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LETTER TRANSMITTING FINAL LETTER REPORT FUEL DISTRIBUTION SYSTEM AREA 15
CNC CHARLESTON SC
2/18/2000
ENSAFE INC.

CTO-144

ENSAFE

ENSAFE INC. ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

201 North Palafox Street, Suite 200 • Pensacola, FL 32501 • Telephone 850-434-2230 • Facsimile 850-434-2288 • www.ensafe.com

February 18, 2000

Mr. Paul Bristol
South Carolina Department of Health and Environmental Control
Groundwater Quality Section
Bureau of Water
2600 Bull Street
Columbia, SC 29201

RE: Fuel Distribution System, Area 15, Charleston Naval Complex, South Carolina (SCDHEC No. 01187)

Dear Mr. Bristol:

EnSafe is please to submit, on behalf of the U.S. Navy, Southern Division Naval Facilities Engineering Command, two copies of the Final Letter Report for SCDHEC petroleum site number 01187. This submittal incorporates the results of follow-on investigative activities performed in accordance with recommendations in the CAR and to address SCDHEC comments concerning these areas.

Should you have any questions or concerns regarding this submittal, please contact me.

Sincerely,

ENSAFE INC.

Craig R. Smith

Attachment

cc: T. Haverkost, EnSafe - Charleston
0144 File

ENSAFE

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February 18, 2000

Commanding Officer
ATTN: Mr. Gabriel L. Magwood, Code 1849
Naval Facilities Engineering Command
Southern Division
2155 Eagle Drive
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Fuel Distribution System, Area 15, Charleston Naval Complex, South Carolina (SCDHEC No. 01187)

Dear Mr. Magwood:

This Final Letter Report supplements the Fuel Distribution System (FDS) Contamination Assessment Report (CAR) dated September 10, 1998. The enclosed letter report (2 copies) reflects the results of the surface and subsurface soil samples collected and the previously collected groundwater data at Area 15. The submittal is concurrently being sent to SCDHEC (2 copies), as we discussed in our recent phone conversation.

Should you have any questions or concerns regarding this submittal, please contact me.

Sincerely,

ENSAFE, INC.

Craig R. Smith

Attachment

cc: T. Haverkost, EnSafe - Charleston
0144 File

Area 15
(SCDHEC #01187)

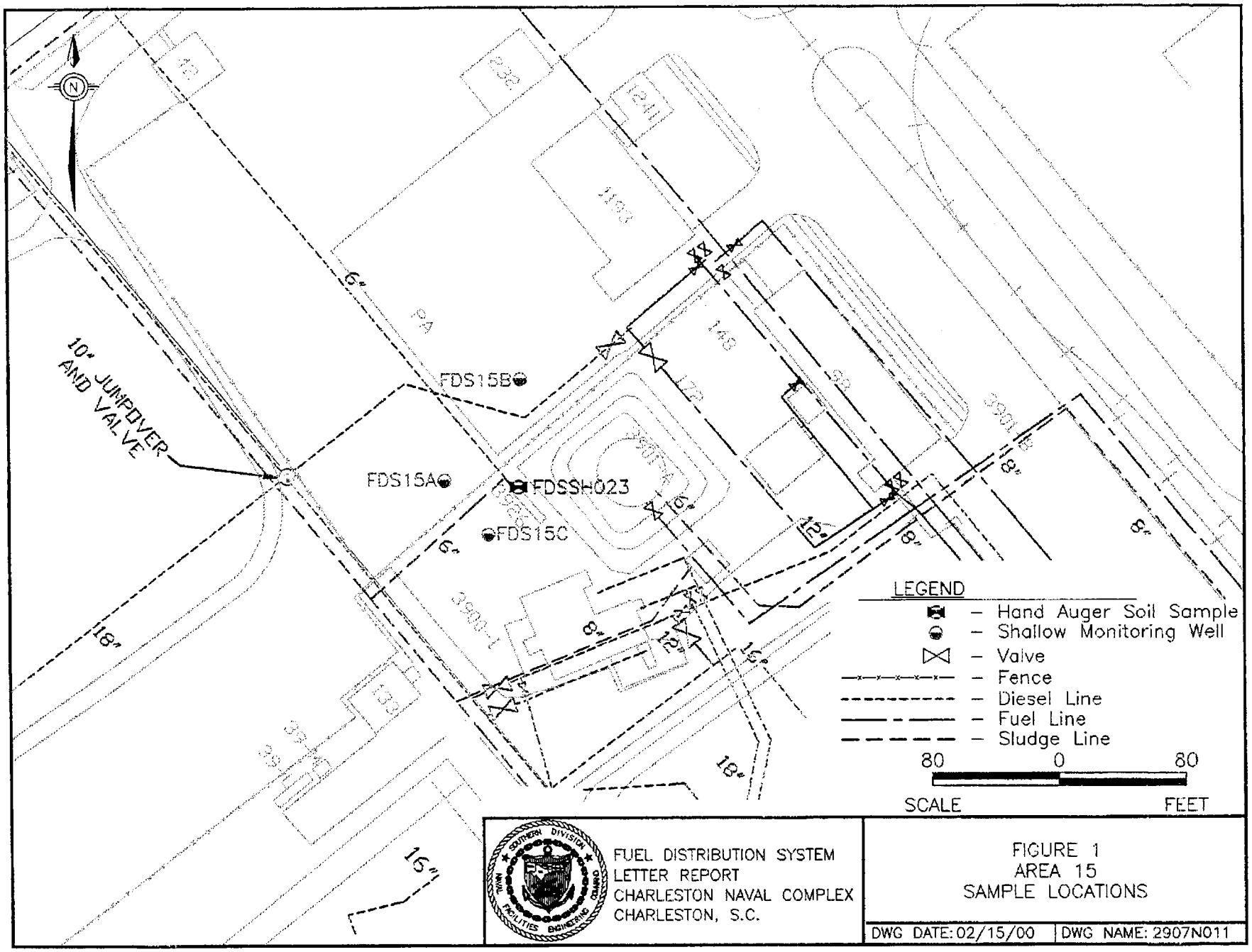
Background

Area 15 of the Fuel Distribution System (FDS) is associated with Phase I surface soil sample FDSSH02301. The sample was located just outside the western corner of the containment dike for Facility 3901A, on the north side of Building 3926. Six-inch pipelines intersect and connect to Building 3926 approximately three feet from FDSSH02301. Figure 1 presents the site features.

