

**UNDERGROUND STORAGE TANK
CLOSURE ASSESSMENT
PALM STREET CHRISTIAN CHURCH SITE
GREENSBORO, NORTH CAROLINA**

August 31, 1990

Prepared For:

**Four Seasons Industrial Services, Inc.
Greensboro, North Carolina**

Prepared By:

**Aquaterra, Inc.
Greensboro, North Carolina**





AQUATERRA

Aquaterra, Inc. • 309 Concord Street, Suite 204D • Greensboro, NC 27406 • 919-273-5003 • FAX 919-271-8138

August 31, 1990

Four Seasons Industrial Services, Inc.
Post Office Box 16590
Greensboro, North Carolina 27316

Attention: Mr. Mike Stoneman, Corporate UST Program Manager

Reference: Underground Storage Tank Closure Assessment
Palm Street Christian Church Site
Greensboro, North Carolina
Aquaterra Job No. G144

RECEIVED
N.C. Dept. NRCD

AUG 12 1990

Winston-Salem
Regional Office

Dear Mr. Stoneman:

Aquaterra, Inc. (Aquaterra) is pleased to submit this underground storage tank (UST) closure assessment report for the Palm Street Christian Church Site. The closure assessment was provided as required by 40 CFR Part 280 Subpart G. This report provides you with the results of the site investigation work tasks, laboratory analytical data, and our conclusions and recommendations regarding the completeness of the closure assessment.

Based on the data collected at this site and the soil contaminant level of 10 mg/kg TPH accepted by the North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management, Aquaterra does not recommend additional assessment at this location. Aquaterra recommends this UST be considered for clean closure.

If you require additional information, please contact us at (919) 273-5003.

Sincerely,

AQUATERRA, INC.

Crystal Killen
Staff Geologist

C. Earl Jones
Project Manager

Peer Review By:

Phillip L. Rahn, P.G.
Senior Hydrogeologist

CK/CEJ/slp
GR101-90

**Underground Storage Tank Closure Assessment
Palm Street Christian Church
Greensboro, North Carolina
Aquaterra Job No. G144**

1 Introduction

Aquaterra, Inc. (Aquaterra) was contracted to conduct an underground storage tank (UST) closure assessment at the Palm Street Christian Church site located in Greensboro, North Carolina (see Figure 1). It is Aquaterra's understanding that one 1,000 gallon UST that previously contained #2 fuel oil was excavated, removed, and disposed of by Four Seasons Industrial Services, Inc. (Four Seasons).

The closure assessment included screening the in situ and excavated soils with an organic vapor analyzer (OVA) for total volatilized organic compounds (VOCs), which may indicate petroleum hydrocarbon contamination. A typical procedure for screening soils involves filling a clean container approximately halfway with soil and sealing it with a relatively impermeable barrier. This creates an open space in which the VOCs from the soils accumulate.

After allowing approximately 10 minutes for this process to occur, the probe of the OVA is then inserted in the headspace of the container to obtain a VOC reading. When OVA readings of the in situ soils do not indicate the presence of significant (greater than 10 parts per million, ppm) volatile organic contamination, soil samples are collected from the UST excavation. These soil samples are prepared for analysis following SW-846 Extraction Methods 5030 and 3550 and are analyzed for total petroleum hydrocarbons (TPH) by laboratory gas chromatography (GC). This analysis supports the field OVA readings and documents the closure assessment.

2 Site Investigation

2.1 Tank Excavation

On August 13, 1990, Aquaterra mobilized a staff geologist to the Palm Street Christian Church site to conduct a UST closure assessment (see Figure 2). The assessment was conducted in conjunction with the excavation and removal of one 1,000 gallon UST that previously contained #2 fuel oil.

The soils around the UST were being excavated when the geologist arrived at the site. These soils were scanned with the OVA as described above. The soils yielding OVA readings greater than 10 ppm were separated from soils with OVA readings of 10 ppm or less and were stockpiled on polyethylene sheeting.

2.2 Tank Description

The geologist visually inspected the UST when it was removed from the excavation and noted pitting. One hole measuring approximately 1/2" in diameter was visually noted in the tank. The UST measured 3 ft 6 in (D) x 11 ft 11 in (L).

