4.3	1		<	1	U
Chromium	7.2	1		7.2	1		7.6	1		4.4	1	
Copper	9.9	1		9.8	1		300	1		190	1	
Lead	<	5	U	<	5	U	620	5		100	5	
Mercury	<	0.02	U				0.592	0.02		0.384	0.02	
Nickel	14	2.5		15	2.5		20	2.5		9.4	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	41	1		45	1		470	1		71	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB24-0301			UPWY-SB04-0601			UPWY-SB04-0801			UPWY-SB24-0801		
DATE COLLECTED	Dup. of SB04-0301			03/02/00			03/2/00			Dup. of SB04-0801		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	150	U	12.5	5							
1,2-Dichlorobenzene	<	150	U	<	5	U						
1,3,5-Trimethylbenzene	<	150	U	<	5	U						
1,3-Dichlorobenzene	<	150	U	<	5	U						
1,4-Dichlorobenzene	<	150	U	<	5	U						
Cis-1,2-dichloroethene	<	150	U	<	5	U						
Ethylbenzene	<	150	U	<	5	U						
Isopropylbenzene	<	150	U	<	5	U						
Methylene Chloride	<	1500	U	<	189	U						
N-butylbenzene	<	150	U	<	5	U						
N-propylbenzene	<	150	U	<	5	U						
P-isopropyltoluene	<	150	U	<	5	U						
Sec-butylbenzene	<	150	U	<	5	U						
Tert-butylbenzene	<	150	U	<	5	U						
Tetrachloroethene	<	150	U	<	5	U						
Trichloroethylene	<	150	U	<	5	U						
Xylenes, Total	<	150	U	13.9	5							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel				<	10	U						
Gasoline				<	10	U						
Motor Oil				35	10							
Total Extractable Hydrocarbons				35	10							
METALS (mg/kg)												
Antimony				<	5	U	<	5	U	<	5	U
Arsenic				6.5	1		3.4	1		3.8	1	
Beryllium				<	0.5	U	<	0.5	U	<	0.5	U
Cadmium				<	1	U	<	1	U	<	1	U
Chromium				6.2	1		11	1		12	1	
Copper				210	1		14	1		15	1	
Lead				130	5		11	5		10	5	
Mercury				0.354	0.02		0.033	0.02		0.034	0.02	
Nickel				12	2.5		21	2.5		20	2.5	
Silver				<	1	U	<	1	U	<	1	U
Zinc				110	1		61	1		60	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB04-1101			UPWY-SB05-0101			UPWY-SB05-0301			UPWY-SB05-0701		
DATE COLLECTED	03/2/00			03/2/00			03/02/00			03/2/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene				<	5	U	<	120	U	<	120	U
1,2-Dichlorobenzene				<	5	U	<	120	U	<	120	U
1,3,5-Trimethylbenzene				<	5	U	<	120	U	<	120	U
1,3-Dichlorobenzene				<	5	U	<	120	U	<	120	U
1,4-Dichlorobenzene				<	5	U	<	120	U	<	120	U
Cis-1,2-dichloroethene				<	5	U	<	120	U	<	120	U
Ethylbenzene				<	5	U	<	120	U	<	120	U
Isopropylbenzene				<	5	U	<	120	U	<	120	U
Methylene Chloride				<	50	U	<	1200	U	<	1200	U
N-butylbenzene				<	5	U	<	120	U	<	120	U
N-propylbenzene				<	5	U	<	120	U	<	120	U
P-isopropyltoluene				<	5	U	<	120	U	<	120	U
Sec-butylbenzene				<	5	U	<	120	U	<	120	U
Tert-butylbenzene				<	5	U	<	120	U	<	120	U
Tetrachloroethene				<	5	U	<	120	U	<	120	U
Trichloroethylene				<	5	U	<	120	U	<	120	U
Xylenes, Total				<	5	U	<	120	U	<	120	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel				<	10	U	12.1	10		<	10	U
Gasoline				<	10	U	<	10	U	<	10	U
Motor Oil				280	10	J	27.4	10		<	10	U
Total Extractable Hydrocarbons				280	10	J	<	10	U	<	10	U
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	4.3	1		12	1		5.8	1		12	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	2.6	1		3.7	1		2.2	1	
Chromium	10	1		10	1		2.8	1		9.6	1	
Copper	15	1		71	1		52	1		25	1	
Lead	11	5		160	5		59	5		18	5	
Mercury	0.037	0.02		0.344	0.02		0.166	0.02		<	0.02	U
Nickel	16	2.5		14	2.5		9	2.5		17	2.5	
Silver	<	1	U	<	2	U	<	1	U	<	1	U
Zinc	65	1		140	1		57	1		74	1	

ND = Not Detected RL = Reporting Limit
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB05-0801			UPWY-SB05-1101			UPWY-SB06-0101			UPWY-SB06-0301		
DATE COLLECTED	03/2/00			03/2/00			03/2/00			03/02/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							<	150	U	<	160	U
1,2-Dichlorobenzene							<	150	U	<	160	U
1,3,5-Trimethylbenzene							<	150	U	<	160	U
1,3-Dichlorobenzene							<	150	U	<	160	U
1,4-Dichlorobenzene							<	150	U	<	160	U
Cis-1,2-dichloroethene							<	150	U	187	160	
Ethylbenzene							<	150	U	<	160	U
Isopropylbenzene							<	150	U	<	160	U
Methylene Chloride							<	1500	U	<	1600	U
N-butylbenzene							<	150	U	<	160	U
N-propylbenzene							<	150	U	<	160	U
P-isopropyltoluene							<	150	U	<	160	U
Sec-butylbenzene							<	150	U	<	160	U
Tert-butylbenzene							<	150	U	<	160	U
Tetrachloroethene							7610	150		10100	160	
Trichloroethylene							317	150		470	470	
Xylenes, Total							<	150	U	<	160	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							<	10		56	10	J
Gasoline							<	10	U	<	10	U
Motor Oil							370	10		170	10	J
Total Extractable Hydrocarbons							370	10		226	10	J
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	12	5		<	5	U
Arsenic	8.4	1		3.4	1		19	1		16	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	3.2	1		<	1	U	5.2	1		3.3	1	
Chromium	8.1	1		9.3	1		13	1		6.5	1	
Copper	26	1		16	1		210	1		140	1	
Lead	27	5		27	5		450	5		310	5	
Mercury	<	0.02	U	<	0.02	U	0.66	0.02		0.516	0.02	
Nickel	15	2.5		15	2.5		22	2.5		18	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	77	1		55	1		440	1		190	1	

ND = Not Detected RL = Reporting Limit
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB06-0801			UPWY-SB06-1101			UPWY-SB26-1101			UPWY-SB07-0101		
DATE COLLECTED	03/2/00			03/2/00			Dup. of SB06-1101			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene				152	150					<	5	U
1,2-Dichlorobenzene				<	150	U				<	5	U
1,3,5-Trimethylbenzene				1380	150					<	5	U
1,3-Dichlorobenzene				<	150	U				<	5	U
1,4-Dichlorobenzene				<	150	U				<	5	U
Cis-1,2-dichloroethene				<	150	U				<	5	U
Ethylbenzene				923	150					<	5	U
Isopropylbenzene				863	150					<	5	U
Methylene Chloride				<	1500	U				<	106	U
N-butylbenzene				3230	150					<	5	U
N-propylbenzene				2150	150					<	5	U
P-isopropyltoluene				<	150	U				<	5	U
Sec-butylbenzene				<	150	U				<	5	U
Tert-butylbenzene				1400	150					<	5	U
Tetrachloroethene				<	150	U				<	5	U
Trichloroethylene				<	150	U				<	5	U
Xylenes, Total				342	150					<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel				2700	100					<	10	U
Gasoline				<	100	U				<	10	U
Motor Oil				<	100	U				17.2	10	
Total Extractable Hydrocarbons				2700	100					1702	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	2	1		7.3	1		5.8	1		6.6	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	<	1	U	<	1	U
Chromium	7.6	1		7.3	1		8.7	1		8.6	1	
Copper	10	1		16	1		15	1		12	1	
Lead	<	5	U	<	5	U	<	5	U	54	5	
Mercury	0.023	0.02		<	0.02	U	0.066	0.02	J	0.039	0.02	
Nickel	9.8	2.5		9.6	2.5		15	2.5		18	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	41	1		51	1		54	1		58	1	

ND = Not Detected RL = Reporting Limit
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB07-0301			UPWY-SB07-0601			UPWY-SB27-0601			UPWY-SB07-0801		
DATE COLLECTED	03/03/00			03/03/00			Dup. of SB07-0601			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	<	150	U						
1,2-Dichlorobenzene	<	5	U	<	150	U						
1,3,5-Trimethylbenzene	<	5	U	<	150	U						
1,3-Dichlorobenzene	<	5	U	<	150	U						
1,4-Dichlorobenzene	<	5	U	<	150	U						
Cis-1,2-dichloroethene	<	5	U	<	150	U						
Ethylbenzene	<	5	U	<	150	U						
Isopropylbenzene	<	5	U	<	150	U						
Methylene Chloride	268	50		<	1500	U						
N-butylbenzene	<	5	U	<	150	U						
N-propylbenzene	<	5	U	<	150	U						
P-isopropyltoluene	<	5	U	<	150	U						
Sec-butylbenzene	<	5	U	<	150	U						
Tert-butylbenzene	<	5	U	<	150	U						
Tetrachloroethene	11.9	5		<	150	U						
Trichloroethylene	<	5	U	<	150	U						
Xylenes, Total	<	5	U	<	150	U						
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	69.8	10	J	40.6	10	J			
Gasoline	<	10	U	<	10	U	<	10	U			
Motor Oil	200	10		160	10	J	53.1	10	J			
Total Extractable Hydrocarbons	200	10		230	10	J	93.7	10	J			
METALS (mg/kg)												
Antimony	<	5	U	<	5	U				<	5	U
Arsenic	10	1		27	1					2.1	1	
Beryllium	<	0.5	U	<	0.5	U				<	0.5	U
Cadmium	2.4	1		5.1	1					<	1	U
Chromium	4.7	1		3.8	1					7.3	1	
Copper	110	1		1	1					16	1	
Lead	330	5		10	5					27	5	J
Mercury	0.302	0.02		0.414	0.02					0.025	0.02	
Nickel	10	2.5		22	2.5					13	2.5	
Silver	<	1	U	3.2	1					<	1	U
Zinc	150	1		260	1					59	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB27-0801			UPWY-SB07-1101			UPWY-SB08-0201			UPWY-SB08-0301		
DATE COLLECTED	Dup. of SB07-0801			03/03/00			03/03/00			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							<	150	U	<	5	U
1,2-Dichlorobenzene							<	150	U	<	5	U
1,3,5-Trimethylbenzene							<	150	U	<	5	U
1,3-Dichlorobenzene							<	150	U	<	5	U
1,4-Dichlorobenzene							<	150	U	<	5	U
Cis-1,2-dichloroethene							<	150	U	<	5	U
Ethylbenzene							<	150	U	<	5	U
Isopropylbenzene							<	150	U	<	5	U
Methylene Chloride							<	1500	U	286	50	
N-butylbenzene							<	150	U	<	5	U
N-propylbenzene							<	150	U	<	5	U
P-isopropyltoluene							<	150	U	<	5	U
Sec-butylbenzene							<	150	U	<	5	U
Tert-butylbenzene							<	150	U	<	5	U
Tetrachloroethene							<	150	U	<	5	U
Trichloroethylene							<	150	U	<	5	U
Xylenes, Total							<	150	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							48.2	10	J	<	10	U
Gasoline							<	10	U	<	10	U
Motor Oil							130	10		22	10	
Total Extractable Hydrocarbons							178	10		22	10	
METALS (mg/kg)												
Antimony	<	5	U	30	5		<	5	U	<	5	U
Arsenic	1.8	1		3.1	1		140	1		20	1	
Beryllium	<	0.5	U	<	0.5	U	1.3	0.5		1	0.5	
Cadmium	<	1	U	<	1	U	3.2	1		3.7	1	
Chromium	6.8	1		8.5	1		11	1		8.3	1	
Copper	16	1		22	1		110	1		80	1	
Lead	65	5	J	87	5		400	5		240	5	
Mercury	0.024	0.02		<	0.02	U	0.14	0.02		0.408	0.02	
Nickel	13	2.5		14	2.5		14	2.5		20	2.5	
Silver	<	1	U	<	1	U	3	1		<	1	U
Zinc	66	1		54	1		230	1		270	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB28-0301			UPWY-SB08-0601			UPWY-SB28-0601			UPWY-SB08-0801		
DATE COLLECTED	Dup. of SB08-0301			03/03/00			Dup. of SB08-0601			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5.5	U	<	5	U						
1,2-Dichlorobenzene	<	5.5	U	<	5	U						
1,3,5-Trimethylbenzene	<	5.5	U	<	5	U						
1,3-Dichlorobenzene	<	5.5	U	<	5	U						
1,4-Dichlorobenzene	<	5.5	U	<	5	U						
Cis-1,2-dichloroethene	<	5.5	U	<	5	U						
Ethylbenzene	<	5.5	U	<	5	U						
Isopropylbenzene	<	5.5	U	<	5	U						
Methylene Chloride	278	55		<	60.1	U						
N-butylbenzene	<	5.5	U	<	5	U						
N-propylbenzene	<	5.5	U	<	5	U						
P-isopropyltoluene	<	5.5	U	<	5	U						
Sec-butylbenzene	<	5.5	U	<	5	U						
Tert-butylbenzene	<	5.5	U	<	5	U						
Tetrachloroethene	<	5.5	U	<	5	U						
Trichloroethylene	<	5.5	U	<	5	U						
Xylenes, Total	8	5.5		5.2	5							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	1500	100		<	10	U	<	10	U			
Gasoline	<	10	U	<	10	U	<	10	U			
Motor Oil	<	10	U	<	10	U	<	10	U			
Total Extractable Hydrocarbons	1500	100		<	10	U	<	10	U			
METALS (mg/kg)												
Antimony	<	5	U	<	5	U				<	5	UJ
Arsenic	4.8	1		6.4	1	J				8.5	1	
Beryllium	<	0.5	U	<	0.5	U				<	0.5	U
Cadmium	<	1	U	<	1	U				2.1	1	
Chromium	11	1		8.3	1					10	1	
Copper	54	1		15	1	J				19	1	
Lead	40	5		10	5	J				40	5	
Mercury	0.432	0.02		0.132	0.02					0.15	0.02	
Nickel	20	2.5		17	2.5					16	2.5	
Silver	<	1	U	<	1	U				<	1	U
Zinc	73	1		52	1					86	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB28-0801			UPWY-SB08-1101			UPWY-SB09-0101			UPWY-SB09-0301		
DATE COLLECTED	Dup. of SB08-0801			03/03/00			03/03/00			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							6.5	5		<	5	U
1,2-Dichlorobenzene							<	5	U	<	5	U
1,3,5-Trimethylbenzene							<	5	U	<	5	U
1,3-Dichlorobenzene							<	5	U	<	5	U
1,4-Dichlorobenzene							<	5	U	<	5	U
Cis-1,2-dichloroethene							<	5	U	<	5	U
Ethylbenzene							<	5	U	<	5	U
Isopropylbenzene							<	5	U	<	5	U
Methylene Chloride							<	62.1	U	<	50	U
N-butylbenzene							<	5	U	<	5	U
N-propylbenzene							<	5	U	<	5	U
P-isopropyltoluene							<	5	U	<	5	U
Sec-butylbenzene							<	5	U	<	5	U
Tert-butylbenzene							<	5	U	<	5	U
Tetrachloroethene							<	5	U	<	5	U
Trichloroethylene							<	5	U	<	5	U
Xylenes, Total							<	5	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							<	10	U	46.1	10	J
Gasoline							<	10	U	<	10	U
Motor Oil							95.8	10	J	230	10	
Total Extractable Hydrocarbons							95.8	10	J	276	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	15	1	J	7.1	1		6.2	1		7.8	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	1.3	0.5	
Cadmium	2.9	1	U	<	1	U	<	1	U	<	1	U
Chromium	12	1		8	1		21	1		<	1	U
Copper	32	1	J	12	1		26	1		46	1	
Lead	95	5	J	12	5		88	5		240	5	
Mercury	0.135	0.02		0.145	0.02		0.043	0.02		0.158	0.02	
Nickel	16	2.5		15	2.5		8.4	2.5		5.1	2.5	
Silver	<	1	U	<	1	U	6.4	1		<	1	U
Zinc	100	1		51	1		75	1		170	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB29-0301			UPWY-SB09-0601			UPWY-SB09-0801			UPWY-SB09-1101		
DATE COLLECTED	Dup. of SB09-0301			03/03/00			03/03/00			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene				6.2	5							
1,2-Dichlorobenzene				<	5	U						
1,3,5-Trimethylbenzene				<	5	U						
1,3-Dichlorobenzene				<	5	U						
1,4-Dichlorobenzene				<	5	U						
Cis-1,2-dichloroethene				<	5	U						
Ethylbenzene				<	5	U						
Isopropylbenzene				<	5	U						
Methylene Chloride				<	50							
N-butylbenzene				<	5	U						
N-propylbenzene				<	5	U						
P-isopropyltoluene				<	5	U						
Sec-butylbenzene				<	5	U						
Tert-butylbenzene				<	5	U						
Tetrachloroethene				<	5	U						
Trichloroethylene				<	5	U						
Xylenes, Total				6.3	5							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	60.4	10	J	<	10	U						
Gasoline	<	10	U	<	10	U						
Motor Oil	320	10		15	10							
Total Extractable Hydrocarbons	410	10		15	10							
METALS (mg/kg)												
Antimony				<	5	U	<	5	U	<	5	U
Arsenic				5.2	1		10	1		7.6	1	
Beryllium				<	0.5	U	<	0.5	U	<	0.5	U
Cadmium				<	1	U	2.3	1		<	1	U
Chromium				9.5	1		9.1	1		11	1	
Copper				15	1		22	1		18	1	
Lead				39	5		92	5		21	5	
Mercury				0.54	0.02		1	0.02		0.059	0.02	
Nickel				17	2.5		17	2.5		20	2.5	
Silver				<	1	U	<	1	U	<	1	U
Zinc				74	1		140	1		64	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB10-0101			UPWY-SB10-0301			UPWY-SB30-0301			UPWY-SB10-0601		
DATE COLLECTED	03/03/00			03/03/00			Dup. of SB10-0301			03/03/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
1,2-Dichlorobenzene	<	5	U	<	170	U	<	180	U	<	5	U
1,3,5-Trimethylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
1,3-Dichlorobenzene	<	5	U	<	170	U	<	180	U	<	5	U
1,4-Dichlorobenzene	<	5	U	<	170	U	<	180	U	<	5	U
Cis-1,2-dichloroethene	<	5	U	<	170	U	<	180	U	<	5	U
Ethylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
Isopropylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
Methylene Chloride	<	138	U	<	1700	U	<	1800	U	<	50	U
N-butylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
N-propylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
P-isopropyltoluene	<	5	U	<	170	U	<	180	U	<	5	U
Sec-butylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
Tert-butylbenzene	<	5	U	<	170	U	<	180	U	<	5	U
Tetrachloroethene	<	5	U	<	170	U	<	180	U	<	5	U
Trichloroethylene	<	5	U	<	170	U	<	180	U	<	5	U
Xylenes, Total	<	5	U	<	170	U	<	180	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	43.2	10					16.5	10	
Gasoline	<	10	U	<	10	U				<	10	U
Motor Oil	99.3	10		170	10					52.7	10	
Total Extractable Hydrocarbons	99.3	10		213	10					69.2	10	
METALS (mg/kg)												
Antimony	12	5		<	5	U				<	5	U
Arsenic	4.7	1		18	1					7.4	1	
Beryllium	<	0.5	U	1.8	0.5					<	0.5	U
Cadmium	2.1	1		3.8	1					<	1	U
Chromium	10	1		4.2	1					4.4	1	
Copper	48	1		290	1					210	1	
Lead	250	5		430	5					260	5	
Mercury	0.036	0.02		81	0.02					1.9	0.02	
Nickel	8.8	2.5		13	2.5					9.3	2.5	
Silver	<	1	U	<	1	U				<	1	U
Zinc	120	1		370	1					130	1	