Facility 3901A is a 103,194 gallon welded steel ballast and sludge storage tank, which has been used for waste oil storage since 1945. The tank is connected to sludge lines which extend to various parts of the base, paralleling the fuel lines of the FDS. Building 3926 is a 15-foot high metal oil water separator mounted on a concrete pad. The facility originally used a Wemco unit to treat ballast water from tanks 39A and 39D. The Wemco unit was replaced with the current baffle operated system in 1991.

Soil Sample Results

Surface soil was sampled at Area 15 because it was most likely to be impacted by area activities or associated with a release at the site. As reported in the FDS *Contamination Assessment Report* (CAR), sample FDSSH02301 exhibited total petroleum hydrocarbons-gasoline range organics of 501 micrograms per kilogram (μg/kg), which prompted Phase II soil and groundwater sampling within Area 15. Phase II soil sampling revealed surface soil naphthalene (1,700 μg/kg) and total naphthalenes (8,500 μg/kg) above the respective groundwater protective Risk-Based Screening Levels (RBSLs) for these analytes (210 μg/kg for each analyte) at FDSSH02301. The ingestion and dermal contact RBSLs for napthalenes and total naphthalenes (3.1E+06 μg/kg for each analyte) was not exceeded.



FUEL DISTRIBUTION SYSTEM
LETTER REPORT
CHARLESTON NAVAL COMPLEX
CHARLESTON, S.C.

FIGURE 1
AREA 15
SAMPLE LOCATIONS

DWG DATE: 02/15/00 | DWG NAME: 2907N011

Based on these results, a subsurface soil sample from the 3- to 5-foot below ground surface (bgs) interval, sample FDSSH02302, was collected and analyzed to determine the vertical extent and leachability potential of naphthalenes in subsurface soil at Area 15. Table 1 presents the surface soil results, as published in the CAR, and the recently acquired subsurface soil results. As presented in the CAR and Table 1, surface soil analytical results exceeded the groundwater protective RBSLs for napthalene and total napthlenes (210 μg/kg each analyte). No groundwater protective RBSLs were exceeded in the subsurface soil data. These results document that the naphthalene detected in the surficial interval is limited to that interval, thus delineating the vertical extent of this Contaminant of Concern (COC).

Groundwater Sample Results

Table 2 presents the groundwater analytical results, as published in the CAR. No groundwater organic RBSL parameters were detected during the most recent sampling event of the Phase II groundwater investigation at Area 15. Specifically, no naphthalene compounds were detected in shallow groundwater. No groundwater inorganic detection at Area 15 exceeded a RBSL during any sampling event. Figure 1 also depicts the Area 15 sample locations.

Conclusions and Recommendations

A review of analytical results from the surface soil data reveals that naphthalene and total naphthalenes in surficial soil exceeded the groundwater protective RBSL, but did not exceed the ingestion and dermal contact RBSL. The subsurface soil results document that these exceedances are limited to the surficial interval. In addition, an evaluation of Phase II groundwater results reveals that no naphthalenes were detected in shallow groundwater at Area 15. No other analytes detected in shallow groundwater exceeded their respective groundwater RBSLs.

Groundwater is not currently used at Charleston Naval Complex (CNC) as a source of potable or process water; a base wide potable water system provides drinking and process water to buildings

at CNC. This system is to remain in operation under the current base reuse plan. In addition, the shallow aquifer for this investigation contains significant concentrations of naturally occurring chlorides and elevated total dissolved solids, which makes this water-bearing unit a questionable potable water source.

Area 15 is currently zoned for marine industrial use, and will likely remain a fuel farm under this usage scenario. Since the napthalene detected in surficial soil does not exceed the ingestion and dermal contact RBSL and is not leaching to shallow groundwater at the site, no further action is recommended for Area 15.

Table 1
Analytes Detected in Surface and Subsurface Soil
Area 15
Fuel Distribution System

Parameters	Location	Surface Conc.	Ingestion/Dermal Contact RBSL	Subsurface Conc.	Groundwater Protection RBSL	Exceeds Ingestion-Dermal RBSL/Groundwater Protection RBSL
TPH - GRO (μg/kg)						
Gasoline	FDSSH023	501	NL	NT	NL	NA/NA
Volatile Organic Compounds (μg/kg)						
1,1-Dichloroethane	FDSSH023	85	NL	ND	NL	NA/NA
1,1,1-Trichloroethane	FDSSH023	48	NL	ND	NL	NA/NA
Benzene	FDSSH023	ND	22,000	2	5	No/No
Ethylbenzene	FDSSH023	130	7.8E+06	ND	1,260	No/No
Methylene chloride	FDSSH023	ND	NL	ND	NL	NA/NA
Tetrachloroethene	FDSSH023	13	NL	ND	NL	NA/NA
Toluene	FDSSH023	22	1.6E+06	ND	1,622	No/No
Xylene (Total)	FDSSH023	1800	1.6E+08	ND	42,471	No/No
Semivolatile Organic Compounds (μg/kg)						
Total Naphthalenes	FDSSH023	8500	3.1E+06	ND	210	No/Yes
2-Methylnaphthalene	FDSSH023	6800	NL	ND	NL	NA/NA
Naphthalene	FDSSH023	1700	3.1E+06	ND	210	No/Yes
bis(2-ethylhexyl)phthalate	FDSSH023	ND	NL	ND	NL	NA/NA
Chrysene	FDSSH023	240	88,000	ND	12,998	No/No

Table 1
Analytes Detected in Surface and Subsurface Soil
Area 15
Fuel Distribution System