2.3 Soil Sampling Procedures

The fill material around the UST consisted of tan to brown medium sand. The in situ soils consisted of brown red fine silty sands. Soils from the floor of the excavation were screened for total VOCs, as described above. OVA readings of the in situ soils ranged from 10 ppm to 20 ppm. Two soil samples (1PB1 and 1PB2) were then collected from the floor of the excavation (see Figure 3).



Palm Street Christian Church
G144
August 31, 1990

3 Laboratory Procedures and Results

All soil samples were immediately placed in laboratory provided glass containers and labeled with a tag indicating the date, time, sample number, sampler's name, and analysis to be conducted. The samples were then placed in a cooler and chilled with ice to approximately 4^o C. The samples were transported to the analytical laboratory in accordance with EPA approved chain-of-custody procedures. The samples were relinquished to laboratory personnel for TPH by GC analysis. Soil sample analytical results are summarized in Table 1 and are documented in Attachment A.

Results from the laboratory analyses of the soil samples (1PB1 and 1PB2) were below the laboratory method detection limit of 2 mg/kg TPH.

4 Recommendations

Based on the collected data and the soil cleanup level of 10 mg/kg TPH adopted by the North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management (DEM), Aquaterra recommends this UST site be considered for clean closure.

Further, Aquaterra recommends the results of this assessment be forwarded to the DEM in Winston-Salem, North Carolina for their review and comment.

It is Aquaterra's understanding that remediation and/or disposal of all stockpiled soils is the responsibility of Four Seasons Industrial Services, Inc.