ND = Not Detected RL = Reporting Limit
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB10-0801			UPWY-SB10-1101			UPWY-SB11-0101			UPWY-SB11-0301		
DATE COLLECTED	03/03/00			03/03/00			03/1/00			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene							<	5	U	<	190	U
1,2-Dichlorobenzene							<	5	U	<	190	U
1,3,5-Trimethylbenzene							<	5	U	<	190	U
1,3-Dichlorobenzene							<	5	U	<	190	U
1,4-Dichlorobenzene							<	5	U	<	190	U
Cis-1,2-dichloroethene							<	5	U	<	190	U
Ethylbenzene							<	5	U	<	190	U
Isopropylbenzene							<	5	U	<	190	U
Methylene Chloride							<	117	U	<	1900	U
N-butylbenzene							<	5	U	<	190	U
N-propylbenzene							<	5	U	<	190	U
P-isopropyltoluene							<	5	U	<	190	U
Sec-butylbenzene							<	5	U	<	190	U
Tert-butylbenzene							<	5	U	469	190	
Tetrachloroethene							<	5	U	<	190	U
Trichloroethylene							<	5	U	<	190	U
Xylenes, Total							<	5	U	<	190	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel							<	10	U	17	10	
Gasoline							<	10	U	<	10	U
Motor Oil							160	10	J	77	10	
Total Extractable Hydrocarbons							160	10	J	94	10	
METALS (mg/kg)												
Antimony	<	5	U				<	5	U	<	5	U
Arsenic	4.6	1		4.9	1		10	1		19	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	1	U
Cadmium	<	1	U	<	1	U	4.1	1		2.5	1	
Chromium	7.9	1		8.3	1		29	1		9.1	1	
Copper	29	1		10	1		81	1		200	1	
Lead	32	5		<	5	U	380	5		570	5	
Mercury	0.107	0.02		0.025	0.02		0.464	0.02		13	0.02	
Nickel	18	2.5		14	2.5		13	2.5		11	2.5	
Silver	<	1	U	<	1	U	<	1	U	9.2	1	
Zinc	62	1		46	1		200	1		180	1	

ND = Not Detected RL = Reporting Limit
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TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB11-0601			UPWY-SB11-0801			UPWY-SB31-0801			UPWY-SB11-1101		
DATE COLLECTED	03/01/00			03/1/00			Dup. of SB11-0801			03/1/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	5.4	5										
1,2-Dichlorobenzene	<	5	U									
1,3,5-Trimethylbenzene	<	5	U									
1,3-Dichlorobenzene	<	5	U									
1,4-Dichlorobenzene	<	5	U									
Cis-1,2-dichloroethene	<	5	U									
Ethylbenzene	<	5	U									
Isopropylbenzene	9	5										
Methylene Chloride	<	51.5	U									
N-butylbenzene	<	5	U									
N-propylbenzene	<	5	U									
P-isopropyltoluene	<	5	U									
Sec-butylbenzene	<	5	U									
Tert-butylbenzene	757	5										
Tetrachloroethene	<	5	U									
Trichloroethylene	<	5	U									
Xylenes, Total	<	5	U									
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U									
Gasoline	<	10	U									
Motor Oil	140	10										
Total Extractable Hydrocarbons	140	10										
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	3.9	1		3.5	1		4	1		6.8	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	<	1	U	<	1	U
Chromium	4.6	1		6.9	1		7.7	1		15	1	
Copper	11	1		14	1		14	1		19	1	
Lead	22	5		25	5		20	5		16	5	
Mercury	2.5	0.02		0.055	0.02	J	0.12	0.02	J	0.098	0.02	
Nickel	9.4	2.5		14	2.5		15	2.5		19	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	41	1		45	1		50	1		58	1	

ND = Not Detected RL = Reporting Limit
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U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB12-0101			UPWY-SB12-0601			UPWY-SB12-0801			UPWY-SB32-0801		
DATE COLLECTED	03/1/00			03/01/00			03/03/00			Dup. of SB12-0801		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	34.4	5							
1,2-Dichlorobenzene	<	5	U	<	5	U						
1,3,5-Trimethylbenzene	<	5	U	11.4	5							
1,3-Dichlorobenzene	<	5	U	<	5	U						
1,4-Dichlorobenzene	<	5	U	<	5	U						
Cis-1,2-dichloroethene	<	5	U	<	5	U						
Ethylbenzene	<	5	U	<	5	U						
Isopropylbenzene	<	5	U	<	5	U						
Methylene Chloride	296	50		<	150	U						
N-butylbenzene	<	5	U	<	5	U						
N-propylbenzene	<	5	U	<	5	U						
P-isopropyltoluene	<	5	U	5.2	5							
Sec-butylbenzene	<	5	U	<	5	U						
Tert-butylbenzene	<	5	U	20.5	5							
Tetrachloroethene	<	5	U	<	5	U						
Trichloroethylene	<	5	U	<	5	U						
Xylenes, Total	<	5	U	16.4	5							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	<	10	U						
Gasoline	<	10	U	<	10	U						
Motor Oil	160	10	J	37	10							
Total Extractable Hydrocarbons	160	10	J	37	10							
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	4.4	1		4.7	1		4.4	1		4.7	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	2.1	1		<	1	U	<	1	U	<	1	U
Chromium	7.1	1		5.1	1		7.3	1		8.3	1	
Copper	56	1		12	1		12	1		14	1	
Lead	180	5		27	5		16	5		12	5	
Mercury	0.048	0.02		0.221	0.02		0.038	0.02		0.049	0.02	
Nickel	5.1	2.5		9.8	2.5		13	2.5		16	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	270	1		31	1		53	1		58	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB12-1101			UPWY-SB13-0101			UPWY-SB13-0301			UPWY-SB13-0601		
DATE COLLECTED	03/1/00			03/6/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene				5.4	5		<	150	U	<	5	U
1,2-Dichlorobenzene				<	5	U	<	150	U	<	5	U
1,3,5-Trimethylbenzene				<	5	U	<	150	U	<	5	U
1,3-Dichlorobenzene				<	5	U	<	150	U	<	5	U
1,4-Dichlorobenzene				<	5	U	<	150	U	<	5	U
Cis-1,2-dichloroethene				<	5	U	<	150	U	<	5	U
Ethylbenzene				<	5	U	<	150	U	<	5	U
Isopropylbenzene				<	5	U	<	150	U	<	5	U
Methylene Chloride				<	125	U	<	1500	U	<	50	U
N-butylbenzene				<	5	U	<	150	U	<	5	U
N-propylbenzene				<	5	U	<	150	U	<	5	U
P-isopropyltoluene				<	5	U	<	150	U	<	5	U
Sec-butylbenzene				<	5	U	<	150	U	<	5	U
Tert-butylbenzene				<	5	U	<	150	U	<	5	U
Tetrachloroethene				<	5	U	<	150	U	<	5	U
Trichloroethylene				<	5	U	<	150	U	<	5	U
Xylenes, Total				<	5	U	<	150	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel				<	1000	U	130	10	J	<	10	U
Gasoline				<	1000	U	360	10	J	<	10	U
Motor Oil				16000	1000		<	10	U	<	10	U
Total Extractable Hydrocarbons				16000	1000		490	10	J	16	10	
METALS (mg/kg)												
Antimony	<	5	U	110	5		36	5		<	5	U
Arsenic	11	1		26	1		13	1		4.6	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	10	1		4.8	1		2.4	1	
Chromium	9	1		14	1		4.9	1		6.2	1	
Copper	15	1		8900	1		570	1		26	1	
Lead	16	5		4500	5		830	5		52	5	
Mercury	0.043	0.02		3	0.02		0.785	0.02		0.417	0.02	
Nickel	18	2.5		190	2.5		13	2.5		13	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	63	1		1000	1		280	1		680	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB13-0801			UPWY-SB33-0801			UPWY-SB13-1101			UPWY-SB14-0101		
DATE COLLECTED	03/6/00			Dup. of SB13-0801			03/6/00			03/6/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene										<	140	U
1,2-Dichlorobenzene										<	140	U
1,3,5-Trimethylbenzene										<	140	U
1,3-Dichlorobenzene										<	140	U
1,4-Dichlorobenzene										<	140	U
Cis-1,2-dichloroethene										<	140	U
Ethylbenzene										<	140	U
Isopropylbenzene										<	140	U
Methylene Chloride										<	1400	U
N-butylbenzene										<	140	U
N-propylbenzene										<	140	U
P-isopropyltoluene										<	140	U
Sec-butylbenzene										<	140	U
Tert-butylbenzene										<	140	U
Tetrachloroethene										<	140	U
Trichloroethylene										<	140	U
Xylenes, Total										<	140	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel										<	10	U
Gasoline										<	10	U
Motor Oil										270	10	
Total Extractable Hydrocarbons										270	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	6.4	1		4	1		8.3	1		5.2	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	2.8	1		<	1	U	<	2	U	3.7	1	
Chromium	13	1		9.8	1		12	1		14	1	
Copper	26	1		21	1		23	1		36	1	
Lead	43	5	J	17	5	J	12	5		140	5	
Mercury	0.087	0.02		0.061	0.02		0.037	0.02		0.123	0.02	
Nickel	18	2.5		19	2.5		18	2.5		17	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	840	1	J	82	1	J	79	1		220	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 1
SUMMARY OF ANALYTICAL DETECTIONS
WEST YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPWY-SB14-0301			UPWY-SB14-0601			UPWY-SB14-0801			UPWY-SB14-1101		
DATE COLLECTED	03/06/00			03/06/00			03/6/00			03/6/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	8.3	5							
1,2-Dichlorobenzene	<	5	U	<	5	U						
1,3,5-Trimethylbenzene	<	5	U	<	5	U						
1,3-Dichlorobenzene	<	5	U	<	5	U						
1,4-Dichlorobenzene	<	5	U	<	5	U						
Cis-1,2-dichloroethene	<	5	U	<	5	U						
Ethylbenzene	<	5	U	<	5	U						
Isopropylbenzene	<	5	U	<	5	U						
Methylene Chloride	<	50	U	<	50	U						
N-butylbenzene	<	5	U	<	5	U						
N-propylbenzene	<	5	U	<	5	U						
P-isopropyltoluene	<	5	U	<	5	U						
Sec-butylbenzene	<	5	U	<	5	U						
Tert-butylbenzene	<	5	U	<	5	U						
Tetrachloroethene	<	5	U	<	5	U						
Trichloroethylene	<	5	U	<	5	U						
Xylenes, Total	<	5	U	8	5							
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	11.2	10							
Gasoline	<	10	U	<	10	U						
Motor Oil	390	10	J	<	10	U						
Total Extractable Hydrocarbons	390	10	J	11.2	10							
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	5.9	1		5.1	1		4.3	1		3.4	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	1	U
Cadmium	<	1	U	<	1	U	<	1	U	<	1	U
Chromium	4.5	1		7.8	1		7.9	1		8.1	1	
Copper	320	1		12	1		12	1		10	1	
Lead	200	5		<	5	U	<	5	U	<	5	U
Mercury	0.35	0.02		0.035	0.02		0.023	0.02		<	0.02	U
Nickel	9.2	2.5		15	2.5		14	2.5		13	2.5	
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	110	1		45	1		44	1		46	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 2
SUMMARY OF ANALYTICAL DETECTIONS
EAST ABBOTT DRIVE AREA - UPRR OMAHA SHOPS

