HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
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FAX 503.620.6918
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ENVIRONMENTAL AUDIT REPORT: PRIVILEGED DOCUMENT

J-5308

CONFIDENTIAL

December 15, 1993

WTD Industries, Inc.
10260 SW Greenburg Road, Suite 900
Portland, Oregon 97223

Attn: Mr. John Burns

Re: Remediation of Petroleum Contaminated Soils
Former Cle Elum Mill - Ronald, Washington

Dear Mr. Burns:

This letter presents the results of our remediation of petroleum contaminated soil (PCS) at your former Cle Elum Mill located approximately 1/4 mile west of Ronald, Washington (see Figure 1). Our work was completed in general accordance with our proposal submitted to you on October 27, 1993.

A characterization sampling and analyses study conducted on the property by Hart Crowser, report dated October 21, 1993, identified an area ("Oil Disposal Area") of oil contaminated soil with dimensions approximately 18 feet wide by 30 feet long by at least 11 feet deep adjacent to the south wall of the former mill building. Figure 2 shows the location of this area on the property.

Between November 10 and 16, 1993, Hart Crowser implemented our proposal for excavation and disposal of the these soils which included:

- Excavation of PCS;
- On-site stockpiling of PCS and backfilling with import soil;
- Hauling PCS to and disposal of at Roosevelt Regional Landfill; and
- Environmental observation, sampling, analyses, and reporting.

In summary, soil with petroleum hydrocarbons exceeding the MTCA Method A cleanup level of 200 mg/kg was excavated from the oil disposal area to the extent practicable. Soil with petroleum hydrocarbons above the cleanup level remain adjacent to (and possibly beneath) the existing building but could not be excavated without threatening the integrity of the building. The remaining petroleum hydrocarbon contaminated soil should be capped (such as with asphalt concrete pavement). In addition, if the building is ever demolished, additional soil remediation may be necessary to meet regulatory requirements.

EXCAVATION AND DISPOSAL

Soil Excavation

First Phase Excavation. On November 10, 1993, we removed PCS to the extent practicable adjacent to the building foundations with the intent to meet the Model Toxic Control Act (MTCA) Method A cleanup goal of 200 mg/kg total petroleum hydrocarbons (TPH) concentration levels for diesel and oil. The excavated soil, approximately 100 cubic yards (inplace) or 147 tons, was temporarily stockpiled and later disposed of at the Rabanco Company - Roosevelt Regional Landfill.

Soil verification (excavation) samples (US-1 to US-9) were collected following soil removal from the excavation sidewalls and bottom (see Figure 3).

Based on these results, further PCS excavation was necessary to the west and south of the initial excavation. Further excavation to the north and east was not possible because of the proximity of the adjacent building walls.

Second Phase Excavation. On November 12, 1993, a second phase of excavation was completed to a maximum depth of 18 feet, to the final extent shown on Figure 3. Approximately, 100 additional cubic yards were excavated and stockpiled on-site during this phase of excavation. These soils are presently on-site and we understand these soils will be treated on the site by others.

Soil verification samples (US-10 to US-14) were collected following soil removal from the excavation sidewalls and bottom (see Figure 3).

Soil sample locations removed during the second phase soil excavation (US-1, 2, 3, and 8) are noted by an asterisk (*) on Table 1.

Abandoned underground piping and electrical conduits were removed from the excavation when they were found to interfere with the excavation operations. These materials were stockpiled adjacent to the excavation. Additionally, an approximately 1-1/2-inch steel line (with trace liquids appearing to be oil) was saw cut and removed at the southeast corner of the excavation. We attached a plastic endcap secured by a metal band to the cut pipe.

Soil Backfilling and Compaction

After the completion of the soil excavation and environmental sampling, Hart Crowser backfilled the excavation area to its original grade using imported select backfill material. These soils were backfilled and compacted utilizing a backhoe with an attached vibratory "hoepac" compactor. The locally available select backfill material was a sandy gravel with up to 12-inch-size material. Because of the abundant oversize material, soil compaction testing utilizing standard testing methods was not possible.

Soil Hauling and Disposal

Based on our characterization sample results at the former mill, Rabanco Company accepted these as meeting their minimum requirements for disposal. Hart Crowser loaded and hauled 147 tons of PCS on November 12, 1993, to the Roosevelt Regional Landfill located near Roosevelt, Washington. Disposal weight tickets are included in Attachment A.