Parameters	Location	Surface Conc.	Ingestion/Dermal Contact RBSL	Subsurface Conc.	Groundwater Protection RBSL	Exceeds Ingestion-Dermal RBSL/Groundwater Protection RBSL
Fluorene	FDSSH023	1900	NL	ND	NL	NA/NA
Phenanthrene	FDSSH023	1900	NL	ND	NL	NA/NA
Pyrene	FDSSH023	590	NL	ND	NL	NA/NA
Pesticides/PCB (μg/kg)						
4,4'-DDE	FDSSH023	ND	NL	12	NL	NA/NA
Aroclor- 1260	FDSSH023	ND	NL	53	NL	NA/NA
Endrin	FDSSH023	20	NL	ND	NL	NA/NA
Heptachlor	FDSSH023	5.3	NL	ND	NL	NA/NA
Heptachlor epoxide	FDSSH023	ND	NL	ND	NL	NA/NA
gamma-Chlordane	FDSSH023	3.4	NL	3.2	NL	NA/NA
Inorganics (mg/kg)						
Aluminum (Al)	FDSSH023	2820	NL	6,950	NL	NA/NA
Arsenic (As)	FDSSH023	1.8	NL	2.4	NL	NA/NA
Barium (Ba)	FDSSH023	13.1	NL	31.3	NL	NA/NA
Beryllium (Be)	FDSSH023	ND	NL	0.31	NL	NA/NA
Cadmium (Cd)	FDSSH023	0.19	NL	ND	NL	NA/NA
Calcium (Ca)	FDSSH023	13,100	NL	1,220	NL	NA/NA

Table 1
Analytes Detected in Surface and Subsurface Soil
Area 15
Fuel Distribution System

Parameters	Location	Surface Conc.	Ingestion/Dermal Contact RBSL	Subsurface Conc.	Groundwater Protection RBSL	Exceeds Ingestion-Dermal RBSL/Groundwater Protection RBSL
Chromium (Cr)	FDSSH023	9.3	NL	13.5	NL	NA/NA
Cobalt (Co)	FDSSH023	1.3	NL	1.5	NL	NA/NA
Copper (Cu)	FDSSH023	ND	NL	2.4	NL	NA/NA
Iron (Fe)	FDSSH023	4,860	NL	10,500	NL	NA/NA
Lead (Pb)	FDSSH023	29.5	NL	7.9	NL	NA/NA
Magnesium (Mg)	FDSSH023	499	NL	646	NL	NA/NA
Manganese (Mn)	FDSSH023	29.6	NL	34.3	NL	NA/NA
Mercury (Hg)	FDSSH023	0.07	NL	0.05	NL	NA/NA
Nickel (Ni)	FDSSH023	4.2	NL	2.9	NL	NA/NA
Potassium (K)	FDSSH023	240	NL	321	NL	NA/NA
Selenium (Se)	FDSSH023	ND	NL	0.51	NL	NA/NA
Sodium (Na)	FDSSH023	ND	NL	249	NL	NA/NA
Thallium (Tl)	FDSSH023	0.47	NL	ND	NL	NA/NA
Tin (Sn)	FDSSH023	ND	NL	ND	NL	NA/NA
Vanadium (V)	FDSSH023	10.6	NL	16.1	NL	NA/NA
Zinc (Zn)	FDSSH023	66.8	NL	14.8	NL	NA/NA

Notes:

NL	=	Not listed
NA	=	Not applicable
NT	=	Not taken
µg/kg	=	Micrograms per kilogram
mg/kg	=	Milligrams per kilogram

RBSLs for ingestion or dermal contact with surficial soil from the *South Carolina Risk-Based Corrective Action for Petroleum Releases* (SCDHEC, January 5, 1998) were used as reference concentrations.
Bolded concentrations exceed RBSL.

Table 2
Analytes Detected in Shallow Groundwater
Area 15
Fuel Distribution System

Parameters	Location	First Sampling Event	Second Sampling Event	RBSL/Tap Water RBC (μg/L)	Shallow Background
Volatile Organic Compounds (μg/L)					
Toluene	FDS15A	3	ND	1000/75	NA
Chlorobenzene	FDS15A	6	ND	NL/3.9	NA
Semivolatile Organic Compounds (μg/L)					
Phenol	FDS15A	1	ND	NL/2200	NA
4-Methylphenol (p-cresol)	FDS15A	23	2	NL/18	NA
Benzoic acid	FDS15A	6	ND	NL/15000	NA
Pesticides/PCBs (μg/L)					
beta-BHC	FDS15A	0.057	ND	NL/0.037	NA
Inorganics (μg/L)					
Aluminum (Al)	FDS15A	100	503	NL/3700	692
	FDS15B	3,010	209		
	FDS15C	962	474		
Antimony (Sb)	FDS15C	3.5	ND	NL/1.5	4.85
Arsenic (As)	FDS15A	19.4	26.7	50/0.045	17.8
	FDS15B	4.1	4.6		
Barium (Ba)	FDS15A	55.2	94.5	2000/260	31
	FDS15B	68.6	70.6		
	FDS15C	159	153		
Calcium (Ca)	FDS15A	126000	235000	NL/NL	NL
	FDS15B	98800	119000		
	FDS15C	268000	284000		
Chromium (Cr)	FDS15A	0.92	1.5	100/11	3.88
	FDS15B	4.7	ND		
	FDS15C	1.9	ND		
Cobalt (Co)	FDS15B	8.1	6.8	NL/220	1.45
	FDS15C	1.3	ND		
Copper (Cu)	FDS15A	3.6	ND	NL/150	8.33
Cyanide (CN)	FDS15A	3	NT	NL/73	3.8
	FDS15B	7	NT		
Iron (Fe)	FDS15A	4920	6620	NL/1100	30,400
	FDS15B	2060	675		
	FDS15C	1920	3040		

Table 2
Analytes Detected in Shallow Groundwater
Area 15
Fuel Distribution System

Parameters	Location	First Sampling Event	Second Sampling Event	RBSL/Tap Water RBC (μg/L)	Shallow Background
Magnesium (Mg)	FDS15A	12200	15800	NL/NL	NL
	FDS15B	26200	22800		
	FDS15C	19300	14000		
Manganese (Mn)	FDS15A	721	515	NL/73	2906
	FDS15B	1050	813		
	FDS15C	806	465		
Nickel (Ni)	FDS15A	3.7	0.84	NL/73	4.08
	FDS15B	3.2	1.6		
	FDS15C	1.7	0.9		
Potassium (K)	FDS15A	10800	5130	NL/NL	NL
	FDS15B	7410	8050		
	FDS15C	3440	3450		
Sodium (Na)	FDS15A	78300	157000	NL/NL	NL
	FDS15B	92400	158000		
	FDS15C	117000	114000		
Thallium (Tl)	FDS15C	*3.3*	ND	NL/0.26	ND
Vanadium (V)	FDS15A	1.3	1.6	NL/26	15.4
	FDS15B	6	1.1		
	FDS15C	1.9	1.6		

Notes:
NL = Not listed
NA = Not applicable
ND = Not detected
NT = Not taken
μg/L = Micrograms per liter
RBSLs from the *South Carolina Risk-Based Corrective Action for Petroleum Releases* (SCDHEC, January 5, 1998) and tap water RBCs (THQ=0.1) from *Risk Based Concentration Table* (USEPA, October 7, 1999) were used as reference concentrations.
Italicized concentrations exceed the Tap Water RBC. For inorganics, italicized concentrations exceed the shallow groundwater background concentration and the tap water RBC.
All background values for Zone G are based on twice the means of the grid sample concentrations. Background values for groundwater are based on two sampling rounds in two wells at each depth.

