

**INITIAL SITE ASSESSMENT  
UNICON CONCRETE  
HIGH POINT, NORTH CAROLINA**

**S&ME JOB NO. 1584-93-087**



July 13, 1993

Mr. Gary McLamb  
Unicon Concrete  
P.O. Box 237  
High Point, North Carolina 27261

Reference:           **INITIAL SITE ASSESSMENT**  
Unicon Concrete  
406 Tomlinson Street  
High Point, North Carolina  
S&ME Project No. 1584-93-087

Dear Mr. McLamb:

S&ME, Inc. has completed the Initial Site Assessment at the above referenced location (see Figure 84087-1). The purpose of the Initial Site Assessment was to explore the potential for petroleum hydrocarbon contamination of the soil and groundwater at the former location of a gasoline underground storage tank (UST). The results of the field and laboratory explorations indicate low concentrations of soil and groundwater contamination. The level of groundwater contamination encountered is above the current groundwater quality standards as set forth in 15A NCAC 2L of the North Carolina Administrative Code. This report describes our field and laboratory procedures and recommendations.

## **BACKGROUND**

On April 12, 1993, Piedmont Environmental Services, Inc. removed a 1,500 gallon gasoline UST from the site. Overburden soils were stockpiled on-site adjacent to the excavation. Indications of a release of petroleum hydrocarbons in the form of strong hydrocarbon vapors and possible free product were observed. Unicon Concrete received a Notice of Regulatory Requirement for the site dated April 14, 1993 from the North Carolina Department of Environment, Health, and Natural Resources (DEHNR) which outlined required additional investigation.



## **FIELD PROCEDURE**

On June 4, 1993, S&ME personnel drilled hand auger borings in the immediate vicinity of the former UST (see figure 84087-2 for location of borings). The hand-auger borings were extended at each location until groundwater was encountered. The soil at each location was examined for physical signs of contamination and screened for volatile organic vapors with an HNu meter. HNu readings ranged from less than 10 parts per million (ppm) to 115 ppm. Groundwater was encountered at a depth of approximately 7 feet below the ground surface at each location. Hand-auger location #2 was extended to a depth of approximately 9 1/2 feet below the ground surface. A temporary slotted PVC standpipe was installed in order to measure for free product and to obtain a groundwater sample for laboratory analysis. After the PVC standpipe had been installed, a groundwater sample was obtained with a disposable PVC bailer.

Soil samples were obtained for laboratory analyses at hand-auger locations #2 and #3 at a depth of approximately 6 feet below the ground surface. A composite soil sample of the stockpiled soil previously removed from the UST location was also obtained.

## **LABORATORY ANALYSES**

The soil samples were analyzed for total petroleum hydrocarbons (TPH) by SW-846 Method 5030. The groundwater sample taken from the standpipe at hand-auger location #2 was analyzed for volatile organic compounds by EPA method 602. The results of the laboratory analyses indicated TPH concentrations in the soil samples obtained from the hand auger borings (AB-2 and AB-3) of 45 ppm and 31 ppm, respectively. A TPH concentration of 50 ppm was reported for the soil sample obtained from the soil stockpile (SP-1).

The results of the laboratory analysis on the groundwater sample indicated concentrations of two compounds higher than the 2L standard. Benzene at 740 parts per billion (ppb) and ethylbenzene at 72 ppb are above their respective regulatory limits of 1 ppb and 29 ppb. Copies of the laboratory test reports are included in the Appendix.

## **SITE SENSITIVITY EVALUATION**

In the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater", DEHNR has established a Site Sensitivity Evaluation (SSE) for hydrocarbon contaminated soils. The purpose of the SSE is to evaluate the sensitivity of groundwater to petroleum hydrocarbon contamination in the soil. Soil clean-up levels are based on the type of hydrocarbon and are determined by the SSE score. All clean-up levels must be approved by DEHNR.

There are five site classifications in the SSE depending on groundwater usage in the vicinity of the site and access to a public water supply. Because no known water supply wells are located within 1,500 feet of the site and the site is served by public water supply, the site is included in Category E.