ANALYTICAL RESULTS

Hart Crowser provided environmental verification (excavation) sampling and designation (stockpile) sampling during soil excavation activities. Laboratory certificates of analyses and sample chain-of-custody documentation are included in Attachment B. In general, given the presence of the building, soil with petroleum hydrocarbons was excavated to the extent practicable.

Verification Sampling Analysis Results

Fourteen soil verification samples (US-1 to US-14) were analyzed for total petroleum hydrocarbons quantified as diesel and oil (heavier than diesel) using method WTPH-D extended (see Table 1 and Figure 3).

South and west excavation sidewall and bottom verification samples collected following the second phase of excavation show low levels of TPH concentrations remaining. These samples had TPH concentrations qualified as diesel ranging in concentrations from less than the method reporting limit to 110 mg/kg, and TPH concentrations qualified as oil ranging in concentrations from less than the method reporting limit to 320 mg/kg. Only one of the five samples (US-9 and US-13) had TPH concentrations of oil above the MTCA Method A cleanup standard of 200 mg/kg. None of the sidewall (south and west) or bottom samples exceeded the MTCA Method A cleanup standard of 200 mg/kg for diesel.

North and east excavation sidewall verification samples (US-4 through US-7, US-9, and US-14) collected adjacent to the foundation footing walls show levels of TPH above the MTCA Method A cleanup standard. These samples had TPH concentrations qualified as diesel ranging from 93 mg/kg to 4,500 mg/kg, and TPH concentrations qualified as oil ranging from 130 mg/kg to 15,000 mg/kg.

Designation Sampling Analysis Results

Five soil designation samples (DS-1 to DS-5) were analyzed for total petroleum hydrocarbons by method WTPH 418.1 (see Table 1). Stockpile samples DS-1 to DS-3 from the first phase soil excavation had TPH concentrations ranging from 420 mg/kg to 10,000 mg/kg. These

soils were hauled off-site and disposed of at Rabanco Company - Roosevelt Regional Landfill. Stockpile samples DS-4 and DS-5 from the second phase excavation had concentrations of 570 mg/kg and 1400 mg/kg, respectfully.

If we may provide any additional information or clarification of this report, please contact us.

Sincerely,

HART CROWSER, INC.