Attachment A
Analytical Data

DATALCP3
02/18/00

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

CYANIDE

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/21/96
DATE ANALYZED --->	10/24/96
MATRIX ---------->	Soil
UNITS ---------->	MG/KG

CAS #	Parameter	27339	VAL
57-12-5	Cyanide (CN)	0.53	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-META

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/22/96
DATE ANALYZED --->	10/24/96
MATRIX ---------->	Soil
UNITS ---------->	MG/KG

CAS #	Parameter	27339	VAL
7439-97-6	Mercury (Hg)	0.07	
7429-90-5	Aluminum (Al)	2820.	
7439-92-1	Lead (Pb)	29.5	
7440-36-0	Antimony (Sb)	0.33	U
7439-95-4	Magnesium (Mg)	499.	
7440-38-2	Arsenic (As)	1.8	
7782-49-2	Selenium (Se)	0.33	U
7440-39-3	Barium (Ba)	13.1	
7440-41-7	Beryllium (Be)	0.23	U
7440-43-9	Cadmium (Cd)	0.19	J
7440-70-2	Calcium (Ca)	13100.	
7440-47-3	Chromium (Cr)	9.3	
7440-48-4	Cobalt (Co)	1.3	J
7440-50-8	Copper (Cu)	10.6	U
7439-89-6	Iron (Fe)	4860.	
7439-96-5	Manganese (Mn)	29.6	
7440-02-0	Nickel (Ni)	4.2	J
7440-09-7	Potassium (K)	240.	J
7440-22-4	Silver (Ag)	0.21	U
7440-23-5	Sodium (Na)	164.	U
7440-28-0	Thallium (Tl)	0.47	J
7440-31-5	Tin (Sn)	2.	U
7440-62-2	Vanadium (V)	10.6	
7440-66-6	Zinc (Zn)	66.8	

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-PEST

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	FDSSH02301
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/20/96
DATE ANALYZED --->	10/28/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	27339	VAL
319-84-6	alpha-BHC	1.4	U
319-85-7	beta-BHC	1.4	U
319-86-8	delta-BHC	1.4	U
58-89-9	gamma-BHC (Lindane)	1.4	U
76-44-8	Heptachlor	5.3	J
309-00-2	Aldrin	1.4	U
1024-57-3	Heptachlor epoxide	1.4	U
959-98-8	Endosulfan I	1.4	U
60-57-1	Dieldrin	2.8	U
72-55-9	4,4'-DDE	2.8	U
72-20-8	Endrin	20.	
33213-65-9	Endosulfan II	2.8	U
72-54-8	4,4'-DDD	2.8	U
1031-07-8	Endosulfan sulfate	2.8	U
50-29-3	4,4'-DDT	11.	U
72-43-5	Methoxychlor	14.	U
53494-70-5	Endrin ketone	2.8	U
7421-93-4	Endrin aldehyde	2.8	U
5103-71-9	alpha-Chlordane	1.4	U
5103-74-2	gamma-Chlordane	3.4	
8001-35-2	Toxaphene	92.	U
12674-11-2	Aroclor-1016	37.	U
11104-28-2	Aroclor-1221	37.	U
11141-16-5	Aroclor-1232	37.	U
53469-21-9	Aroclor-1242	37.	U
12672-29-6	Aroclor-1248	37.	U
11097-69-1	Aroclor-1254	74.	U
11096-82-5	Aroclor-1260	170.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-SVOA

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/20/96
DATE ANALYZED --->	11/01/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	27339	VAL
108-95-2	Phenol	1800.	U
111-44-4	bis(2-Chloroethyl)ether	1800.	U
95-57-8	2-Chlorophenol	1800.	U
541-73-1	1,3-Dichlorobenzene	1800.	U
106-46-7	1,4-Dichlorobenzene	1800.	U
100-51-6	Benzyl alcohol	1800.	U
95-50-1	1,2-Dichlorobenzene	1800.	U
95-48-7	2-Methylphenol (o-Cresol)	1800.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800.	U
106-44-5	4-Methylphenol (p-Cresol)	1800.	U
621-64-7	N-Nitroso-di-n-propylamine	1800.	U
67-72-1	Hexachloroethane	1800.	U
98-95-3	Nitrobenzene	1800.	U
78-59-1	Isophorone	1800.	U
88-75-5	2-Nitrophenol	1800.	U
105-67-9	2,4-Dimethylphenol	1800.	U
65-85-0	Benzoic acid	8900.	U
111-91-1	bis(2-Chloroethoxy)methane	1800.	U
120-83-2	2,4-Dichlorophenol	1800.	U
120-82-1	1,2,4-Trichlorobenzene	1800.	U
91-20-3	Naphthalene	1700.	J
106-47-8	4-Chloroaniline	1800.	U
87-68-3	Hexachlorobutadiene	1800.	U
59-50-7	4-Chloro-3-methylphenol	1800.	U
91-57-6	2-Methylnaphthalene	6800.	
77-47-4	Hexachlorocyclopentadiene	1800.	U
88-06-2	2,4,6-Trichlorophenol	1800.	U
95-95-4	2,4,5-Trichlorophenol	8900.	U
91-58-7	2-Chloronaphthalene	1800.	U
88-74-4	2-Nitroaniline	8900.	U
131-11-3	Dimethyl phthalate	1800.	U
208-96-8	Acenaphthylene	1800.	U
606-20-2	2,6-Dinitrotoluene	1800.	U
99-09-2	3-Nitroaniline	8900.	U
83-32-9	Acenaphthene	1800.	U
51-28-5	2,4-Dinitrophenol	8900.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-SVOA

