J-U-B ENGINEERS, Inc.
ENGINEERS • SURVEYORS • PLANNERS
2810 W. Clearwater Avenue, Suite 201
Kennewick, WA 99336
509/783-2144
FAX: 509/736-0790

December 23, 1992

Mr. Mike Peloquin
Benton Franklin Health Department
Environmental Health
800 W. Canal Drive
Kennewick, WA 99336

**RE: CITY OF BENTON CITY, SITE ASSESSMENT**
**LEAKING UNDERGROUND STORAGE TANKS**

Dear Mr. Peloquin:

On September 17, 1992, J-U-B ENGINEERS, Inc. monitored the excavation of approximately 500 $YD^3$ of soil from and around two excavated holes that had contained and were previously removed a regular gasoline tank with a capacity of 1,000 gallons, an unleaded gasoline tank with a capacity of 2,500 gallons and a diesel tank with a capacity of 500 gallons. A site plan along with a detailed site layout containing sample locations are attached. The site is currently owned by the Union Pacific Railroad and is leased to the City of Benton City.

A two stockpile order was established for excavating purposes. Each bucket of soil to be excavated from a hole or relocated from an existing stockpile was monitored visually and by scent. If it appeared to be uncontaminated, the soil was placed in the uncontaminated stockpile (USS). If the bucket of soil appeared to be contaminated, it was placed in the stockpile designated as contaminated (CSS). Soil was removed from and around each hole until no contamination was evident. The holes were then barricaded until test results were acquired.

A total of ten samples were taken. These sample locations are located on the detailed site layout. The samples were transported to the testing laboratory and results acquired. The results from the two stockpiles did not correlate with the findings in the field. Sample results taken from the contaminated stockpile were negative, while a sample from the uncontaminated stockpile was positive. This led us to believe, despite standard chain custody procedures, the samples had been reversed at the laboratory.

On November 5, 1992, six more samples were acquired from the stockpile, three per stockpile. These samples were transported to the laboratory. The results of these samples reinforced the findings monitored at the site. Samples from the uncontaminated stockpile (lot # 1) were negative while results from the contaminated stockpile (lot # 2) were positive. The test results of all test analysis and concentrations are attached. These results include TPH, BTEX, Total Lead and a screening for PCB's.

The proposed disposal of the contaminated soil is to transport it to the Richland, Washington Landfill using Hazardous Waste Trained personnel. The uncontaminated stockpile will be used to backfill the excavated holes. If additional soil is needed for backfill purposes, it will be acquired from an off site location.