FIELD ID	UPEA-SB01-0101			UPEA-SB01-0601			UPEA-SB01-1001			UPEA-SB02-0301		
DATE COLLECTED	3/8/00			3/8/00			3/8/00			3/10/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trichlorobenzene	<	25	U	<	25	U	<	25	U	<	25	U
Naphthalene	<	25	U	<	25	U	<	25	U	<	25	U
Toluene	<	5	U	5.1	5		<	5	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Motor Oil	14	10		130	10	J	360	10	J	72	30	
Total Extractable Hydrocarbons	14	10		130	10	J	360	10	J	72	30	
METALS (mg/kg)												
Antimony	<	5	U	1	5		1	5		73	5	
Arsenic	9	1		1	1		750	1		92	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	1.2	0.5	
Cadmium	<	1	U	28	1		26	1		5.7	1	
Chromium	9.2	1		16	1		8.5	1		10	1	
Copper	14	1		3	1		2	1		240	1	
Lead	39	5		30	5		7	5		1	5	
Mercury	0.041	0.02		0.775	0.02		4	0.02		0.552	0.02	
Nickel	18	2.5		180	2.5		84	2.5		32	2.5	
Selenium	<	1	U	22	1		15	1		<	1	U
Silver	<	1	U	88	1		33	1		<	1	U
Zinc	64	1		9	1		8	1		440	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 2
SUMMARY OF ANALYTICAL DETECTIONS
EAST ABBOTT DRIVE AREA - UPRR OMAHA SHOPS

FIELD ID	UPEA-SB02-0801			UPEA-SB22-0801			UPEA-SB02-1201			UPEA-SB03-0701		
DATE COLLECTED	3/10/00			Dup. of SB02-0801			3/10/00			3/10/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trichlorobenzene	1	780		<	640	U	<	25	U	<	25	U
Naphthalene	<	780	U	776	640		<	25	U	<	25	U
Toluene	<	160	U	<	130	U	<	5	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Motor Oil	260	10					30	30		<	10	U
Total Extractable Hydrocarbons	260	10					30	30		<	10	U
METALS (mg/kg)												
Antimony	<	5	U				<	5	U	<	5	U
Arsenic	10	1					11	1		630	1	
Beryllium	<	0.5	U				<	0.5	U	<	0.5	U
Cadmium	6.5	1					2.3	1		2.5	1	
Chromium	7.9	1					10	1		10	1	
Copper	69	1					11	1		16	1	
Lead	120	5					10	5		<	5	U
Mercury	0.975	0.02					0.036	0.02		0.039	0.02	
Nickel	26	2.5					12	2.5		17	2.5	
Selenium	<	1	U				<	1	U	<	1	U
Silver	<	1	U				<	1	U	<	1	U
Zinc	560	1					72	1		56	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 2
SUMMARY OF ANALYTICAL DETECTIONS
EAST ABBOTT DRIVE AREA - UPRR OMAHA SHOPS

FIELD ID	UPEA-SB03-1101			UPEA-SB23-1101			UPEA-SB03-1501		
DATE COLLECTED	3/10/00			Dup. of SB03-1101			3/10/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)									
1,2,4-Trichlorobenzene	<	25	U				<	25	U
Naphthalene	<	25	U				<	25	U
Toluene	<	5	U				<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Motor Oil	<	10	U	<	10	U	<	10	U
Total Extractable Hydrocarbons	<	10	U	<	10	U	<	10	U
METALS (mg/kg)									
Antimony	<	5	U	<	5	U	11	5	
Arsenic	540	1		560	1		390	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	2.9	1		2.5	1		<	1	U
Chromium	8.8	1		10	1		7.2	1	
Copper	65	1	J	16	1	J	33	1	
Lead	90	5	J	24	5	J	54	5	
Mercury	0.085	0.02		0.065	0.02		0.131	0.02	
Nickel	18	2.5		15	2.5		28	2.5	
Selenium	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U
Zinc	100	1		60	1		180	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB01-0101			UPCT-SB01-0201			UPCT-SB01-0301			UPCT-SB02-0101		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	28	5		23	5		20	5		230	5	
Arsenic	12	1		43	1		24	1		270	1	
Beryllium	<	0.5	U	<	0.5	U	1.2	0.5		<	0.5	U
Cadmium	3.6	1		2.6	1		5.8	1		27	1	
Chromium	9.1	1		2.8	1		7.4	1		9.4	1	
Copper	52	1		65	1		280	1		700	1	
Lead	660	5		400	5		840	5		8700	5	
Mercury	0.067	0.02		0.22	0.02		0.29	0.02		0.57	0.02	
Nickel	12	2.5		7.2	2.5		20	2.5		16	2.5	
Selenium	<	1	U	1.6	1		<	1	U	2.6	1	
Silver	<	1	U	<	1	U	4.5	1		27	1	
Zinc	190	1		210	1		1600	1		15000	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB02-0201			UPCT-SB02-0301			UPCT-SB03-0101			UPCT-SB03-0201		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	260	5		91	5		38	5	
Arsenic	9.7	1		420	1		52	1		91	1	J
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	1.7	0.5	
Cadmium	<	1	U	15	1		30	1		29	1	
Chromium	10	1		10	1		12	1		8.3	1	
Copper	22	1		760	1		180	1		120	1	
Lead	140	5		6800	5		1500	5		1500	5	J
Mercury	0.054	0.02		0.6	0.02		0.13	0.02		0.11	0.02	
Nickel	16	2.5		29	2.5		24	2.5		15	2.5	
Selenium	<	1	U	<	1	U	<	1	U	1.8	1	
Silver	<	1	U	38	1		9.6	1		2.7	1	
Zinc	230	1		2900	1		990	1		510	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB23-0201			UPCT-SB03-0301			UPCT-SB04-0101			UPCT-SB04-0201		
DATE COLLECTED	Dup. of SB03-0201			03/07/00			03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	52	5		<	5	U	22	5		21	5	J
Arsenic	51	1	J	9	1		110	1		22	1	
Beryllium	1.4	0.5		<	0.5	U	<	0.5	U	1.4	0.5	
Cadmium	27	1		3	1		3.9	1		2.7	1	
Chromium	11	1		9.6	1		8.4	1		<	1	U
Copper	140	1		15	1		86	1		31	1	J
Lead	1	5	J	43	5		470	5		140	5	
Mercury	0.12	0.02		0.046	0.02		0.12	0.02		0.06	0.02	
Nickel	20	2.5		17	2.5		13	2.5		<	2.5	U
Selenium	1.1	1		<	1	U	<	1	U	<	1	U
Silver	3	1		<	1	U	2.6	1		<	1	U
Zinc	470	1		360	1		280	1		320	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB04-0301			UPCT-SB05-0101			UPCT-SB05-0201			UPCT-SB05-0301		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	11	5		<	5	U	<	5	U	<	5	U
Arsenic	36	1		31	1		4.9	1		7.4	1	
Beryllium	1.2	0.5		<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	6.4	1		150	1		3.1	1		4	1	
Chromium	5.8	1		<	1	U	5.1	1		3.7	1	
Copper	87	1		380	1		6.4	1		7.8	1	
Lead	340	5		140	5		16	5		29	5	
Mercury	0.085	0.02		0.11	0.02		<	0.02	U	<	0.02	U
Nickel	23	2.5		4.3	2.5		9	2.5		9.7	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	520	1		320	1		490	1		44	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB06-0101			UPCT-SB06-0201			UPCT-SB06-0301			UPCT-SB26-0301		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			Dup. of SB06-0301		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	26	5		<	5	U	<	5	U	<	5	U
Arsenic	47	1		5.6	1		4.9	1		3.6	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	8.3	1		<	1	U	<	1	U	<	1	U
Chromium	11	1		4.9	1		4.8	1		4.6	1	
Copper	130	1		4.3	1		3.7	1		2.5	1	
Lead	1100	5		20	5		30	5		<	5	U
Mercury	0.35	0.02		0.023	0.02		<	0.02	U	<	0.02	U
Nickel	15	2.5		6.6	2.5		8.8	2.5		8.6	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	2.3	1		<	1	U	<	1	U	<	1	U
Zinc	490	1		110	1		31	1		24	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB07-0101			UPCT-SB07-0201			UPCT-SB07-0301			UPCT-SB08-0101		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	22	5		<	5	U	<	5	U	27	5	
Arsenic	42	1		8.3	1		6.3	1		47	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	9.6	1		<	1	U	<	1	U	19	1	
Chromium	12	1		6.3	1		8.6	1		20	1	
Copper	130	1		9.2	1		23	1		180	1	
Lead	1300	5		26	5		88	5		1400	5	
Mercury	0.22	0.02		0.022	0.02		0.026	0.02		0.19	0.02	
Nickel	13	2.5		13	2.5		15	2.5		19	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	3.5	1		<	1	U	<	1	U	3.8	1	
Zinc	360	1		260	1		77	1		570	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPCT-SB08-0201			UPCT-SB08-0301			UPES-SB17-0101			UPES-SB17-0201		
DATE COLLECTED	03/07/00			03/07/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	0.5	U	14	5		<	5	U
Arsenic	12	1		4.6	1		17	1		3.5	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	5.1	1		<	1	U
Chromium	7.8	1		4.9	1		3.9	1		3.6	1	
Copper	10	1		6.3	1		61	1		5.5	1	
Lead	23	5		22	5		290	5		24	5	
Mercury	0.031	0.02		<	0.02	U	0.11	0.02		<	0.02	U
Nickel	13	2.5		11	2.5		10	2.5		9.2	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	UJ
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	220	1		43	1		390	1		40	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB17-0301			UPES-SB17-0401			UPES-SB18-0101			UPES-SB18-0201		
DATE COLLECTED	03/06/00			03/06/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	5.1	1		9.3	1		6.1	1		7.8	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	2.9	1		<	1	U	<	1	U
Chromium	5.1	1		10	1		7.6	1		7.1	1	
Copper	4.9	1		27	1		8.3	1		12	1	
Lead	<	5	U	92	5		<	5	U	26	5	
Mercury	<	0.02	U	0.062	0.02		0.023	0.02		0.04	0.02	
Nickel	11	2.5		15	2.5		15	2.5		13	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	32	1		180	1		310	1		64	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB18-0301			UPES-SB18-0401			UPES-SB19-0101			UPES-SB19-0201		
DATE COLLECTED	03/06/00			03/06/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	UJ	<	5	U	<	5	U
Arsenic	6.1	1		7.7	1		7.7	1		11	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	6	1		<	1	U
Chromium	5.8	1		5.8	1		5.9	1		4.5	1	
Copper	6.4	1		5.7	1		77	1		16	1	
Lead	<	5	U	<	5	U	190	5		54	5	
Mercury	0.026	0.02		<	0.02	U	0.056	0.02		0.043	0.02	
Nickel	13	2.5		13	2.5		8.3	2.5		13	2.5	
Selenium	<	1	UJ	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	48	1		40	1		1100	1		110	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB19-0301			UPES-SB19-0401			UPES-SB20-0101			UPES-SB40-0101		
DATE COLLECTED	03/06/00			03/06/00			03/06/00			Dup. of SB20-0101		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	27	1		31	1		16	1	J	28	1	J
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	3.2	1		3.7	1		5.9	1		5.4	1	
Chromium	5	1		9.4	1		6.2	1		6.1	1	
Copper	33	1		31	1		42	1		58	1	
Lead	190	5		150	5		230	5		300	5	
Mercury	0.079	0.02		0.36	0.02		0.12	0.02	J	0.224	0.02	J
Nickel	14	2.5		16	2.5		12	2.5		29	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	210	1		100	1		430	1		660	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB20-0201			UPES-SB20-0301			UPES-SB20-0401			UPES-SB21-0101		
DATE COLLECTED	03/06/00			03/06/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	28	1		43	1		16	1		12	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	7.2	1		4.5	1		<	1	U	5	1	
Chromium	6.1	1		6.6	1		6.2	1		4.7	1	
Copper	58	1		87	1		26	1		32	1	
Lead	350	5		380	5		170	5		200	5	
Mercury	0.26	0.02		0.31	0.02		0.21	0.02		0.033	0.02	
Nickel	23	2.5		14	2.5		10	2.5		8.3	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	660	1		710	1		170	1		220	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB41-0101			UPES-SB21-0201			UPES-SB21-0301			UPES-SB21-0401		
DATE COLLECTED	Dup. of SB21-0101			03/06/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U				<	5	U	<	5	U
Arsenic	13	1		8.4	1		3.8	1		3.1	1	
Beryllium	<	0.5	U	<	0.5	U	<	1	U	<	0.5	U
Cadmium	3.6	1		2.4	1		<	1	U	<	1	U
Chromium	5.8	1		5.2	1		3.5	1		4	1	
Copper	20	1		7.6	1		<	1	U	<	1	U
Lead	130	5		400	5		<	5	U	<	5	U
Mercury	0.044	0.02		<	0.02	U	<	0.02	U	<	0.02	U
Nickel	7.1	2.5		8	2.5		18	2.5		11	2.5	
Selenium	<	1	U	<	1	UJ	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	140	1		86	1		34	1		24	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB22-0101			UPES-SB22-0201			UPES-SB42-0201			UPES-SB22-0301		
DATE COLLECTED	03/06/00			03/06/00			Dup. of SB22-0201			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	<	5	U
Arsenic	17	1		14	1	J	5.5	1	J	68	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	2.7	1		<	1	U	<	1	U	4.6	1	
Chromium	4	1		8.1	1		7.7	1		9.4	1	
Copper	54	1		24	1		15	1		79	1	
Lead	270	5		120	5		140	5		370	5	
Mercury	0.069	0.02		0.066	0.02	J	0.021	0.02	J	0.462	0.02	
Nickel	11	2.5		15	2.5		13	2.5		22	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	2.6	1	
Zinc	240	1		79	1		65	1		200	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB22-0401			UPES-SB23-0101			UPES-SB23-0201			UPES-SB23-0301		
DATE COLLECTED	03/06/00			03/06/00			03/06/00			03/06/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	37	5		<	5	U	<	5	U
Arsenic	6.6	1		29	1		13	1		4.4	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	5.4	1		3.3	1		<	1	U
Chromium	8.8	1		5.3	1		10	1		9.2	1	
Copper	13	1		80	1		18	1		14	1	
Lead	<	5	U	820	5		<	5	U	12	5	
Mercury	0.031	0.02		0.165	0.02		0.036	0.02		0.037	0.02	
Nickel	14	2.5		12	2.5		19	2.5		17	2.5	
Selenium	<	1	U	1.1	1		<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	49	1		330	1		95	1		57	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB23-0401			UPES-SB23-0801			UPES-SB23-1101			UPES-SB24-0101		
DATE COLLECTED	03/06/00			3/6/00			03/06/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	33	5	
Arsenic	8.9	1		33	1		9.6	1		49	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	1.7	0.5	U
Cadmium	2.1	1		2.9	1		<	1	U	9.5	1	
Chromium	8.8	1		11	1		7.9	1		10	1	
Copper	32	1		40	1		15	1		370	1	
Lead	110	5		97	5		<	5	U	1700	5	
Mercury	0.654	0.02		0.334	0.02		0.032	0.02		0.45	0.02	
Nickel	18	2.5		16	2.5		17	2.5		50	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	4.8	1	U
Zinc	210	1		250	1		52	1		1600	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB24-0201			UPES-SB24-0301			UPES-SB24-0401			UPES-SB24-0801		
DATE COLLECTED	03/07/00			03/07/00			03/07/00			3/7/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	18	5		10	5		<	5	UJ	<	5	U
Arsenic	9.6	1		10	1		9.1	1	J	5.2	1	
Beryllium	<	0.5	U	<	0.5	U	<	0.5	U	<	0.5	U
Cadmium	3.8	1		2.5	1		<	1	U	<	1	U
Chromium	16	1		5.6	1		6.1	1		6.6	1	
Copper	97	1		75	1		28	1		14	1	
Lead	710	5		480	5		140	5		61	5	
Mercury	0.036	0.02		0.33	0.02		0.18	0.02	J	0.022	0.02	
Nickel	19	2.5		18	2.5		12	2.5		14	2.5	
Selenium	<	1	U	<	1	U	<	1	UJ	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	440	1		510	1		310	1	J	140	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB24-1101			UPES-SB25-0101			UPES-SB45-0101			UPES-SB25-0201		
DATE COLLECTED	03/07/00			03/07/00			Dup. of SB25-0101			03/07/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)												
Antimony	<	5	U	<	5	U	<	5	U	15	5	
Arsenic	6.9	1		14	1		15	1		21	1	
Beryllium	<	0.5	U	1	0.5		<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	2.3	1		3	1	
Chromium	8.9	1		3.8	1	J	12	1	J	4.6	1	
Copper	26	1		19	1	J	61	1	J	99	1	
Lead	33	5		100	5	J	290	5	J	500	5	
Mercury	0.26	0.02		0.58	0.02		0.11	0.02		0.34	0.02	
Nickel	17	2.5		8.9	2.5	J	19	2.5	J	12	2.5	
Selenium	<	1	U	<	1	U	<	1	U	<	1	U
Silver	<	1	U	<	1	U	<	1	U	<	1	U
Zinc	92	1		100	1	J	440	1	J	690	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 3
SUMMARY OF ANALYTICAL DETECTIONS
EIGHTH STREET YARD/NEW COAL TRACK - UPRR OMAHA SHOPS