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/20/96
DATE ANALYZED --->	11/01/96
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	27339	VAL
100-02-7	4-Nitrophenol	8900.	U
132-64-9	Dibenzofuran	1800.	U
121-14-2	2,4-Dinitrotoluene	1800.	U
84-66-2	Diethylphthalate	1800.	U
7005-72-3	4-Chlorophenylphenylether	1800.	U
86-73-7	Fluorene	1900.	
100-01-6	4-Nitroaniline	8900.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	8900.	U
86-30-6	N-Nitrosodiphenylamine	1800.	U
101-55-3	4-Bromophenyl-phenylether	1800.	U
118-74-1	Hexachlorobenzene	1800.	U
87-86-5	Pentachlorophenol	8900.	U
85-01-8	Phenanthrene	1900.	
120-12-7	Anthracene	1800.	U
84-74-2	Di-n-butylphthalate	1800.	U
206-44-0	Fluoranthene	1800.	U
129-00-0	Pyrene	590.	J
85-68-7	Butylbenzylphthalate	1800.	U
91-94-1	3,3'-Dichlorobenzidine	3700.	U
56-55-3	Benzo(a)anthracene	1800.	U
218-01-9	Chrysene	240.	J
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	1800.	U
117-84-0	Di-n-octyl phthalate	1800.	U
205-99-2	Benzo(b)fluoranthene	1800.	U
207-08-9	Benzo(k)fluoranthene	1800.	U
50-32-8	Benzo(a)pyrene	1800.	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800.	U
53-70-3	Dibenz(a,h)anthracene	1800.	U
191-24-2	Benzo(g,h,i)perylene	1800.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-VOA

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE ANALYZED --->	10/22/96
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	27339	VAL
74-87-3	Chloromethane	56.	U
74-83-9	Bromomethane	56.	U
75-01-4	Vinyl chloride	56.	U
75-00-3	Chloroethane	56.	U
75-09-2	Methylene chloride	28.	U
67-64-1	Acetone	56.	U
75-15-0	Carbon disulfide	28.	U
75-35-4	1,1-Dichloroethene	28.	U
75-34-3	1,1-Dichloroethane	85.	J
540-59-0	1,2-Dichloroethene (total)	28.	U
67-66-3	Chloroform	28.	U
107-06-2	1,2-Dichloroethane	28.	U
78-93-3	2-Butanone (MEK)	56.	U
71-55-6	1,1,1-Trichloroethane	48.	J
56-23-5	Carbon tetrachloride	28.	U
75-27-4	Bromodichloromethane	28.	U
78-87-5	1,2-Dichloropropane	28.	U
10061-01-5	cis-1,3-Dichloropropene	28.	U
79-01-6	Trichloroethene	28.	U
124-48-1	Dibromochloromethane	28.	U
79-00-5	1,1,2-Trichloroethane	28.	U
71-43-2	Benzene	28.	U
10061-02-6	trans-1,3-Dichloropropene	28.	U
75-25-2	Bromoform	28.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	56.	U
591-78-6	2-Hexanone	56.	UJ
127-18-4	Tetrachloroethene	13.	J
79-34-5	1,1,2,2-Tetrachloroethane	28.	UJ
108-88-3	Toluene	22.	J
108-90-7	Chlorobenzene	28.	UJ
100-41-4	Ethylbenzene	130.	J
100-42-5	Styrene	28.	UJ
1330-20-7	Xylene (Total)	1800.	J
108-05-4	Vinyl acetate	56.	UJ
110-75-8	2-Chloroethyl vinyl ether	56.	UR

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

TPH-DRO

SAMPLE ID ------->	FDS-S-H023-01
ORIGINAL ID ----->	FDSSH02301
LAB SAMPLE ID --->	27355.10
ID FROM REPORT -->	FDSSH02301
SAMPLE DATE ----->	10/17/96
DATE EXTRACTED -->	10/24/96
DATE ANALYZED --->	11/04/96
MATRIX ---------->	Soil
UNITS ---------->	MG/KG

CAS #	Parameter	27339	VAL
68334-30-5	Diesel	55.6	U
8008-20-6	Kerosene	55.6	U
9999000-35-1	JP-4 C6-C14	55.6	U
9999000-48-6	NAPHTHA C6-C12	55.6	U
68553-00-4	Fuel oil no. 6	55.6	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

TPH-GRO							
	SAMPLE ID ------->	FDS-S-H023-01					
	ORIGINAL ID ----->	FDSSH02301					
	LAB SAMPLE ID --->	FDSSH02301					
	ID FROM REPORT -->	FDSSH02301					
	SAMPLE DATE ----->	10/17/96					
	DATE ANALYZED --->	10/22/96					
	MATRIX ---------->	Soil					
	UNITS ---------->	UG/KG					
CAS #	Parameter	27339	VAL				
86290-81-5	Gasoline	501.	J				

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

CYANIDE							
	SAMPLE ID ------->	FDS-S-H023-02					
	ORIGINAL ID ----->	FDSSH02302					
	LAB SAMPLE ID --->	40518.01					
	ID FROM REPORT -->	FDSSH02302					
	SAMPLE DATE ----->	09/30/99					
	DATE EXTRACTED -->	10/07/99					
	DATE ANALYZED --->	10/08/99					
	MATRIX ---------->	Soil					
	UNITS ---------->	MG/KG					
CAS #	Parameter	40518	VAL				
57-12-5	Cyanide (CN)	0.17	U				

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW-META

SAMPLE ID ------->	FDS-S-H023-02
ORIGINAL ID ----->	FDSSH02302
LAB SAMPLE ID --->	40518.01
ID FROM REPORT -->	FDSSH02302
SAMPLE DATE ----->	09/30/99
DATE EXTRACTED -->	10/06/99
DATE ANALYZED --->	10/07/99
MATRIX ---------->	Soil
UNITS ----------->	MG/KG

CAS #	Parameter	40518	VAL
7439-97-6	Mercury (Hg)	0.05	J
7440-38-2	Arsenic (As)	2.4	J
7440-39-3	Barium (Ba)	31.3	
7440-43-9	Cadmium (Cd)	0.03	U
7440-47-3	Chromium (Cr)	13.5	
7439-92-1	Lead (Pb)	7.9	
7782-49-2	Selenium (Se)	0.51	J
7440-22-4	Silver (Ag)	0.14	U
7440-36-0	Antimony (Sb)	0.31	UJ
7440-41-7	Beryllium (Be)	0.31	J
7440-70-2	Calcium (Ca)	1220.	
7440-48-4	Cobalt (Co)	1.5	J
7440-50-8	Copper (Cu)	2.4	
7439-89-6	Iron (Fe)	10500.	
7439-95-4	Magnesium (Mg)	646.	
7439-96-5	Manganese (Mn)	34.3	J
7440-02-0	Nickel (Ni)	2.9	J
7440-09-7	Potassium (K)	321.	
7440-23-5	Sodium (Na)	249.	J
7440-28-0	Thallium (Tl)	0.4	U
7440-62-2	Vanadium (V)	16.1	
7440-66-6	Zinc (Zn)	14.8	
7440-31-5	Tin (Sn)	4.9	U
7429-90-5	Aluminum (Al)	6950.	