S&ME performed a SSE for the subject site based on the information which was obtained during the field exploration. A Total Site Characteristics Score of 75 was obtained. This corresponds to a final soil clean-up level of 180 ppm. A copy of the SSE is included in the Appendix.

### **CONCLUSIONS**

Based on the TPH concentrations reported by the laboratory analyses and the SSE score for the site, we do not believe that further remediation of the in-place soils in the vicinity of the UST excavation should be performed. The soil samples were obtained from locations adjacent to the UST where the highest TPH concentrations would be anticipated. The results of the laboratory analyses on the soil stockpile sample indicate that hydrocarbon contamination is present. Because the stockpile is small (approximately 5 cubic yards), we recommend that the stockpile be aerated on-site on an impermeable surface in order to allow the petroleum hydrocarbons in the soil to volatilize. After the stockpile has been aerated, a soil sample should be obtained for laboratory analysis to verify the TPH concentration remaining in the soil.

The results of the laboratory analysis performed on the groundwater sample indicate that benzene and ethylbenzene are above the 2L standard. Each of these compounds are components of gasoline.

Groundwater flow at the former UST location most likely flows toward a stream which bisects the property. The stream is approximately 50 to 75 feet from the UST location. Because the contaminant concentrations identified are relatively small and represent the degree of contamination at the source, we do not believe that groundwater contamination from the UST excavation will reach the stream in concentrations which will adversely affect water quality. We do not recommend further investigation at this time.

Initial Site Investigation  
Unicon Concrete

1584-93-087  
July 13, 1993

**CLOSURE**

S&ME appreciates the opportunity to assist Unicon Concrete with this investigation. If you have questions concerning this report or if we may be of further service, please call.