FIELD ID	UPES-SB25-0301			UPES-SB25-0401		
DATE COLLECTED	03/07/00			03/07/00		
	Result	RL	Qual	Result	RL	Qual
METALS (mg/kg)						
Antimony	<	5	U	<	5	U
Arsenic	4.6	1		22	1	
Beryllium	<	0.5	U	<	0.5	U
Cadmium	<	1	U	2.8	1	
Chromium	7.9	1		9.3	1	
Copper	16	1		37	1	
Lead	56	5		110	5	
Mercury	0.22	0.02		0.57	0.02	
Nickel	17	2.5		21	2.5	
Selenium	<	1	U	<	1	U
Silver	<	1	U	<	1	U
Zinc	79	1		99	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPSY-SB01-0101			UPSY-SB01-0601			UPSY-SB01-1101			UPSY-SB02-0101		
DATE COLLECTED	03/01/00			03/01/00			03/01/00			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
1,3,5-Trimethylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Ethylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Isopropylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Methylene Chloride	<	1700	U	<	50	U	<	74.3	U	<	1700	U
N-butylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
N-propylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Naphthalene	<	840	U	<	25	U	<	25	U	<	860	U
Sec-butylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Tert-butylbenzene	<	170	U	<	5	U	<	5	U	<	170	U
Xylenes, Total	<	170	U	<	5	U	<	5	U	<	170	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	23	10	J	<	10	U	<	10	U	<	10	UJ
Motor Oil	<	10	U	<	10	U	14.2	10		43.1	10	J
Total Extractable Hydrocarbons	23	10	J	<	10	U	14.2	10		43.1	10	J
METALS (mg/kg)												
Antimony	74	5		<	5	U	<	5	U	88	5	
Arsenic	130	1		5.9	1		9.8	1		100	1	
Beryllium	1.9	0.5		<	0.5	U	<	0.5	U	1.4	0.5	
Cadmium	5.6	1		<	1	U	<	1	U	4	1	
Chromium	5.5	1		6.8	1		7.9	1		5.6	1	
Copper	90	1		13	1		20	1		140	1	
Lead	1400	5		38	5		73	5		1900	5	
Mercury	0.099	0.02		0.109	0.02		0.402	0.02		0.27	0.02	
Nickel	13	2.5		14	2.5		16	2.5		16	2.5	
Selenium	1.4	1		<	1	U	<	1	U	2.7	1	
Silver	4.9	1		<	1	U	<	1	U	5.9	1	
Zinc	1200	1		67	1		78	1		940	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPSY-SB02-0601			UPSY-SB02-1101			UPSY-SB03-0101			UPSY-SB03-0601		
DATE COLLECTED	03/01/00			03/01/00			03/01/00			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	<	5	U	9.3	6		<	5	U
1,3,5-Trimethylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
Ethylbenzene	<	5	U	<	5	U	24.6	6		<	5	U
Isopropylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
Methylene Chloride	<	89.6	U	<	50	U	403	60		<	71.5	U
N-butylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
N-propylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
Naphthalene	<	25	U	<	25	U	<	30	U	<	25	U
Sec-butylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
Tert-butylbenzene	<	5	U	<	5	U	<	6	U	<	5	U
Xylenes, Total	<	5	U	<	5	U	5.6	6		<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	<	10	U	<	100	U	44.3	10	
Motor Oil	14.7	10		<	10	U	880	100		<	10	U
Total Extractable Hydrocarbons	14.7	10		<	10	U	880	100		44.3	10	
METALS (mg/kg)												
Antimony	<	5	U	<	5.5	U	760	5		<	5	U
Arsenic	9.8	1		3.6	1		99	1		14	1	
Beryllium	<	0.5	U	<	1	U	<	0.5	U	<	0.5	U
Cadmium	<	1	U	<	1	U	11	1		<	1	U
Chromium	7.8	1		6.4	1		16	1		9.3	1	
Copper	14	1		7.3	1		160	1		17	1	
Lead	77	5		<	5	U	3200	5		110	5	
Mercury	0.174	0.02		0.02	0.02		1.7	0.02		3.3	0.02	
Nickel	15	2.5		10	2.5		30	2.5		14	2.5	
Selenium	<	1	U	<	1	U	1.6	1		<	1	U
Silver	<	1	U	<	1	U	12	1		8.2	1	
Zinc	80	1		34	1		1000	1		91	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPSY-SB03-1101			UPSY-SB13-1101			UPSY-SB04-0101			UPSY-SB04-0601		
DATE COLLECTED	03/01/00			Dup. of SB03-1101			03/01/00			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	267	5		332	5		<	150	U	<	5	U
1,3,5-Trimethylbenzene	103	5		133	5		<	150	U	<	5	U
Ethylbenzene	13	5		12	5		<	150	U	<	5	U
Isopropylbenzene	19.5	5		20.8	5		<	150	U	<	5	U
Methylene Chloride	<	55.5	U	189	50		<	1500	U	<	50	U
N-butylbenzene	151	5		223	5		<	150	U	<	5	U
N-propylbenzene	58	5		69.6	5		<	150	U	<	5	U
Naphthalene	96.1	25		133	25		<	760	U	<	25	U
Sec-butylbenzene	60.4	5		88.4	5		<	150	U	<	5	U
Tert-butylbenzene	84.7	5	J	193	5	J	<	150	U	<	5	U
Xylenes, Total	52.7	5		48.5	5		<	150	U	<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	89.3	10					<	10	UJ	29.7	10	
Motor Oil	<	10	U				32.5	10	J	<	10	U
Total Extractable Hydrocarbons	89.3	10					32.5	10	J	29.7	10	
METALS (mg/kg)												
Antimony	<	5	U				60	1		<	10	U
Arsenic	4.3	1					86	1		5.3	1	
Beryllium	<	0.5	U				<	0.5	U	<	0.5	U
Cadmium	<	1	U				6.9	1		<	1	U
Chromium	8.2	1					8.8	1		5	1	
Copper	12	1					360	1		60	1	
Lead	<	5	U				3100	5		140	5	
Mercury	0.02	0.02					0.555	0.02		0.032	0.02	
Nickel	13	2.5					19	2.5		8.6	2.5	
Selenium	<	1	U				1.7	1		<	1	U
Silver	<	1	U				7.8	1		<	1	U
Zinc	49	1					1400	1		64	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPSY-SB14-0601			UPSY-SB04-1101			UPSY-SB14-1101			UPSY-SB05-0101		
DATE COLLECTED	Dup. of SB04-0601			03/01/00			Dup. of SB04-1101			03/01/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U	<	5	U				<	5.1	U
1,3,5-Trimethylbenzene	<	5	U	<	5	U				<	5	U
Ethylbenzene	<	5	U	<	5	U				<	5	U
Isopropylbenzene	<	5	U	<	5	U				<	5	U
Methylene Chloride	<	78.3	U	<	64.8	U				<	50.7	U
N-butylbenzene	<	5	U	<	5	U				<	5	U
N-propylbenzene	<	5	U	<	5	U				<	5	U
Naphthalene	<	25	U	<	25	U				<	25	U
Sec-butylbenzene	<	5	U	<	5	U				<	5	U
Tert-butylbenzene	<	5	U	<	5	U				<	5	U
Xylenes, Total	<	5	U	<	5	U				<	5	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel				<	10	U				240	10	
Motor Oil				12	10					<	10	U
Total Extractable Hydrocarbons				12	10					240	10	
METALS (mg/kg)												
Antimony				<	5	U	<	5	U	20	5	
Arsenic				6.9	1		5.7	1		480	1	
Beryllium				<	1	U	<	0.5	U	<	0.5	U
Cadmium				<	2	U	<	1	U	4.9	1	
Chromium				9.6	1		9	1		4.6	1	
Copper				21	1		14	1		490	1	
Lead				10	5		<	5	U	940	5	
Mercury				0.036	0.02		0.026	0.02		0.092	0.2	
Nickel				16	2.5		15	2.5		11	2.5	
Selenium				<	1	U	<	1	U	2.2	1	
Silver				<	1	U	<	1	U	<	1	U
Zinc				52	1		53	1		400	1	

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

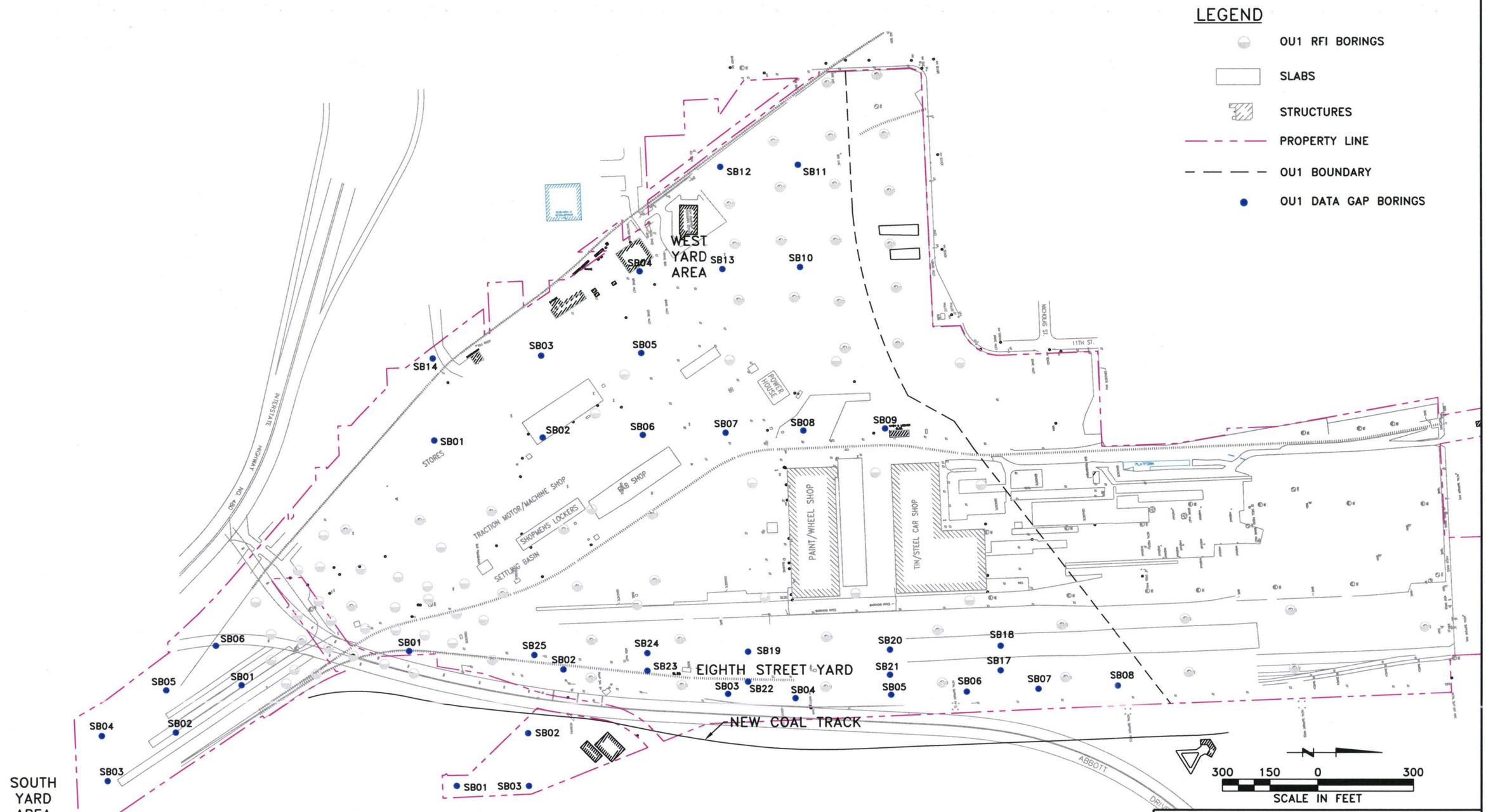
FIELD ID	UPSY-SB05-0601			UPSY-SB015-0601			UPSY-SB05-1101			UPSY-SB06-0101		
DATE COLLECTED	03/01/00			Dup. of SB05-0601			03/01/00			03/02/00		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)												
1,2,4-Trimethylbenzene	<	5	U				<	5	U	<	140	U
1,3,5-Trimethylbenzene	<	5	U				<	5	U	<	140	U
Ethylbenzene	<	5	U				<	5	U	<	140	U
Isopropylbenzene	<	5	U				<	5	U	<	140	U
Methylene Chloride	<	50	U				<	50	U	<	1400	U
N-butylbenzene	<	5	U				<	5	U	<	140	U
N-propylbenzene	<	5	U				<	5	U	<	140	U
Naphthalene	<	25	U				<	25	U	<	700	U
Sec-butylbenzene	<	5	U				<	5	U	<	140	U
Tert-butylbenzene	<	5	U				<	5	U	<	140	U
Xylenes, Total	<	5	U				<	5	U	<	140	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	<	10	U	<	10	U	<	10	U	120	10	
Motor Oil	<	10	U	<	10	U	11.9	10		500	10	
Total Extractable Hydrocarbons	<	10	U	<	10	U	11.9	10		620	10	J
METALS (mg/kg)												
Antimony	<	5	UJ				<	1	U	16	5	
Arsenic	24	1					15	1		28	1	
Beryllium	<	0.5	U				<	0.5	U	<	0.5	U
Cadmium	<	1	U				<	1	U	2.5	1	
Chromium	7.2	1					8.1	1		9.3	1	
Copper	13	1					30	1		44	1	
Lead	12	5					110	5		460	5	
Mercury	0.091	0.02					0.45	0.02		0.059	0.02	
Nickel	17	2.5					16	1		12	2.5	
Selenium	<	1	UJ				<	1	U	<	1	U
Silver	<	1	U				<	1	U	<	1	U
Zinc	53	1					92	1				

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect

TABLE 4
SUMMARY OF ANALYTICAL DETECTIONS
SOUTH YARD AREA - UPRR OMAHA SHOPS

FIELD ID	UPSY-SB06-1101			UPSY-SB16-1101		
DATE COLLECTED	03/02/00			Dup. of SB06-1101		
	Result	RL	Qual	Result	RL	Qual
VOLATILE ORGANICS (METHOD 8260) (µg/kg)						
1,2,4-Trimethylbenzene	152	150				
1,3,5-Trimethylbenzene	1380	150				
Ethylbenzene	923	150				
Isopropylbenzene	860	150				
Methylene Chloride	<	1500	U			
N-butylbenzene	3230	150				
N-propylbenzene	2150	150				
Naphthalene	<	740	U			
Sec-butylbenzene	<	150	U			
Tert-butylbenzene	1400	150				
Xylenes, Total	340	150				
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
Diesel	2700	100		5200	1000	
Motor Oil	<	100	U	<	1000	U
Total Extractable Hydrocarbons	2700	100		5200	1000	
METALS (mg/kg)						
Antimony	<	5	U			
Arsenic	2.3	1				
Beryllium	<	0.5	U			
Cadmium	<	1	U			
Chromium	6.2	1				
Copper	9.1	1				
Lead	20	5				
Mercury	<	0.02	U			
Nickel	9.6	2.5				
Selenium	<	1	U			
Silver	<	1	U			
Zinc	52	1				