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW-SVOA

SAMPLE ID ------->	FDS-S-H023-02
ORIGINAL ID ----->	FDSSH02302
LAB SAMPLE ID --->	40518.01
ID FROM REPORT -->	FDSSH02302
SAMPLE DATE ----->	09/30/99
DATE EXTRACTED -->	10/11/99
DATE ANALYZED --->	10/12/99
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	40518	VAL
108-95-2	Phenol	380.	U
111-44-4	bis(2-Chloroethyl)ether	380.	U
95-57-8	2-Chlorophenol	380.	U
541-73-1	1,3-Dichlorobenzene	380.	U
106-46-7	1,4-Dichlorobenzene	380.	U
100-51-6	Benzyl alcohol	380.	U
95-50-1	1,2-Dichlorobenzene	380.	U
95-48-7	2-Methylphenol (o-Cresol)	380.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380.	U
106-44-5	4-Methylphenol (p-Cresol)	380.	U
621-64-7	N-Nitroso-di-n-propylamine	380.	U
67-72-1	Hexachloroethane	380.	U
98-95-3	Nitrobenzene	380.	U
78-59-1	Isophorone	380.	U
88-75-5	2-Nitrophenol	380.	U
105-67-9	2,4-Dimethylphenol	380.	U
65-85-0	Benzoic acid	380.	U
111-91-1	bis(2-Chloroethoxy)methane	380.	U
120-83-2	2,4-Dichlorophenol	380.	U
120-82-1	1,2,4-Trichlorobenzene	380.	U
91-20-3	Naphthalene	380.	U
106-47-8	4-Chloroaniline	380.	U
87-68-3	Hexachlorobutadiene	380.	U
59-50-7	4-Chloro-3-methylphenol	380.	U
91-57-6	2-Methylnaphthalene	380.	U
77-47-4	Hexachlorocyclopentadiene	380.	U
88-06-2	2,4,6-Trichlorophenol	380.	U
95-95-4	2,4,5-Trichlorophenol	950.	U
91-58-7	2-Chloronaphthalene	380.	U
88-74-4	2-Nitroaniline	950.	U
131-11-3	Dimethyl phthalate	380.	U
208-96-8	Acenaphthylene	380.	U
99-09-2	3-Nitroaniline	950.	U
83-32-9	Acenaphthene	380.	U
51-28-5	2,4-Dinitrophenol	950.	UR
100-02-7	4-Nitrophenol	950.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW-SVOA

SAMPLE ID ------->	FDS-S-H023-02
ORIGINAL ID ----->	FDSSH02302
LAB SAMPLE ID --->	40518.01
ID FROM REPORT -->	FDSSH02302
SAMPLE DATE ----->	09/30/99
DATE EXTRACTED -->	10/11/99
DATE ANALYZED --->	10/12/99
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	40518	VAL
132-64-9	Dibenzofuran	380.	U
121-14-2	2,4-Dinitrotoluene	380.	U
606-20-2	2,6-Dinitrotoluene	380.	U
84-66-2	Diethylphthalate	380.	U
7005-72-3	4-Chlorophenylphenylether	380.	U
86-73-7	Fluorene	380.	U
100-01-6	4-Nitroaniline	950.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	950.	UR
86-30-6	N-Nitrosodiphenylamine	380.	U
101-55-3	4-Bromophenyl-phenylether	380.	U
118-74-1	Hexachlorobenzene	380.	U
87-86-5	Pentachlorophenol	950.	U
85-01-8	Phenanthrene	380.	U
120-12-7	Anthracene	380.	U
84-74-2	Di-n-butylphthalate	380.	U
206-44-0	Fluoranthene	380.	U
129-00-0	Pyrene	380.	U
85-68-7	Butylbenzylphthalate	380.	U
91-94-1	3,3'-Dichlorobenzidine	380.	U
56-55-3	Benzo(a)anthracene	380.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	380.	U
218-01-9	Chrysene	380.	U
117-84-0	Di-n-octyl phthalate	380.	U
205-99-2	Benzo(b)fluoranthene	380.	U
207-08-9	Benzo(k)fluoranthene	380.	U
50-32-8	Benzo(a)pyrene	380.	U
193-39-5	Indeno(1,2,3-cd)pyrene	380.	U
53-70-3	Dibenz(a,h)anthracene	380.	U
191-24-2	Benzo(g,h,i)perylene	380.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW-VOA

SAMPLE ID ------->	FDS-S-H023-02
ORIGINAL ID ----->	FDSSH02302
LAB SAMPLE ID --->	40518.01
ID FROM REPORT -->	FDSSH02302
SAMPLE DATE ----->	09/30/99
DATE ANALYZED --->	10/08/99
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	40518	VAL
71-43-2	Benzene	2.	J
100-41-4	Ethylbenzene	7.	U
108-88-3	Toluene	7.	U
1330-20-7	Xylene (Total)	7.	U
74-87-3	Chloromethane	7.	U
74-83-9	Bromomethane	7.	U
75-01-4	Vinyl chloride	7.	U
75-00-3	Chloroethane	7.	U
75-09-2	Methylene chloride	7.	U
67-64-1	Acetone	7.	U
75-15-0	Carbon disulfide	7.	U
75-35-4	1,1-Dichloroethene	7.	U
75-34-3	1,1-Dichloroethane	7.	U
540-59-0	1,2-Dichloroethene (total)	7.	U
67-66-3	Chloroform	7.	U
107-06-2	1,2-Dichloroethane	7.	U
78-93-3	2-Butanone (MEK)	7.	U
71-55-6	1,1,1-Trichloroethane	7.	U
56-23-5	Carbon tetrachloride	7.	U
108-05-4	Vinyl acetate	7.	U
75-27-4	Bromodichloromethane	7.	U
78-87-5	1,2-Dichloropropane	7.	U
10061-01-5	cis-1,3-Dichloropropene	7.	U
79-01-6	Trichloroethene	7.	U
124-48-1	Dibromochloromethane	7.	U
79-00-5	1,1,2-Trichloroethane	7.	U
10061-02-6	trans-1,3-Dichloropropene	7.	U
75-25-2	Bromoform	7.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.	U
591-78-6	2-Hexanone	7.	U
127-18-4	Tetrachloroethene	7.	U
79-34-5	1,1,2,2-Tetrachloroethane	7.	U
108-90-7	Chlorobenzene	7.	U
100-42-5	Styrene	7.	U
110-75-8	2-Chloroethyl vinyl ether	7.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 SOIL SAMPLE RESULTS