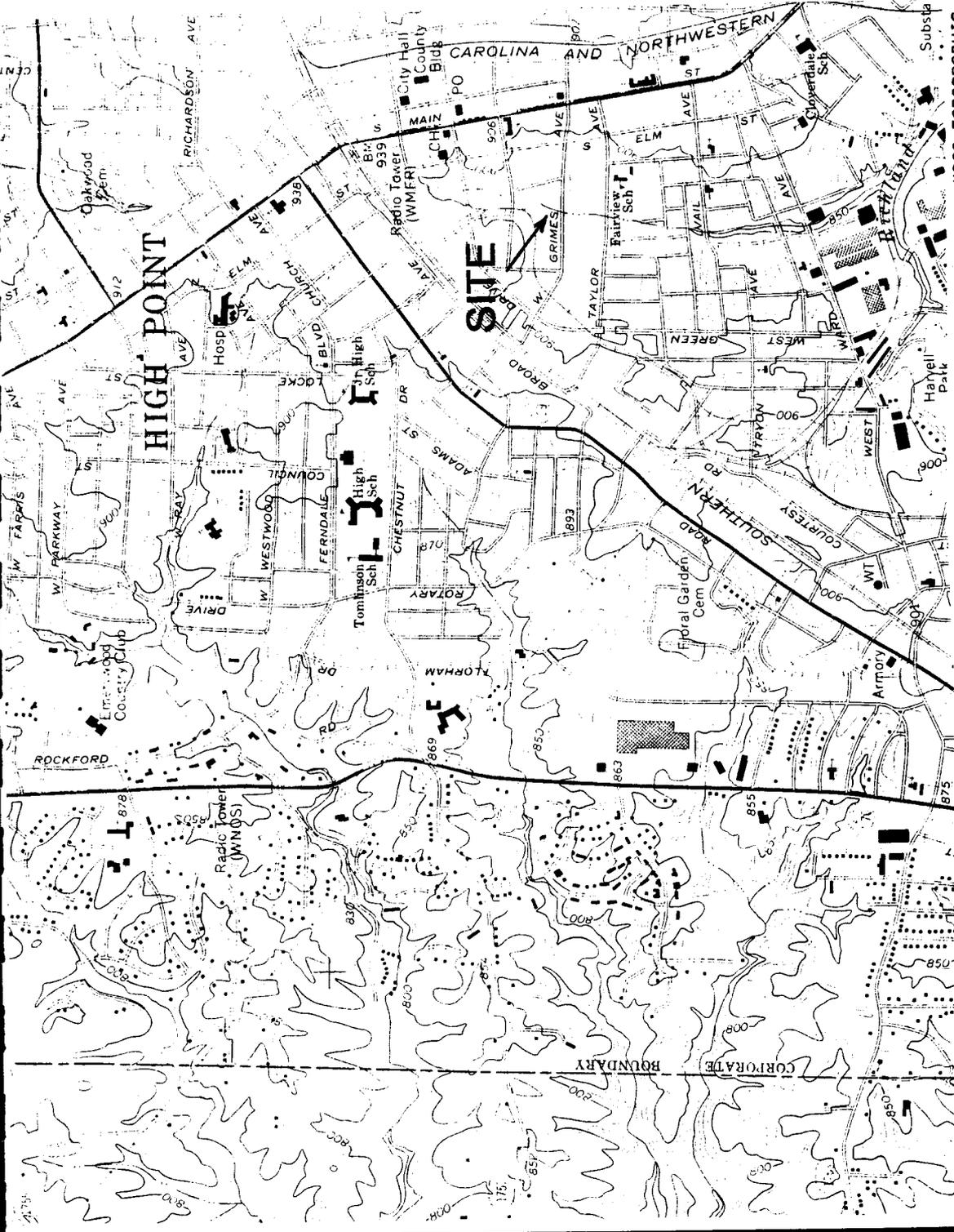
Sincerely,

S&ME, Inc.



Wayne H. Watterson, P.E.  
Project Manager

cc: Guilford County Emergency Services



USGS TOPOGRAPHIC MAP  
HIGH POINT WEST QUADRANGLE



S&ME, INC.