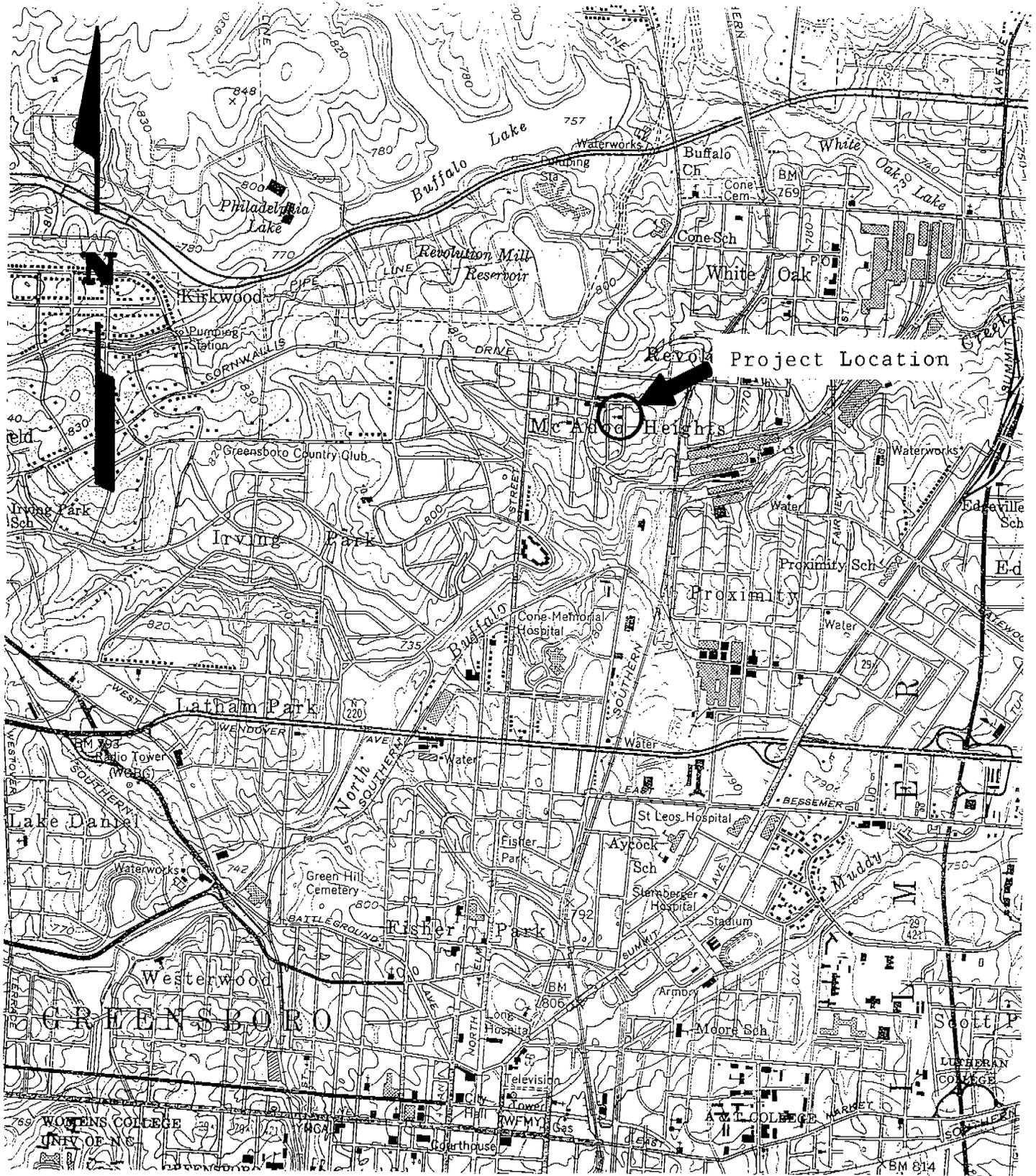
TABLE 1

Soil Sample Laboratory Analytical Results
Palm Street Christian Church
Greensboro, North Carolina
Aquaterra Job No. G144

<u>Sample No.</u>	<u>Date</u>	<u>Depth</u>	<u>TPH by GC Method 5030^a</u>	<u>TPH by GC Method 3550^a</u>
1PB1	8-13-90	7.5 ft	<2.0	<2.0
1PB2	8-13-90	7.5 ft	<2.0	<2.0

^aAll units in mg/kg.

Analytical Laboratory: Industrial & Environmental Analysts, Inc.
Cary, North Carolina



PROJECT:
 Palm Street Church
 Greensboro, N C

TITLE:
 Project Location Map

103:
 G144

DRAWING:

FIGURE:
 1

SCALE:
 1:24000



AQUATERRA, INC.
 RALEIGH, GREENSBORO, CHARLOTTE
 NORTH CAROLINA

PALM STREET

FENCE

PALM STREET CHRISTIAN CHURCH

STORAGE SHED

TANK PIT

AIR CONDITIONING UNITS

UTILITY POLE



CHURCH PARKING LOT

PROJECT:

PALM STREET CHURCH
GREENSBORO, NORTH CAROLINA

TITLE:

SITE LOCATION MAP

JOB:

G144

DRAWING:

G144-2

FIGURE:

#2

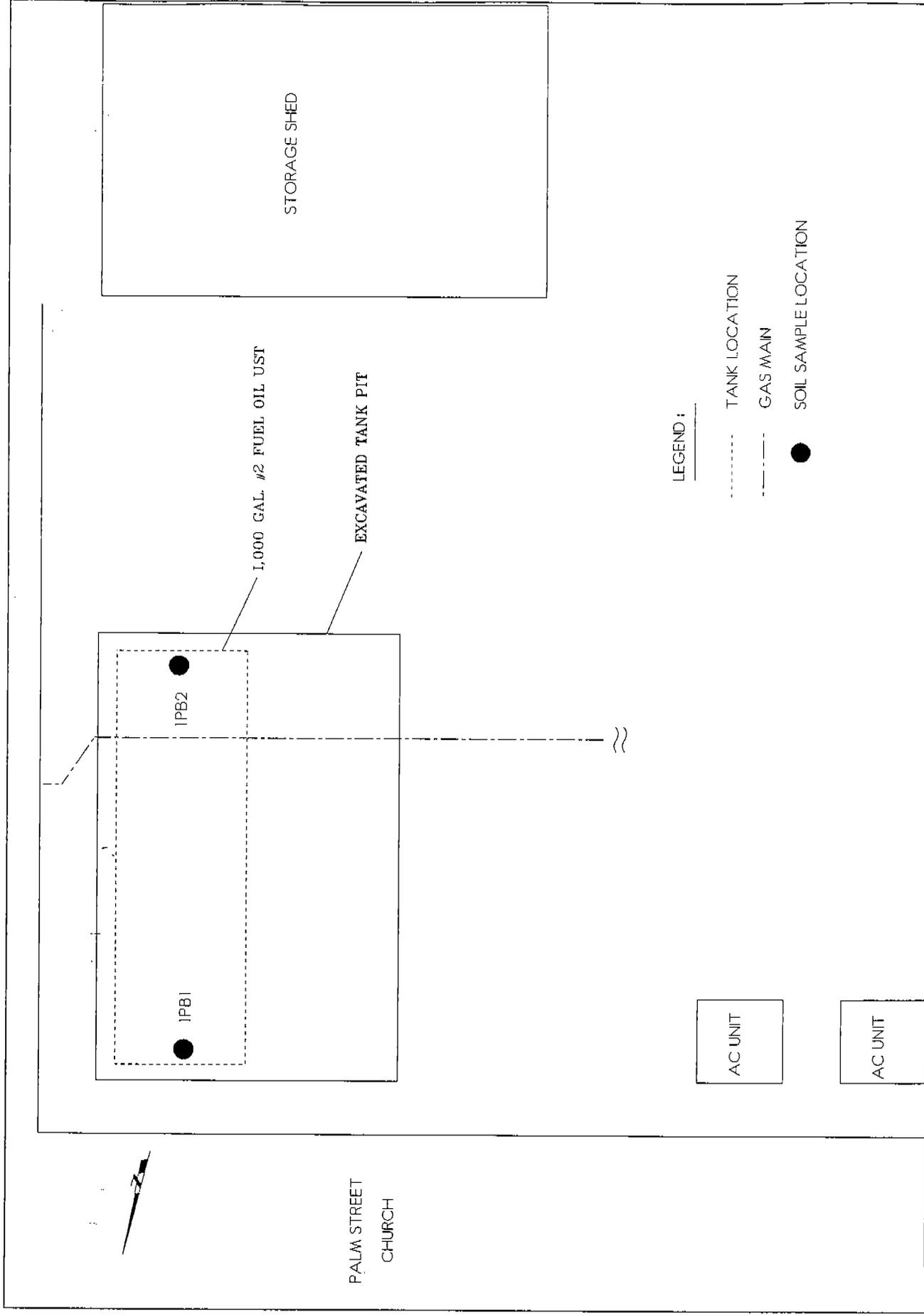
SCALE:

1"=20'



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RALEIGH, GREENSBORO, CHARLOTTE
NORTH CAROLINA



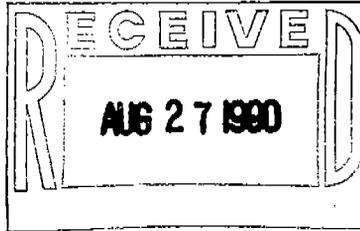
PROJECT:	PALM STREET CHURCH GREENSBORO, NORTH CAROLINA		TITLE: SOIL SAMPLE LOCATION MAP	
	JOB: G144	DRAWING: G144-3	FIGURE: #3	SCALE: 1"=5'
 AQUATERRA, INC. RALEIGH, GREENSBORO, CHARLOTTE NORTH CAROLINA				



Industrial & Environmental Analysts, Inc.

P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

August 23, 1990



Earl Jones
Aquaterra, Inc.
309 Concord Street, Suite 204D
Greensboro, NC 27406

Reference IEA Report No.: 835234
Project ID: G144

Dear Mr. Jones,

Transmitted herewith are the results of analyses on two samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Juliana L. Nemi
for

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84



Total Petroleum Hydrocarbon Analysis

IEA Sample No: 835-234-1 Date Received: 8-14-90
Client Sample No: 1PB1 Date Extracted: 8-17-90
Client Project No: G144

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 8-20-90

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

=====
Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 8-20-90

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:



Total Petroleum Hydrocarbon Analysis

IEA Sample No: 835-234-2

Date Received: 8-14-90

Client Sample No: 1PB2

Date Extracted: 8-17-90

Client Project No: G144

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil, kerosene, varsol)
Date Analyzed: 8-20-90

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 8-20-90

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