SW846-PEST

SAMPLE ID ------->	FDS-S-H023-02
ORIGINAL ID ----->	FDSSH02302
LAB SAMPLE ID --->	40518.01
ID FROM REPORT -->	FDSSH02302
SAMPLE DATE ----->	09/30/99
DATE EXTRACTED -->	10/03/99
DATE ANALYZED --->	10/05/99
MATRIX ---------->	Soil
UNITS ---------->	UG/KG

CAS #	Parameter	40518	VAL
12674-11-2	Aroclor-1016	39.	U
11104-28-2	Aroclor-1221	39.	U
11141-16-5	Aroclor-1232	39.	U
53469-21-9	Aroclor-1242	39.	U
12672-29-6	Aroclor-1248	39.	U
11097-69-1	Aroclor-1254	39.	U
11096-82-5	Aroclor-1260	53.	
319-84-6	alpha-BHC	1.5	U
319-85-7	beta-BHC	1.5	U
319-86-8	delta-BHC	1.5	U
58-89-9	gamma-BHC (Lindane)	1.5	U
76-44-8	Heptachlor	1.5	U
309-00-2	Aldrin	1.5	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	1.5	U
60-57-1	Dieldrin	3.	U
72-55-9	4,4'-DDE	12.	
72-20-8	Endrin	3.	U
33213-65-9	Endosulfan II	3.	U
72-54-8	4,4'-DDD	3.	U
1031-07-8	Endosulfan sulfate	3.	U
50-29-3	4,4'-DDT	3.	U
7421-93-4	Endrin aldehyde	3.	U
72-43-5	Methoxychlor	15.	U
5103-71-9	alpha-Chlordane	1.5	U
5103-74-2	gamma-Chlordane	3.2	
8001-35-2	Toxaphene	99.	U
53494-70-5	Endrin ketone	3.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

CYANIDE								
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15B-01		FDS-G-W15C-01		
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15B01		FDSGW15C01		
	LAB SAMPLE ID --->	28308.01		28308.02		28308.03		
	ID FROM REPORT -->	FDSGW15A01		FDSGW15B01		FDSGW15C01		
	SAMPLE DATE ----->	01/28/97		01/28/97		01/28/97		
	DATE EXTRACTED -->	01/31/97		01/31/97		01/31/97		
	DATE ANALYZED --->	02/01/97		02/01/97		02/01/97		
	MATRIX ---------->	Water		Water		Water		
	UNITS ---------->	UG/L		UG/L		UG/L		
CAS #	Parameter	28308	VAL	28308	VAL	28308	VAL	
57-12-5	Cyanide (CN)	3.	J	7.	J	2.	U	

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

SW846-META													
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15A-02		FDS-G-W15B-01		FDS-G-W15B-02		FDS-G-W15C-01		FDS-G-W15C-02	
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	LAB SAMPLE ID --->	28308.01		29707.04		28308.02		29730.06		28308.03		29730.07	
	ID FROM REPORT -->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	SAMPLE DATE ----->	01/28/97		06/13/97		01/28/97		06/16/97		01/28/97		06/16/97	
	DATE EXTRACTED -->	01/31/97		06/20/97		01/31/97		06/20/97		01/31/97		06/20/97	
	DATE ANALYZED --->	01/31/97		07/02/97		01/31/97		07/02/97		01/31/97		07/02/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	28308	VAL	29707	VAL	28308	VAL	29707	VAL	28308	VAL	29707	VAL
7429-90-5	Aluminum (Al)	100.	J	503.		3010.		209.		962.		474.	
7440-36-0	Antimony (Sb)	2.1	U	1.6	U	2.1	U	1.6	U	3.5	J	1.6	U
7440-38-2	Arsenic (As)	19.4		26.7		4.1	J	4.6	J	2.5	U	2.1	U
7440-39-3	Barium (Ba)	55.2	J	94.5		68.6	J	70.6		159.	J	153.	
7440-41-7	Beryllium (Be)	0.34	U	0.35	U	0.59	U	0.29	U	0.59	U	0.42	U
7440-43-9	Cadmium (Cd)	0.5	U	0.3	U	0.5	U	0.3	U	0.5	U	0.3	U
7440-70-2	Calcium (Ca)	126000.	J	235000.		98800.	J	119000.		268000.	J	284000.	
7440-47-3	Chromium (Cr)	0.92	J	1.5	J	4.7	J	1.	U	1.9	J	1.	U
7440-48-4	Cobalt (Co)	0.9	U	0.8	U	8.1	J	6.8	J	1.3	J	0.8	U
7440-50-8	Copper (Cu)	3.6	J	1.4	U	1.2	U	1.4	U	0.6	U	1.4	U
7439-89-6	Iron (Fe)	4920.	J	6620.		2060.	J	675.		1920.	J	3040.	
7439-92-1	Lead (Pb)	1.7	U	0.9	U	1.7	U	0.9	U	1.7	U	0.9	U
7439-95-4	Magnesium (Mg)	12200.	J	15800.		26200.	J	22800.		19300.	J	14000.	
7439-96-5	Manganese (Mn)	721.	J	515.		1050.	J	813.		806.	J	465.	
7439-97-6	Mercury (Hg)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7440-02-0	Nickel (Ni)	3.7	J	0.84	J	3.2	J	1.6	J	1.7	J	0.9	J
7440-09-7	Potassium (K)	10800.		5130.		7410.		8050.		3440.	J	3450.	J
7782-49-2	Selenium (Se)	2.8	U	3.4	U	2.8	U	3.4	U	2.8	U	3.4	U
7440-22-4	Silver (Ag)	1.2	U	1.	U	1.2	U	1.	U	1.2	U	1.	U
7440-23-5	Sodium (Na)	78300.		157000.		92400.		158000.		117000.		114000.	
7440-28-0	Thallium (Tl)	2.7	U	5.3	U	2.7	U	5.1	U	3.3	J	5.7	U
7440-31-5	Tin (Sn)	2.6	U	14.	U	2.6	U	14.	U	2.6	U	14.	U
7440-62-2	Vanadium (V)	1.3	J	1.6	J	6.	J	1.1	J	1.9	J	1.6	J
7440-66-6	Zinc (Zn)	35.6	U	5.8	U	7.1	U	11.9	U	5.3	U	9.8	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