ND = Not Detected RL = Reporting Limit
Qual = Qualifier J = Estimated
U = Nondetect UJ = Estimated Nondetect



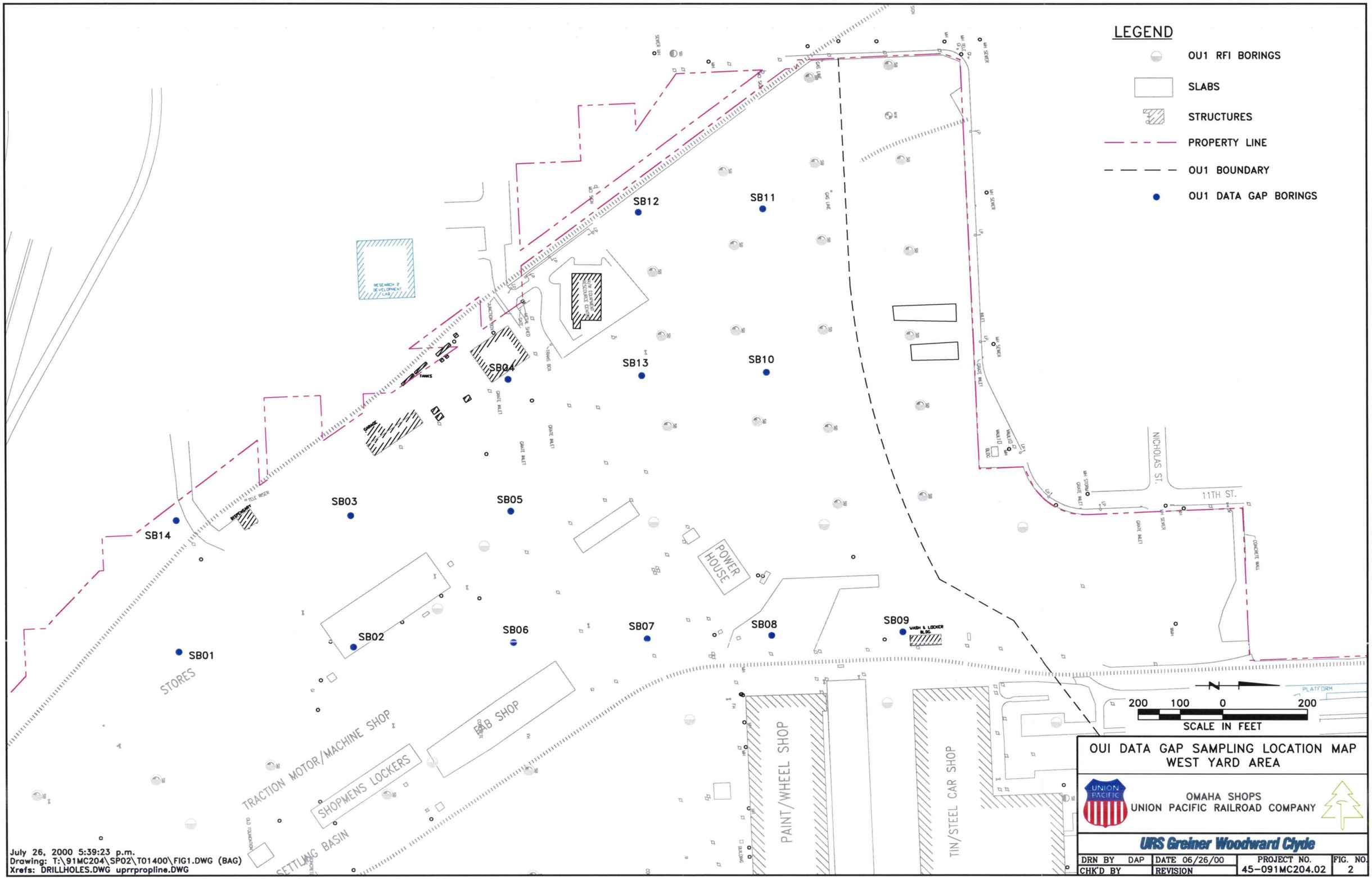
OUI DATA GAP SAMPLING LOCATION MAP

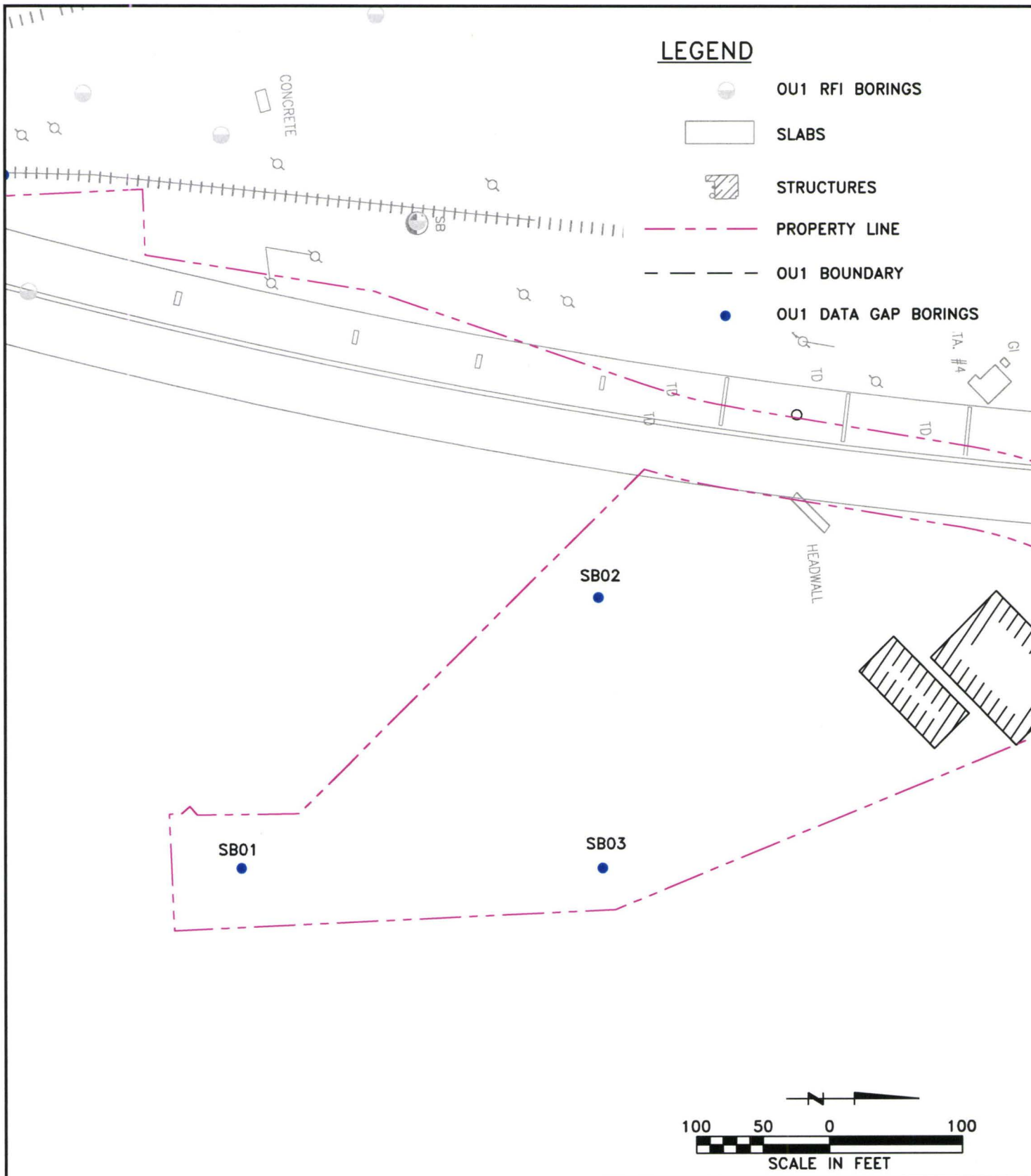
OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS Greiner Woodward Clyde

DRN BY DAP	DATE 06/26/00	PROJECT NO.	FIG. NO.
CHK'D BY	REVISION	45-091MC204.02	1

July 26, 2000 5:39:23 p.m.
Drawing: T:\91MC204\SP02\T01400\FIG1.DWG (BAG)
Xrefs: DRILLHOLES.DWG uprrpropline.DWG


LEGEND
OU1 RFI BORINGS
SLABS
STRUCTURES
PROPERTY LINE
OU1 BOUNDARY
OU1 DATA GAP BORINGS
SB01
SB02
SB03
SB04
SB05
SB06
SB07
SB08
SB09
SB10
SB11
SB12
SB13
SB14
STORES
TRACTION MOTOR/MACHINE SHOP
SHOPMENS LOCKERS
FAB SHOP
SETTLING BASIN
POWER HOUSE
PAINT/WHEEL SHOP
TIN/STEEL CAR SHOP
NICHOLAS ST.
11TH ST.
200 100 0 200
SCALE IN FEET
OUI DATA GAP SAMPLING LOCATION MAP
WEST YARD AREA
OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY
URS Greiner Woodward Clyde
DRN BY DAP
CHK'D BY
DATE 06/26/00
REVISION
PROJECT NO. 45-091MC204.02
FIG. NO. 2
July 26, 2000 5:39:23 p.m.
Drawing: T:\91MC204\SP02\T01400\FIG1.DWG (BAG)
Xrefs: DRILLHOLES.DWG uprrpropline.DWG



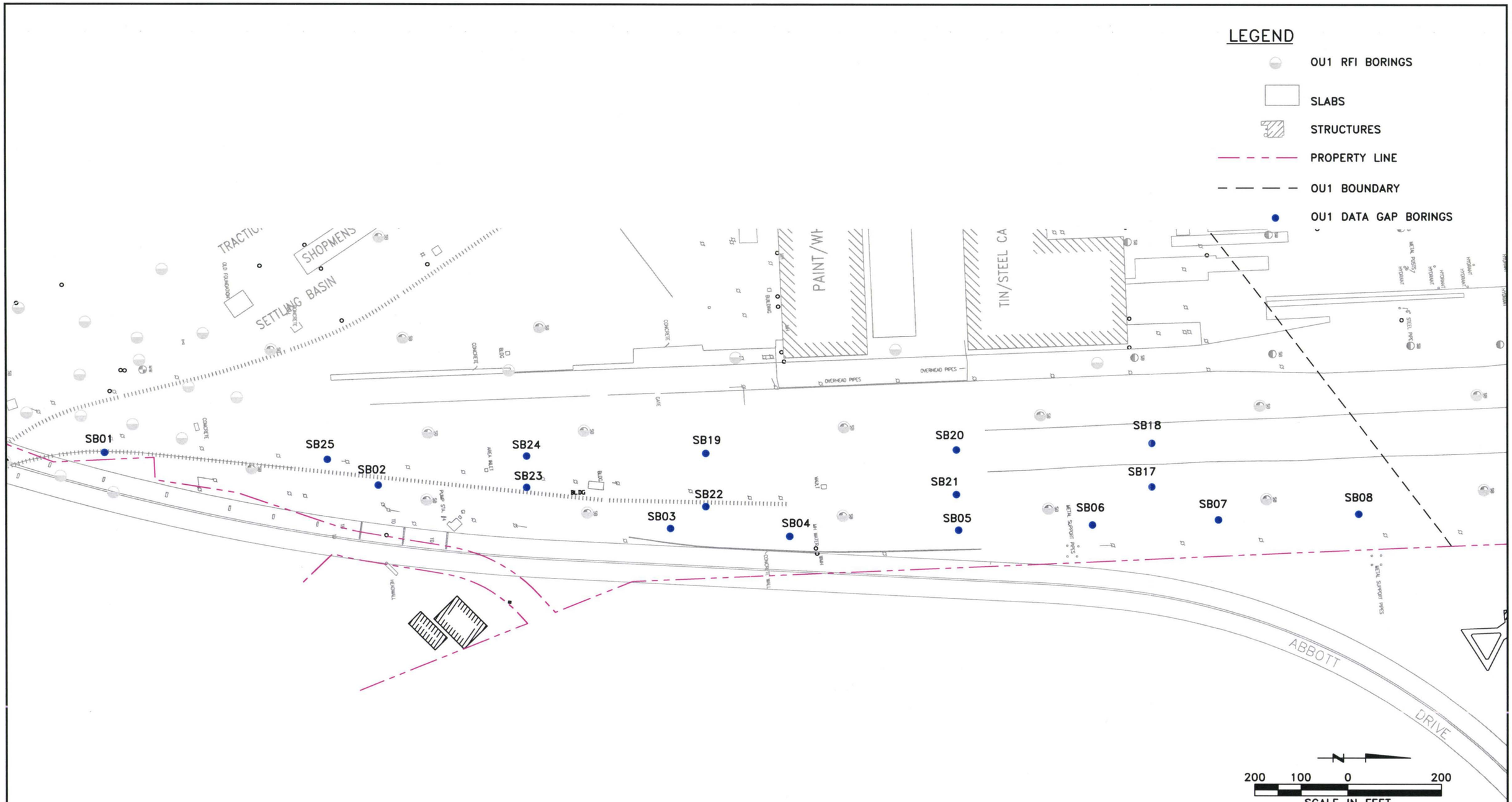
OUI DATA GAP SAMPLING LOCATION MA
EAST ABBOTT DRIVE AREA

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

UPRS Greiner Woodward Clyde

DRN BY DAP	DATE 06/26/00	PROJECT NO.	FIG.
CHK'D BY	REVISION	45-091MC204.02	

July 26, 2000 5:39:23 p.m.
Drawing: T:\91MC204\SP02\T01400\FIG1.DWG (BAG)
Xrefs: DRILLHOLES.DWG uprrpropline.DWG



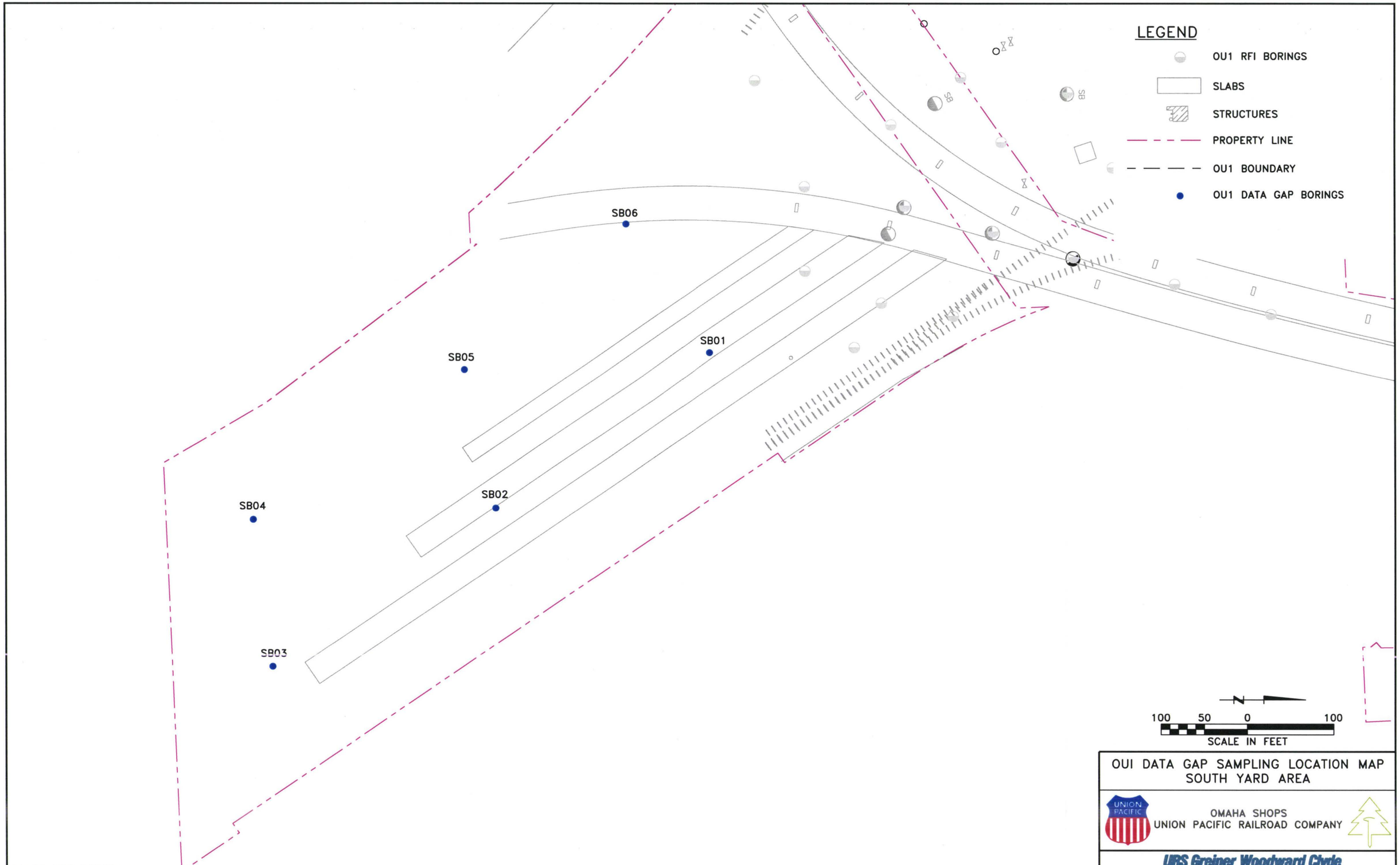
OUI DATA GAP SAMPLING LOCATION MAP
EIGHTH STREET YARD / NEW COAL TRACK

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS Greiner Woodward Clyde

DRN BY DAP	DATE 06/26/00	PROJECT NO.	FIG. NO.
CHK'D BY	REVISION	45-091MC204.02	4

July 26, 2000 5:39:23 p.m.
Drawing: T:\91MC204\SP02\T01400\FIG1.DWG (BAG)
Xrefs: DRILLHOLES.DWG uprrpropline.DWG