for BRIAN E. CHRISTIANSON
Senior Project Geologist

HERBERT F. CLOUGH, P.E.
Associate

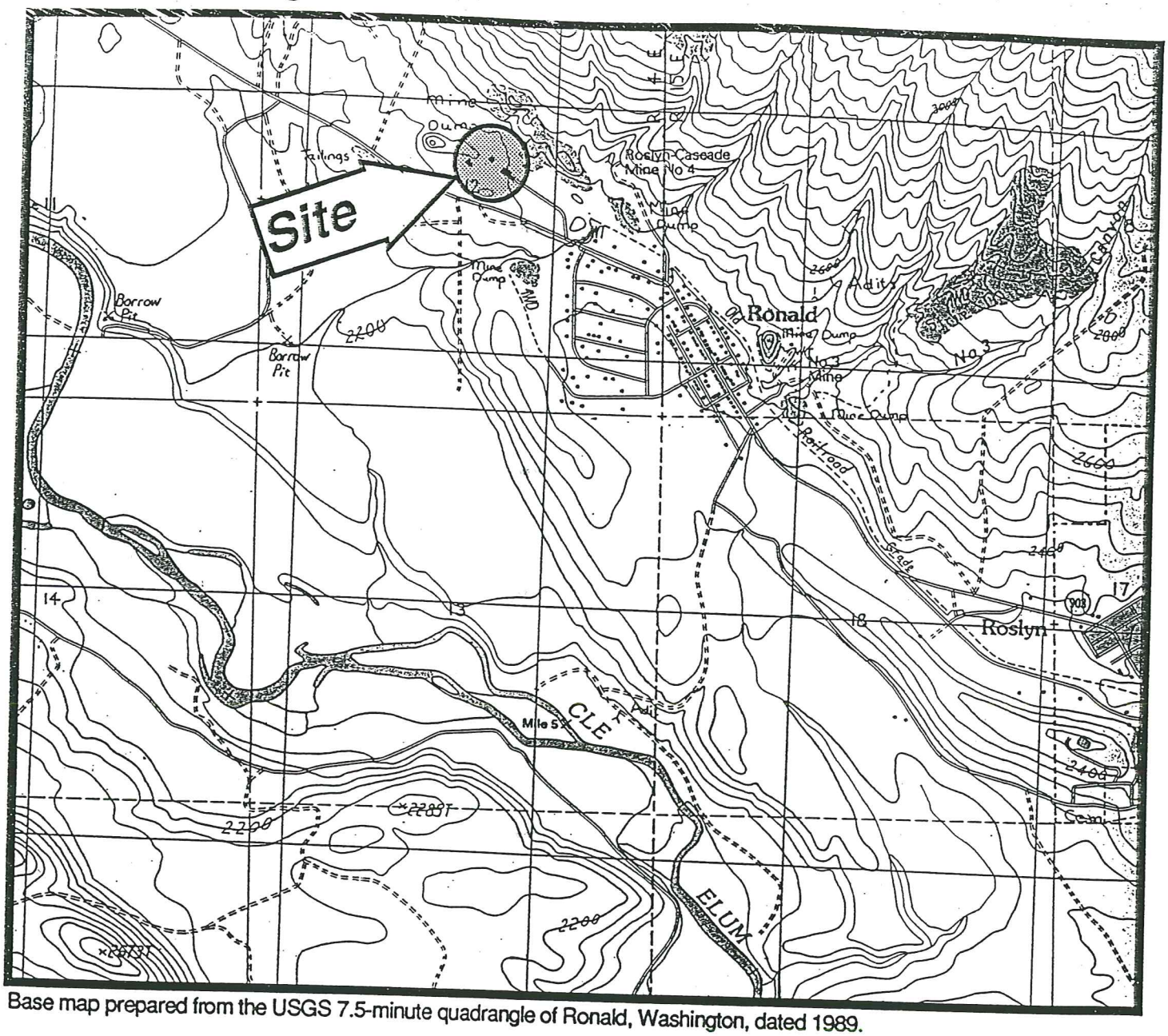
Attachments: Table 1 - Soil Verification and Designation Sampling
Figure 1 - Site Location Map
Figure 2 - Site and Vicinity Plan
Figure 3 - Final Excavation and Verification Sample Results
Attachment A - Disposal Weight Tickets
Attachment B - Certificates of Analyses

Table 1 - Soil Verification and Designation Sampling
Chemical Analytical Results
Former WTD Industries Cle Elum Mill
Cle Elum, Washington

Sample ID:	Sample Date	Depth in Feet	WTPH 418.1 in mg/kg	WTPH-D EXTENDED Diesel in mg/kg	WTPH-D EXTENDED Oil in mg/kg
US-1*	11/10/93	12	NA	1,100	3,100
US-2*	11/10/93	7	NA	910	3,000
US-3*	11/10/93	7	NA	180	430
US-4	11/10/93	9	NA	4,500	15,000
US-5	11/10/93	9	NA	3,400	11,000
US-6	11/10/93	5	NA	1,900	5,300
US-7	11/10/93	4	NA	110	130
US-8*	11/10/93	3	NA	130	250
US-9	11/10/93	2	NA	110	120
US-10	11/12/93	19	NA	12 U	49 U
US-11	11/12/93	12	NA	94	340
US-12	11/12/93	5	NA	10 U	42 U
US-13	11/12/93	13	NA	12 U	48 U
US-14	11/12/93	9	NA	93	260
DS-1	11/10/93	-	10,000	NA	NA
DS-2	11/10/93	-	5,700	NA	NA
DS-3	11/10/93	-	420	NA	NA
DS-4	11/12/93	-	1,400	NA	NA
DS-5	11/12/93	-	570	NA	NA

Notes:
U = Not detected at indicated detection limit.
NA = Not analyzed
*Sample locations were excavated during subsequent excavation.

Site Location Map
Cle Elum Mill
Ronald, Washington



Base map prepared from the USGS 7.5-minute quadrangle of Ronald, Washington, dated 1989.