GREENSBORO, NORTH CAROLINA

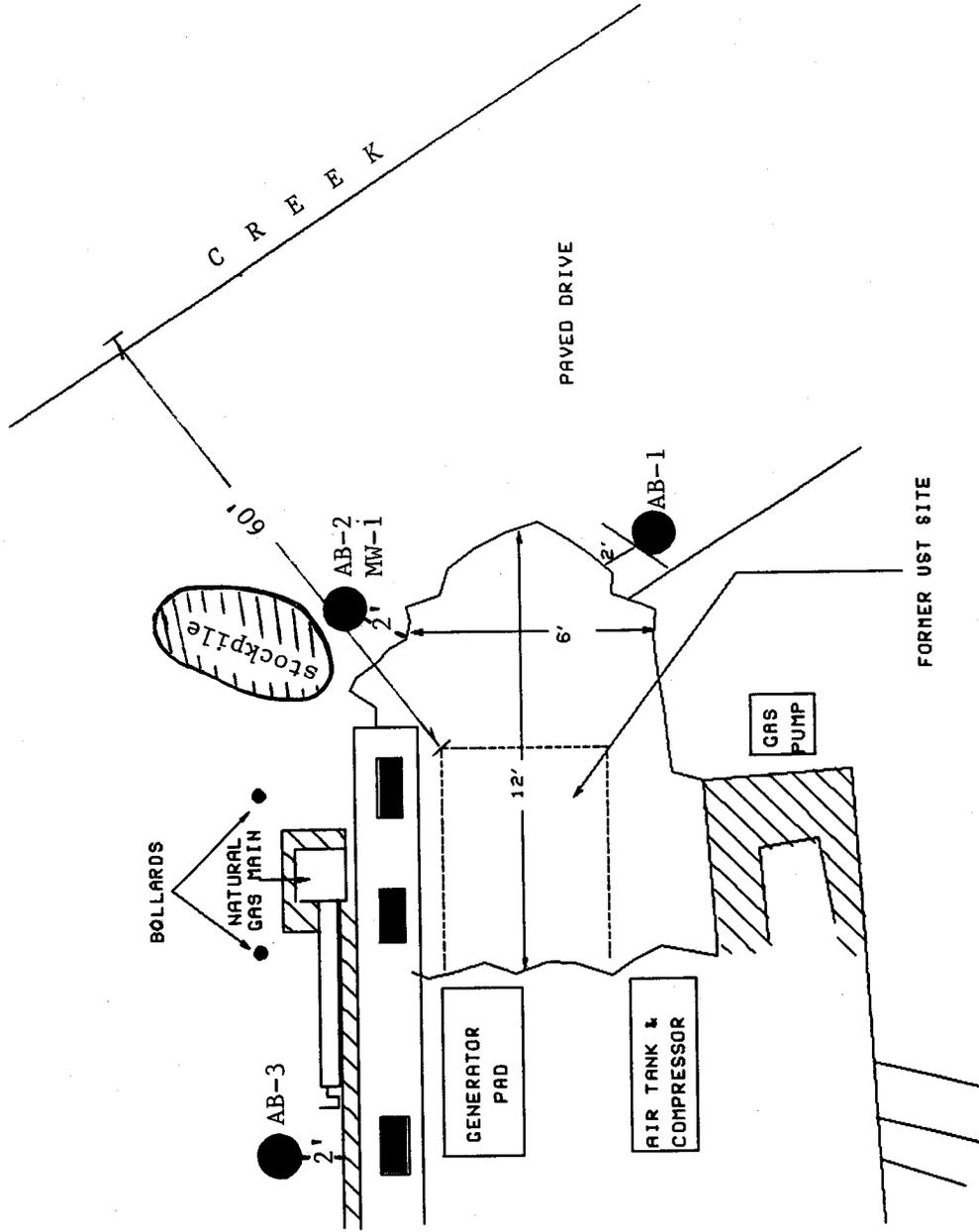
DATE: 06-15-93

DRAWN BY: VLR

*NW*

FORMER UST SITE/UNICON CONCRETE  
HIGH POINT, NORTH CAROLINA

SITE VICINITY MAP 84087-1



NOTE: NOT TO SCALE



S&ME, INC.  
GREENSBORO, NORTH CAROLINA

DATE: 06-15-93

APPROVED BY: *(Signature)*

DRAWN BY: VLR

FORMER UST SITE/UNICON CONCRETE  
HIGH POINT, NORTH CAROLINA

SITE PLAN

84087-2

**IEA**

An Aquarion Company

**Total Petroleum Hydrocarbon Analysis**

IEA Project No: 552-344 Date Sampled: 06-04-93  
IEA Sample No: 9306117-01 Date Received: 06-07-93  
Client Sample No: AB-2  
Client Project No: 1584-93-087

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)  
Date Analyzed: 06-11-93 Analyzed by: Westhead  
Time Analyzed: 1112

The sample contains a petroleum hydrocarbon blend with a distillation range similar to gasoline. Total concentration is 45 mg/kg.  
The quantitation limit is 5.0 mg/kg.

**Comment:**

Quantitation limit elevated due to sample dilution prior to analysis.  
Sample diluted due to the presence of target compounds.

**IEA**

An Aquanon Company

**Total Petroleum Hydrocarbon Analysis**

IEA Project No: 552-344 Date Sampled: 06-04-93  
IEA Sample No: 9306117-02 Date Received: 06-07-93  
Client Sample No: AB-3  
Client Project No: 1584-93-087

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)  
Date Analyzed: 06-11-93 Analyzed by: Westhead  
Time Analyzed: 1145

The sample contains a petroleum hydrocarbon blend with a distillation range similar to gasoline. Total concentration is 31 mg/kg.  
The quantitation limit is 5.0 mg/kg.

**Comment:**

Quantitation limit elevated due to sample dilution prior to analysis.  
Sample diluted due to the presence of target compounds.

**IEA**

An Aquarion Company

**Total Petroleum Hydrocarbon Analysis**

IEA Project No: 552-344 Date Sampled: 06-04-93  
IEA Sample No: 9306117-03 Date Received: 06-07-93  
Client Sample No: SP-1  
Client Project No: 1584-93-087

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)  
Date Analyzed: 06-11-93 Analyzed by: Westhead  
Time Analyzed: 1219

The sample contains a petroleum hydrocarbon blend with a distillation range similar to gasoline. Total concentration is 50 mg/kg.  
The quantitation limit is 5.0 mg/kg.