OUI DATA GAP SAMPLING LOCATION MAP
SOUTH YARD AREA

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS Greiner Woodward Clyde

DRN BY DAP	DATE 06/26/00	PROJECT NO.	FIG. NO.
CHK'D BY	REVISION	45-091MC204.02	5

July 26, 2000 5:39:23 p.m.
Drawing: T:\91MC204\SP02\T01400\FIG1.DWG (BAG)
Xrefs: DRILLHOLES.DWG uprrpropline.DWG

ATTACHMENT A

BORING LOGS

BORING LOG

BORING UPRR-SB32

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/2/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					12" concrete asphalt and cobble		
			P		Dk brown moist m. stiff silty CLAY w/ gravel sand and brick		
			P		becomes black		
5			P		gray, stiff, low plastic, moist, silty CLAY		Petroleum odor in spoon
			P				Petroleum odor in spoon
10			P				
							STOP - BOB = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB02

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 5/2/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown w/ gray mottling and iron stains, moist, low plastic, stiff, silty CLAY		
			P		Brown loose moist m. sand		
5			P		Gray, moist, stiff, low plastic silty CLAY		
			P				
10			P				
							STOP-BOB2 11'
15							
20							
25							

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Figure No.

BORING LOG

BORING UPW4-SB03

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/2/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown v. stiff moist low plastic silty CLAY w/ some gravel		
							Move 5' south continued hit iron
			P		Brown moist loose silty f. SAND		
					Gray m. stiff moist silty CLAY w/ trace sand low plastic		
5			P				
			P				
10			P				
							STOP @ 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY - SB04

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/2/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		8" of asphalt and concrete		
					Stiff loose moist silty Clayey GRAVEL w/ some sand and brick		
			P		Grey loose wet f. sand		ATD
5			P		Grey wet soft low plastic silty CLAY		
			P				
10			P				
							STOP BOR - 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UAW - SB05

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/2/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		concrete		
					Brown moist m. stiff low plastic silty CLAY w/ brick gravel		
			P		Black moist loose silty CLAYey f. SAND		
					→ Void begins (old sewer)		ATD
5			P		→ Void ends becomes wet		
			P		wet soft black low plastic silty CLAY		
10			P				
							STOP - BOB = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB02

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Asphalt		
					Brown med stiff moist low plastic silty CLAY w/ sand, gravel, brick		
			P				
5					Concrete - footing (?)		Drilled through 30" of concrete
			P		Gray w/o black soft moist low plastic silty CLAY		Petroleum odor in spoon
10			P				
							STOP 8.0-11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY - SB37

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/3/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown and gray stiff moist low plastic silty CLAY w/ iron oxide, gravel, brick		
			P				
5			P		Black moist low plastic soft low silty CLAY w/ some gravel and C. SAND		AID
					No gravel or sand, wet		
			P				
					becomes very soft		
10			P				
							STOP BOB=11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB38

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/3/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					8" concrete		8" Concrete
			P		Black loose moist silty clayey GRAVEL w/ brick and		
			P		stiff moist brown and gray silty CLAY - low plastic		
					becomes brown w/ iron oxide		
5			P				
					becomes black and gray, soft		
			P				
10			P				
							STOP - BDS = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB09

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/3/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black loose dry silty clayey SAND w/ gravel		
			P				
5			P		soft black 2ND grey low plastic moist silty CLAY.		
			P				
					Becomes wet		▽ ATD
10			P				
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB10

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/3/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black loose dry silty clayey SAND w/ gravel		
			P				
							ATD
5			P		Black soft moist to wet low plastic silty CLAY becomes wet		
			P				
10			P				
							STOP - BOG = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPRR-SB11

PROJECT NAME: Union Pacific RR Data Gaps
PROJECT LOCATION: Omaha Shops
LOGGED BY: Carson
DRILLED BY: Payton (GSI)
SURFACE ELEVATION:
ELEVATION DATUM:
WATER ENTRY DEPTH:
FEET ATD:
WATER SURFACE DEPTH: na
FEET: na AD
COMMENTS:

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/8/00
RIG: CME 55
METHOD: Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Dk brown dry loose silty clayey GRAVEL w/ c. sand		
			P				
					wet black loose silty f. SAND		
5			P		RRTie		Drilled through RR Tie
					RRTie		
					soft moist black low plastic silty CLAY		Moved rig forward 5' for last two samples
			P				
					becomes gray and stiff		
10			P				
							STOP - BOB = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING VPNY-SB12

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/3/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown dry loose silty clayey GRAVEL w/ C. SAND		
					RR tie		
							ATD
					very soft wet black sandy silty CLAY - low plastic		
5			P				
					become stiff		
			P				
10			P				
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING VAN - SB13

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH 5'
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		brown moist loose silty clayey GRAVEL w/ c. SAND, brick		
					black moist hard low plastic silty CLAY w/ c. sand gravel sand carbon		ATD
			P				
5			D		Black wet loose silty clayey f. SAND		
					Gray w/ iron stains stiff wet low plastic silty CLAY		
			P				
10			P				
							STOP - BOB = 11'
15							
20							
25							

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Figure No. _____

BORING LOG

BORING UPWY-SB19

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ____ ELEVATION DATUM ____
WATER ENTRY DEPTH ____ FEET ATD ____
WATER SURFACE DEPTH na FEET na AD
COMMENTS ____

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown dry loose silty clayey Gravel w/ c sand		
			P		lt brown loose moist silty f. SAND		
5			P		gray, med. stiff moist low plastic silty CLAY		
			P				
10			P				
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. ____

BORING LOG

BORING UPEA-SB01

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/8/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown stiff moist low plastic silty CLAY		
					slag present in cuttings		
5			P				
					End slag layer		
					Dk brown low plastic silty CLAY moist w/ small pieces of brick, slag		
10			P				
							STOP BOB=10.5'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPEA - SB02

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/10/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Drilled through 2' of ASARCO cap. Dk brown, dry, hard, low plastic silty CLAY w/ traces of gravel, brick		
			P				
5					becomes black		
			P				
					becomes dk. gray, moist, stiff		
10							
			P				
					becomes greenish gray		STOP BOB=12.5'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPEA-SB03

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 5/10/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					silty clay w/ brick, concrete		
5							Drilled to 6' to get through fill to surrounding surface
			P		Brown w/ gray mottling, stiff, moist, low plastic silty CLAY w/ iron oxide, gravel, brick		
10			P				
					Moist loose brown silty f. SAND		
15			P				
							STOP - BOB = 15.5'
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB18

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Brown, moist, loose silty f. SAND		
			D				
			D				
			D				
			D				
5							STOP EOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB17

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Dk brown, loose, silty, clayey, f. SAND w/ gravel - dry		
			P				
					lt brown moist, loose, silty f. SAND		
			P				
			P				
					moist gray and stiff low plastic silty CLAY		
			P				
5							STOP - BOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES- SB19

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Brown moist loose silty f. SAND		START CENTERLINE of ROAD
			P				
			P				
			P		Brown moist stiff low plastic silty CLAY (CL)		
			P				
5							STOP - BOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB20

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Brown, loose, moist, silty C. SAND w/ f. gravel, brick		
			D		No brick		
			D		Decayed RR tie		
			D				
			D				
5							STOP - BOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-S621

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Brown loose moist poorly graded f. SAND		Road underlain Stat
			?				
			?				
			?				
			?				
5							STOP - BOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB22

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 5/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Brown, dense, dry silty ~~GRAVEL~~ f. SAND w/ gravel		START ROAD CENTERLINE
			P	—			
			P	—			
			P	—	gray mod stiff moist low plastic silty CLAY w/ some iron oxide		
			P	—			
5							STOP- BOS=4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB23

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/6/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Asphalt 3" thick		3" Asphalt
					Black loose dry silty gravel w/ some sand, brick		
			P				
			P		Lt brown w/ gray and rust oxide stains, stiff dry low plastic silty CLAY		
			P		← becomes moist, stiff		
			P		← becomes mostly gray w/ lt brown mottling		
5							
					← becomes black		
			P				
					gray moist mod stiff low plastic silty CLAY		
10			P				
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB24

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Black soft ~~moist~~ dry low plastic silty CLAY	CL	START grass surface
		R	P	ND			
			P	ND	Bulkout		Move boring 5' west to complete
			P	ND	Black, loose, dry silty SAND w/ some gravel		
			P	ND			
5							
					Black, hard, dry low plastic silty CLAY with some SAND		
			P	ND			
					Black, moist, Med stiff low plastic silty CLAY		
10			P	ND			
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPES-SB25

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
					Dk brown moist stiff low plastic silty CLAY	CL	START grass surface
			P	ND			
			P	ND			
			P	ND			
			P	ND			
5							STOP - BOB = 4.5'
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPC-SB01

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black loose dry silty CLAY w/ gravel, sand, brick low plastic	CL	
			P				
			P				
							STOP - BOB - 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-SB02

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown loose dry silty Gravel with SAND		
			P		brown stiff dry low plastic silty CLAY w/ trace SAND		
			P				
							STOP-SOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-SB03

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		black low plastic dry silty CLAY w/ gravel sub SAND		
			D		loose brown moist silty f. SAND (SP)		
			D				
							STOP - BOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-S604

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson DRILLED BY Payton (GSI)
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH na FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		brown loose dry low plastic silty CLAY w/		
			P		some gravel + c. sand + chert		
			P				
							STOP - BOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-SBOS

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Brown stiff dry low plastic silty CLAY w/ f. gravel and c. sand		
			D		loose brown moist silty f. SAND		
			D				
							STOP - BOS = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-SB06

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 5/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Dk brown, dry, low plastic stiff silty CLAY w/ some f. gravel		
			D		loose, moist, brown silty f. SAND		
			D				
							STOP - BOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT-SB07

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Dk brown, dry, stiff, low plastic, silty CLAY w/ c. sand + f. gravel		
			D		Brown loose moist silty f. SAND		
			D				
							STOP - BOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPCT - SB08

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/7/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Dk brown, dry, stiff, low plastic silty CLAY w/ gravel and sand		
			D		Brown loose moist silty f. SAND		
			D				
							STOP - SOB = 3'
5							
10							
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPSY-5001

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/1/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		black, loose, moist, silty, clayey, SAND (f.) w/ some chert		
					loss sand present		
							∇ ATD
					gray w/ green and black mottling, soft, wet silty CLAY w/ some brick and chert		
5			P				
10			P				
							STOP - BOB = 11.0'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPSY-SB02

PROJECT NAME **Union Pacific RR Data Gaps**
PROJECT LOCATION **Omaha Shops**
LOGGED BY **Carson** DRILLED BY **Payton (GSI)**
SURFACE ELEVATION ____ ELEVATION DATUM ____
WATER ENTRY DEPTH ____ FEET ATD ____
WATER SURFACE DEPTH **na** FEET **na** AD
COMMENTS ____

SHEET **1** OF **1**
PROJECT NO. **45091MC204.02**
TASK NO. **1300**
DATE 3/1/00
RIG **CME 55**
METHOD **Hollow Stems**

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black, moist, loose silty, clayey, SAND (f). with some brick and gravel		
					← becomes wet		▽ ATD
					soft wet gray w/ green and black and brown mottling silty CLAY - plastic		
5			P				
10			P				
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. ____

BORING LOG

BORING UPSY-SB23

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/1/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black, loose, dry, silty, clayey F. SAND w/ gravel and brick		
					Soft gray and black moist low plastic silty CLAY w/ some brick and chert		
5			P				
							▽ ATD
					becomes mud stiff, wet		
10			P				
							STOP - BOB = 11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPSY - SB04

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 3/1/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black, loose, moist silty clayey SAND w/ gravel and chert and ballast		
5			D		Brown loose moist clayey f. SAND		
10			P		Black, w/ gray mottling, soft, low plastic, moist silty CLAY w/ trace sand		
							STOP - BOG=11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPSY - SB05

PROJECT NAME Union Pacific RR Data Gaps
PROJECT LOCATION Omaha Shops
LOGGED BY Carson
DRILLED BY Payton (GSI)
SURFACE ELEVATION
ELEVATION DATUM
WATER ENTRY DEPTH
FEET ATD
WATER SURFACE DEPTH na
FEET na AD
COMMENTS

SHEET 1 OF 1
PROJECT NO. 45091MC204.02
TASK NO. 1300
DATE 5/1/00
RIG CME 55
METHOD Hollow Stems

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P		Black loose moist silty clayey f. SAND w gravel, brick, wood chert		
					gray w/ brown mottling and iron stains, moist, med stiff low plastic silty CLAY		
5			P				
10			P				
							BOB = 11' BGS
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

BORING LOG

BORING UPSY-SB01

PROJECT NAME **Union Pacific RR Data Gaps**
PROJECT LOCATION **Omaha Shops**
LOGGED BY **Carson** DRILLED BY **Payton (GSI)**
SURFACE ELEVATION ELEVATION DATUM
WATER ENTRY DEPTH FEET ATD
WATER SURFACE DEPTH **na** FEET **na** AD
COMMENTS

SHEET **1** OF **1**
PROJECT NO. **45091MC204.02**
TASK NO. **1300**
DATE 9/2/00
RIG **CME 55**
METHOD **Hollow Stems**

DEPTH (ft)	TYPE	SAMPLE REC	SAMPLE RES	SAMPLE PP/HS	DESCRIPTION and (USC)	SYMBOL	Field Notes
			P	R	Dk brown, m. stiff, moist low plastic silty CLAY w/ gravel, chert and sand.		
					gravel, brick, concrete and rubber Did not collect sample.		
5			3	R			
					becomes wet		
					gray wet soft low plastic sandy CLAY		ATD
10			P	R			
							STOP - BOG=11'
15							
20							
25							

Woodward-Clyde Consultants

Figure No. _____

ATTACHMENT B

CHEMICAL DATA REVIEW

UPRR Data Review

Laboratory SDG: 00.02319

Reviewer: John D. Keith

Date Reviewed: 06/08/00

Sample Identification #	Sample Identification #
UPWY-SB01-0601	UPWY-SB02-0201
UPWY-SB02-0301	UPWY-SB02-0601
UPSY-SB06-0101	UPSY-SB06-1101
UPWY-SB01-0101	UPWY-SB01-0301
UPWY-SB03-0301	UPWY-SB01-0801
UPWY-SB21-0801	UPWY-SB01-1101
UPWY-SB02-0801	UPWY-SB02-1101
UPWY-SB26-1101	UPWY-SB06-1101
UPSY-SB16-1101	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case which are not discussed in subsequent sections?