SCALE 1 : 24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 20 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

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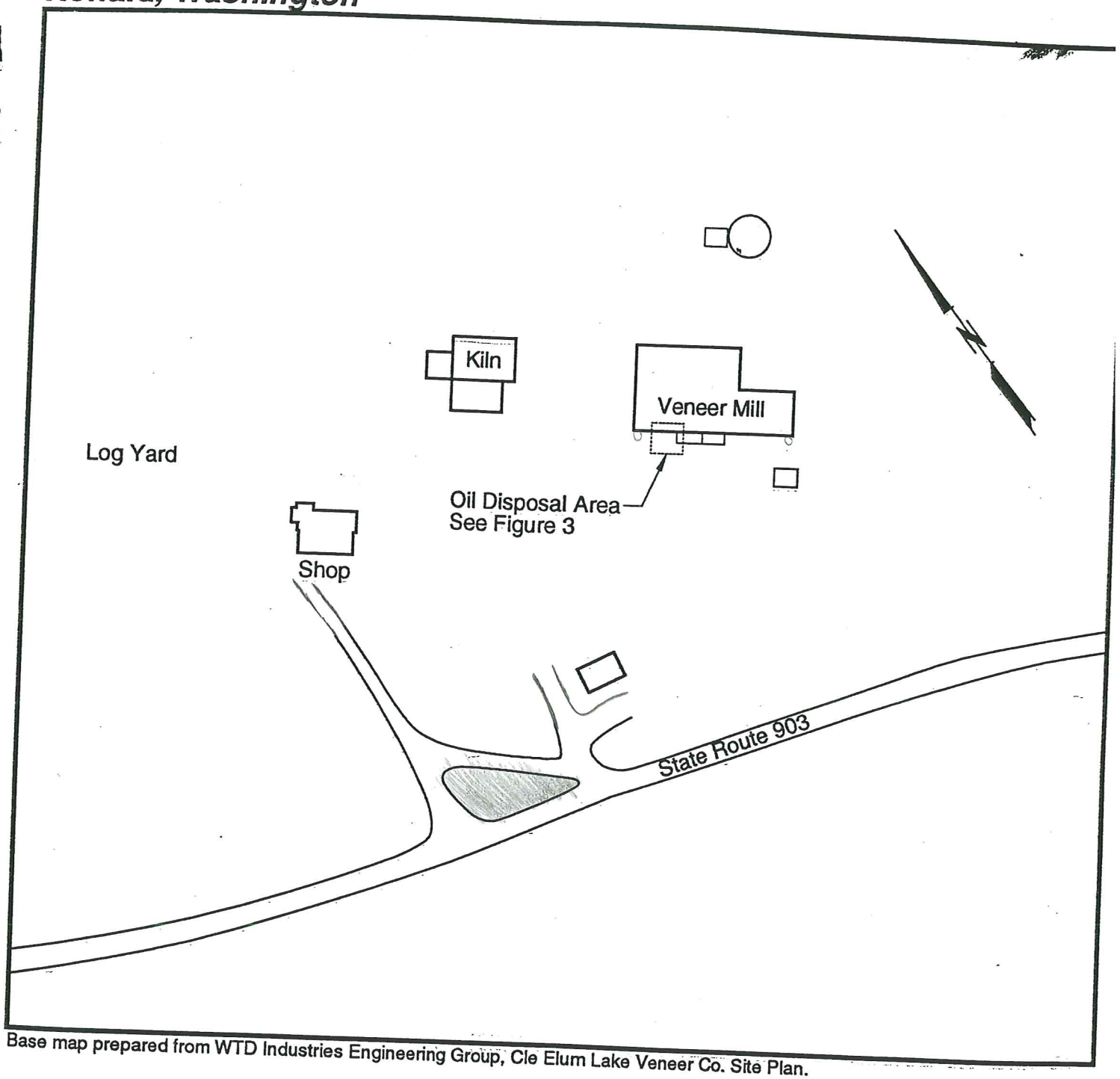
Figure 1

Site and Vicinity Plan
Cle Elum Mill
Ronald, Washington



Base map prepared from WTD Industries Engineering Group, Cle Elum Lake Veneer Co. Site Plan.