Sincerely,

**J-U-B ENGINEERS, Inc.**

Douglas E. Ensor, P.E.
Project Manager

DEE:jlc
Project No. 12651-5

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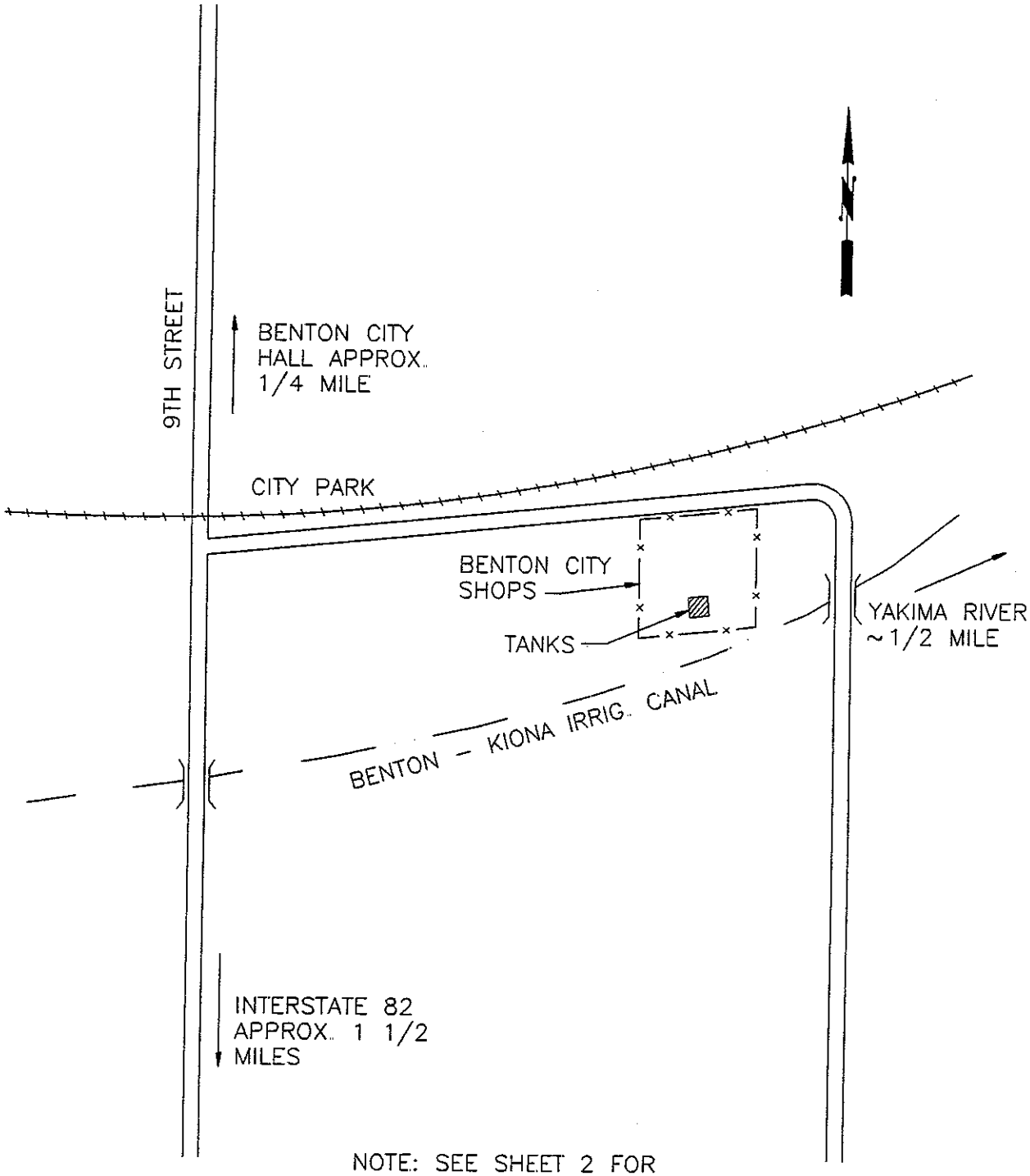