The laboratory case narrative/cooler receipt form indicated two analytes were detected in the method blank for VOC batch 700. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. Additionally, some volatile compounds were detected in the method blanks. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes.

Blank ID	Analyte	Concentration
VBLK (3/7/00)	n-butylbenzene	150 ug/kg
VBLK (3/7/00)	Hexachlorobutadiene	750 ug/kg

Since associated data were reported nondetect no qualification of the data was required.

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPWY-SB01-0601	TPH	N-Octosane	223	53.3-117
UPWY-SB02-0301	TPH	N-Octosane	708	53.3-117

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPWY-SB01-0601	T EH	**J**
UPWY-SB01-0601	Diesel	**J**
UPWY-SB01-0601	Motor Oil	**J**
UPWY-SB02-0301	T EH	**J**
UPWY-SB02-0301	Diesel	**J**
UPWY-SB02-0301	Motor Oil	**J**

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPWY-SB01-0101	Arsenic	21/76	20	75-125/20
	Antimony	28/3	7.5	75-125/20
	Selenium	38/38	9.7	75-125/20
UPWY-SB02-0301	Mercury	0/0	12	75-125/20
UPWY-SB26-1101	Mercury	68/68	0	75-125/20

Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for mercury (UPWY-SB02-0301) with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification. The antimony and arsenic data for sample UPWY-SB01-0101 were qualified unusable (**R**) since recoveries were less than 30%R.

Field ID	Analyte	Qualification
UPWY-SB01-0101	Antimony	**R**
UPWY-SB01-0101	Arsenic	**R**
UPWY-SB01-0101	Selenium	**J**
UPWY-SB26-1101	Mercury	**J**

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
NA			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPWY-SB01-0801	UPWY-SB21-0801
UPWY-SB06-1101	UPWY-SB16-1101

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPWY-SB01-0801	UPWY-SB21-0801	Arsenic	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPWY-SB01-0601	VOC	ALL	32
UPWY-SB02-0301	VOC	ALL	29.5
UPWY-SB06-0101	VOC	ALL	28
UPWY-SB06-1101	VOC TPH	ALL ALL	29.8 10

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPWY-SB01-0101	Methylene chloride	72.8	U	Professional judgement
UPWY-SB01-0301	Methylene chloride	136	U	Professional judgement
UPWY-SB03-0301	Methylene chloride	150	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 00.02322

Reviewer: John D. Keith

Date Reviewed: 06/08/00

Sample Identification #	Sample Identification #
UPWY-SB03-0101	UPWY-SB03-0601
UPWY-SB04-0201	UPWY-SB04-0301
UPWY-SB04-0601	UPWY-SB05-0101
UPWY-SB05-0301	UPWY-SB05-0701
UPWY-SB06-0101	UPWY-SB06-0301
UPWY-SB23-0301	UPWY-SB24-0301
UPWY-SB23-0601	UPWY-SB03-0801
UPWY-SB03-1101	UPWY-SB04-1101
UPWY-SB04-0801	UPWY-SB24-0801
UPWY-SB05-0801	UPWY-SB05-1101
UPWY-SB06-0801	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

The laboratory case narrative/cooler receipt form indicated the VOC MS/MSD (batch 702) was outside evaluation criteria. While not noted in the case narrative, some surrogate and metals MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPWY-SB04-0201	TPH	N-Octacosane	223	53.3-137
UPWY-SB05-0101	TPH	N-Octacosane	287	53.3-137
UPWY-SB06-0301	TPH	N-Octacosane	206	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPWY-SB04-0201	Total extractable hydrocarbons	J
UPWY-SB04-0201	Diesel	J
UPWY-SB04-0201	Motor Oil	J
UPWY-SB05-0101	Total extractable hydrocarbons	J
UPWY-SB05-0101	Motor Oil	J
UPWY-SB06-0301	Total extractable hydrocarbons	J
UPWY-SB06-0301	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
552970	Arsenic	21/76	20	75-125/20
	Selenium	38/38	0	75-125/20
	Antimony	28/3	7.5	75-125/20
552978	Mercury	68/68	0	75-125/20
553135	Selenium	32/34	3.5	75-125/20
	Antimony	19/26	32	75-125/20
552968	TPH-Diesel	76/144	23	63-125

Since the samples used for the VOC, TPH-diesel and metals MS/MSD were not samples in this SDG, no qualification of the VOC, TPH-diesel or metals data was completed.

Field ID	Analyte	Qualification
N/A		

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPWY-SB03-0301	UPWY-SB23-0301
UPWY-SB03-0601	UPWY-SB23-0601
UPWY-SB04-0301	UPWY-SB24-0301
UPWY-SB04-0801	UPWY-SB24-0801

Were field duplicates within evaluation criteria?

Yes.

Field ID	Field Duplicate ID	Analyte	Qual
N/A			

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPWY-SB04-0201	VOCs	All	22.8
UPWY-SB05-0301	VOCs	All	23.7
UPWY-SB05-0701	VOCs	All	24.6
UPWY-SB06-0101	VOCs	All	30.4
UPWY-SB06-0301	VOCs	All	32
UPWY-SB24-0301	VOCs	All	1.5

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPWY-SB03-0101	Methylene chloride	90.4	U	Professional judgement
UPWY-SB03-0601	Methylene chloride	143	U	Professional judgement
UPWY-SB04-0301	Methylene chloride	78.4	U	Professional judgement
UPWY-SB04-0601	Methylene chloride	189	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (U) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 0.02358

Reviewer: John D. Keith

Date Reviewed: 06/12/00

Sample Identification #	Sample Identification #
UPWY-SB09-0801	UPWY-SB09-1101
UPWY-SB10-0801	UPWY-SB10-1101
UPWY-SB12-0801	UPWY-SB32-0801
UPWY-SB11-0801	UPWY-SB31-0801
UPWY-SB11-1101	UPWY-SB10-0101
UPWY-SB12-1101	UPWY-SB10-0601
UPWY-SB10-0301	UPWY-SB11-0301
UPWY-SB11-0101	UPWY-SB12-0101
UPWY-SB11-0601	UPWY-SB30-0301
UPWY-SB12-0601	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomolies were noted in the laboratory case narrative. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPWY-SB11-0101	TPH	N-Octacosane	197	53.3-137
UPWY-SB12-0101	TPH	N-Octacosane	168	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPWY-SB11-0101	Total extractable hydrocarbons	J
UPWY-SB11-0101	Motor Oil	J
UPWY-SB12-0101	Total extractable hydrocarbons	J
UPWY-SB12-0101	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPWY-SB09-1101	Selenium	32/34	3.5	75-125/20
	Antimony	19/26	32	75-125/20
UPWY-SB12-0101	Selenium	46/41	13	75-125/20
553140	Antimony	44/45	4.2	75-125/20

Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for metals with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification.

Field ID	Analyte	Qualification
UPWY-SB09-1101	Selenium	J
UPWY-SB09-1101	Antimony	R
UPWY-SB12-0101	Selenium	J

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPWY-SB10-0301	UPWY-SB30-0301
UPWY-SB11-0801	UPWY-SB31-0801
UPWY-SB12-0801	UPWY-SB32-0801

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPWY-SB11-0801	UPWY-SB31-0801	Mercury	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPWY-SB10-0301	VOC	All	34
UPWY-SB11-0301	VOC	All	38.1
UPWY-SB30-0301	VOC	All	36

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPWY-SB10-0101	Methylene chloride	138	U	Professional judgement
UPWY-SB11-0101	Methylene chloride	117	U	Professional judgement
UPWY-SB11-0601	Methylene chloride	51.5	U	Professional judgement
UPWY-SB12-0601	Methylene chloride	150	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (U) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 0.02367

Reviewer: John D. Keith

Date Reviewed: 06/12/00

Sample Identification #	Sample Identification #
UPWY-SB08-0601	UPWY-SB09-0101
UPWY-SB09-0301	UPWY-SB09-0601
UPWY-SB07-0101	UPWY-SB07-0301
UPWY-SB07-0601	UPWY-SB08-0201
UPWY-SB08-0301	UPWY-SB28-0601
UPWY-SB29-0301	UPWY-SB27-0601
UPWY-SB28-0301	UPWY-SB08-0801
UPWY-SB28-0801	UPWY-SB08-1101
UPWY-SB07-0801	UPWY-SB27-0801
UPWY-SB07-1101	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomalies were identified in the laboratory case narrative. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPWY-SB09-0101	TPH	N-Octacosane	155	53.3-137
UPWY-SB08-0201	TPH	N-Octacosane	153	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPWY-SB09-0101	TE H	J
UPWY-SB09-0101	Motor Oil	J
UPWY-SB12-0101	TE H	J
UPWY-SB12-0101	Motor Oil	J
UPWY-SB12-0101	Diesel	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
553179	Mercury	173	-	75-125/20
553150	Selenium	46/41	13	75-125/20
553343	Selenium	57/55	8.9	75-125/20
UPWY-SB08-0801	Antimony	37/34	10	75-125/20

Analytical data that required qualification based on MS/MSD data are included in the table below. MS/MSD spikes 553179, 553150 and 553343 were not samples in this SDG, so no qualification of the data was completed.

Field ID	Analyte	Qualification
UPWY-SB08-0801	Antimony	J

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
NA			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPWY-SB07-0601	UPWY-SB27-0601
UPWY-SB07-0801	UPWY-SB27-0801
UPWY-SB08-0301	UPWY-SB28-0301
UPWY-SB08-0601	UPWY-SB28-0601
UPWY-SB08-0801	UPWY-SB28-0801
UPWY-SB09-0301	UPWY-SB29-0301

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPWY-SB07-0601	UPWY-SB27-0601	Total Extractable Hydrocarbons	**J**
UPWY-SB07-0601	UPWY-SB27-0601	Diesel	**J**
UPWY-SB07-0601	UPWY-SB27-0601	Motor Oil	**J**
UPWY-SB07-0801	UPWY-SB27-0801	Lead	**J**
UPWY-SB09-0301	UPWY-SB29-0301	Diesel	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPWY-SB07-0601	VOC	All	30
UPWY-SB08-0201	VOC	All	30.2
UPWY-SB28-0301	VOC	All	1.1

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPWY-SB08-0601	Methylene chloride	60.1	**U**	Professional judgement
UPWY-SB09-0101	Methylene chloride	62.1	**U**	Professional judgement
UPWY-SB09-0601	Methylene chloride	65.9	**U**	Professional judgement
UPWY-SB07-0101	Methylene chloride	106	**U**	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 00.02405

Reviewer: John Keith

Date Reviewed: 06/08/00

Sample Identification #	Sample Identification #
UPWY-SB-14-0601	UPWY-SB13-0101
UPWY-SB13-0301	UPWY-SB13-0601
UPWY-SB14-0101	UPWY-SB14-0801
UPWY-SB14-1101	UPES-SB17-0101
UPES-SB17-0201	UPES-SB17-0301
UPES-SB17-0401	UPES-SB18-0101
UPES-SB18-0201	UPES-SB18-0301
UPES-SB18-0401	UPWY-SB13-0801
UPWY-SB33-0801	UPWY-SB13-1101
UPWY-SB14-0301	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomalies were identified in the laboratory case narrative. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPWY-SB13-0301	TPH	N-Octocosane	265	53.3-117
UPWY-SB14-0301	TPH	N-Octocosane	245	53.3-117

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPWY-SB13-0301	T EH	J
UPWY-SB13-0301	Diesel	J
UPWY-SB13-0301	Gasoline	J
UPWY-SB14-0301	T EH	J
UPWY-SB14-0301	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
553179	Mercury	173/854	59	75-125/20
UPES-SB17-0201	Selenium	57/55	8.9	75-125/20
UPES-SB18-0301	Selenium	42/46	7	75-125/20
553189	Antimony	37/34	10	75-125/20
UPES-SB18-0401	Antimony	54/63	14	75-125/20

Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for metals with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification.

Field ID	Analyte	Qualification
UPES-SB17-0201	Selenium	**UJ**
UPES-SB18-0301	Selenium	**UJ**
UPES-SB18-0401	Antimony	**UJ**

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
NA			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPWY-SB13-0801	UPWY-SB33-0801

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPWY-SB13-0801	UPWY-SB33-0801	Lead	**J**
UPWY-SB13-0801	UPWY-SB33-0801	Zinc	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPWY-SB13-0101	TPH	ALL	100
UPWY-SB13-0301	VOC	ALL	29.9
UPWY-SB14-0101	VOC	ALL	27

11.0 Additional Qualifications

Were additional qualifications applied?

Field ID	Analyte	New RL	Qualification	Comments
UPWY-SB13-0101	Methylene chloride	125	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 00.02654

Reviewer: John D. Keith

Date Reviewed: 06/16/00

Sample Identification #	Sample Identification #
UPEA-SB01-0101	UPEA-SB01-0601
UPEA-SB01-1001	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomolies were noted in the laboratory case narrative. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPEA-SB01-0601	TPH	N-Octacosane	164	53.3-137
UPEA-SB01-1001	TPH	N-Octacosane	232	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPEA-SB01-0601	Total Extractable Hydrocarbons	J
UPEA-SB01-0601	Motor Oil	J
UPEA-SB01-1001	Total Extractable Hydrocarbons	J
UPEA-SB01-1001	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
553744	Arsenic	0/0	33	75-125/20
	Mercury	189/92	25	75-125/20
	Selenium	37/29	15	75-125/20
UPEA-SB01-1001	Arsenic	9290/1241	9.9	75-125/20
	Mercury	0/0	24	75-125/20
	Selenium	98/44	20	75-125/20
554124	Zinc	71/75	6.4	75-125/20
UPEA-SB01-0101	1,2,4-trichlorobenzene	58/73	23	70-130/20

Since samples 553744 and554124 were not samples in this SDG, no qualification of the data was completed. The MS/MSD recoveries for arsenic and mercury for sample UPEA-SB01-1001 with concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification. Functional Guidelines indicates that organic data should not be qualified based on MS/MSD data alone and LCS were within evaluation criteria therefore, no qualification of the 1,2,4-trichlorobenzene data was required.

Field ID	Analyte	Qualification
N/A		

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

No.

Field ID	Field Duplicate ID
N/A	

Were field duplicates within evaluation criteria?

N/A.

Field ID	Field Duplicate ID	Analyte	Qual
N/A			

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

No.

Field ID	Analysis	Analyte	Dilution Factor
N/A			

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPEA-SB01-0601	Methylene chloride	126	U	Professional judgement
UPEA-SB01-1001	Methylene chloride	114	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (U) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 0.02712

Reviewer: John D. Keith

Date Reviewed: 06/12/00

Sample Identification #	Sample Identification #
UPEA-SB02-0301	UPEA-SB02-0801
UPEA-SB02-1201	UPEA-SB03-0701
UPEA-SB03-1101	UPEA-SB03-1501
UPEA-SB22-0801	UPEA-SB23-1101

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative or cooler receipt form which are not discussed in subsequent sections?

No anomolies were noted in the laboratory case narrative. While not noted in the case narrative, some MS/MSD recoveries were outside evaluation criteria. This issue is addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes.