0 100 200 400

Approximate Scale in Feet

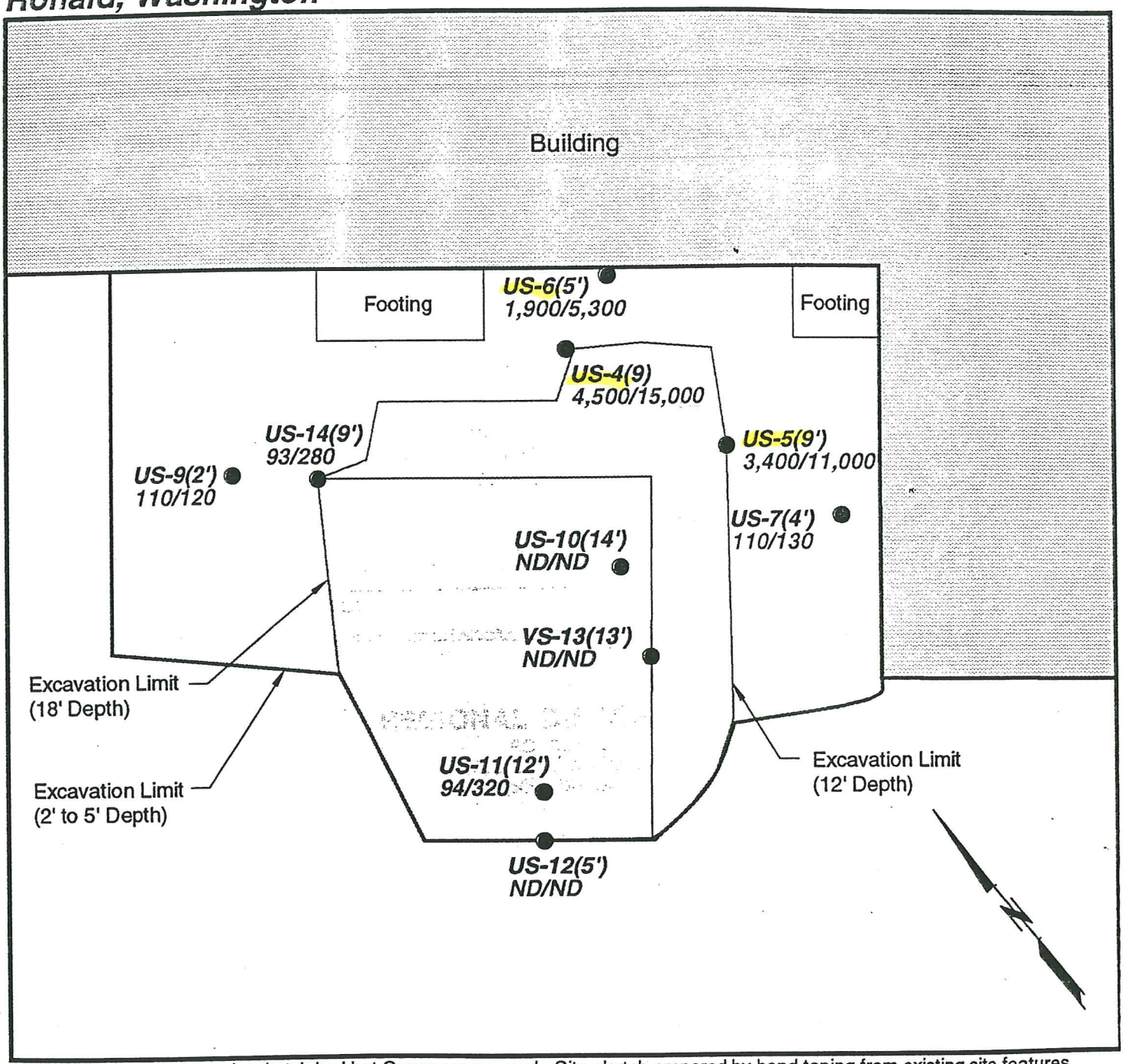
HARTCROWSER

J-5308 12/93

Figure 2

Final Excavation and Verification Sample Results

Cle Elum Mill
Ronald, Washington



Base map prepared from site sketch by Hart Crowser personnel. Site sketch prepared by hand taping from existing site features.

0 3 6 12

Approximate Scale in Feet

Legend:

US-11(12')	●	Soil Verification Sample Location and Designation (Sample Depth)
94/320		TPH-D Extended Concentration (Diesel/Motor Oil) in mg/kg
ND/ND		Not Detected. See Table 1 for Detection Limits

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Figure 3

REGIONAL DISPOSAL CO.
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER 84863

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 0138 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	93780 LBS	14:37	11/12/93
OUT:	36560 LBS	14:42	11/12/93

NET WEIGHT: 57220 LBS / 28.610 TO

led Weighmaster - JILL

Driver

REGIONAL DISPOSAL CO.
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER 84865

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 0136 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	89200 LBS	14:40	11/12/93
OUT:	36580 LBS	14:44	11/12/93

NET WEIGHT: 52620 LBS / 26.310 TONS

Recycled

Weighmaster

REGIONAL DISPOSAL CO
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER
84873

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 146 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	86060 LBS	14:58	11/12/93
OUT:	36620 LBS	15:10	11/12/93