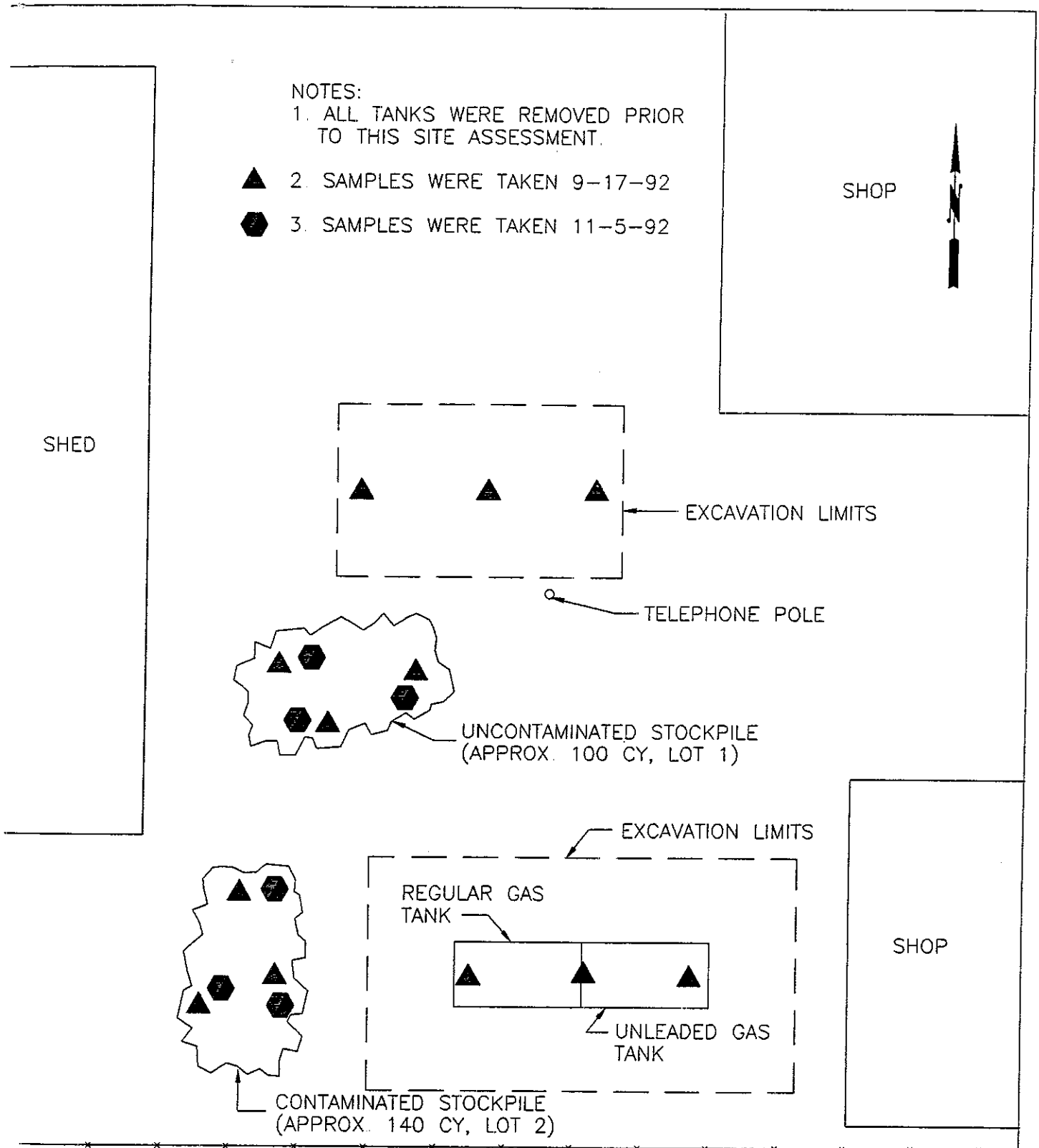

NOTE: SEE SHEET 2 FOR DETAIL OF SHOP AREA.

# BENTON CITY SHOP VICINITY MAP

J-U-B Engineers Surveyors Planners

J-U-B ENGINEERS, INC.
*Engineers Surveyors Planners*
KENNEWICK, WASHINGTON

| DES. WHR | DR. MJT | CK. WHR | SHEET 1 OF 2 |
|---|---|---|---|
| SCALE: 1" = ~200' | DATE: DECEMBER 24, 1992 | DWG. NO. SHOPVM | |




# BENTON CITY SHOP SITE PLAN

J-U-B Engineers Surveyors Planners

J-U-B ENGINEERS, INC.
*Engineers Surveyors Planners*
KENNEWICK, WASHINGTON

| DES. WHR | DR. MJT | CK. WHR | SHEET 2 OF 2 |
|---|---|---|---|
| SCALE: N.T.S. | DATE: DECEMBER 24, 1992 | DWG. NO. SHOPSITE | |

Chemist: McMillan
Client Sample ID: Lot 1, Sample 1
Lab Sample Number: 3012JUB1

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | U |
| 2 | TPH-HCID Diesel Range | 50 | U |
| 3 | TPH-HCID Heavier Oil | 100 | U |

Chemist: McMillan
Client Sample ID: Lot 1, Sample 2
Lab Sample Number: 3012JUB2

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | U |
| 2 | TPH-HCID Diesel Range | 50 | U |
| 3 | TPH-HCID Heavier Oil | 100 | U |

Chemist: McMillan
Client Sample ID: Lot 1, Sample 3
Lab Sample Number: 3012JUB3

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | U |
| 2 | TPH-HCID Diesel Range | 50 | U |
| 3 | TPH-HCID Heavier Oil | 100 | U |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 1
Lab Sample Number: 3012JUB4

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | >20 |
| 2 | TPH-HCID Diesel Range | 50 | >50 |
| 3 | TPH-HCID Heavier Oil | 100 | U |

## BTEX

Method: EPA 8020

| Item Number | Compound | Detection Limit µg/kg (ppb) | Concentration µg/kg (ppb) |
|---|---|---|---|
| 1 | Benzene | 10 | U |
| 2 | Toluene | 10 | U |
| 3 | Ethylbenzene | 10 | U |
| 4 | Xylene | 10 | U |

Comment: Sample has higher molecular weight aromatic hydrocarbons, such as trimethyl benzenes, and tetra methyl benzene.