Field ID	Analysis	Surrogate	Recovery	Criteria	Action
N/A					

Field ID	Analyte	Qualification
N/A		

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No. Multiple metal compounds were outside evaluation criteria for samples 553744, 554132, and 553348 but, the samples were from other SDGs, therefore no qualification of the data was completed. One MS/MSD compound for sample 554130 was outside evaluation criteria, but the sample was from another SDG therefore, no qualification of the data was completed.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPEA-SB02-0801	Benzene	132/124	8.1	37-151/35
	Chlorobenzene	132/127	6	37-160/35
	Ethylbenzene	139/132	6.9	37-162/35
	MTBE	142/123	16	70-130/35
	Trichloroethylene	143/135	7.3	71-157/35
	1,2,4-trimethylbenzene	135/135	1.4	70-130/35
	1,3,5-trimethylbenzene	143/139	3.9	70-130/35
	Xylenes, total	131/128	4.2	70-130/35
554130	1,2,4-trichlorobenzene	58/73	23	70-130/35

Analytical data which required qualification based on MS/MSD data are included in the table below. Since Functional Guidelines indicates no qualification of organic data based on MS/MSD alone, and the LCS were within evaluation criteria, no qualification of the VOC data was required.

Field ID	Analyte	Qualification
N/A		

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPEA-SB02-0801	UPEA-SB22-0801
UPEA-SB03-1101	UPEA-SB23-1101

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPEA-SB03-1101	UPEA-SB23-1101	Copper	**J**
UPEA-SB03-1101	UPEA-SB23-1101	Lead	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

No.

Field ID	Analysis	Analyte	Dilution Factor
N/A			

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPEA-SB02-0301	Methylene chloride	154	**U**	Professional judgement
UPEA-SB03-0701	Methylene chloride	67.2	**U**	Professional judgement
UPEA-SB03-1101	Methylene chloride	52.7	**U**	Professional judgement
UPEA-SB03-1501	Methylene chloride	54.2	**U**	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 00.02415

Reviewer: John D. Keith

Date Reviewed: 06/16/00

Sample Identification #	Sample Identification #
UPES-SB20-0101	UPES-SB20-0201
UPES-SB20-0301	UPES-SB20-0401
UPES-SB40-0101	UPES-SB21-0101
UPES-SB21-0201	UPES-SB21-0301
UPES-SB21-0401	UPES-SB41-0101
UPES-SB19-0101	UPES-SB19-0201
UPES-SB19-0301	UPES-SB19-0401
UPES-SB22-0101	UPES-SB22-0201
UPES-SB22-0301	UPES-SB22-0401
UPES-SB23-0101	UPES-SB23-0201
UPES-SB23-0301	UPES-SB23-0401
UPES-SB42-0201	UPES-SB23-0801
UPES-SB23-1101	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomalies were identified in the laboratory case narrative. While not noted in the case narrative, some MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Surrogate analysis is not applicable to metals analysis.

Field ID	Analysis	Surrogate	Recovery	Criteria	Action
N/A					

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
553744	Arsenic	0/0	33	75-125/20
	Selenium	37/29	15	75-125/20
554132	Arsenic	9290/1241	9.9	75-125/20
553488	Selenium	42/46	7	75-125/20

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
553399	Arsenic Selenium	22/0 59/59	0.5 0.9	75-125/20 75-125/20
553349	Antimony	54/63	14	75-125/20
553686	Antimony	71/68	4.4	75-125/20

Since samples 553744, 554132, 553488, 553349 and 553686 were not in this SDG, no qualification of the data was required. Analytical data which required qualification based on MS/MSD data are included in the table below. Since the antimony recoveries were less than 30%, the antimony data for UPES-SB21-0201 was qualified unusable (**R**).

Field ID	Analyte	Qualification
UPES-SB21-0201	Selenium	**J**
UPES-SB21-0201	Antimony	**R**

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPES-SB20-0101	UPES-SB40-0101
UPES-SB21-0101	UPES-SB41-0101
UPES-SB22-0201	UPES-SB42-0201

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPES-SB20-0101	UPES-SB40-0101	Arsenic	J
UPES-SB20-0101	UPES-SB40-0101	Mercury	J
UPES-SB20-0101	UPES-SB40-0101	Nickel	J
UPES-SB22-0201	UPES-SB42-0201	Arsenic	J
UPES-SB22-0201	UPES-SB42-0201	Mercury	J

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

No.

Field ID	Analysis	Analyte	Dilution Factor
N/A			

11.0 Additional Qualifications

Were additional qualifications applied?

No.

Field ID	Analyte	New RL	Qualification	Comments
N/A				

UPRR Data Review

Laboratory SDG: 00.02500

Reviewer: John D. Keith

Date Reviewed: 06/16/00

Sample Identification #	Sample Identification #
UPBL-SB06-1001	UPBL-SB05-0601
UPBL-SB02-1001	UPBL-SB03-1001
UPBL-SB01-0601	UPBL-SB04-1001
UPES-SB24-0101	UPES-SB24-0201
UPES-SB24-0301	UPES-SB24-0401
UPES-SB24-0801	UPES-SB24-1101
UPES-SB24-0401	UPES-SB25-0101
UPES-SB25-0201	UPES-SB25-0301
UPES-SB25-0401	UPES-SB45-0101

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomolies were noted in the laboratory case narrative. While not noted in the case narrative, some MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes.

Field ID	Analysis	Surrogate	Recovery	Criteria	Action
N/A					

Field ID	Analyte	Qualification
None		

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPES-SB24-0401	Arsenic	71/70	0.7	75-125/20
	Selenium	68/73	6.2	75-125/20
	Antimony	71/68	4.4	75-125/20
	Mercury	117/86	22	75-125/20
	Zinc	37/45	2.3	75-125/20
553744	Mercury	189/92	25	75-125/20
554132	Mercury	0/0	24	75-125/20
553719	Zinc	290/335	4.6	75-125/20

Since samples 553744, 554132 and 553719 were not in this SDG, no qualification of the data was completed. Analytical data which required qualification based on MS/MSD data are included in the table below.

Field ID	Analyte	Qualification
UPES-SB24-0401	Arsenic	**J**
UPES-SB24-0401	Selenium	**J**
UPES-SB24-0401	Antimony	**J**
UPES-SB24-0401	Mercury	**J**
UPES-SB24-0401	Zinc	**J**

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
N/A		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPES-25-0101	UPES-SB45-0101

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPES-25-0101	UPES-SB45-0101	Chromium	**J**
UPES-25-0101	UPES-SB45-0101	Copper	**J**
UPES-25-0101	UPES-SB45-0101	Lead	**J**
UPES-25-0101	UPES-SB45-0101	Nickel	**J**
UPES-25-0101	UPES-SB45-0101	Zinc	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPBL-SB05-0601	VOCs	All	31.1
UPBL-SB02-1001	VOCs	All	28.8
UPBL-SB03-1001	VOCs	All	28
UPBL-SB01-0601	VOCs	All	31.5
UPBL-SB04-1001	VOCs	All	28.7

11.0 Additional Qualifications

Were additional qualifications applied?

No.

Field ID	Analyte	New RL	Qualification	Comments
N/A				

UPRR Data Review

Laboratory SDG: 00.02515

Reviewer: John D. Keith

Date Reviewed: 06/16/00

Sample Identification #	Sample Identification #
UPCT-SB05-0101	UPCT-SB05-0201
UPCT-SB05-0301	UPCT-SB06-0101
UPCT-SB06-0201	UPCT-SB06-0301
UPCT-SB07-0101	UPCT-SB07-0201
UPCT-SB07-0301	UPCT-SB08-0101
UPCT-SB08-0201	UPCT-SB08-0301
UPCT-SB26-0301	UPCT-SB01-0101
UPCT-SB01-0201	UPCT-SB01-0301
UPCT-SB02-0101	UPCT-SB02-0201
UPCT-SB02-0301	UPCT-SB03-0101
UPCT-SB03-0201	UPCT-SB03-0301
UPCT-SB23-0201	UPCT-SB04-0101
UPCT-SB04-0201	UPCT-SB04-0301

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomolies were noted in the laboratory case narrative. While not noted in the case narrative, some MS/MSD recoveries were outside evaluation criteria. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

Blank ID	Analyte	Concentration
N/A		

Since associated data were reported nondetect no qualification of the data was required.

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes.

Field ID	Analysis	Surrogate	Recovery	Criteria	Action
N/A					

Field ID	Analyte	Qualification
N/A		

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPCT-SB04-0201	Arsenic	0/0	33	75-125/20
	Mercury	189/92	25	75-125/20
	Selenium	37/29	15	75-125/20
	Antimony	66/86	11	75-125/20
	Copper	58/55	3.7	75-125/20
	Lead	0/0	11	75-125/20
	Zinc	0/0	4.2	75-125/20
554132	Arsenic	9290/1241	9.9	75-125/20
	Mercury	0/0	24	
554400	Selenium	68/73	6.2	75-125/20
553719	Zinc	290/335	4.6	75-125/20

Since samples 554132, 554400 and 553719 were not samples in this SDG, no qualification of data for these samples was completed. Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for lead, silver and zinc with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification.

Field ID	Analyte	Qualification
UPCT-SB04-0201	Copper	J
UPCT-SB04-0201	Antimony	J

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
NA			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPCT-SB03-0201	UPCT-SB23-0201
UPCT-SB06-0301	UPCT-SB26-0301

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPCT-SB03-0201	UPCT-SB23-0201	Arsenic	J
UPCT-SB03-0201	UPCT-SB23-0201	Lead	J

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

No.

Field ID	Analysis	Analyte	Dilution Factor
N/A			

11.0 Additional Qualifications

Were additional qualifications applied?

No.

Field ID	Analyte	New RL	Qualification	Comments
N/A				

UPRR Data Review

Laboratory SDG: 00.02230

Reviewer: John D. Keith

Date Reviewed: 06/16/00

Sample Identification #	Sample Identification #
UPSY-SB01-0101	UPSY-SB01-0601
UPSY-SB01-1101	UPSY-SB03-0101
UPSY-SB03-0601	UPSY-SB03-1101
UPSY-SB02-0101	UPSY-SB02-0601
UPSY-SB02-1101	UPSY-SB13-1101

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

No anomolies were noted in laboratory case narrative. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. Additionally, some volatile compounds were detected in the method blanks. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes.

Blank ID	Analyte	Concentration
BLK (03-05-00)	Toluene 1,2,4-trimethylbenzene xylenes, total	6.6 ug/kg 11.8 ug/kg 26.9 ug/kg
BLK (03/07/00)	n-butylbenzene hexachlorobutadiene	150 ug/kg 750 ug/kg

Since associated data were reported nondetect no qualification of the data was required.

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPSY-SB01-0101	TPH	N-Octacosane	190	53.3-137
UPSY-SB02-0101	TPH	N-Octacosane	26	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPSY-SB01-0101	TE H	J
UPSY-SB01-0101	Diesel	J
UPSY-SB02-0101	TE H	J
UPSY-SB02-0101	Diesel	UJ
UPSY-SB02-0101	Gasoline	UJ
UPSY-SB02-0101	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
552674	Arsenic	245/58	31	75-125/20
	Mercury	19/6	2.6	75-125/20
	Selenium	58/56	7.1	75-125/20
	Antimony	29/34	21	75-125/20

Since sample 552674 was not a sample within this SDG, no qualification of the data was required.

Field ID	Analyte	Qualification
N/A		

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

N/A.

Field ID	Analyte	%RPD	Criteria
N/A			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPSY-SB03-1101	UPSY-SB13-1101

Were field duplicates within evaluation criteria?

No.

Field ID	Field Duplicate ID	Analyte	Qual
UPSY-SB03-1101	UPSY-SB13-1101	Tert-butylbenzene	**J**

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes.

Field ID	Analysis	Analyte	Dilution Factor
UPSY-SB02-0101	VOCs	All	34.6

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPSY-SB01-1101	Methylene chloride	74.3	**U**	Professional judgement
UPSY-SB03-0601	Methylene chloride	71.5	**U**	Professional judgement
UPSY-SB03-1101	Methylene chloride	55.5	**U**	Professional judgement
UPSY-SB02-0601	Methylene chloride	89.6	**U**	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.

UPRR Data Review

Laboratory SDG: 02224

Reviewer: John D. Keith

Date Reviewed: 06/08/00

Sample Identification #	Sample Identification #
UPSY0SB05-0101	UPSY-SB05-0601
UPSY-SB05-1101	UPSY-SB04-0101
UPSY-SB04-0601	UPSY-SB04-1101
UPSY-SB015-0601	UPSY-SB14-1101
UPSY-SB14-0601	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes.

2.0 Laboratory Case Narrative

Were problems noted in the laboratory case narrative which are not discussed in subsequent sections?

The laboratory case narrative indicated that the VOC MS/MSD were outside evaluation criteria. While not noted in the case narrative, some surrogate and MS/MSD recoveries were outside evaluation criteria. Additionally, some volatile compounds were detected in the method blanks. These issues are addressed in the sections below.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes.

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes.

Blank ID	Analyte	Concentration
BLK (3/5/00)	Toluene 1,2,4-trimethlybenzene xylenes, total	6.6 ug/kg 11.8 ug/kg 26.9 ug/kg
BLK (3/7/00)	n-butylbenzene hexachlorobutadiene	150 ug/kg 750 ug/kg

Qualifications due to blank contamination are included in the table below. Analytical data which were reported nondetect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Analyte	New RL	Qualification	Assoc. Blank ID
UPSY-SB05-0101	1,2,4-trimethylbenzene	5.1	U	BLK (3/5/00)
UPSY-SB05-1101	1,2,4-trimethylbenzene	6.5	U	BLK (3/7/00)

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes.

LCS ID	LCS Compound	LCS Recovery	LCS Criteria	DCS RPD	RPD Criteria
N/A					

Field ID	Analyte	Qualification
N/A		

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No.

Field ID	Analysis	Surrogate	Recovery	Criteria
UPSY-SB04-0101	TPH	N-octacosane	22	53.3-137

Analytical data which required qualification based on surrogate data are included in the table below. Analytical data which were reported as nondetect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Analyte	Qualification
UPSY-SB04-0101	Total extractable hydrocarbons	J
UPSY-SB04-0101	Diesel	UJ
UPSY-SB04-0101	Gasoline	UJ
UPSY-SB04-0101	Motor Oil	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of this SDG?

Yes.

Were MS/MSD recoveries within evaluation criteria?

No.

MS/MSD ID	Analyte	MS/MSD Recovery (%)	RPD	Criteria
UPSY-SB05-0601	Arsenic	245/58	31	75-125/20
	Mercury	19/6	2.6	75-125/20
	Selenium	58/56	7.1	75-125/20
	Antimony	29/34	21	75-125/20
552965 (not UP sample)	1,2,4-trimethylbenzene	33/41	39	70-130/35

Analytical data which required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for arsenic and mercury had sample concentrations greater than four times (4X) the matrix spike concentration therefore no qualification of the data was required. Since the antimony MS recovery (29%R) was only slightly less than 30%R and the MSD recovery was 34%R, the antimony data was qualified estimated (**J**). Since the sample used for the VOC MS/MSD was not collected from this site, no qualification of the data was completed.

Field ID	Analyte	Qualification
UPSY-SB05-0601	Selenium	J
UPSY-SB05-0601	Antimony	J

8.0 Lab Duplicate Results

Were lab duplicates samples collected as part of this SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

Field ID	Analyte	%RPD	Criteria
NA			

Field ID	Analyte	Qualification
NA		

9.0 Field Duplicate Results

Were field duplicates samples collected as part of this SDG?

Yes.

Field ID	Field Duplicate ID
UPSY-SB05-0601	UPSY-SB15-0601
UPSY-SB04-0601	UPSY-SB14-0601
UPSY-SB04-1101	UPSY-SB14-1101

Were field duplicates within evaluation criteria?

Yes.

Field ID	Field Duplicate ID	Analyte	Qual
N/A			

10.0 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

No.

Field ID	Analysis	Analyte	Dilution Factor
NA			

11.0 Additional Qualifications

Were additional qualifications applied?

Yes.

Field ID	Analyte	New RL	Qualification	Comments
UPSY-SB05-0101	Methylene chloride	50.7	U	Professional judgement
UPSY-SB04-1101	Methylene chloride	64.8	U	Professional judgement
UPSY-SB14-0601	Methylene chloride	78.3	U	Professional judgement

Professional judgement was used to qualify the listed data as nondetect (**U**) since methylene chloride is a common laboratory contaminant.