NET WEIGHT: 49440 LBS / 24.720 TO

Recycled

REGIONAL DISPOSAL CO.
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER
84862

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 147 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	83740 LBS	14:36	11/12/93
OUT:	34120 LBS	14:46	11/12/93

NET WEIGHT: 49620 LBS / 24.810 TO

Recycled

Weighmaster - JILL

Driver

REGIONAL DISPOSAL CO.
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER 84874

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 0149 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	77480 LBS	15:00	11/12/93
OUT:	34280 LBS	15:14	11/12/93

NET WEIGHT: 43200 LBS / 21.600 TON

Recycled

Weighmaster - JILL

Driver

REGIONAL DISPOSAL CO.
P.O. Box 204
Roosevelt, WA 99356
(509) 374-5641

TICKET NUMBER 84871

*** COMPLETED WEIGHT TICKET ***

TRUCK ID: 00151 Mack-Grey-C T I

ACCOUNT:

COMMODITY: 34 PCS
SOURCE: Cle Elum, WA
JOB ID: 93-1853
CONTAINER #:

SEAL #:

CUSTOMER TICKET #:
COMMENTS:

CUSTOMER WEIGHT: 0 LBS

	WEIGHT	TIME	DATE
IN:	75520 LBS	14:56	11/12/93
OUT:	34060 LBS	15:09	11/12/93

NET WEIGHT: 41460 LBS / 20.730 TONS

Recycled

Weighmaster - JILL

Driver

Analytical Technologies, Inc.

ATI I.D. # 9311-112

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: N/A
PROJECT #	: J5308	DATE RECEIVED	: N/A
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	<10
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	<40
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	88	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: N/A
PROJECT #	: J5308	DATE RECEIVED	: N/A
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/11/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	<10
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	<40
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	86	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112-1

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: US-1	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 10

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	1100
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	3100
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	119	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112-2

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: US-2	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 20

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	910
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	3000
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	117	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112-3

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: US-3	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	180
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	430
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	91	50 - 150

Analytical Technologies, Inc.

AMENDED

ATI I.D. # 9311-112-4

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/11/93
CLIENT I.D.	: US-4	DATE ANALYZED	: 11/12/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 20

RESULTS ARE CORRECTED FOR MOISTURE CONTENT
REVISED : 12/14/93

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	4500
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	15000 D6
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	119	50 - 150

D6 = Value from a 50 fold diluted analysis.

Analytical Technologies, Inc

ATI I.D. # 9311-112-5

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/11/93
CLIENT I.D.	: US-5	DATE ANALYZED	: 11/12/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 20

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	3400
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	11000
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	120	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112-6

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/11/93
CLIENT I.D.	: US-6	DATE ANALYZED	: 11/12/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 10

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	1900
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	5300
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	103	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311 112-7

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/11/93
CLIENT I.D.	: US-7	DATE ANALYZED	: 11/12/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	110
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	130
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	93	50 - 150

Analytical Technologies, Inc

ATI I.D. # 9311-112-8

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: US-8	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	130
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	250
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	93	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112-9

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: HART CROWSER, INC.	DATE SAMPLED	: 11/10/93
PROJECT #	: J5308	DATE RECEIVED	: 11/10/93
PROJECT NAME	: WTD - CLE ELUM MILL	DATE EXTRACTED	: 11/10/93
CLIENT I.D.	: US-9	DATE ANALYZED	: 11/11/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	110
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL
FUEL HYDROCARBONS	120
HYDROCARBON RANGE	C24 - C36
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	91	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9311-112

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT : HART CROWSER, INC.
PROJECT # : J5308
PROJECT NAME : WTD - CLE ELUM MILL
METHOD : WA DOE WTPH-418.1 MODIFIED
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

DATE EXTRACTED : 11/10/93
DATE ANALYZED : 11/11/93
UNITS : mg/Kg
SAMPLE MATRIX : SOIL

ATI I.D. #	CLIENT I.D.	TOTAL PETROLEUM HYDROCARBONS	TOTAL PETROLEUM HYDROCARBONS*
9311-112-10	DS-1	9900 D0	10000 D0
9311-112-11	DS-2	5300 D0	5700 D0
9311-112-12	DS-3	430	420
METHOD BLANK	-	<20	<20

* Reanalyzed after second aliquot of silica gel added.
D0 = Value from a 25 fold diluted analysis.