SW846-PEST															
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15A-02		FDS-G-W15B-01		FDS-G-W15B-02		FDS-G-W15C-01		FDS-G-W15C-02	
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	LAB SAMPLE ID --->	28308.01		29707.04		28308.02		29730.06		28308.03		29730.07	
	ID FROM REPORT -->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	SAMPLE DATE ----->	01/28/97		06/13/97		01/28/97		06/16/97		01/28/97		06/16/97	
	DATE EXTRACTED -->	01/29/97		06/16/97		01/29/97		06/18/97		01/29/97		06/18/97	
	DATE ANALYZED --->	01/31/97		06/19/97		01/31/97		06/20/97		01/31/97		06/20/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	28308	VAL	29707	VAL	28308	VAL	29707	VAL	28308	VAL	29707	VAL
319-84-6	alpha-BHC	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
319-85-7	beta-BHC	0.057	J	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
319-86-8	delta-BHC	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
58-89-9	gamma-BHC (Lindane)	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
76-44-8	Heptachlor	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
309-00-2	Aldrin	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
1024-57-3	Heptachlor epoxide	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
959-98-8	Endosulfan I	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
60-57-1	Dieldrin	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-55-9	4,4'-DDE	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-20-8	Endrin	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
33213-65-9	Endosulfan II	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-54-8	4,4'-DDD	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
1031-07-8	Endosulfan sulfate	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
50-29-3	4,4'-DDT	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
72-43-5	Methoxychlor	0.38	UJ	0.38	U	0.38	U	0.38	U	0.38	U	0.38	U
53494-70-5	Endrin ketone	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
7421-93-4	Endrin aldehyde	0.08	UJ	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
5103-71-9	alpha-Chlordane	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
5103-74-2	gamma-Chlordane	0.04	UJ	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U
8001-35-2	Toxaphene	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
12674-11-2	Aroclor-1016	1.	UJ	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	UJ	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	UJ	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	UJ	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	UJ	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	2.	UJ	2.	U	2.	U	2.	U	2.	U	2.	U
11096-82-5	Aroclor-1260	2.	UJ	2.	U	2.	U	2.	U	2.	U	2.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

SW846-SVOA													
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15A-02		FDS-G-W15B-01		FDS-G-W15B-02		FDS-G-W15C-01		FDS-G-W15C-02	
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	LAB SAMPLE ID --->	28308.01		29707.04		28308.02		29730.06		28308.03		29730.07	
	ID FROM REPORT -->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	SAMPLE DATE ----->	01/28/97		06/13/97		01/28/97		06/16/97		01/28/97		06/16/97	
	DATE EXTRACTED -->	01/29/97		06/16/97		01/29/97		06/18/97		01/29/97		06/18/97	
	DATE ANALYZED --->	01/31/97		06/23/97		01/30/97		06/25/97		01/30/97		06/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	28308	VAL	29707	VAL	28308	VAL	29707	VAL	28308	VAL	29707	VAL
108-95-2	Phenol	1.	J	10.	U	10.	U	12.	U	10.	U	12.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
100-51-6	Benzyl alcohol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
106-44-5	4-Methylphenol (p-Cresol)	23.		2.	J	10.	U	12.	U	10.	U	12.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
65-85-0	Benzoic acid	6.	J	50.	U	50.	U	62.	U	50.	U	60.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
106-47-8	4-Chloroaniline	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
95-95-4	2,4,5-Trichlorophenol	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
131-11-3	Dimethyl phthalate	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

SW846-SVOA													
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15A-02		FDS-G-W15B-01		FDS-G-W15B-02		FDS-G-W15C-01		FDS-G-W15C-02	
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	LAB SAMPLE ID --->	28308.01		29707.04		28308.02		29730.06		28308.03		29730.07	
	ID FROM REPORT -->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	SAMPLE DATE ----->	01/28/97		06/13/97		01/28/97		06/16/97		01/28/97		06/16/97	
	DATE EXTRACTED -->	01/29/97		06/16/97		01/29/97		06/18/97		01/29/97		06/18/97	
	DATE ANALYZED --->	01/31/97		06/23/97		01/30/97		06/25/97		01/30/97		06/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	28308	VAL	29707	VAL	28308	VAL	29707	VAL	28308	VAL	29707	VAL
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	62.	U	50.	U	60.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	25.	U	20.	U	24.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
117-84-0	Di-n-octyl phthalate	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	12.	U	10.	U	12.	U

*** Validation Complete ***

CHARLESTON CTO-0144 FUEL DISTRIBUTION
LETTER REPORT
AREA 15 GROUNDWATER SAMPLE RESULTS

SW846-VOA													
	SAMPLE ID ------->	FDS-G-W15A-01		FDS-G-W15A-02		FDS-G-W15B-01		FDS-G-W15B-02		FDS-G-W15C-01		FDS-G-W15C-02	
	ORIGINAL ID ----->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	LAB SAMPLE ID --->	28308.01		29707.04		28308.02		29730.06		28308.03		29730.07	
	ID FROM REPORT -->	FDSGW15A01		FDSGW15A02		FDSGW15B01		FDSGW15B02		FDSGW15C01		FDSGW15C02	
	SAMPLE DATE ----->	01/28/97		06/13/97		01/28/97		06/16/97		01/28/97		06/16/97	
	DATE ANALYZED --->	01/30/97		06/17/97		01/30/97		06/19/97		01/30/97		06/19/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	28308	VAL	29707	VAL	28308	VAL	29707	VAL	28308	VAL	29707	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	13.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	3.	J	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	6.		5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-05-4	Vinyl acetate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***