**Comment:**

Quantitation limit elevated due to sample dilution prior to analysis.  
Sample diluted due to the presence of target compounds.



# IEA

An Aquarion Company

PURGEABLE AROMATICS  
EPA 602 COMPOUND LIST

IEA Project Number:	552-344(0)	Date Received:	06/07/93
IEA Sample Number:	9306118-01	Date Sampled:	06/04/93
Client Name:	S&ME Greensboro	Date Analyzed:	06/16/93
Client Project ID:	1584-93-087	Analysis By:	Ware
Sample Identification:	MW-1	Dilution Factor:	20
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	1.0	740
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	72
7	Toluene	1.0	170
8	Xylenes (Total)	1.0	220

Comments:

Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor.

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.  
Sample diluted due to high concentration of target compounds present.

Table 1  
**Site Sensitivity Evaluation (SSE)**  
 Site Characteristics Evaluation (Step 1)

Characteristic	Condition	Rating	
Grain Size*	Gravel	150	50
	Sand	100	
	Silt	50	
	Clay	0	
Are relict structures, sedimentary structures, and/or textures present in the zone of contamination and underlying "soils"?	Present and intersecting the water table.	10	0
	Present but <u>not</u> intersecting the water table.	5	
	None present.	0	
Distance from location of deepest contaminated soil** to water table.	0 - 5 feet	20	20
	(C, D & E sites only)	20	
	5 - 10 feet	10	
	>10 - 40 feet	0	
	> 40 feet	0	
Is the top of bedrock or transmissive indurated sediments located above the water table?	Yes	20	0
	No	0	
Artificial conduits present within the zone of contamination.	Present and intersecting the water table.	10	5
	Present but <u>not</u> intersecting the water table.	5	
	Not present.	0	

**Total Site Characteristics Score: 75**

\* **Predominant** grain size based on Unified Soil Classification System or U.S. Dept. of Agriculture's Soil Classification Method.  
 \*\* (>10 ppm TPFH by Method 5030; >40 ppm TPFH by Method 3550; >250 ppm O&G by Method 9071)

# Site Sensitivity Evaluation (SSE)

Initial Cleanup Level  
(Step 2)

Final Cleanup Level  
(Step 3)

## EPA Method 5030 for Low Boiling Point Hydrocarbons such as Gasoline, Aviation Fuels, Gasohol

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤10		1 x _____ = _____ ppm	Category C & D (Multiply initial cleanup level by 2)
121-150	20	<div style="border: 1px solid black; padding: 5px; display: inline-block;">                     Select Site Category*                      →                 </div>	Category E (Multiply initial cleanup level by 3)	3 x <u>60</u> = <u>180</u> ppm
91-120	40			
61-90	60			
31-60	80			
0-30	100			

## EPA Method 3550 for High Boiling Point Hydrocarbons such as Kerosene, Diesel, Varsol, Mineral Spirits, Naphtha

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤40		1 x _____ = _____ ppm	Category C & D (Multiply initial cleanup level by 2)
121-150	80	<div style="border: 1px solid black; padding: 5px; display: inline-block;">                     Select Site Category*                      →                 </div>	Category E (Multiply initial cleanup level by 3)	3 x _____ = _____ ppm
91-120	160			
61-90	240			
31-60	320			
0-30	400			

## EPA Method 9071 for Heavy Fuels - Oil & Grease (O&G) such as Fuel Oil #4, #5, #6, Motor Oil, Hydraulic Fluid

Total Site Characteristics Score	Initial Cleanup Level O&G (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤250		1 x _____ = _____ ppm	Category C & D (Multiply initial cleanup level by 2)
121-150	400	<div style="border: 1px solid black; padding: 5px; display: inline-block;">                     Select Site Category*                      →                 </div>	Category E (Multiply initial cleanup level by 3)	3 x _____ = _____ ppm
91-120	550			
61-90	700			
31-60	850			
0-30	1000			

\* See Site Category Descriptions, Table 3