## Total Lead

Chemist : Honghan Method: EPA 7420

| Item Number | Compound | Detection Limit mg/kg (ppm) | Concentration mg/kg (ppm) |
|---|---|---|---|
| 1 | Lead | 5.0 | 48.9 |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 1
Lab Sample Number: 3012JUB4

Date completed: 11/17/92
Sample type: Soil / Water / Oil / Unknown
Method: EPA 8080

| Item Number | Compound | Detection Limit µg/mL (ppm) | Concentration µg/mL (ppm) |
|---|---|---|---|
| 1 | PCB | 0.5 | U |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 2
Lab Sample Number: 3012JUB5

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | U |
| 2 | TPH-HCID Diesel Range | 50 | U |
| 3 | TPH-HCID Heavier Oil | 100 | U |

## BTEX

Method: EPA 8020

| Item Number | Compound | Detection Limit µg/kg (ppb) | Concentration µg/kg (ppb) |
|---|---|---|---|
| 1 | Benzene | 5 | U |
| 2 | Toluene | 5 | U |
| 3 | Ethylbenzene | 5 | U |
| 4 | Xylene | 5 | U |

## Total Lead

Chemist : Honghan

Method: EPA 7420

| Item Number | Compound | Detection Limit mg/kg (ppm) | Concentration mg/kg (ppm) |
|---|---|---|---|
| 1 | Lead | 5.0 | 45.1 |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 2
Lab Sample Number: 3012JUB5

Date completed: 11/17/92
Sample type: Soil / Water / Oil / Unknown
Method: EPA 8080

| Item Number | Compound | Detection Limit µg/mL (ppm) | Concentration µg/mL (ppm) |
|---|---|---|---|
| 1 | PCB | 0.5 | U |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 3
Lab Sample Number: 3012JUB6

Date completed: 11/16/92
Sample type: Soil
Method: EPA 8015 modified

| Item Number | Compound | Detection Limit mg/L (ppm) | Concentration mg/L (ppm) |
|---|---|---|---|
| 1 | TPH-HCID Gas Range | 20 | >20 |
| 2 | TPH-HCID Diesel Range | 50 | >50 |
| 3 | TPH-HCID Heavier Oil | 100 | U |

## BTEX

Method: EPA 8020

| Item Number | Compound | Detection Limit µg/kg (ppb) | Concentration µg/kg (ppb) |
|---|---|---|---|
| 1 | Benzene | 5 | U |
| 2 | Toluene | 5 | U |
| 3 | Ethylbenzene | 5 | U |
| 4 | Xylene | 5 | U |

## Total Lead

Chemist : Honghan Method: EPA 7420

| Item Number | Compound | Detection Limit mg/kg (ppm) | Concentration mg/kg (ppm) |
|---|---|---|---|
| 1 | Lead | 5.0 | 52.6 |

Chemist: McMillan
Client Sample ID: Lot 2, Sample 3
Lab Sample Number: 3012JUB6

Date completed: 11/17/92
Sample type: Soil / Water / Oil / Unknown
Method: EPA 8080

| Item Number | Compound | Detection Limit µg/mL (ppm) | Concentration µg/mL (ppm) |
|---|---|---|---|
| 1 | PCB | 0.5 | U |

**Precision Analytics, Inc.**

**Report Number: 3012JUB** **Pg 1 of 2** **WTPH-G, D, 418.1 (Heavy Oil)**

Chemist: McMillan
Client Sample ID: Lot 2, Sample 1
Lab Sample Number: 3012JUB4

Date completed: 11/25/92
Sample type: Soil / Water / Oil / Unknown

| Item Number | Analysis | Detection Limit mg/ (ppm) | Concentration mg/ (ppm) |
|---|---|---|---|
| 1 | WTPH-G | 20 | 247 |
| 2 | WTPH-D | 50 | 484 |
| 3 | WTPH-418.1 (Heavy Oil) | 100 | -- |

**Report Number: JUB3012** **Pg 2 of 2** **WTPH-G, D, 418.1 (Heavy Oil)**

Chemist: McMillan
Client Sample ID: Lot 2, Sample 3
Lab Sample Number: 3012JUB6

Date completed: 11/25/92
Sample type: Soil / Water / Oil / Unknown

| Item Number | Analysis | Detection Limit mg/ (ppm) | Concentration mg/ (ppm) |
|---|---|---|---|
| 1 | WTPH-G | 20 | 164 |
| 2 | WTPH-D | 50 | 240 |
| 3 | WTPH-418.1 (Heavy Oil) | 100 | -- |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *TPH-HCID* **METHOD:** *EPA 8015 MOD*

**CLIENT SAMPLE ID:** *RG - West End Bottom* **LAB ID:** *2074JUB001*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

**CLIENT SAMPLE ID:** *USS- West End* **LAB ID:** *2074JUB002*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *TPH-HCID* **METHOD:** *EPA 8015 MOD*

**CLIENT SAMPLE ID:** *RG - Middle Bottom* **LAB ID:** *2074JUB003*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

**CLIENT SAMPLE ID:** *USS - Top End* **LAB ID:** *2074JUB004*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 50.0 | |
| 2.0 | | Diesel Range Hydrocarbons | 100.0 | |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *TPH-HCID* **METHOD:** *EPA 8015 MOD*

**CLIENT SAMPLE ID:** *RG - East End Bottom* **LAB ID:** *2074JUB005*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

**CLIENT SAMPLE ID:** *D - West End Bottom* **LAB ID:** *2074JUB006*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *TPH-HCID* **METHOD:** *EPA 8015 MOD*

**CLIENT SAMPLE ID:** *D - East End Bottom* **LAB ID:** *2074JUB007*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

**CLIENT SAMPLE ID:** *Css- West End* **LAB ID:** *2074JUB008*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *TPH-HCID* **METHOD:** *EPA 8015 MOD*

**CLIENT SAMPLE ID:** *CSS East End* **LAB ID:** *2074JUB009*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

**CLIENT SAMPLE ID:** *CSS- Top End* **LAB ID:** *2074JUB010*

| # | | COMPOUND TPH-HCID | CONCENTRATION mg/kg (ppm) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Gasoline Range Hydrocarbons | 25.0 | U |
| 2.0 | | Diesel Range Hydrocarbons | 50.0 | U |
| 3.0 | | Lubricant Range Hydrocarbons | 50.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *BTEX* **METHOD:** *EPA 8020 MOD*

**CLIENT SAMPLE ID:** *CSS West End* **LAB ID:** *2074JUB008*

| # | | COMPOUND (BTEX) | CONCENTRATION µg/kg (ppb) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Benzene | 5.0 | U |
| 2.0 | | Toluene | 5.0 | U |
| 3.0 | | Ethylbenzene | 5.0 | U |
| 4.0 | | Xylene | 5.0 | U |

**CLIENT SAMPLE ID:** *CSS East End* **LAB ID:** *2074JUB009*

| # | | COMPOUND (BTEX) | CONCENTRATION µg/kg (ppb) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Benzene | 5.0 | U |
| 2.0 | | Toluene | 5.0 | U |
| 3.0 | | Ethylbenzene | 5.0 | U |
| 4.0 | | Xylene | 5.0 | U |

# ANALYSIS REPORT

**LOG IN: 2074**

**ANALYSIS:** *BTEX* **METHOD:** *EPA 8020 MOD*

**CLIENT SAMPLE ID:** *CSS Top End* **LAB ID:** *2074JUB010*

| # | | COMPOUND (BTEX) | CONCENTRATION µg/kg (ppb) | QUALIFIER |
|---|---|---|---|---|
| 1.0 | | Benzene | 5.0 | U |
| 2.0 | | Toluene | 5.0 | U |
| 3.0 | | Ethylbenzene | 5.0 | U |
| 4.0 | | Xylene | 5.0 | U |